

THE ESSENTIALS  
OF LETTERING



THE ESSENTIALS OF LETTERING



WORKS BY  
**THOMAS E. FRENCH**  
PROFESSOR OF ENGINEERING DRAWING  
OHIO STATE UNIVERSITY

ENGINEERING DRAWING

6 × 9, 329 pages, 556 Illustrations . . . . . \$2.50

BY THOMAS E. FRENCH AND ROBERT MEIKLEJOHN

THE ESSENTIALS OF LETTERING

Oblong, 9 × 6, 94 pages, 120 Illustrations . . . . . \$1.00

BY THOMAS E. FRENCH AND F. W. IVES

AGRICULTURAL DRAWING

7½ × 10, 130 pages, 182 Illustrations . . . . . \$1.25



# THE ESSENTIALS OF LETTERING

A MANUAL FOR STUDENTS AND DESIGNERS

BY

THOMAS E. FRENCH and ROBERT MEIKLEJOHN

THE OHIO STATE UNIVERSITY

THIRD EDITION

SIXTH IMPRESSION

TOTAL ISSUE, 12,000

McGRAW-HILL BOOK COMPANY, INC.

239 WEST 39TH STREET. NEW YORK

LONDON: HILL PUBLISHING CO., LTD.

6 & 8 BOUVERIE ST., E. C.

1912



COPYRIGHT, 1909, 1910, 1912, BY THOMAS E. FRENCH AND ROBERT MEIKLEJOHN

*Printed and Electrotyped  
by The Maple Press  
York, Pa.*



## PREFACE

There are two general classes of persons among those who are interested in the study of the subject of lettering, first, those who have to use letters to convey information on drawings, as engineering students and draftsmen, architects, etc.; second, those who use lettering in design, as art students, artists, designers and craftsmen. The foundation is the same for both, whether the application be on a mechanical drawing or a poster. The first class may be concerned mainly with legibility and speed, and the second with beauty, but there can be no distinction in the principles of the subject.

There is moreover a constant overlapping of the classes thus arbitrarily divided, as for example in the case of the architect, who has both to letter his office drawings and to design permanent inscriptions.

One need only to recall on the one hand instances of the painful attempts of the engineering student to do something "artistic," and on the other the examples of

designs made by otherwise competent art students, which have been ruined by inappropriate, ill-formed, childish lettering, to feel that there are some in both classes who have failed in the appreciation of lettering as an art.

This book is designed as a general text-book on the subject. The draftsman may take up as much as is given in the first part, for the ordinary lettering in connection with drawing; the designer will need to go farther into the study of styles and composition as carried on in the later chapters.

A student in an engineering course must be given training in lettering as a necessary requirement in the execution of technical drawing, but it is too often true that this lettering on account of its application is considered to be mechanical drawing. Let it be emphasized here at the outset that lettering is *not* mechanical drawing, but is design, based on accepted forms and developed freehand.



## PREFACE.

We have taken a step farther in saying that there is no engineers' lettering as distinguished from other lettering. There is simply the adaptation by each draftsman of the style suitable to his particular needs. The map draftsman, the architectural draftsman, the machine draftsman will each select appropriate letters for his kind of work. "Engineers' lettering," so-called, is kept in bad repute by those who persist in making such mechanical caricatures as geometrical letters, block letters, etc.

As there are forms, however, for each branch of drawing which are particularly adapted to it, the subject should be taught to engineers with reference to their chosen branch. The civil engineer, for example, will practice the Modern Roman and the stump letter, as these have become standard letters in map drawing and similar work. The architect, on the other hand, will have no use for the Modern Roman, but should study in detail the Old Roman of both the early and Renaissance periods.

To the engineering student it may seem to be only of general interest, but to the architect, art student, and designer, some knowledge of the history of the alphabet and the different periods of its development is absolutely essential. It is not in our province to discuss the origin or derivation of the present alphabet, for this the student if interested is referred to the standard works on palaeography; but a short historical outline is given in the first chapter in order that subsequent references may be understood.

It will be noticed that in the analytical plates the letters have been arranged in their family groups instead of in the usual alphabetical order.

The assistance of Mr. Dard Hunter, Mr. W. A. Dwiggins, Mr. Ralph Fletcher Seymour, Dr. Rudolf von Larisch, Mr. Alfred Bartlett, Mr. W. J. Norris, Mr. Cree Sheets, Messrs. Curtis and Cameron, John Williams, Inc., the Century Company, and others who have made drawings for this book, or permitted the reproduction of their work, is gratefully acknowledged.



# CONTENTS

|  | PAGE |  | PAGE |
|--|------|--|------|
| PREFACE . . . . .  | v    |  |      |
| CHAPTER I  |      |  |      |
| HISTORICAL OUTLINE . . . . .   | i    |  |      |
| CHAPTER II   |      |  |      |
| LETTER CONSTRUCTION . . . . .  | 4    |  |      |
| General proportions—Optical illusions—The Roman letter—Rules for shading—Old Roman—Renaissance Roman—Analysis of letter forms—Geometrical construction—Modern Roman—Commercial gothic—Single stroke letters—Single stroke vertical capitals—Single stroke inclined capitals—Reinhardt letter—Inclined Roman—Stump letters. |      |  |      |
| CHAPTER III  |      |  |      |
| COMPOSITION AND TITLES . . . . .   | 32   |  |      |
| Principles—Spacing—Titles, for machine drawings, for architectural drawings, for maps—Symmetrical composition—Full panel—Other title forms—Record strip.   |      |  |      |
| CHAPTER IV   |      |  |      |
| SELECTION OF STYLES . . . . .  | 39   |  |      |
| For architectural work—Inscriptions and tablets—For map drawing—For signals and signs—For shop drawings.   |      |  |      |
| CHAPTER V  |      |  |      |
| LETTERS IN DESIGN . . . . .  | 42   |  |      |
| Importance—Old Roman in design—Freedom in composition—Broad pen construction—Roman lower-case—The Uncial—The Celtic—The Gothic, or “Text letter”—Steel and reed pens for Gothic writing—Italic and script—Art nouveau.   |      |  |      |
| CHAPTER VI   |      |  |      |
| DESIGN AND COMPOSITION . . . . .   | 64   |  |      |
| Principles—The period, purpose and material—Ornament—Legibility and beauty—Methods—Spacing—Appropriate letters for different branches of applied design—Suggestions.   |      |  |      |
| CHAPTER VII  |      |  |      |
| MONOGRAMS, CIPHERS AND MARKS . . . . .   | 75   |  |      |
| Definitions—Requirements—The period, purpose and material—Forms, superimposed, successive, continuous, reversible—Method of designing a monogram—Devices and marks—Designs with separate letters.  |      |  |      |
| CHAPTER VIII   |      |  |      |
| DRAWING FOR REPRODUCTION . . . . .   | 82   |  |      |
| Photomechanical processes—Materials—Size—Methods of enlarging drawings—Color—Corrections—Effects gained through engraver’s aid.  |      |  |      |
| CHAPTER IX   |      |  |      |
| BIBLIOGRAPHY . . . . .   | 85   |  |      |
| INDEX . . . . .  | 91   |  |      |



## CHAPTER I

### HISTORICAL OUTLINE

"If we set aside the still more wonderful invention of speech, the discovery of the alphabet may fairly be accounted the most difficult as well as the most fruitful of all the past achievements of the human intellect."

For the general student of history, as well as the art student, the study of palaeography is an interesting one. Canon Taylor, from whom the above quotation is taken, has written a history of the alphabet\* in two large volumes which is accepted as standard, although some of his theories are disputed by other palaeologists; and a bibliography of other works, both historical and practical, will be found at the end of this book. It is sufficient for us to say that our letters are the result of a long evolution probably from the Egyptian and through the Phœnician and Greek to the Roman. The forms of the letters of our present alphabet (with the exception of j, u, w, y, and z) reached their full develop-

\* The Alphabet, Its Origin and Development. Isaac Taylor, London.

ment about two thousand years ago, and have been preserved for us on the Roman inscriptions of that period. This early letter, which we now call Old Roman, is the parent of all the styles, however diversified, which are in use to-day, and curiously enough, instead of being archaic, is the most useful and artistic one for the designer.



FIG. 1.—Portion of Inscription on the Trajan Column.



## HISTORICAL OUTLINE

This monumental form was used in the earliest Latin manuscripts with such modifications as would naturally arise from the use of the pen instead of the chisel. A variety known as rustic, although this name has nothing to do with its appearance, was in use also from the second to the fifth century. This form, however, is of no practical value to us. In the fourth century there was developed the uncial, a letter with beautiful curved outlines and of great value to the designer. In the evolution of this form, the Irish half-uncial, now known in design as Celtic, reached a degree of perfection and beauty never since surpassed. The wonderful book of Kells (early eighth century) in the Dublin museum is perhaps the finest example of lettering and illuminating extant.

It will be noted that up to this time there was not a separate alphabet of capitals and small letters; not until the latter part of the eighth century was this distinction made. This period marks an epoch in the history of writing. Charlemagne in 789 ordered the revision and rewriting of all the church books. In the activity in the monasteries which followed, Alcuin of York, the friend and advisor of Charlemagne, and who was Abbot of St. Martin's of Tours, developed an alphabet

of lower case letters, which has been known ever since as the Caroline (Carlovingian) minuscule. Our present script writing is the direct descendant of this Caroline letter.

Figure 2 is a reproduction of a ninth century manuscript, showing this letter written, it will be noted,

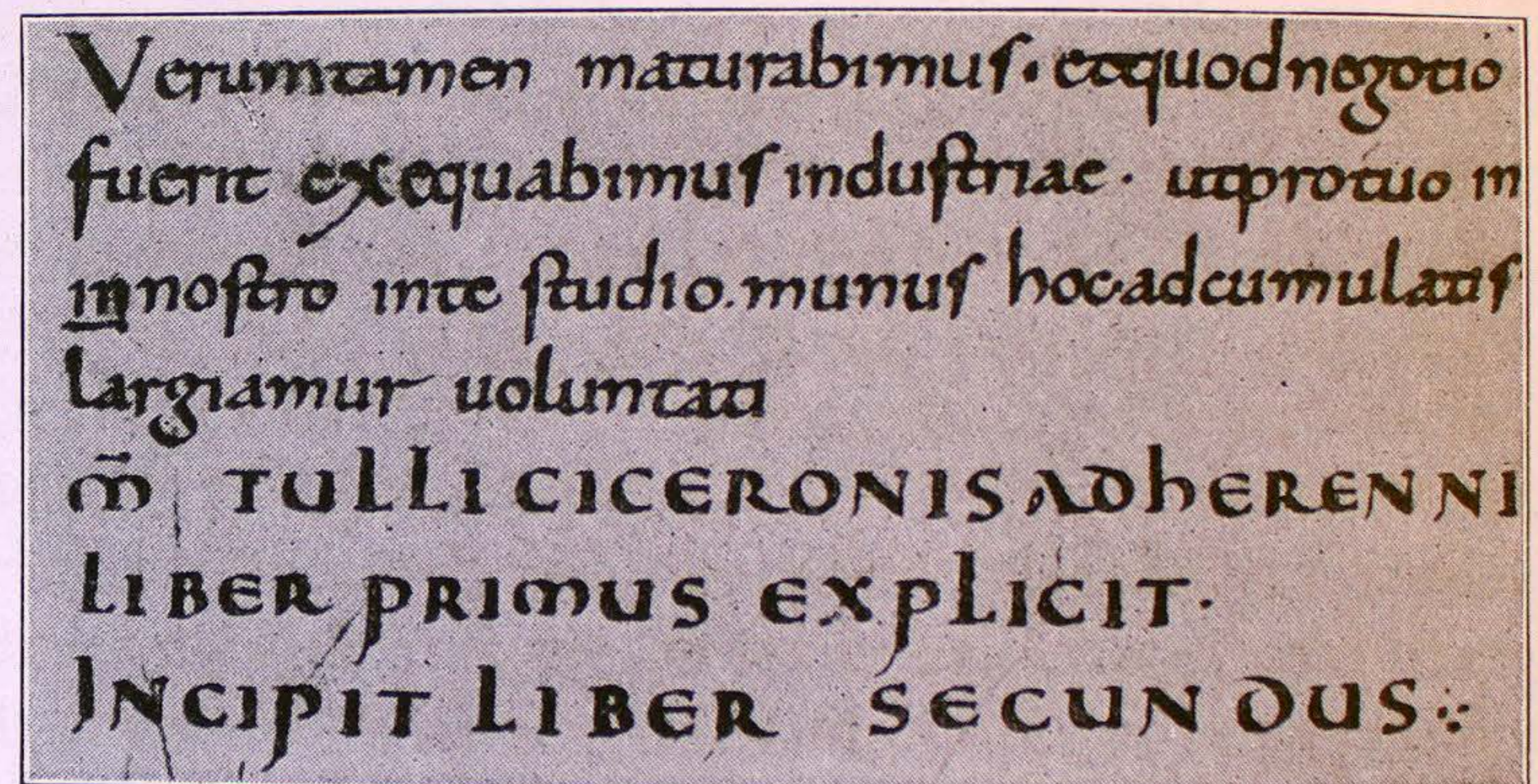


FIG. 2.—From a Ninth Century Manuscript.

with a slanted pen. This full round letter gradually became more compressed as parchment became more expensive, and is known from the eleventh century on as Gothic. During all this time, the old Roman capitals were in constant use as initial letters. This



## HISTORICAL OUTLINE

Gothic reached its extreme limit of angularity and compression in the fourteenth and fifteenth centuries, when the curves had given place entirely to angles. When the letter is so much compressed that the black strokes are wider than the white spaces between, it is known as blackletter. The form commonly known as Old English is an English Gothic of this period.

The Italians, who never followed the extreme angularity of the English and German Gothic, went back in the period of the Italian Renaissance (fifteenth century) to the Caroline minuscule as a model, and designed the Roman small letters, the letter of our books of today. The architects of the same period in their revival of classic architecture remodeled the old Roman capital letters for monumental use.

At the invention of printing in the middle of the fifteenth century, the first types were cut in imitation

of the Gothic writing of that period, but soon afterwards (1468) type was cut on Roman lower case. Throughout the next century books were printed both in Roman and Gothic. The Roman finally replaced the Gothic entirely, except in Germany, whose modern German text is the sole survivor of the mediaeval form. In the sixteenth century, the Italic was designed. The graceful French script, the letter of the period of the Louis' followed. In the eighteenth century the modifications which resulted in the modern Roman occurred. In the nineteenth century was begun the use of the bold letter, which we call Commercial Gothic. The present century is witnessing a most extensive revival of good lettering. The leaders in this movement are the German secessionists and the varieties of letters which they are producing may be classified under the general term of Art Nouveau.



## CHAPTER II

### LETTER CONSTRUCTION

**General Proportions.**—Before combining letters into words we must be familiar in detail with the forms and peculiarities of each letter. Letters vary in their proportion of width to height. Not only are the widths of the different letters in the same alphabet very unequal, but different alphabets vary in their “measure,” some being tall and narrow, others short and wide. There is a certain proportion or appearance as in the ordinary printed or drawn letters which may be called normal or standard. The styles whose widths are less than these in proportion are called compressed or condensed, and those whose widths are greater are known as expanded or extended.

There is also in the different styles a wide variation in the proportion of the thickness of the stem or stroke of the letters to their height, ranging all the way from  $\frac{1}{3}$  to  $\frac{1}{16}$ . Letters with heavy stems are called

Bold Face or Black Face, and those with thin stems, Light Face.

There is an optical illusion well known to all designers, in which a horizontal line drawn across the middle of a rectangle appears to be below the middle. In order that the divisions may seem to be symmetrical such a line must be drawn above the middle. In the construction of letters this illusion must be provided for in what may be called the “rule of stability.” In order to give the appearance of stability such letters as the B E K S X and Z, with the figures 3 and 8 must be drawn smaller at the top than the bottom. To see the effect of this illusion turn a printed page upside down and notice the letters mentioned.

Another optical illusion which must be provided for in large carefully drawn letters is that a round letter of the same height as an adjacent square letter will appear smaller, as it touches the guide line at only one



## LETTER CONSTRUCTION

point. In order to give the appearance of equal height, the round letters must be extended a trifle over the guide line on top and bottom. This is also true in regard to the pointed ends of the angular letters. A letter coming to a sharp point at the guide line will appear smaller than its companions. The point may either be extended over the line, or cut off as in Fig. 14.

These are delicate refinements and any exaggeration of them is much worse than not observing them at all.

A letter drawn in outline will not appear to have the same proportion of stem to height as one of the same width of stem made solid, because in the first instance the eye sees the enclosed area and in the second sees the outside. On this account a letter which is to be filled in solid should be outlined in ink so that the *outside* edge of the ink line touches the penciled outline.

These general proportions and peculiarities are true of all styles. In this chapter we shall consider the two fundamental styles, the Roman Capitals and the Commercial Gothic.

### THE ROMAN LETTER

The Roman is the foundation letter. Although there are countless variations of it, there may be said

to be three general forms, the early or classic, the renaissance, and the modern. The classic and the renaissance are very similar in effect, and the general term Old Roman is given to both. Type based on this form is called by the printers "Roman Oldstyle," and that based on the modern form, simply "Roman." With the newer faces of type, however, this distinction is not so significant.

The Roman letter is composed of two weights of lines, corresponding to the down stroke and the up stroke of the broad reed pen with which it was originally written; and from this we can formulate a rule which will prevent the inexcusable fault of shading a letter incorrectly. With twenty centuries of established form as precedent, it is, from the standpoint of design, as bad to shade a letter on the wrong stroke as it is to reverse it or to misspell the word in which it occurs. To determine the accented lines, we have then simply to draw the letter in one stroke and note which lines were made downward.

AMNUVWYZORSX

FIG. 3.



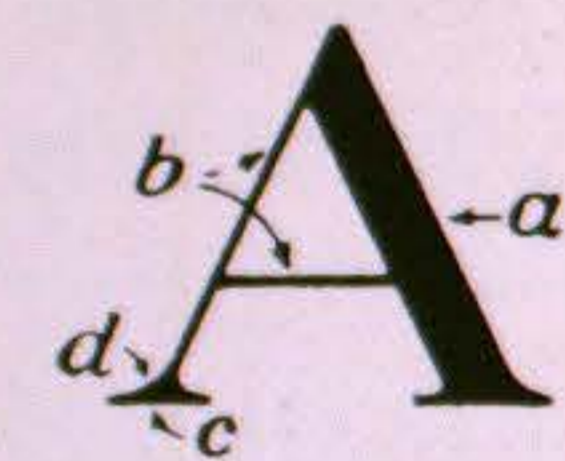
## LETTER CONSTRUCTION

It will be noticed that all the inclined shaded strokes with the exception of Z are downward from left to right (N) which makes a secondary or supplementary rule applicable to X and Y.

### RULES FOR SHADING ROMAN LETTERS

(1) Heavy Lines—all down strokes. This includes all vertical lines (except as noted above in M, N, and U), and all lines slanting downward, left to right.

(2) Light Lines—all horizontal strokes. All strokes upward from left to right (except Z)



In the Roman letter the heavy line (a) is called the stem or body mark, the light line (b) the hair line, the cross stroke (c) which finishes all free ends the serif, and the curves (d) connecting the serifs with the stem, brackets or fillets.

FIG. 4.

### THE OLD ROMAN.

Of the many existing inscriptions of the early Roman period, that at the base of the Trajan Column at Rome (114 A. D.) may be taken as a typical example. Fig. 1 is a photograph of a portion of the inscription, and Fig. 5 an alphabet drawn carefully from this great classic example.

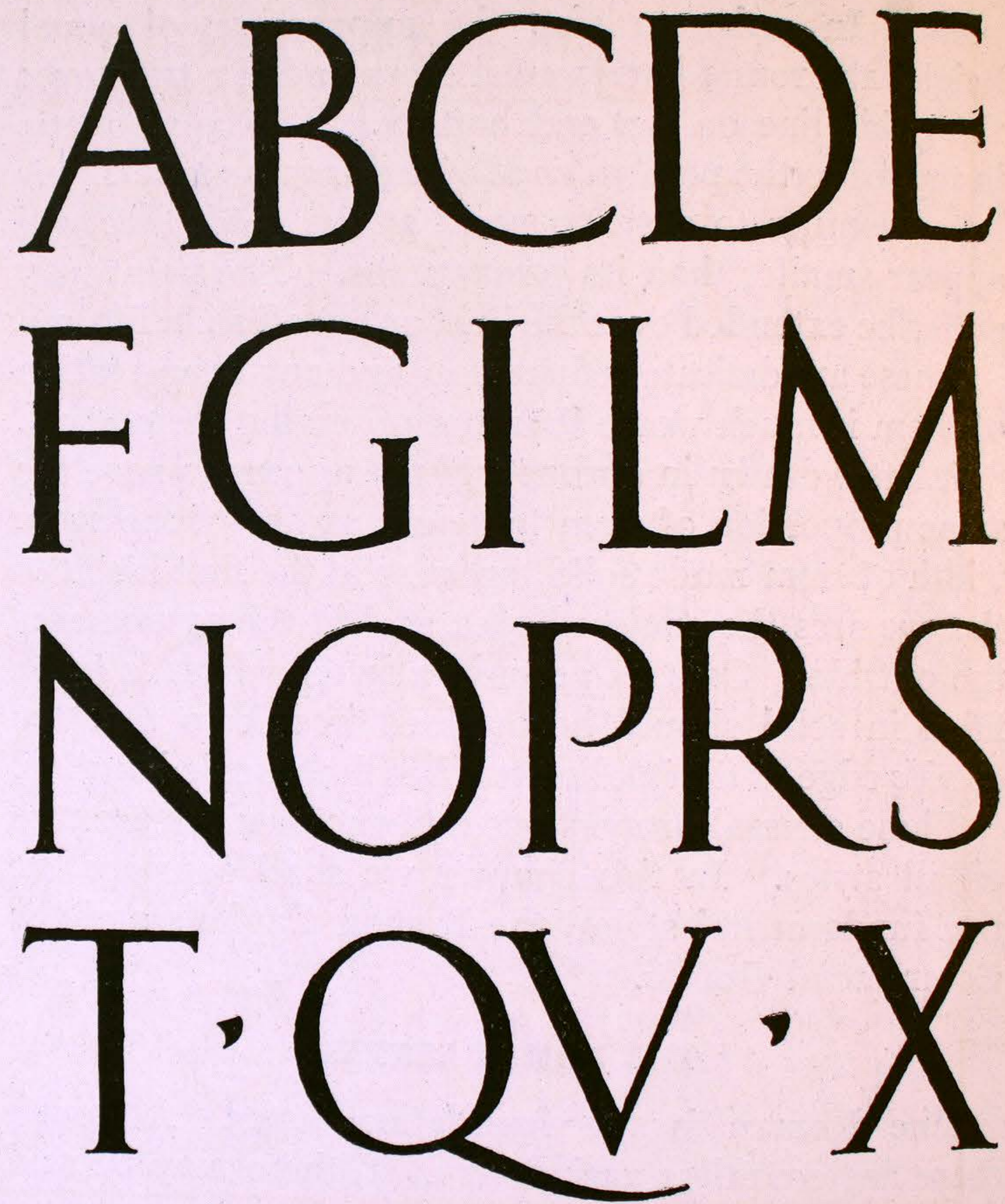


FIG. 5.—Classic Roman. Drawn from the Trajan Column.



OLD ROMAN (RENAISSANCE)

B C D E F G H I L N O Q V X

IMPERATORIS

ITALIAN 1315 TOMB OF HENRY VII

SISTE VIDES MAGNUM  
I INGENIO CVIVS NON  
QVAE NATVRA POLVS .  
KAROLVS AETATIS BHF

ITALIAN 1455 MARSVPPINI MONVMENT

FIG. 6.—Two Examples of Renaissance Roman.



## LETTER CONSTRUCTION

At the time of the Italian Renaissance the architects went to the old Roman models for their letters, modifying and refining them. Fig. 6 illustrates two famous examples of Mediaeval Roman, differing widely in appearance, the Henry VII having the largest serifs that would ever be used, and the Marsuppini very small ones.

The Old Roman is a light face letter, the body stroke being one-eighth to one-tenth of the height of the letter, and the hair line from two-fifths to two-thirds of the width of the body stroke.

In the proportion of width to height the Old Roman alphabet may be divided into two parts, the wide letters and the narrow letters, and it is the combination of these that gives the variety and beauty to this style. The division is as follows:

A CD GH MNO Q TVW Z  
B EF IJ KL P RS XY

FIG. 7.

In the Renaissance Old Roman the narrow letters are sometimes wider in proportion than those of the early period, but the above division is still very evident.

J, U, Y, and Z are letters of a later period than the rest of our alphabet. J was not differentiated from I until the sixteenth century, and hence in designing strictly classical inscriptions I is sometimes used for J. Similarly, the curved U is of later introduction, the sharp V being used for it until comparatively recent times. In careful Old Roman lettering, therefore, it is entirely in keeping to use V for U if the legibility is not affected. Its indiscriminate use however, as for example on office drawings should be avoided. Such use is often pure affectation. Some in order to preserve legibility without using the U form, adopt the manuscript form u, as in Figs. 99 and 101.

The beauty of the Roman letters depends not a little upon the appearance of the serifs and spurs which terminate every free end. These originated, probably, from a chisel cut made across the end to prevent over-cutting, and were copied by the penmen on account of the finished appearance which they gave. They are connected to the stems by small curved fillets or brackets, and great care must be observed in drawing these curves. If made even a trifle too large, the appearance of the letter is badly marred. Fig. 8 shows in detail several forms of these terminals.



## LETTER CONSTRUCTION

- (a) is the serif of the classical Old Roman.
- (b) a longer serif as found on some renaissance examples.
- (c) the serif on the hair line of the A, M, and N.
- (d) top and bottom spurs on horizontal lines, such as E and T.

The requirements for proficiency in lettering are, first, an intimate and critical knowledge of the letter forms, second, and more important, the feeling for composition, which can be gained only by continued observation and practice.

Although difficult of execution both in individual form and in composition, the Old Roman as the foundation letter must be studied first by those who are interested in lettering as an art.

Those who wish only to acquire the ability to letter a shop drawing legibly and correctly may use the time available with the single stroke letters of pages 23 and

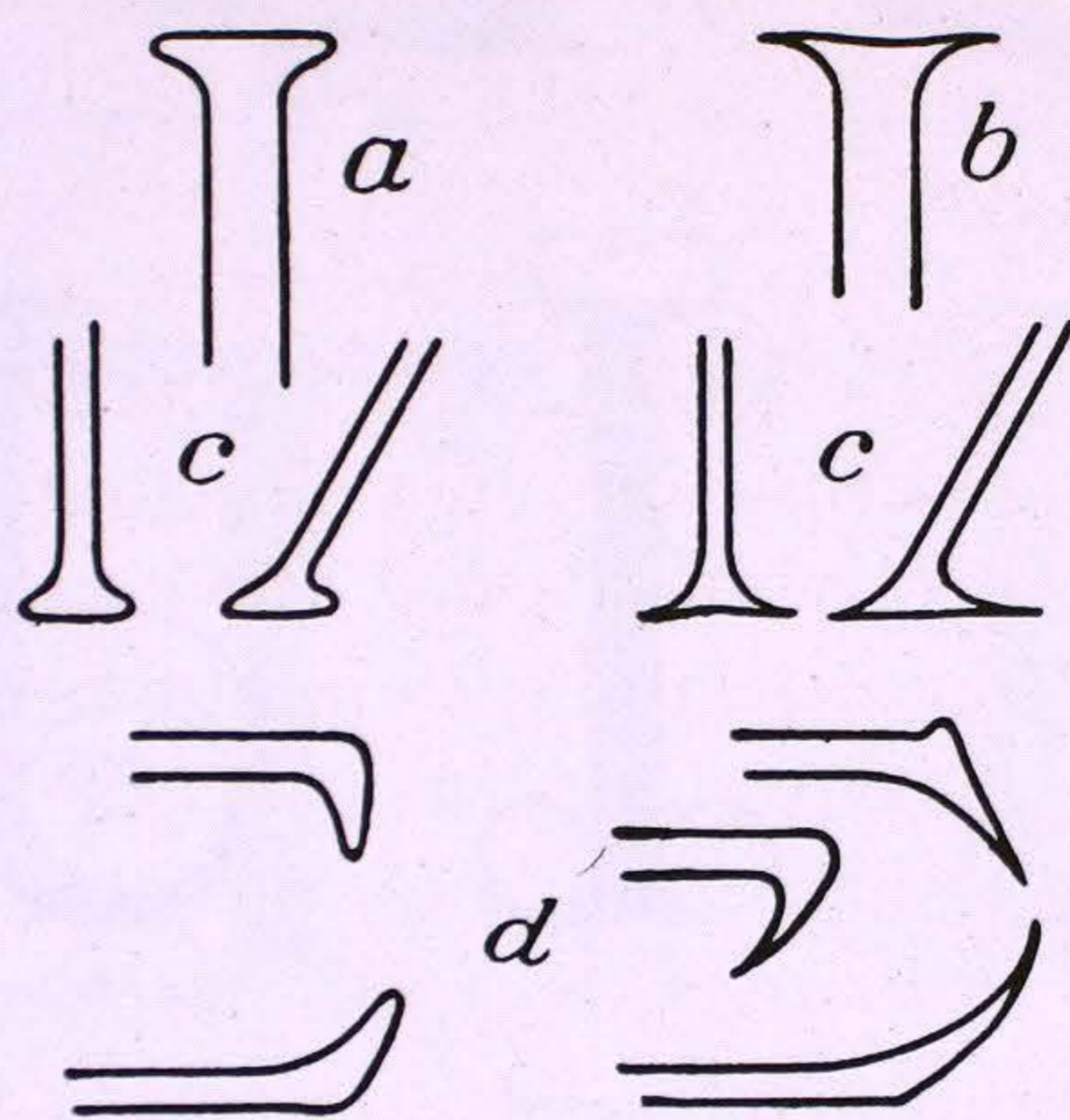


FIG. 8.—Serifs.

26 alone, but with such, even a slight knowledge of the historical forms will greatly increase the power of appreciation of the beautiful in lettering.

It is assumed that the student is familiar with the use of the ordinary drawing instruments. While lettering is not mechanical drawing, a T square, triangle and dividers are necessary adjuncts.

In penciling, a very light free sketchy line should be employed, and the use of a very hard pencil avoided. The beginner's usual mistake is in cutting into the paper with hard wiry lines that cannot be erased and that hinder the motion of the pen. A 2H pencil sharpened to a long conical point is in general the best.

Figs. 9 and 10 contain a carefully drawn Renaissance Roman alphabet. The stems are one-ninth of the height of the letter, and the hair lines one-half the width of the stems.

The width of each letter is given in units, the unit being one-ninth of the height of the letter. A scale should be made by dividing the height into nine parts and marking these divisions on the edge of a strip of paper or a card.

The fine-line circles and geometrical construction shown on this plate are given for use in drawing the



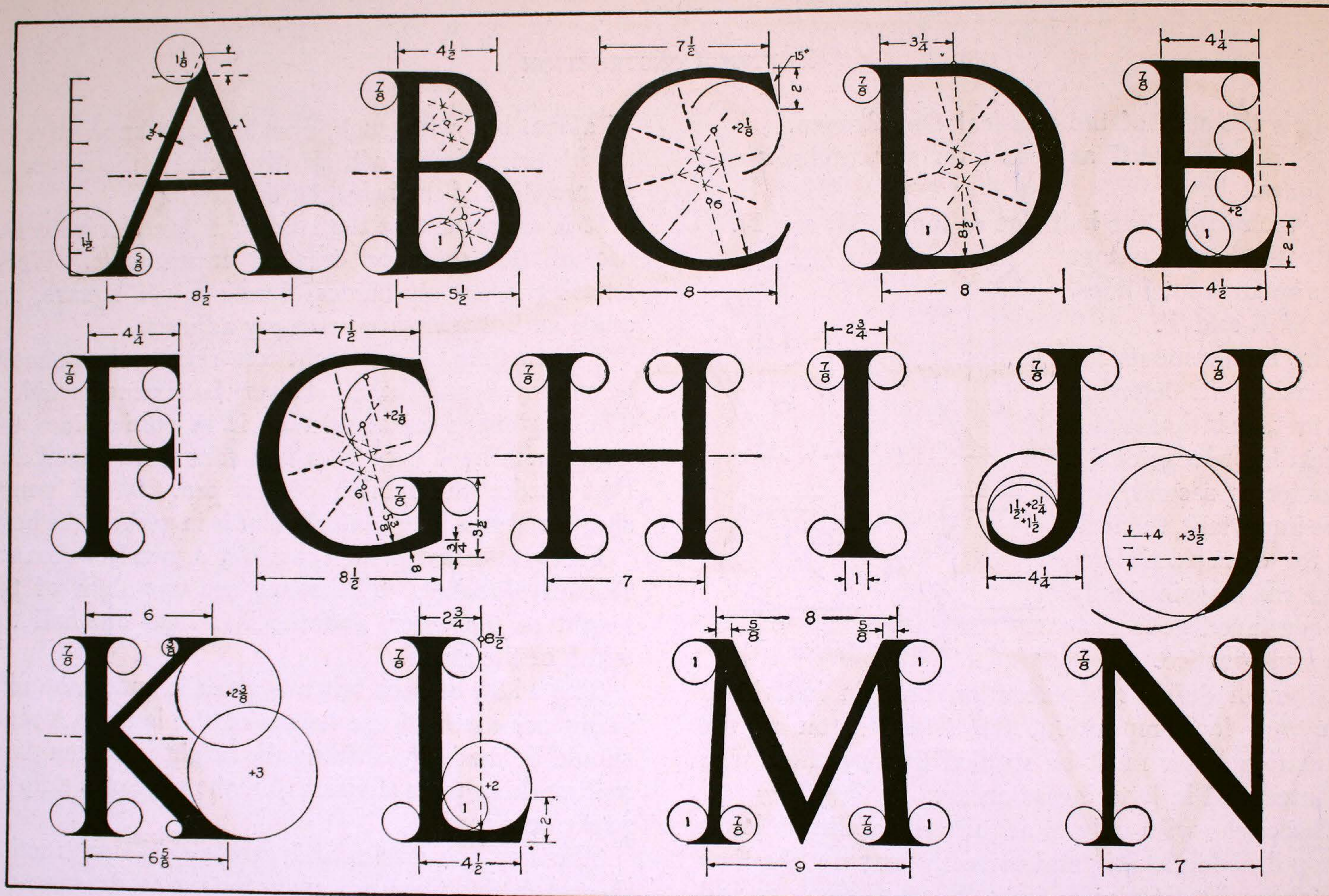


FIG. 9.—Roman Alphabet (first half), with a Method of Geometrical Construction for Large Letters.



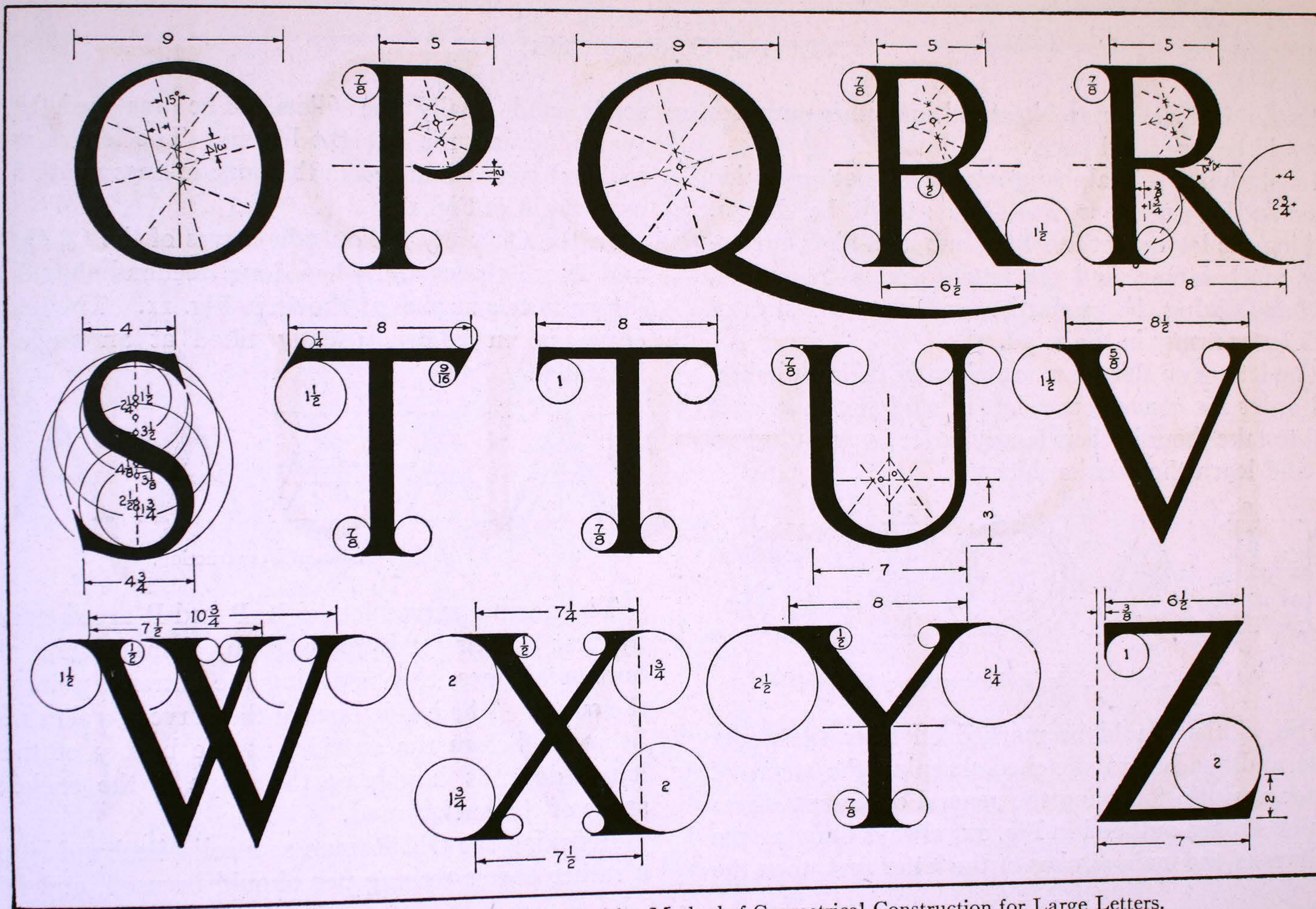


FIG. 10.—Roman Alphabet (second half) with a Method of Geometrical Construction for Large Letters.



## LETTER CONSTRUCTION

letters to large size for architectural, and other purposes and will be described later.

In studying this alphabet, top and bottom guide lines and a center or waist-line should be drawn, making the letters not less than one inch high, preferably much larger, and the letters drawn in outline, freehand, fixing the proportion and characteristics of each letter firmly in the mind.

The letters on this plate are given in their alphabetical order for convenience, but in studying them it is well to take them in their family order as given in Fig. 11, and learn the relationships.

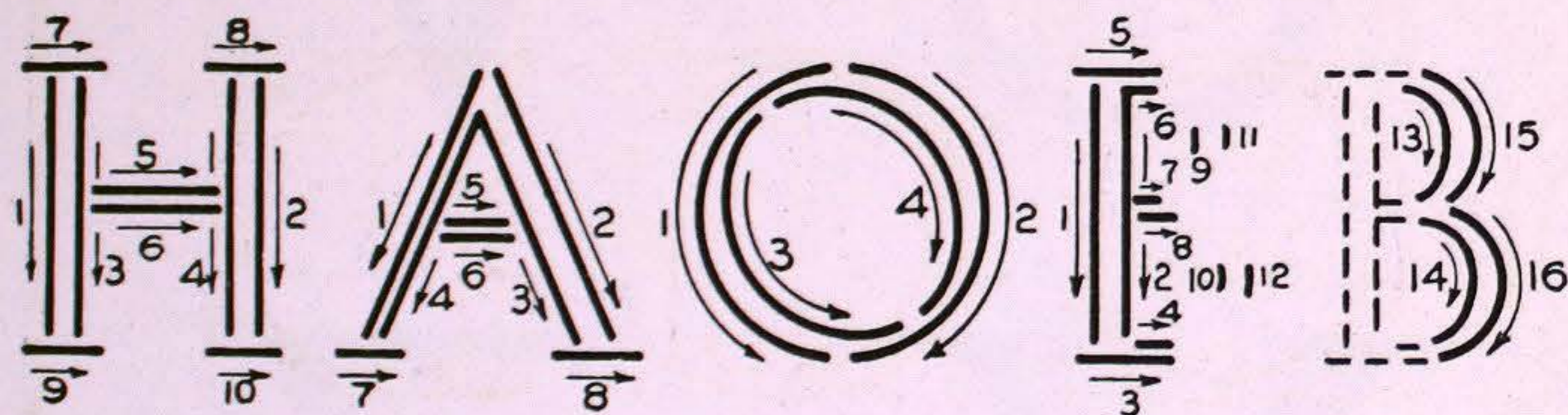


FIG. 11.—Typical Order and Direction of Strokes.

The widths should be marked off from the paper scale and the letters sketched, keeping the stems of uniform width, following the general order and direction of strokes outlined in Fig. 11, always drawing the outlines of the main strokes of the letter first, then the

serifs, and finally the fillets. The analyzed H is typical for all the straight letters. The letters with inclined sides should have the outside lines made first as in the A of Fig. 11.

In the O family the outside curves of the O, Q, C, and D are circles and when done freehand should be drawn in two strokes as shown in Fig. 11. The inside curve is an ellipse, usually tilted at an angle as indicated.

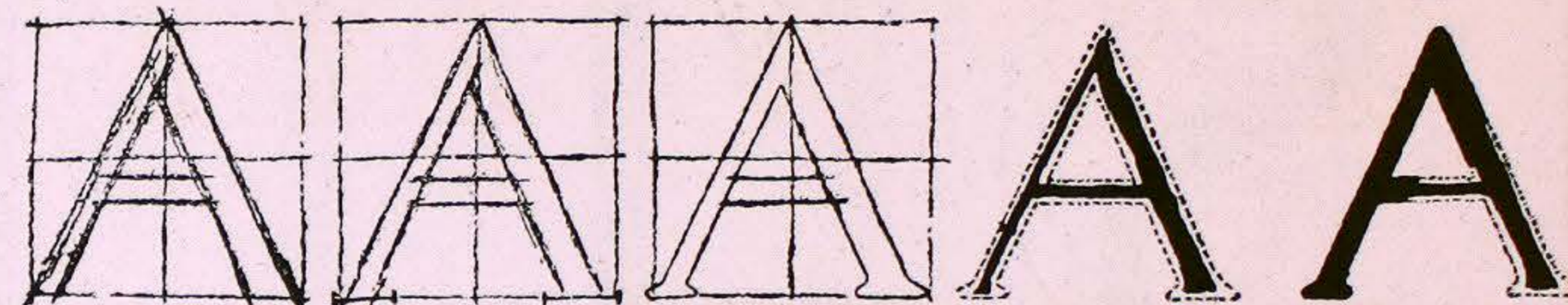


FIG. 12.—Stages of Construction.

The narrow curved letters B, P and R are sketched by first drawing the main stem, then starting the horizontal lines, then marking the extreme points of the curve. The inside lines of the curved strokes may be made before the outside, as the beauty of these letters depends largely on the shape of the enclosed space of the background.

In inking the Old Roman as a solid freehand letter, a rather coarse writing pen should be used, and it is



OLD ROMAN

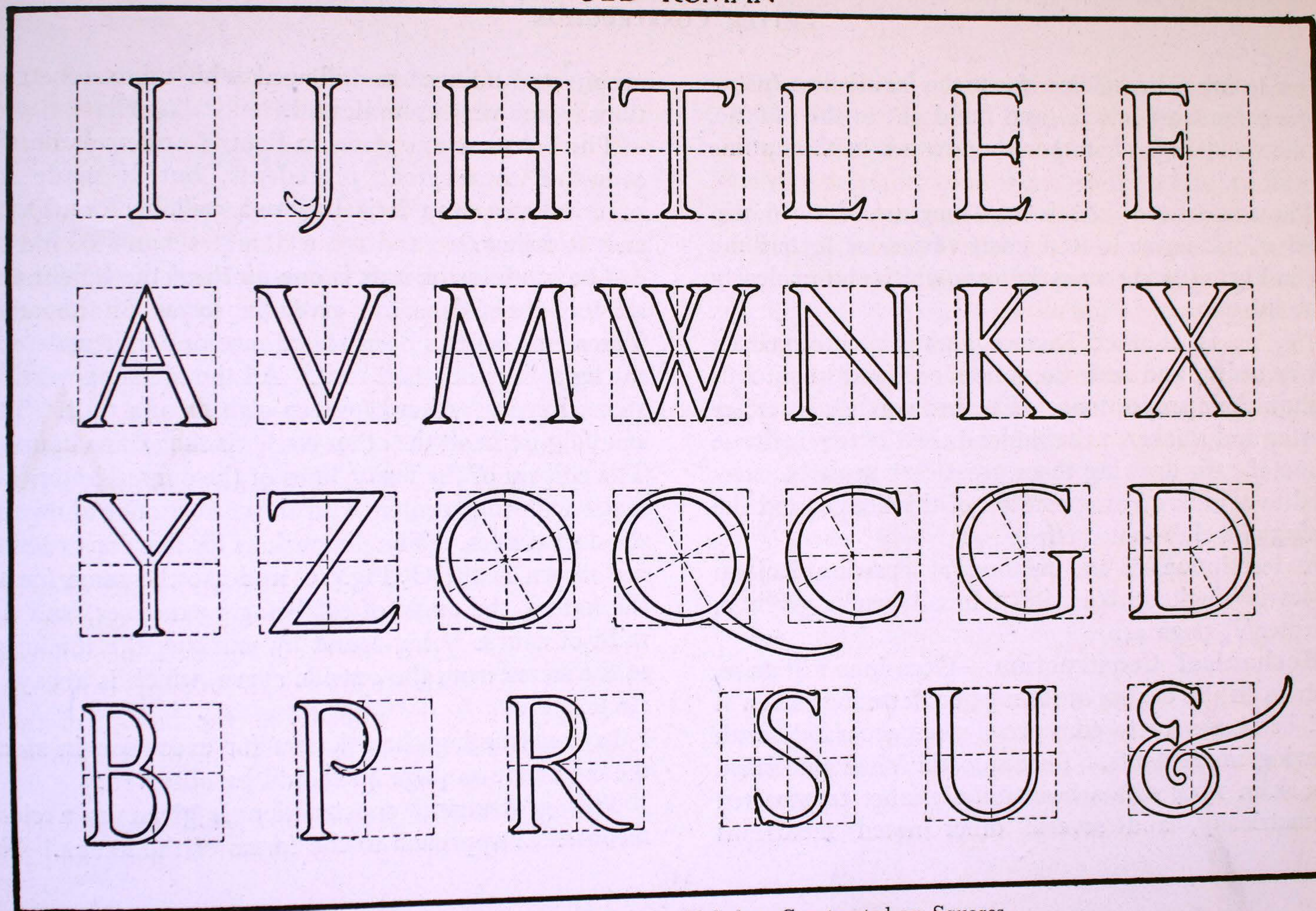


FIG. 13.—A Short Serif Roman Alphabet, Constructed on Squares.



## LETTER CONSTRUCTION

better to ink a broad line down the inside first (using a brush for large letters) and build out to the outline, as shown in Fig. 12, rather than to ink in the outline and fill in.

The ampersand (&) is a monogram of the Latin word *et*. It is made in a great variety of forms, the one in Fig. 13 being an early form which shows clearly its derivation.

Fig. 13 is another Roman alphabet, grouped in family order, and with the letters enclosed in squares to show their proportions. The serifs on this letter are shorter and thicker, suitable for raised letters in stone or metal. In drawing them great care must be exercised to avoid any exaggeration of this shape, and the getting of a club-footed effect.

A description of the method of drawing Roman letters in single stroke with a broad pen is given in Chapter V, page 44.

**Mechanical Construction.**—Occasions will arise, such as in the design of inscription lettering, when it will be necessary to construct letters accurately with drawing instruments. Leonardo da Vinci published a book in 1514 with a beautiful alphabet constructed geometrically, and several other noted mediaeval

architects and writers followed with other constructions, some very complicated.

The construction given in Figs. 9 and 10 is on the order of these great precedents, but is made for practical use, and it is believed, will be found very easy to follow.

The modulus or unit is one-ninth of the height and all the dimensions are given in terms of this unit. The stems, as has been stated, are one unit wide and the light lines one-half unit. All the fillets on vertical stems have a radius of seven-eighths of a unit. The small figure in all the other circles is the radius in units. The ellipses of the inside lines of the curved letters are made with four centers with the construction shown in the dotted lines. The dimensions for this construction are shown in the O, Fig. 10, and are the same for all the letters, the angle of tilt being 15 degrees, and the radii of course being found by marking the thickness of the stems from the outside curve, which is always a circle.

In constructing these letters for execution in stone the comment on page 40 should be observed.

This geometrical construction is given as a close mechanical approach to the forms of the letters. No



## LETTER CONSTRUCTION

mechanical construction, however, can impart the subtlety and character of the freehand curves.

### THE MODERN ROMAN

In the eighteenth century modifications were introduced by some of the type founders which resulted in the letter in common use now in our books and newspapers, and which we have called Modern Roman. This modern form has lost all the variety and beauty of its old prototype, is essentially inartistic and of absolutely no value in design, as in the attempt for uniformity it has become only mechanical and monotonous, but it is the standard letter of our government in the bureau of engraving and printing, coast survey, topographic survey, and geological survey, and is in general use throughout the country for maps and similar work; it therefore must be mastered thoroughly by all civil engineering students.

It is generally made with a much heavier face than the old Roman, a usual proportion of width of stem to height being one to six, with comparatively very light hair lines and long serifs. This violent contrast, while it may give some effect of delicacy or refinement, reduces greatly the legibility of the letter at a distance.

Figures 14 and 15 contain the alphabet and numerals of the Modern Roman, drawn in a slightly expanded form, which is more pleasing for ordinary work than the compressed or even the standard form. Using the width of the body stroke as a unit, the letters are six units high, and the width of each letter is indicated by the dimension in units. A convenient scale to mark off these dimensions may be made on the edge of a card or strip of paper.

The order and direction of strokes are indicated on each letter, and should be followed carefully. As is usual in freehand drawing, all vertical and inclined lines, and curved lines, are made downward, and all horizontal lines from left to right. The strokes of each letter should be studied and the letter practised over and over until the student is perfectly familiar with it. The Roman letter is difficult and it is only by strict attention to details that it can be mastered.

In large letters an optical illusion similar to those mentioned on page 4 may be provided for. The width of the thickest part of a curved letter, as the O, in order to appear to be of the same thickness as the stem of a straight letter, should be made a very little



MODERN ROMAN

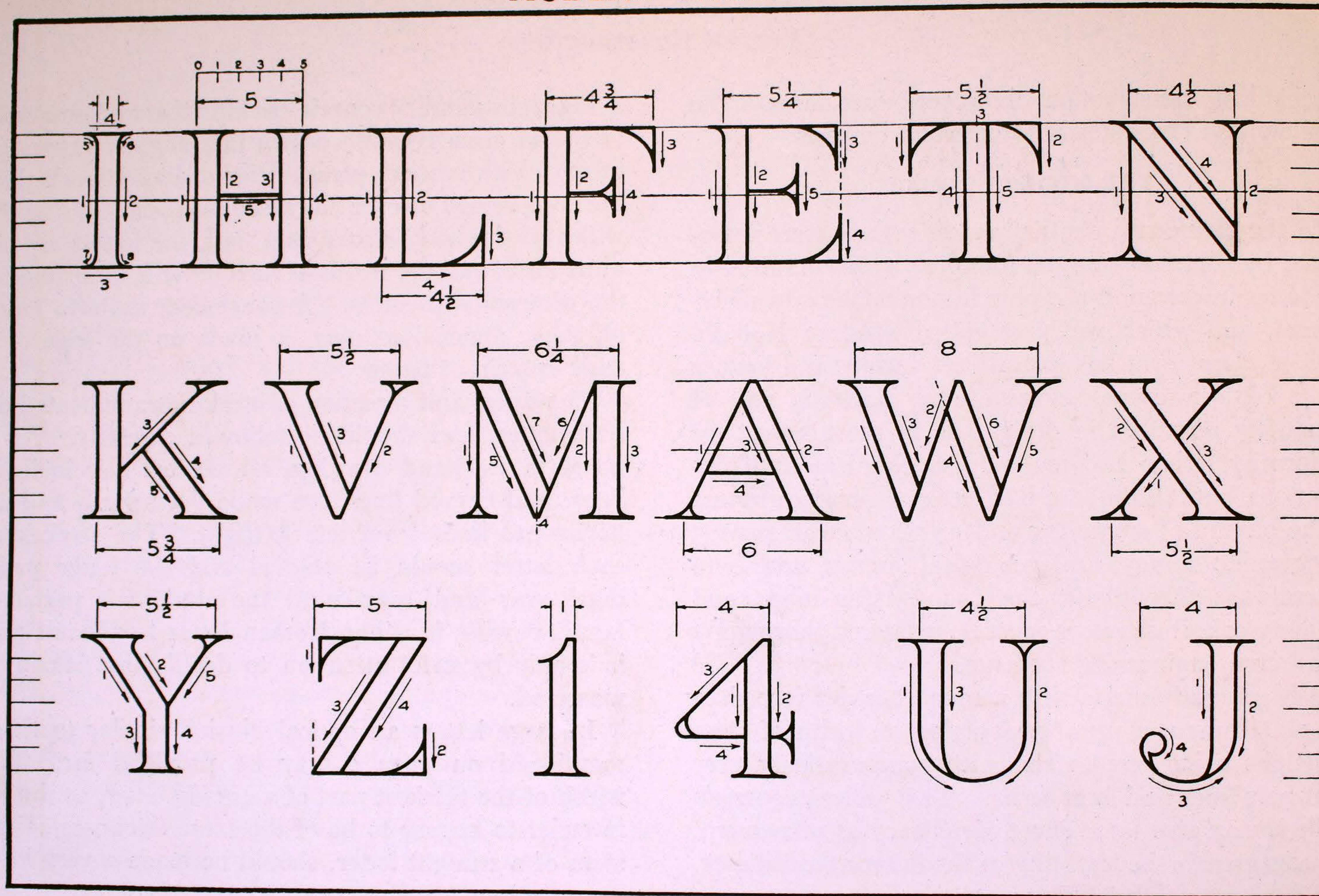


FIG. 14.—Construction of Modern Roman Letters and Figures.



MODERN ROMAN

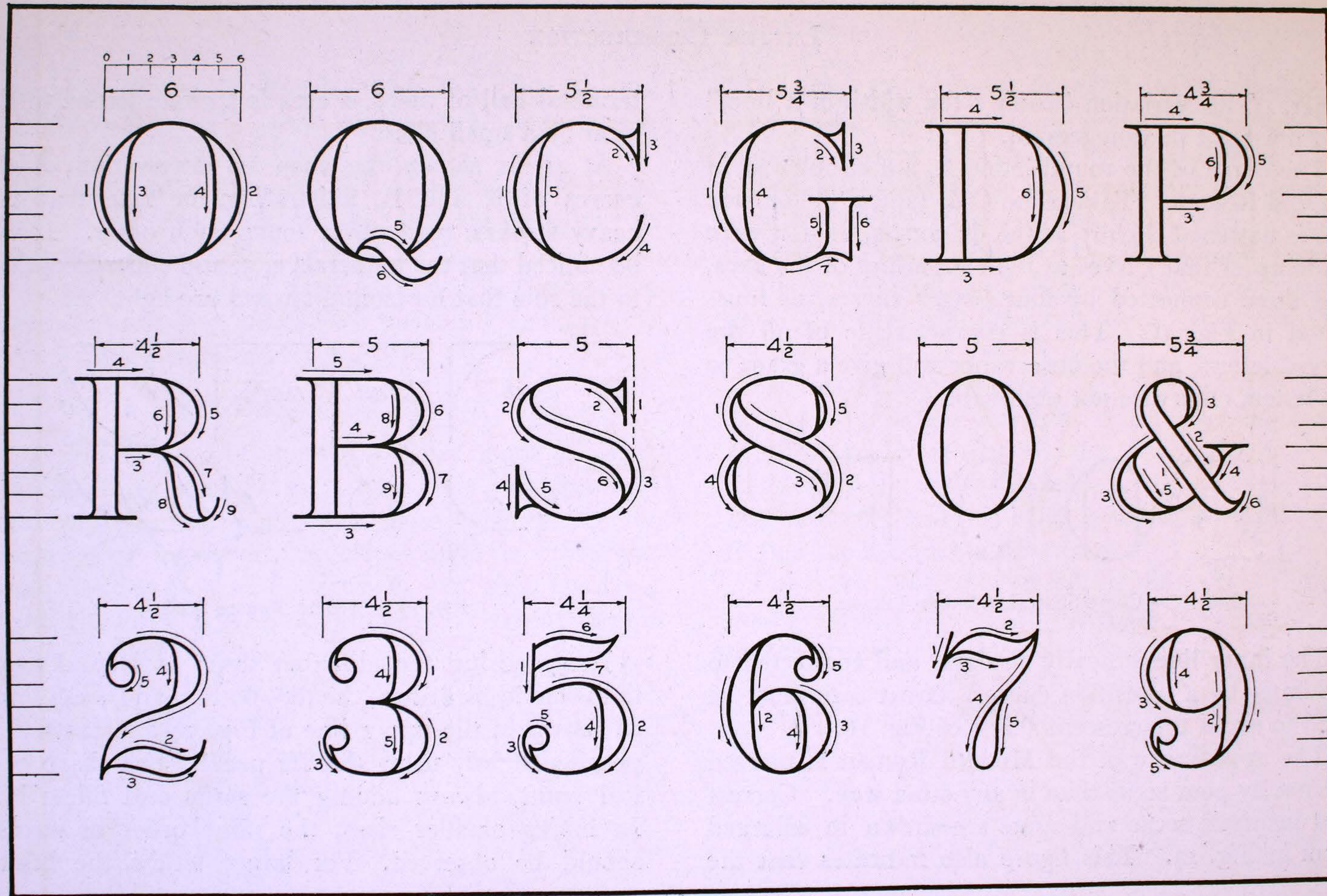


FIG. 15.—Construction of Modern Roman Letters and Figures.



## LETTER CONSTRUCTION

wider. This variation is only "the width of a line," and must not be exaggerated.

The curve of the round letters is not circular as in the Old Roman. Taking the O as typical the outside line is flattened slightly at the diagonals, as if it were made up of four curves at the extremities of the axes, and these connected by four longer curves, as illustrated in Fig. 16. This is characteristic of all the curved letters, and the observance will give a grace to the letters otherwise not obtainable.

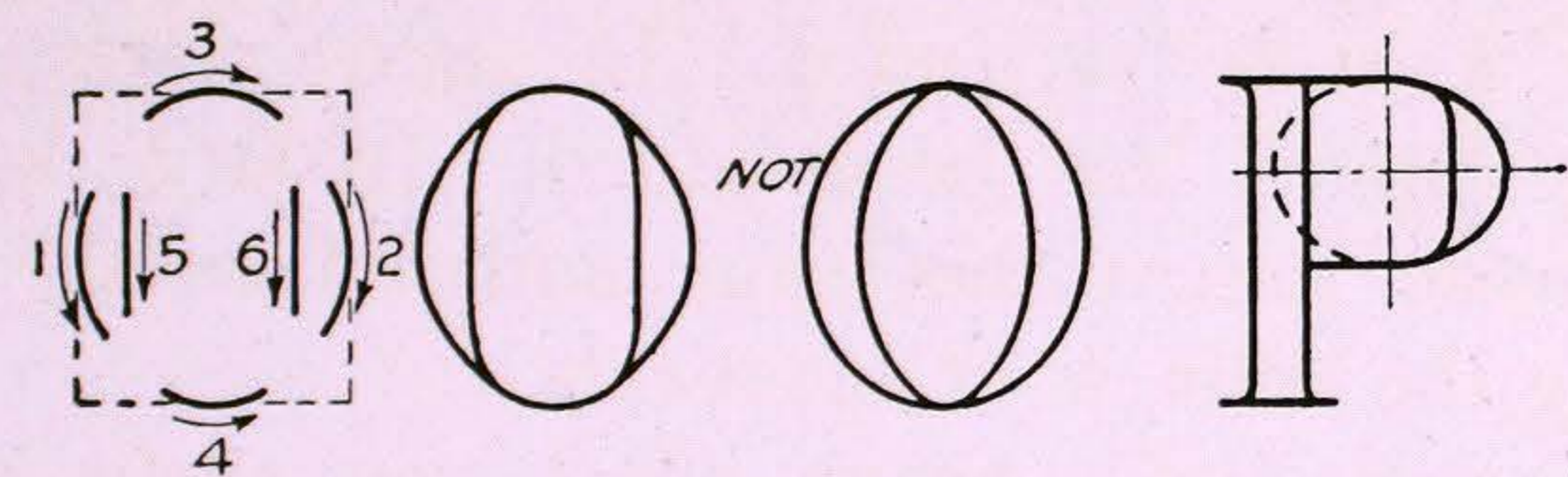


FIG. 16.—Curve Shape in Modern Roman.

The inner line is nearly straight, and connected to the outer by a transition curve. Great care must be used to avoid the crescent shape of Fig. 16.

The appearance of the Modern Roman is marred oftener by poor serifs than in any other way. Correct and incorrect serifs and spurs are shown in enlarged form in Fig. 17. This figure also indicates that the

terminal ball of the J, 2 etc., is a circle joined to the stem by a small fillet.

At (f) is shown the cusp or intersection of the curves of R and B, illustrating the rule that two heavy strokes must never touch each other. It will be noticed that the numerals 2, 5, and 7 are exceptions to the rule that horizontal strokes are light.

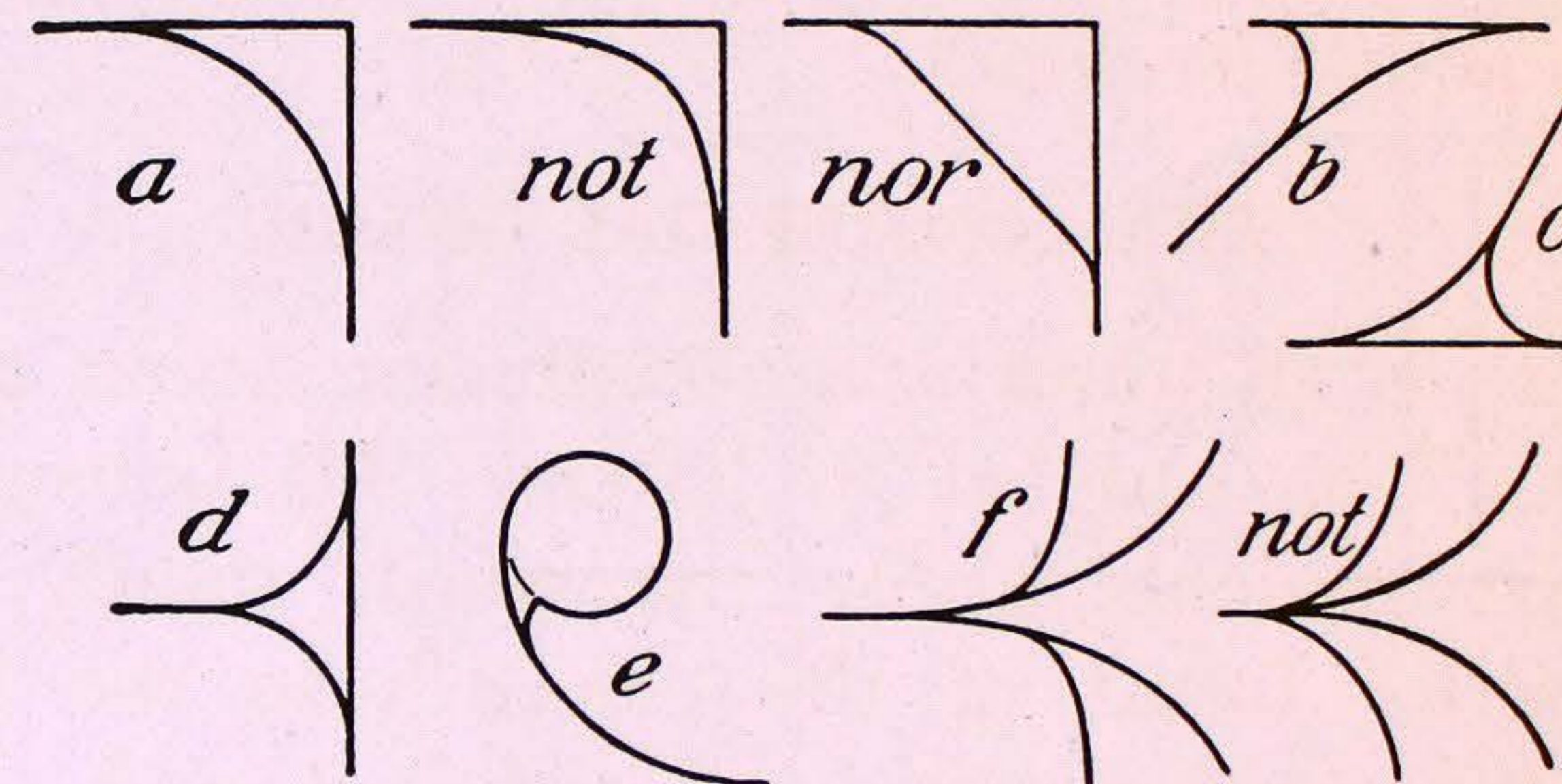


FIG. 17.—Modern Roman Serifs.

In practising the alphabet three horizontal guide lines should be drawn, the top, bottom and waist lines, as shown in the upper line of Fig. 14 and the letters penciled lightly using the 2H pencil, with sharp conical point, always adding the serifs and fillets last. In inking smaller sizes, the same order of strokes should be observed. For larger letters the inking



## LETTER CONSTRUCTION

should be done as described for the Old Roman, working out from a broad rough stroke between the lines.

In letters smaller than  $1/4''$  the fillets on the serifs of the body strokes become so small that it is best to omit them.

In very careful map work and the like the straight lines are sometimes inked with the ruling pen, and the curves added freehand.

### THE COMMERCIAL GOTHIC

There is an unfortunate confusion about the term "Gothic" as applied to letters. All paleographers and art students apply the word, rightly, to the manuscript forms of the eleventh to the fifteenth centuries, written with a tilted pen and changing from the curved lines of the early or round Gothic to the angular of the later forms. But in this country the word Gothic is taken universally by printers, engravers, lithographers, and sign writers to mean the plain bold letter made with uniform strokes and without serifs. (In England the letter is called sans-serif.) Since the word is in such general favor by those who use letters commercially, we have called

this style "Commercial Gothic." It has sometimes been called Egyptian, and in the U. S. Coast and Geodetic Survey, it is known as Block Letter.

This letter should be used wherever boldness and legibility are of more concern than finish. Without the refinement and delicacy of the Roman, it is more easily made, and in "single stroke" form is used more on working drawings than all other styles together.

Figures 18 and 19 show the letter drawn with the thickness of stem one-sixth of the height, and in width a trifle expanded. In these plates a very slight "spur" has been added. In large brush or pen-made letters this spur adds materially in relieving the stiffness of appearance.

For very bold, heavy effect, the stems may be made one-fifth the height. Strokes much thicker are not good except in special cases.

This letter is best drawn in outline first and filled in solid, instead of building it out as the Roman, and much care must be exercised in keeping the stems to uniform width. Failure to observe this rule results in a very unpleasant appearance, as in Fig. 20.

The order and direction of strokes for the outline



COMMERCIAL GOTHIC

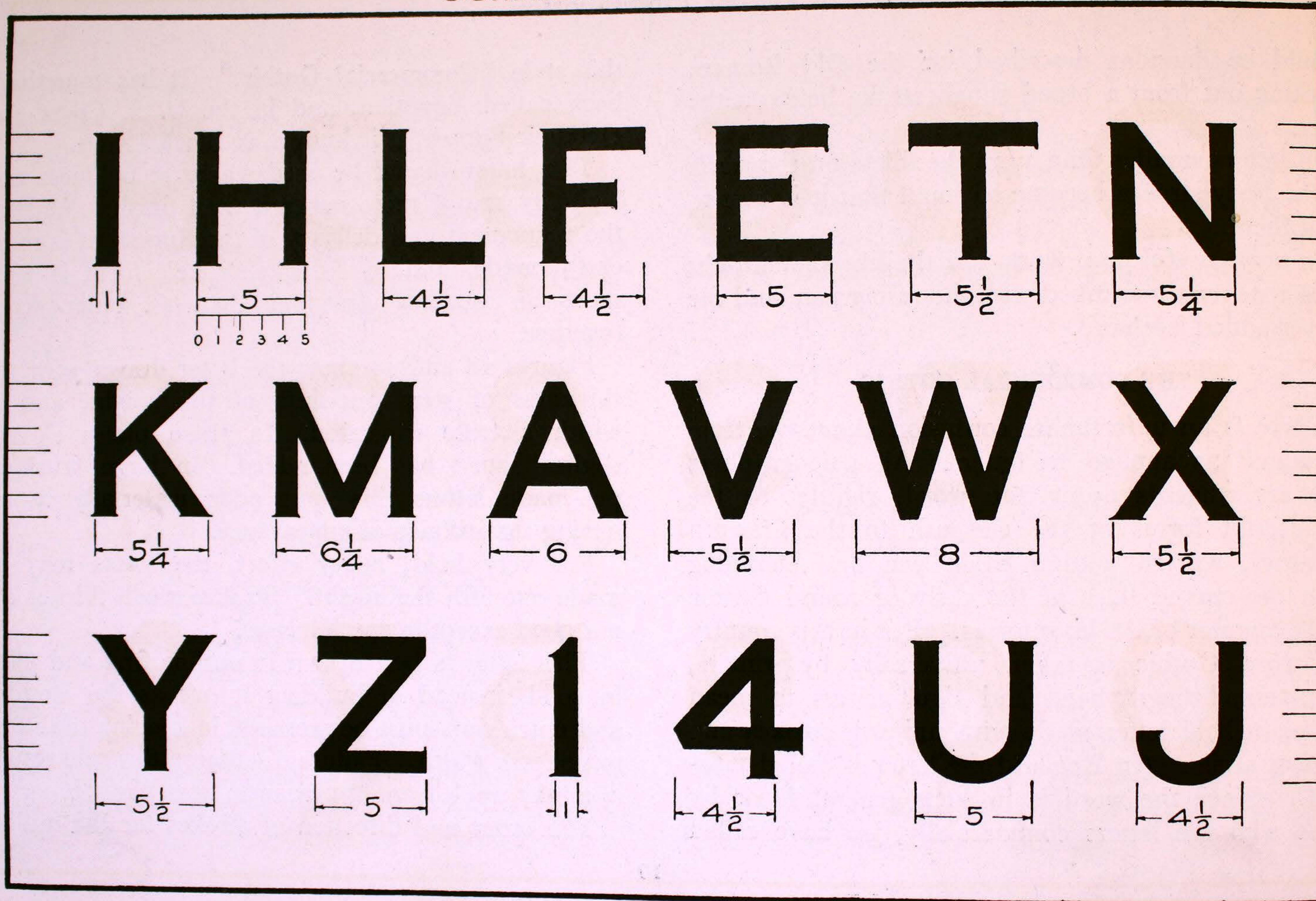


FIG. 18.—Spurred Commercial Gothic.



COMMERCIAL GOTHIC

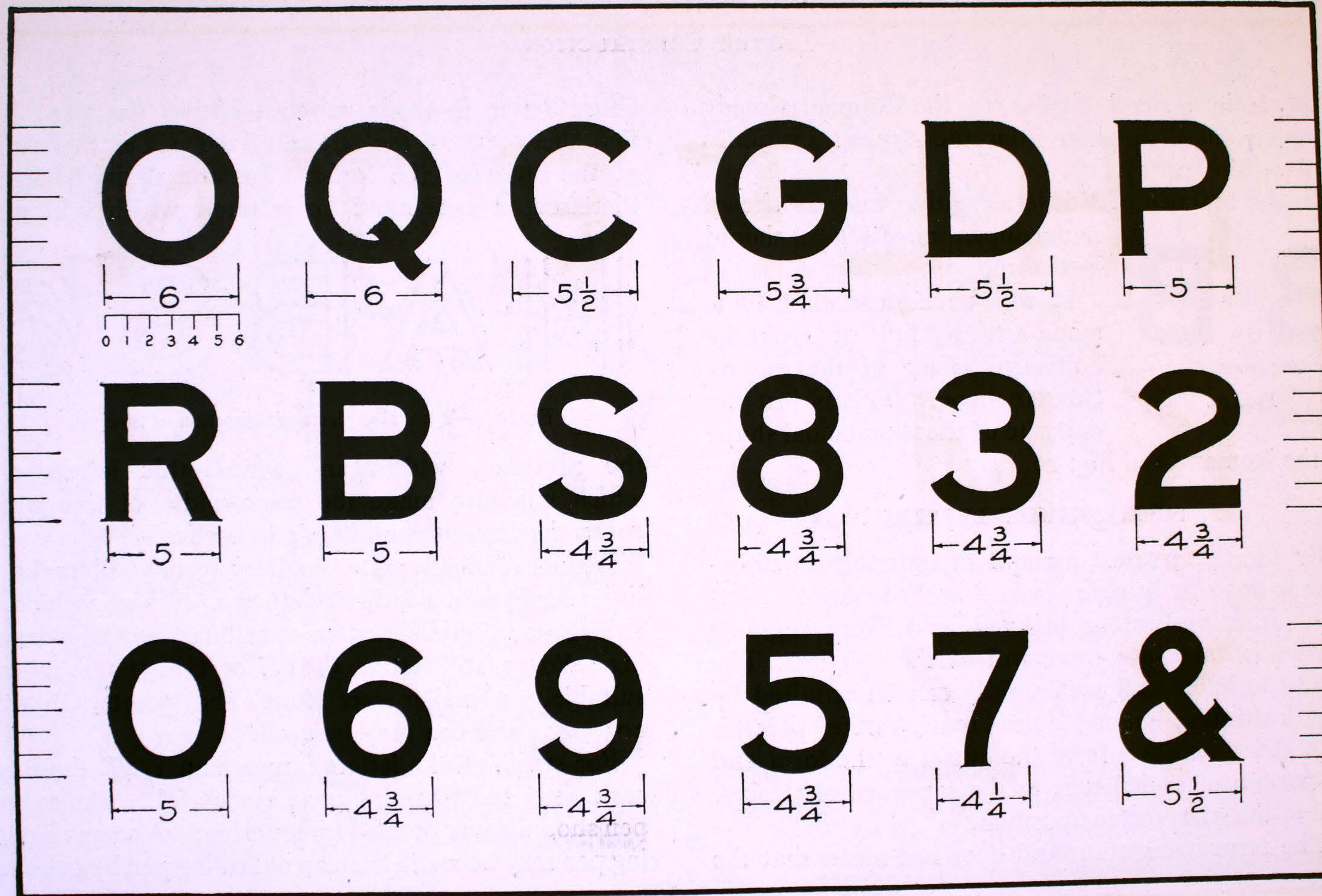


FIG. 19.—Spurred Commercial Gothic.



## LETTER CONSTRUCTION

letter is in general similar to the Roman already given, as may be seen from the typical examples analyzed in Fig. 21.

In the practice of this letter, guide lines as shown in the upper line of Fig. 14 should be drawn.



FIG. 20.

It will be noticed that O is made a trifle "full" to avoid the bull's-eye effect of the exactly circular shape. This is just the opposite of the rhomboidal shape of the Roman O of Fig. 16.

### SINGLE STROKE LETTERS

By far the greatest amount of lettering on drawings is done in "single stroke" or "one stroke" letters, either vertical or inclined, and every engineer must have absolute command of these styles. The ability to letter well and rapidly can be acquired by any draftsman, but it requires much careful practice with strict attention from the outset to the form and proportion of each letter, to the sequence of strokes, and to the rules for composition.

The term "single stroke" does not mean that the

entire letter is made without lifting the pen, but that the width of the stroke of the pen is the width of the stem of the letter. For the desired height, therefore, a pen must be selected which will give

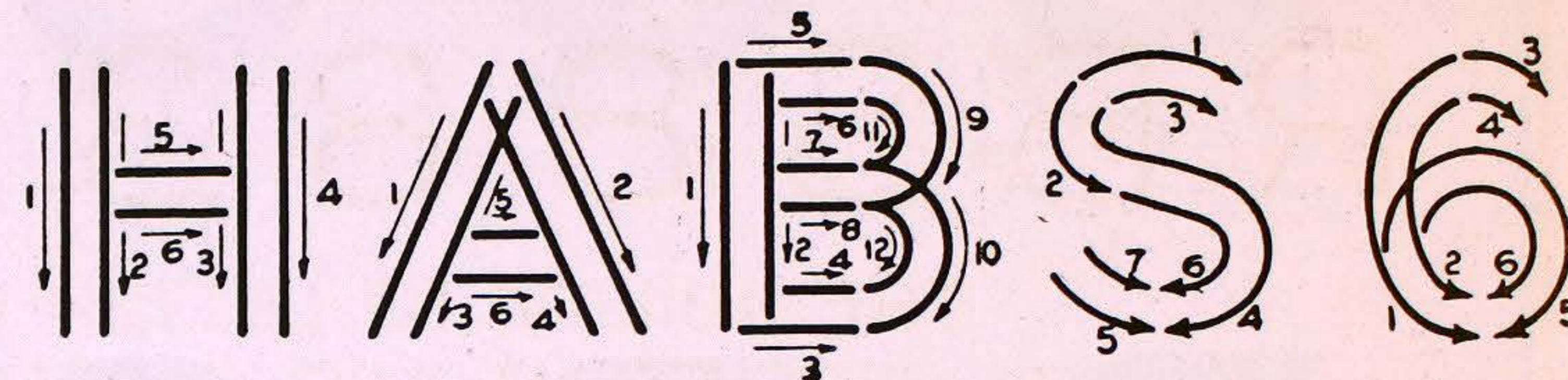


FIG. 21.—Typical Order and Direction of Strokes.

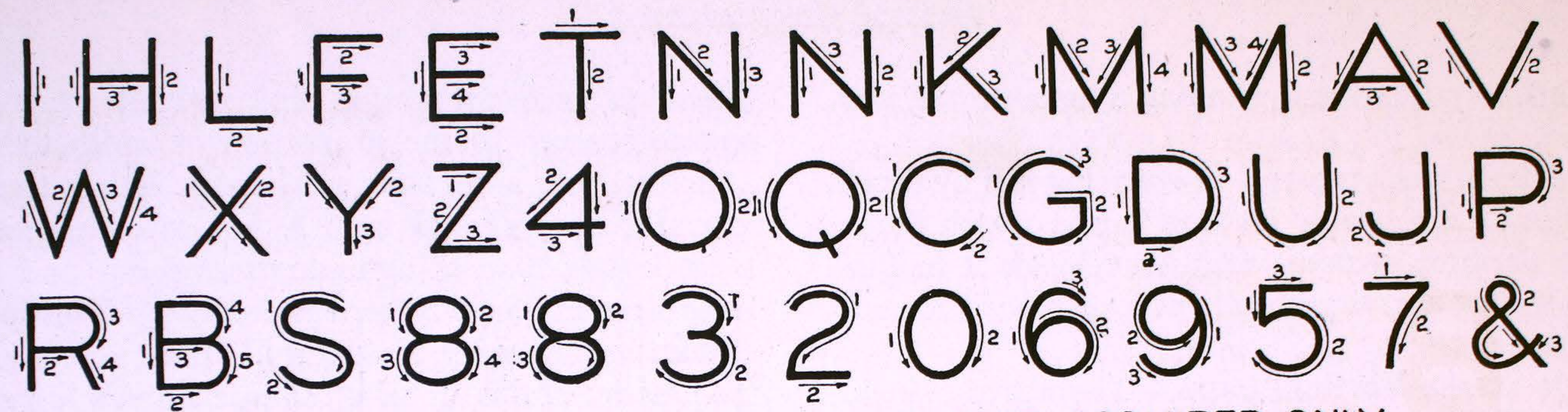
the necessary width, and for Gothic letters one which will also make the same width of line when drawn horizontally, obliquely or vertically.

Leonardt's ball point 506F or 516F will make a line of sufficient width for letters  $\frac{1}{4}$ " high, which is as large as would be used on an ordinary working drawing. For  $\frac{3}{16}$ " letters 516EF or Gillott's 1032 are suitable, for smaller sizes Hunt's shot points, Gillott's 1050, 404 and 604 may be used.

For single stroke letters larger than  $\frac{1}{4}$ ", the Payzant pens and Shepard pens are useful. The ruling pen should never be used for lettering. A coarse lettering pen may be made from an old ruling pen by rubbing

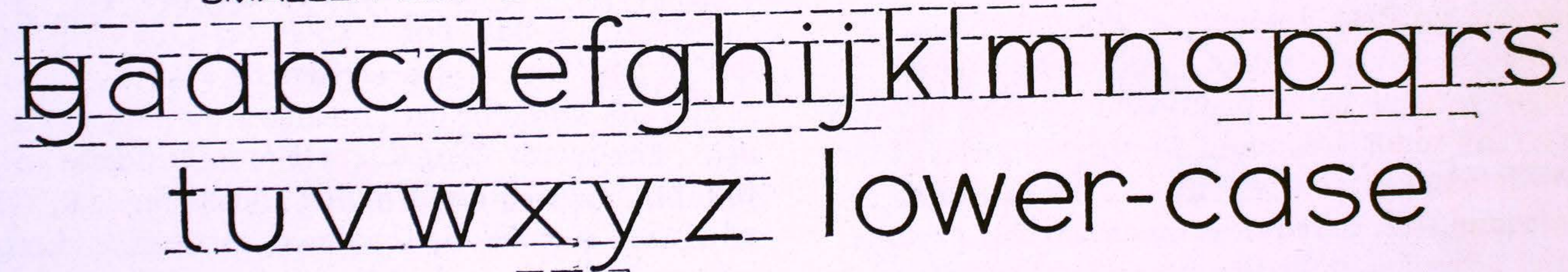


UPRIGHT SINGLE STROKE GOTHIC



THE ABILITY TO LETTER WELL CAN BE ACQUIRED ONLY BY PERSISTENT AND CAREFUL PRACTICE. THE STYLE USED ON WORKING DRAWINGS IS USUALLY OF THE SIMPLEST CHARACTER. LETTERS IN WORDS SHOULD BE CLOSE TOGETHER BUT WORDS WELL SEPARATED.

SMALLER LETTERS ARE MADE IN MORE EXTENDED FORM



Vertical lower case is used to some extent for working drawings, and is employed extensively in map drawing. It is the standard letter for hypsographic features, and is also often used for civil divisions.

FIG. 22.—Analysis and Composition of Upright Gothic.



## LETTER CONSTRUCTION

its points very blunt and grinding a smooth ball end on them.

Some draftsmen prepare a new writing pen by dropping it in alcohol, or by holding it in a match flame for two or three seconds, and some break it in further by writing a word or two lightly, on a hard Arkansas oil stone.

**Single Stroke Vertical Caps.**—The upright single stroke "commercial gothic" letter shown in Fig. 22

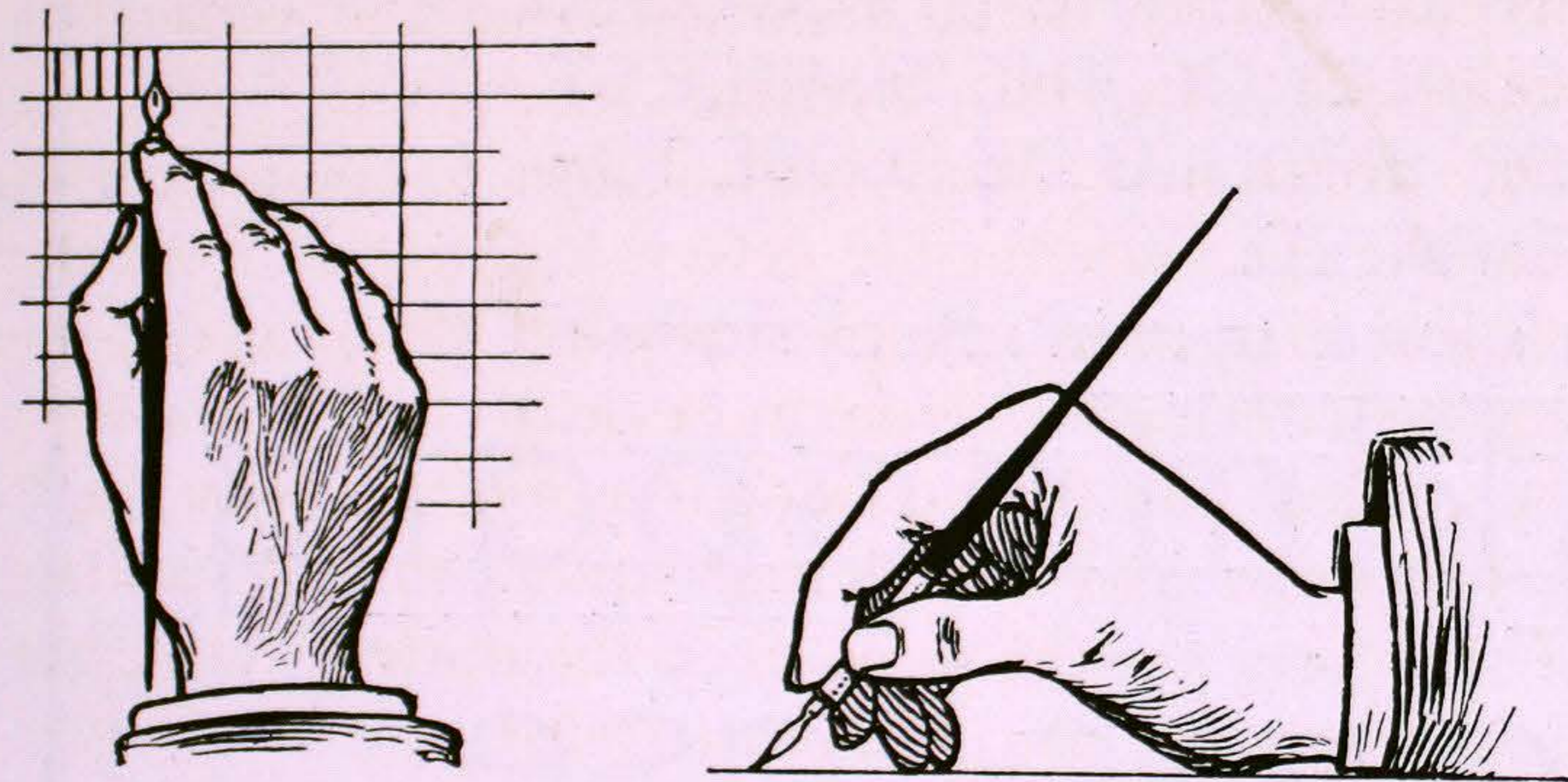


FIG. 23.—Position for Single Stroke Lettering.

is a standard letter for working drawings of all descriptions. It is the letter of Figs. 18 and 19 with lighter face. The analyzed letters of Fig. 22 are

drawn to such proportion that roughly each fills a square space. In the proportion of width to height a general rule is that the smaller the letters the more extended they should be. A low extended letter is more legible than a high compressed one and at the same time makes a better appearance. This letter is seldom used in compressed form. Before commencing the practice of this alphabet, some time should be spent in preliminary practice to gain control of the pen. It should be held easily as in writing, the strokes drawn with a steady, even motion, and a slight uniform pressure on the paper, not enough to spread the



FIG. 24.—Practice Strokes.

nibs of the pen. For the first practice, draw in pencil the top and bottom guide lines for  $\frac{1}{4}$ " letters and with a 516F ball pointed pen make directly in ink a series of vertical lines, drawing the pen down with a finger movement in the position shown in Fig. 23. This one stroke must be practised until the beginner can get lines **vertical** and of equal weight.



## LETTER CONSTRUCTION

Remember that it is drawing, not writing, and that all the flourish movements of the penman must be avoided. It may be found difficult to keep the lines vertical, if so, direction lines may be drawn, as in Fig. 23, an inch or so apart to aid the eye. It is ruinous to the appearance of upright letters to allow them to slant forward. A slight backward slant is not so objectionable, but the aim should be to have them vertical. When this stroke has been mastered, the succeeding strokes of Fig. 24 should be taken up. These strokes are the elements of which the single stroke letters are composed. After sufficient practice with them, they should be combined into letters in the order of Fig. 22, penciling in one pattern letter and numbering its strokes, then drawing directly in ink several beside it.

Care must be taken to keep all angles and in-

**E H M N W T Z**

FIG. 25.—Too much Ink.

tersections clean and sharp; getting too much ink on the pen is responsible for appearances of the kind shown in Fig. 25.

**Single Stroke Inclined Capitals.**—The single stroke letter inclined to a slope of between  $60$  and  $70^\circ$  is preferred by perhaps a majority of draftsmen.

Professor Follows in his dictionary\* says: "The writer believes that for mechanical drawing, sloping lettering is better than vertical. An argument used by those who favor vertical lettering is that there is only one vertical as against any number of slopes, and that it should therefore be easier to teach and get uniformity with the vertical lettering. But as a matter of fact, it is probably easier to get a sufficiently uniform slope than a sufficiently exact vertical, because a very slight deviation from the vertical is noticeable. In the average mechanical drawing there are so many truly vertical lines to compare with that the eye more readily detects a deviation from the vertical than from any given slope. Then, again, the sloping lettering stands out more clearly by contrast with the vertical and the horizontal lines of the drawing."

The order and direction of strokes for the capitals of this form are the same as in the upright form, but these letters are usually not extended.

A common slope for the inclined letters is to the proportion of 2 to 5, giving an angle of  $68^\circ+$ , which may be made by laying off two units on a horizontal line and five on a vertical line. Triangles of  $67\frac{1}{2}^\circ$

\* Universal Dictionary of Mechanical Drawing. G. H. Follows, 1906.



INCLINED SINGLE STROKE GOTHIC

Order and direction of strokes used for letters  $\frac{1}{2}$  or higher

I H L E F T N N K M M A V  
W X Y Z 4 O O C C G D U J P  
R B S S 8 8 3 2 0 6 9 5 7 &  
O O C I A A T O B C C D D E E F F G G  
H H I I J J K K L L M M N N O O P P Q Q R R  
S S T T U U V V W W X X Y Y Z Z

Order and direction of strokes for smaller letters

I H L E F T N N K M M A V W X Y Z 4 O O C  
G D U J P R B S 8 8 3 2 0 0 6 6 9 5 7 &  
a b c d e f g h i j k k l m n o o p q r s t u v v w w x y z

Compressed form

A A B B C C D D E E F F G G H H I I J J K K L L M M N N O O P P Q Q R R S S T T U U V V W W X X Y Y Z z z

FIG. 27.—Analysis of Strokes for Single Stroke Inclined Caps and Lower-case.

are s  
 rapid  
 great  
 If  
 flexib  
 the c  
 illust  
 the r  
 and  
 the c  
 of su

Fig  
 in the  
 of the  
 B, S,  
 28 sh



## LETTER CONSTRUCTION

are sold by the dealers and are very convenient. In rapid lettering some find it easier to use a somewhat greater slant (as much as  $60^\circ$ ).

If a rectangle containing a flexible O should be inclined, the curve would take the form illustrated in Fig. 26, sharp in the upper right-hand and lower left-hand corners, and stretched flat in the other two corners. It is the observance of this characteristic that is the secret of success with the inclined letters.

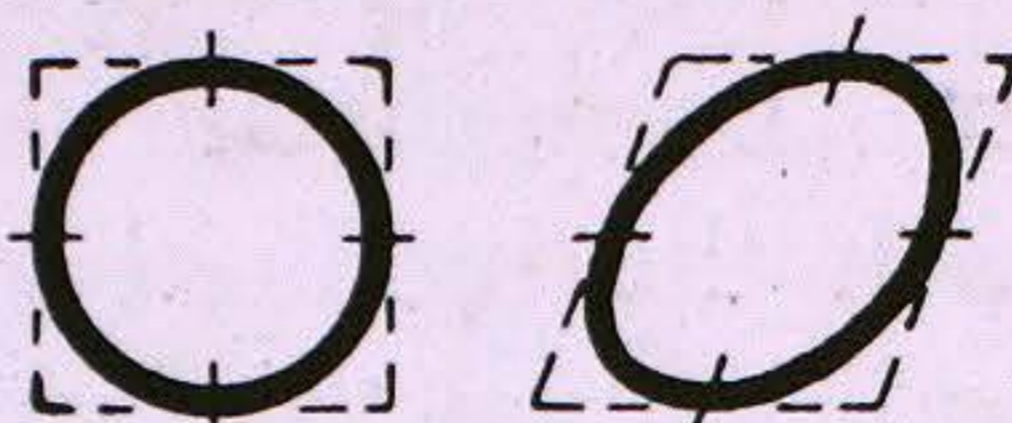


FIG. 26.

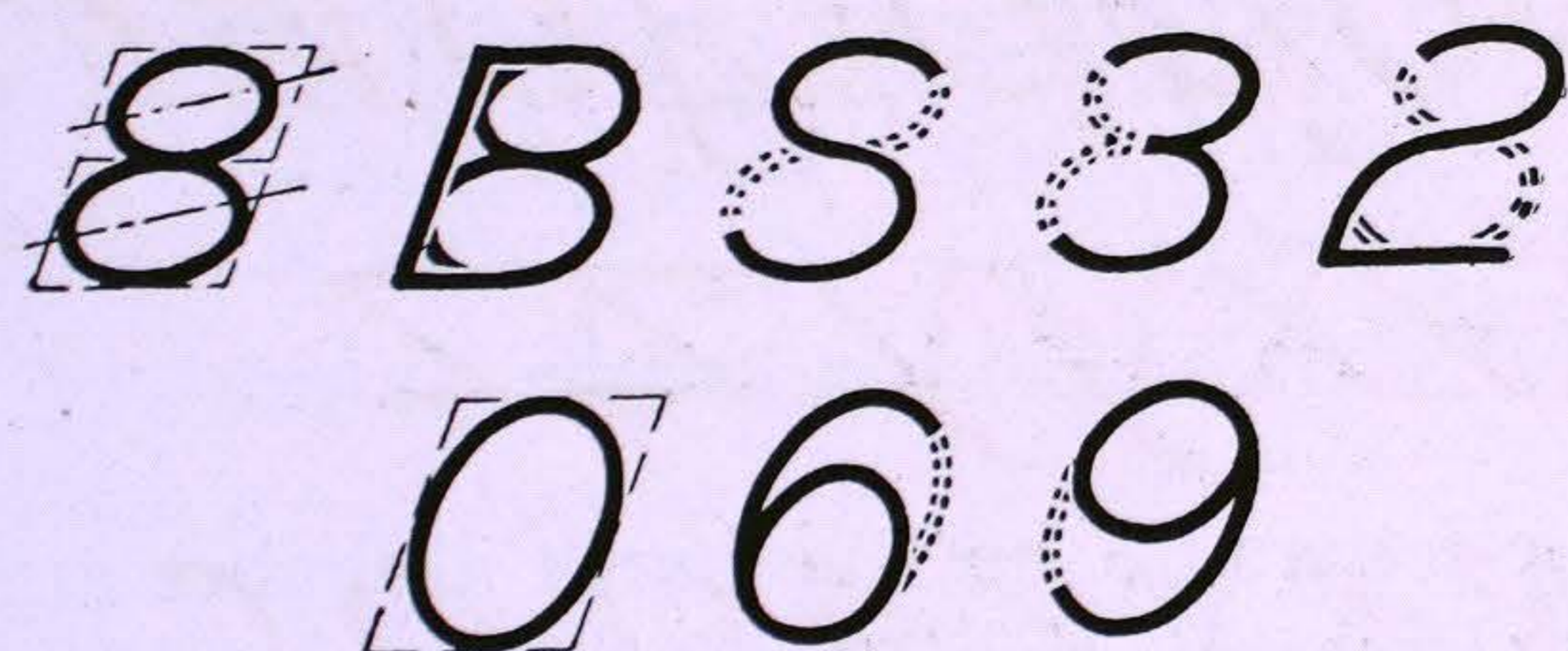


FIG. 28.—Relationships.

Fig. 28 illustrates this principle with the curves used in the S family, showing the directions of the major axes of the ellipses formed. The close relationship of the B, S, 8 and 3 should be noted. The second line of Fig. 28 shows the relationship of the o, 6, and 9. The

cipher it will be noted is narrower than the O, and the back-bone of the 6 and 9 are made of the same curves.

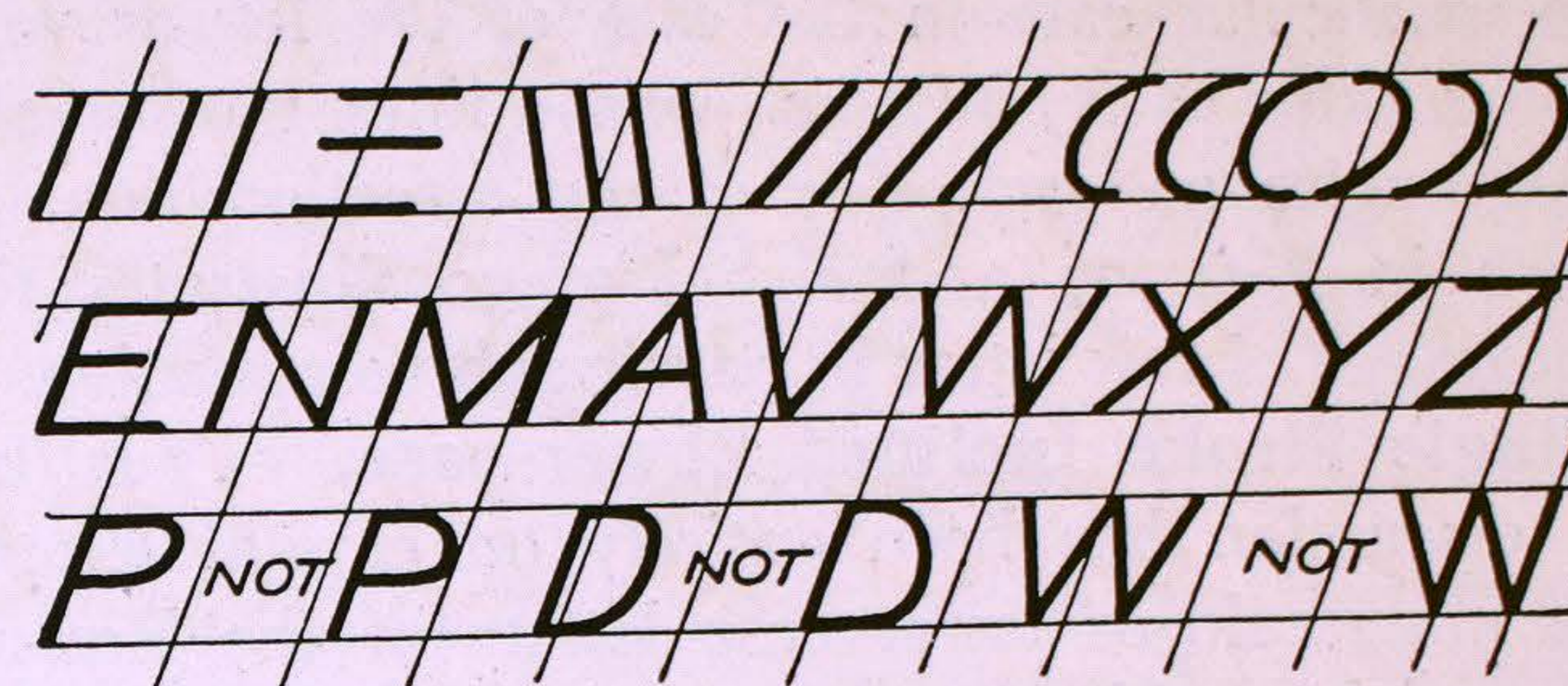


FIG. 29.—Practice Strokes, with Direction Lines.

*INCLINED GOTHIC CAPITALS ARE USED BY MANY DRAFTSMEN IN PREFERENCE TO THE UPRIGHT SINGLE STROKE CAPITALS.*

*KEEP THE LETTERS CLOSE TOGETHER AND THE STROKES UNIFORM IN SLANT AND THICKNESS.*

FIG. 30.—Composition.

In practising the inclined letters the top and bottom guide lines should be drawn, and a sufficient number



## LETTER CONSTRUCTION

of direction lines at the given angle to keep the letters to a uniform slope. This slope must be observed with particular care in the case of the letters with sloping sides as *A*, *W*, etc., whose lines must make equal angles on each side of the direction line, as shown in Figs. 27 and 29. Fig. 30 illustrates the appearance of this letter in paragraph composition.

**Single Stroke Inclined Lower-case.**—Thus far our discussion has been entirely on capital letters. The minuscule or lower case letters of the Roman and upright gothic are very rarely used on working drawings because of the difficulty of execution. It is desirable, however, to have a lower-case letter for notes on drawings on account of the increased legibility, as we read words by their word-shapes and are more familiar with these shapes in lower-case letters. Paragraphs printed entirely in capital letters are monotonous in form and hard to read. The one letter to use for this purpose is the single stroke inclined letter, called the **Reinhardt letter** in honor of Mr. Charles W. Reinhardt of the *Engineering News* whose work has for a generation been admired by draftsmen, and who first reduced the style to a system in his well-known book "Lettering for Engineers."

This letter is the minuscule reduced to its lowest terms, omitting all unnecessary hooks and appendages. It is very legible, and after its swing has been mastered can be written very fast. These letters are used with the inclined gothic capitals and are made with bodies two-thirds the height of the capitals, the ascending letters *bdfhkl* extending to the height of the capitals and the descenders *gjpqy* dropping the same distance below.

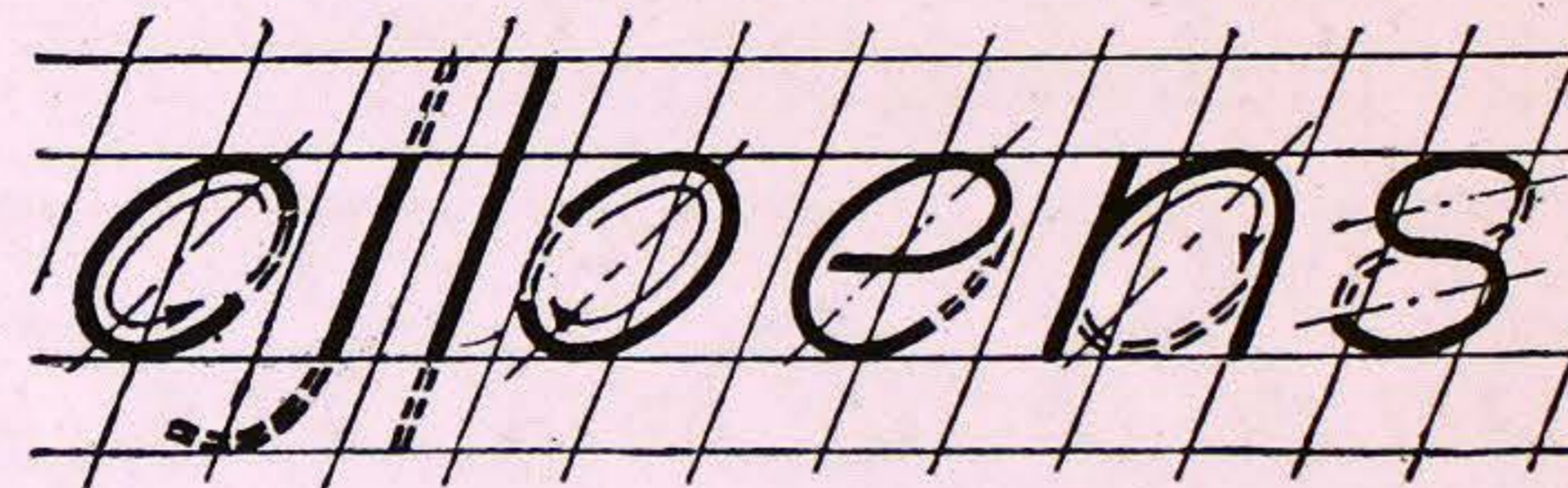


FIG. 31.—Basis of Reinhardt Letter.

All the letters of the Reinhardt alphabet are based on two elements—the straight line, and the ellipse whose conjugate axes are the slope line and the horizontal line, and consequently whose major axis is about  $45^\circ$ . Fig. 31. The general direction of strokes is always downward or from left to right, and their order is given in the last three lines of Fig. 27.

The effect of this letter depends almost entirely



on the uniformity of slope, and constant care must be observed to keep the strokes parallel.

*Beginners' Careless Mistakes*  
*abedfhopq uvw x y z &c*

FIG. 32.

Draw top and bottom guide lines, and slope lines, and practice the O as the basis of the curved letters,

*The "Reinhardt" letter is used for notes on working drawings, and can be made very rapidly. It is of especial value on drawings made for photo-reproduction.*

*When necessary, on account of restricted space, it may be very much compressed and still be held clear and distinct.*

FIG. 33.—Composition (Drawn by C. W. Reinhardt).

until a certain rhythm and swing has been acquired, the pen moving faster in the middle of the stroke than at

the sharp extremities. Then take up the letters as given in Fig. 27, noticing the order and direction of strokes, and swinging them to a mental count of one, two, one, two.

*5 <sup>1</sup>/<sub>2</sub> 6 <sup>3</sup>/<sub>4</sub> 10 <sup>9</sup>/<sub>16</sub> 4'-0 <sup>7</sup>/<sub>8</sub>"*

FIG. 34.—Fractions.

As soon as the shapes of the letters have been learned in this way the entire practice should be devoted to their composition into words and sentences. In this the one rule must be remembered—*Keep the letters close together*, and with full, uniform bodies. The beginner's invariable mistake is to cramp the letters and space them too far apart, Fig. 32. Words should be separated to a distance about equal to the height of the letter. Paragraphs are always indented. Fig. 33 is an example of spacing of letters, words and lines. Special attention should be paid to the practice of the numerals, getting them round and full-bodied. Fractions are made with a horizontal line and extending over the guide lines as shown in Fig. 34.

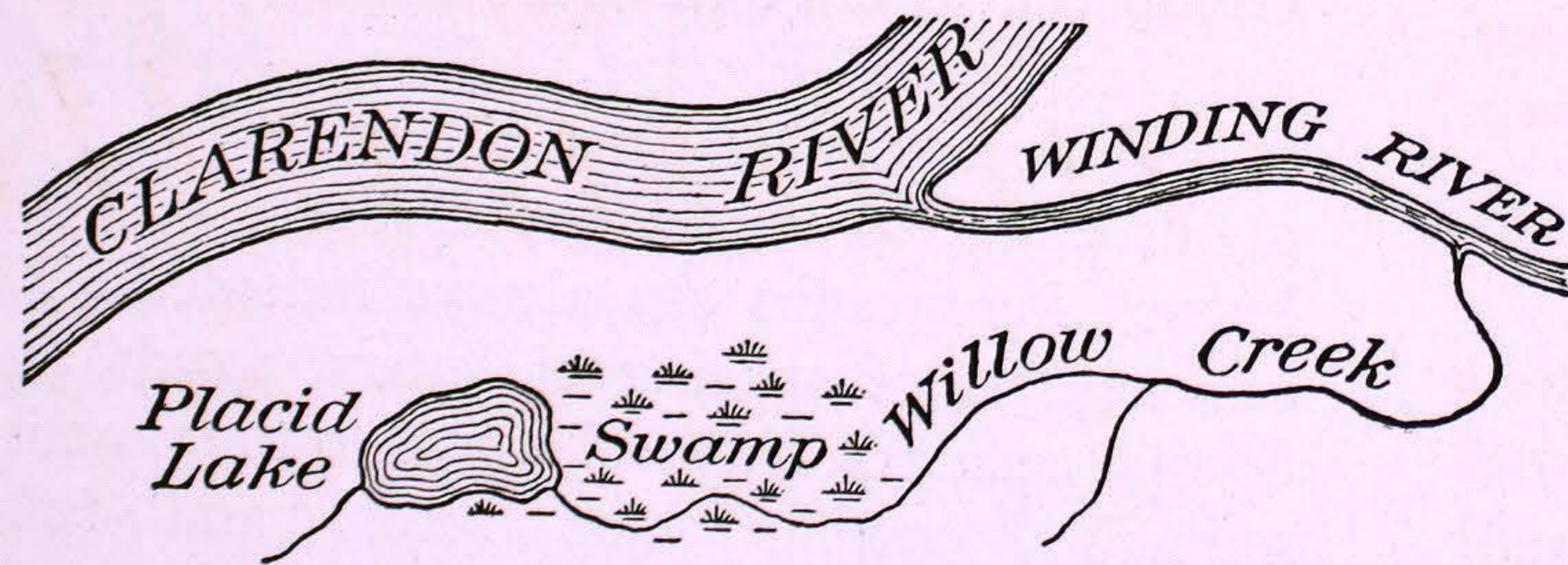
*a d d*

FIG. 35.



ITALICIZED ROMAN AND STUMP LETTERS

*IHLFETNKMAVW*  
*XYZ140QCGDUJPR*  
*BS83220695577&*  
*abcdefghijklmnopqrst*  
*uvwxyz*  $\frac{1}{62500}$  *1234567890*



*The stump letter is a simplified form of the printer's italic, and is much used in map drawing, patent office drawing and similar work.*

FIG. 36.—Inclined Roman, with Stump Letters for Lower-case.



## LETTER CONSTRUCTION

A variation of the Reinhardt letter, known as the "pumpkin seed" letter is preferred by some draftsmen. In it the curves of *abdgpq* are pointed instead of elliptical, as in Fig. 35. The remainder of the alphabet is the same as the Reinhardt.

### INCLINED ROMAN CAPITALS

The inclined or italicized form of Roman capitals, as shown in Fig. 36, is used for water features on maps and as capitals for the stump letters which follow. It is made with a fine flexible pen, the very small sizes in one stroke, springing the pen for the shaded lines, the large sizes by making two strokes for the stems and following the same orders as in Figs. 14 and 15. In letters less than 1/4" high, brackets on the serifs of the body marks should not be attempted. Alternate forms of the numerals, 2, 5 and 7 are shown.

### STUMP LETTERS

The stump letter is a simplified form of the printer's italic, and is much used in map drawing, patent office drawing, and other careful work. It is more difficult than the single stroke letter of Fig. 27 and requires

much more time for its execution, consequently it should not be chosen except for display work. A fine flexible pen should be selected—for letters from 1-20" to 1-10" high, the Gillott 290 and 291, 1-10" to 2-10" Gillott 170, for larger ones, Gillott 303. Except for the smallest letters, two strokes should be used for the shaded lines. In this, as in all the slant letters, the first requirement is uniformity of slope and width of line. The hair lines may be made either with the same stroke as the body, or added with a quick down stroke. This second method is preferred by some draftsmen as it prevents the blur in the angle which sometimes occurs with a sharp pen and paper whose fibre is apt to catch.

The strokes of Fig. 37 should be mastered before attempting to draw the letters.



FIG. 37.—Practice Strokes for Stump Letters.



## CHAPTER III

### COMPOSITION AND TITLES

After becoming familiar with the forms of the individual letters we are ready to compose them into words and the words into sentences, and, as one reads an entire word or even a group of several words at a glance, the necessity for proper spacing of the letters and words is evidently of just as much importance as the correct formation of the letters.

# LETTERING

FIG. 38.

In this we shall have to notice (1) the spacing of letters in words, (2) the spacing of words, (3) the spacing of lines, all of which are design problems in the disposition of white and black, and their successful solution depends on the artistic perception of the draftsman more than on any rules which might be given.

In spacing letters in words uniformity of effect

is gained not by spacing the letters at equal distances apart, but so that the areas of white space between the letters are approximately equal. This makes it necessary to consider the shape of each letter in connection with the following letter. Take, for example, the word LETTERING. In Fig. 38 the letters have been spaced so that the clear dis-

# LETTERING

FIG. 39.

tances between them are equal. The effect, however, is not uniform; the first letters appear much farther apart than the last ones. But if the word be spaced taking the shapes of the letters into consideration, the L, E and T would be set closer together because of the amount of white space included between them, the two T's still closer as they have a maximum of white space under them,

while  
left t  
close  
the l  
TH  
dista  
spac  
A  
with  
studi  
is u  
shou  
adde  
In  
close  
fessio  
thing  
toget  
begin  
and  
ment  
W  
and  
(exce



## COMPOSITION AND TITLES

while between the vertical stems I and N would be left the widest space, and the G would be set a little closer than the IN as its stroke curves away from the line of the N.

Thus while no two of the letters are the same distance apart, the word appears to be uniformly spaced.

A word or line should be sketched in very lightly with all the details of the letters omitted, the effect studied and the letters shifted until the appearance is uniform. When this is satisfactory, the line should be penciled more carefully and the details added.

In single stroke lettering, the letters must be kept close together. The snap and "swing" of the professional draftsman's work comes largely from two things—keeping the letters full and round and close together, and the strokes to a uniform slope. The beginner's invariable mistake of cramping the letters and spacing them too far apart has already been mentioned.

Words should be spaced so as to be read easily and naturally. The clear distance between words (except in compressed lettering) should never be

less than a space equal to the height of the letter nor more than twice this space.

For the spacing of lines, no fixed rules can be given. In the Old Roman the lines are frequently drawn very close together, sometimes closer than those in Fig. 6. The clear distance between lines of Old Roman may vary from one-third to one and one-half times the height of the letter. In inscription lettering, it is usually less than the height.

For single stroke caps the space may be from three-fourths to one and three-fourths, and for single stroke lower case and stump letters two to three times the height of the body.

The appearance of notes with several lines is improved by keeping the right edge as straight as possible, as well as the left. (See Figs. 30 and 33.)

Paragraphs should always be indented.

### TITLES

Every drawing should have a title, giving the necessary information concerning it in a style that conforms to its character. This information will, of course, vary for different classes of drawings, but two items are always necessary, the names and the



## COMPOSITION AND TITLES

date. Even the merest sketch should always be dated.

In general, the title of a machine or structural drawing should contain:

- (1) Name of machine or structure.
- (2) General name of parts (or simply "details").
- (3) Name of purchaser, if special machine.
- (4) Manufacturer; company or firm name and address.
- (5) Date; usually date of completion of tracing.
- (6) Scale or scales; desirable on general drawings, often omitted from fully dimensioned detail drawings.
- (7) Drafting room record; names, initials or marks of the draftsman, tracer, checker, approval of chief draftsman, engineer or superintendent.
- (8) Numbers; of the drawing, of the order. The filing number is often repeated in the upper left hand corner upside down, for convenience in case the drawing should be reversed in the drawer.

An architectural drawing would have part or all of the following:

- (1) Kind of view—elevation, plan, perspective (sometimes put on different part of sheet).

- (2) Name and location of building.
- (3) Name and address of client or owner.
- (4) Date.
- (5) Scale.
- (6) Name and address of architect.
- (7) Number (in the set).
- (8) Key to materials.
- (9) Office record.
- (10) Signed approval of trustees or commission for public buildings.

A map title would contain as many as necessary of the following items:

- (1) Kind—"Map of," etc.
- (2) Name.
- (3) Location of tract.
- (4) Purpose, if special features are represented.
- (5) For whom made.
- (6) Engineer in charge.
- (7) Date (of survey).
- (8) Scale—stated and drawn.
- (9) Authorities.
- (10) Legend or key to symbols.
- (11) North point.
- (12) Certification.



## COMPOSITION AND TITLES

In each case these items must be "displayed" according to their relative importance judged from the point of view of the persons who would use the drawing, the more important lines being made prominent by the size and arrangement of the letters.

Map of  
 Central Ohio - 12  
 Showing  
 Gas and Oil Fields - 18  
 U. S. G. & F. Co. 12  
 Columbus, O. 10  
 Scale  $\frac{1}{62500}$   
 1912

FIG. 40.

The position and shape of the title will depend on the space provided or left for it. The lower right hand corner of the sheet is from long custom and on account of convenience in filing, the usual location, and in laying out a drawing this corner is reserved if possible. The shape is a matter of design. The commonest form is that of the **symmetrical title**

which is balanced or "justified" from a center line, and of elliptical or oval outline, as Fig. 42. Sometimes the wording necessitates a pyramid or inverted pyramid form.

MAP OF  
 CENTRAL OHIO,  
 SHOWING  
 GAS AND OIL FIELDS,  
 U. S. G. & F. CO.,  
 COLUMBUS, O.  
 SCALE  $\frac{1}{62500}$   
 1912

FIG. 41.

In designing a symmetrical title one would first write out the arrangement on a piece of paper and count the letters in each line, counting a space be-



COMPOSITION AND TITLES

tween words as a letter, and, after making allowance for letters of different widths, as I and W, marking the middle of each line. Fig. 40 illustrates the first layout for the title of Fig. 42. A vertical center

MAP OF  
CENTRAL OHIO  
SHOWING  
GAS AND OIL FIELDS  
U. S. G. & F. CO.  
COLUMBUS, O.

SCALE  $\frac{1}{62500}$   
0 1 2 3 4 5  
MILES  
1912

FIG. 42.—Symmetrical Title.

line is then drawn, and guide lines for letters of appropriate size for each line. The most important line is then sketched in very lightly, commencing on the center line and working to the right, making the last half of the line first and drawing

only enough of the letter to show the space it will occupy. The length of this half should then be transferred to the other side and the first half sketched in. Some prefer to work this half backward from the center line, but after a little practice the first

FRONT · ELEVATION  
CENTERBVRG  
B A N K  
CHARLES · P · WOODS · · ARCHITECT  
675 · WILLIAMSON · BVILDING · · CLEVELAND

FIG. 43.—A Full-panel Title.

method will be found preferable. After this most important line is satisfactory in size and spacing, the other lines may be executed in the same way, and the work at this stage will be as in Fig. 41. The effect should then be studied, lines or letters shifted if necessary and the title completed in pencil.

As a rule, all letters should be inked entirely free-



## COMPOSITION AND TITLES

hand. Sometimes, on highly finished maps or drawings for reproduction the straight lines are ruled and the curves drawn freehand, or, for large letters, the curves may be drawn with the compass or French curve. To avoid blotting, the strokes should not be filled in solid until after the drawing has been finished.

The general rule, never combine vertical and slant letters in the same title, should be observed.

### DETAIL OF BEAVER STREET ELEVATION SCALE $\frac{3}{4}$ INCH = 1 FOOT

OFFICE BUILDING FOR AMERICAN BANK NOTE CO.  
NEW YORK CITY

KIRBY, PETIT AND GREEN, ARCHITECTS  
37 WEST 34<sup>th</sup> ST. N.Y.C.

FIG. 44.—“Left Edge” Composition.

The full panel title, a variation of the symmetrical form, often used in architectural work, is made by spacing the letters so that the lines are of equal length, no matter how many letters each contains. Fig. 43 is an example. The Old Roman is the only letter that permits of this wide letter spacing.

Another form often used in architectural and other work is illustrated in Fig. 44. This form has a distinct advantage in not requiring careful preliminary

pencil, and is therefore of value for quick sketches. Space fillers are sometimes added to give balance, but they must be handled carefully for artistic effect.

Formerly titles were often made with curved lines and much elaborate ornamentation. These forms are, happily, obsolete, and any decoration or orna-

|  |                       |                   |
|--|-----------------------|-------------------|
| <b>RESIDENCE FOR DR. W. D. PORTER</b>                                  |                       |                   |
| BUILDING<br>No.<br>179   | CINCINNATI, OHIO.     | SHEET<br>No.<br>5 |
| SCALE<br>$\frac{1}{4}$ " = 1'-0"                                       | <b>SIDE ELEVATION</b> | DATE<br>3-13-09   |
| HOWELL & THOMAS ARCHITECTS<br>COL-SAV. & TRUST - BLDG. COLUMBUS, OHIO. |                       |                   |

FIG. 45.—Boxed Title.

ment is now considered as bad form. Letters should not be drawn or shaded in an attempt to make them appear to have thickness or to stand out from the paper. Punctuation marks are not necessary in a title except in case of abbreviations.

The title on a working drawing is usually boxed



## COMPOSITION AND TITLES

off from the drawing as illustrated in Fig. 45. In large offices the parts of this kind of title which are common to all drawings are often printed on the tracing cloth in order to save time in the drafting room. Fig. 46 is the blank form of a well-known company. The originals of Figs. 45 and 46 are about five inches long, on sheets from 18 to 30 inches.

A form of title which is growing in favor is the "record strip," a narrow strip marked off entirely across the lower part of the sheet, containing the information required in the title, and space for record of orders, changes, etc. The general arrangement of such a title is shown in Fig. 47. In shop drawings it is often printed in blank on the paper or cloth to be used.

The lettering on all such titles is done very quickly in single stroke, often without preliminary penciling.

|  |  |
|--|--|
| <p>.....</p> <p>.....</p> <p>.....</p>   |  |
| <p><b>The Jeffrey Mfg. Co.</b><br/>                 COLUMBUS, OHIO, U. S. A.<br/> <b>Engineering Department.</b><br/>                 CONVEYING AND ELEVATING MACHINERY.</p> |  |
| SCALE.....<br>DRAWN..... DATE.....<br>TRACED..... ".....<br>CHECKED..... ".....<br>CORRECT..... ".....   | DIRECTED.....<br>APPROVED.....<br><br><br> |

FIG. 46.—A printed Title Form.

|                                    |   |           |   |             |   |
|------------------------------------|---|-----------|---|-------------|---|
| <b>2865</b>                        | <b>THE MERIT AUTOMOBILE CO., CAMDEN, N.J.</b> |           |   | Scale 6"=1' |   |
| DRAWN 5-26-09<br><i>A.B. Smith</i> | 1   | S.O. 1645 | 2 | 3           | CAR A-6-60-09<br>DETAIL<br>CYLINDERS<br>5 1/2" X 5" |
| TRACED 5-30-09<br><i>D.E.M.</i>    | ① Changed from 10"<br>7-2-09                  |           |   |             |   |
| CHECKED 6-4-09<br><i>E.R.N.</i>    | ② Changed from 1"<br>7-5-09                   |           |   |             |   |

FIG. 47.—A Record Strip.



## CHAPTER IV

### SELECTION OF STYLES

In lettering a drawing the style selected and the amount of time spent in its execution must be appropriate to the kind of drawing. A carefully rendered map or display drawing will require careful lettering and will permit of time for its execution, while a shop detail requires only legibility and demands speed.

**For Architectural Work.**—There are two distinct divisions in the architect's use of letters, the first, Office Lettering, including all the titles, and notes put on drawings for information; the second, Design Lettering, covering drawings of letters to be executed in stone or bronze or other material in connection with design.

The Old Roman is the architect's one general purpose letter, which serves him, with few exceptions, for all his work in both divisions. Its characteristics have been fully discussed and illustrated in Chapter II.

For titles on finished architectural drawings the Old Roman is usually drawn in outline, as in Fig. 13. Sometimes emphasis is given by running a center line

in each stroke as in Fig. 48 giving it the appearance of being incised.

For smaller titles and lettering on working drawings, a single stroke Old Roman, Fig. 49, based on the

INCISED · EFFECT  
IS · OBTAINED · BY  
USING · THIRD · LINE  
J · K · M · P · Q · V · W · X · Z

FIG. 48.—An Effective Roman Letter.

center line of the regular letter is much used and is very effective. It can be made rapidly and may be given much of the variety and beauty of its parent.

A good deal of freedom may be taken with this



SELECTION OF STYLES

letter if it is done with a real regard and feeling for its beauty.

For notes on architectural drawings the Reinhardt letter is well adapted, as it is simple and legible. The key to good form is simplicity. The day of the wild letter on which the architects allowed their fancy free rein is passed. There is an individuality in lettering often as marked as in handwriting, but there must be

ABCDEF GHIJKLMN  
OPQRSTU VWXYZ &

FIG. 49.—Single Stroke Roman.

no grossness of exaggeration, nor riot of flourishes, nor wandering of free lines.

Modifications of the proportions, which are legitimate and sometimes pleasing, are often made, such as the "high-waisted" letters of Fig. 50.

The architect should not attempt to design inscriptions for permanent structures until he is thoroughly familiar with letters, their construction and spacing, and knows the character and limitations of the material

to be used. Letters on stone are generally incised, or sunk, in V form, and depend for their effect not on the outline but on the shadows cast by the sides. Consequently the strokes must be wider than for the same effect when drawn on paper. This is also true for "square-sunk," and indeed for all letters which depend on shadow instead of difference in color.

AABCDEF GHIJKLMNO  
PQRSTU VWXYZ & &  
ABCDEF GHIJKLMNO  
PQRSTU VWXYZ &

FIG. 50.—Free Modifications.

The construction of Figs. 9 and 10 may be used for accurate drawings for this purpose, keeping the diameters of fillets and curves as given, but increasing the width of the strokes.

If far above the eye the letters will be made taller in proportion to their width and with much wider hori-

zonta  
fores  
In  
cut  
will  
separ  
the s  
some  
On  
Rom  
Br  
eithe  
of th  
1:7  
maki  
a shr  
Th  
and  
for us  
Fo  
map  
is ma  
road  
and



## SELECTION OF STYLES

zontal lines than the standard form, to allow for foreshortening.

In designing lettering for large inscriptions, to be cut on public buildings for example, the architects will often draw the letters to full size, each on a separate sheet, and tack them up on a wall to study the spacing. In very careful work model letters are sometimes made in plaster and studied in place.

One rule must be remembered—Never crowd Old Roman.

Bronze tablets are usually made with raised letters, either flat-top or modeled round. The body strokes of the letters on the tablet illustrated in Fig. 96 are  $1:7\frac{1}{2}$ , and the hair lines  $\frac{2}{3}$  of this width. In making full size design drawings for cast bronze work, a shrinkage of  $\frac{1}{8}$ " in 10" should be allowed.

The architect should be familiar with the Uncial and Gothic letters as given in the succeeding chapter, for use with the appropriate architectural styles.

**For Map Drawing.**—The style of lettering on a map will depend upon the purpose for which the map is made. If for constructive purposes, such as a railroad or sewer map, the single stroke Gothic for titles and the Reinhardt for notes, are to be preferred.

For a finished map, vertical modern Roman for land features, and inclined Roman and stump letters for water features should be used. The well-known maps of the Geological Survey contain good examples of this kind of lettering.

**For signals, signs** or other lettering designed to be painted in connection with railway or other engineering, legibility is the first requirement, and no letter but the upright commercial gothic should be permitted.

**For Shop Drawings.**—On working drawings of any kind no time may be wasted on lettering. It must be legible and uniform, sized and placed well, but executed rapidly. The single stroke capitals, either upright or inclined, for titles, and the Reinhardt for notes should be used exclusively. Roman letters, stump letters, "geometrical" letters, and shipping clerks' marking letters are all out of place.

On patent office drawings the lettering is generally done in stump letters. Any draftsman who has occasion to make patent drawings should send to the Commissioner of Patents, Washington, D. C., requesting a copy of the "Rules of Practice," which gives all the requirements for drawing and lettering.



## CHAPTER V

### LETTERS IN DESIGN

The preceding chapters were written for those students and draftsmen who use lettering only as an adjunct to the "graphical language" of their office drawings. Lettering in design is a far wider field. Here the designer uses lettering not only to make a statement—to convey information by the written words—but for its own inherent beauty of line and composition. He uses it with his ornament, he uses it as ornament, to break a space or to fill a background. The artist or decorative designer must then not only be familiar with the fundamental forms explained in the previous chapters and the rules upon which they are based but must have at his command other historical and modern alphabets and know the appropriateness of each for its place.

In this chapter the principles and peculiarities of the useful letters of different styles and periods will be considered.

#### THE OLD ROMAN

Referring to the historical outline of Chapter I it is remembered that the Old Roman is the parent of all

the styles, and beyond all comparison the most useful letter for the designer. It will be used oftener than all other styles together, and it is safe to recommend that the student **when in doubt use Old Roman.**

The Old Roman letters have been discussed and analyzed in Chapter II and it will be the first duty of the designer to become thoroughly familiar with these forms. An early form is shown in Figs. 1 and 5, and some Renaissance forms in Figs. 6, 9 and 10. These are monumental forms of classic beauty and dignity. As a pen-drawn letter the Old Roman admits of much freer treatment, and in composition not only the position, but the size and shape of each letter is considered with reference to the adjoining letters. They must not be tortured out of shape nor driven to do things they do not want to do, but once the artist has that real feeling of personal acquaintance and familiarity, the letters can be coaxed into doing almost anything he wishes them to do. The lower limb of a letter may be extended and the following letter, a vowel usually, perched on it, the swash lines of the

R an  
T ma  
play  
roun  
into  
ened  
suffic  
Rom



a str  
its fel  
for o  
Fig  
refer  
Ol  
exten



LETTERS IN DESIGN

R and Q may extend almost indefinitely, the top of a T may reach above the guide line and allow letters to play under it, two letters may have a common stroke, round letters may be linked together, serifs may run into each other, and feet may be shortened or lengthened, all easily and naturally if the designer be on sufficiently intimate terms with the family; but the Roman in its dignity resents any such familiarity from

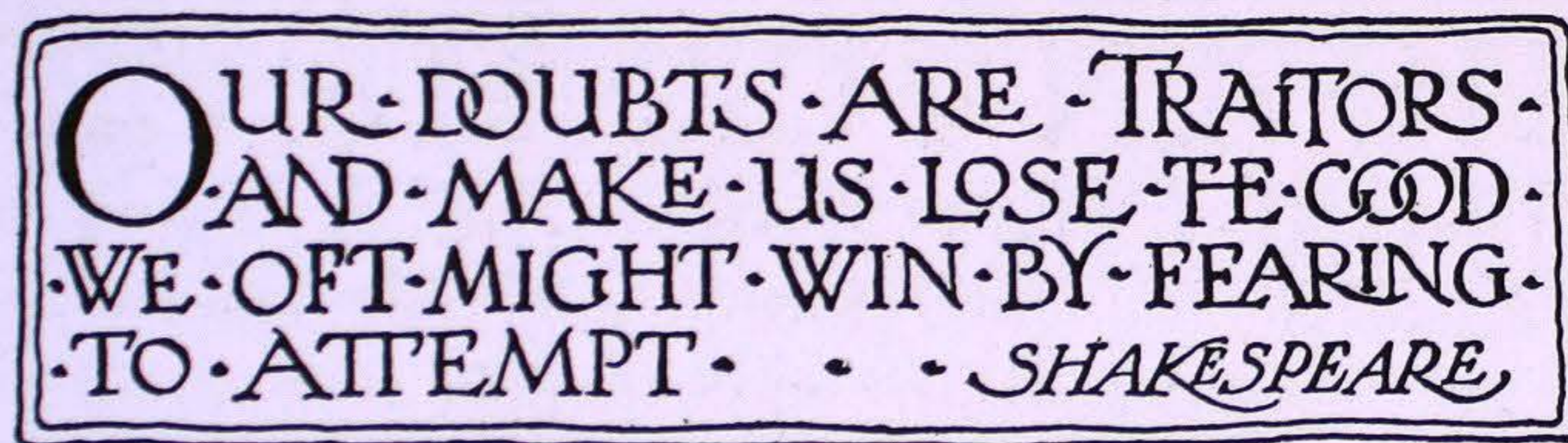


FIG. 51.—Freedom in Composition.

a stranger. To make a letter larger or smaller than its fellows with no more apparent reason than the desire for oddity is pure affectation.

Fig. 51 illustrates something of the freedom referred to.

Old Roman letters should not be stretched out in extended form, but the spaces between the letters may

be increased indefinitely. They may however be condensed if lack of space demands it. In condensing, the straight line letters and narrow letters may be compressed up to the limit before the O family have

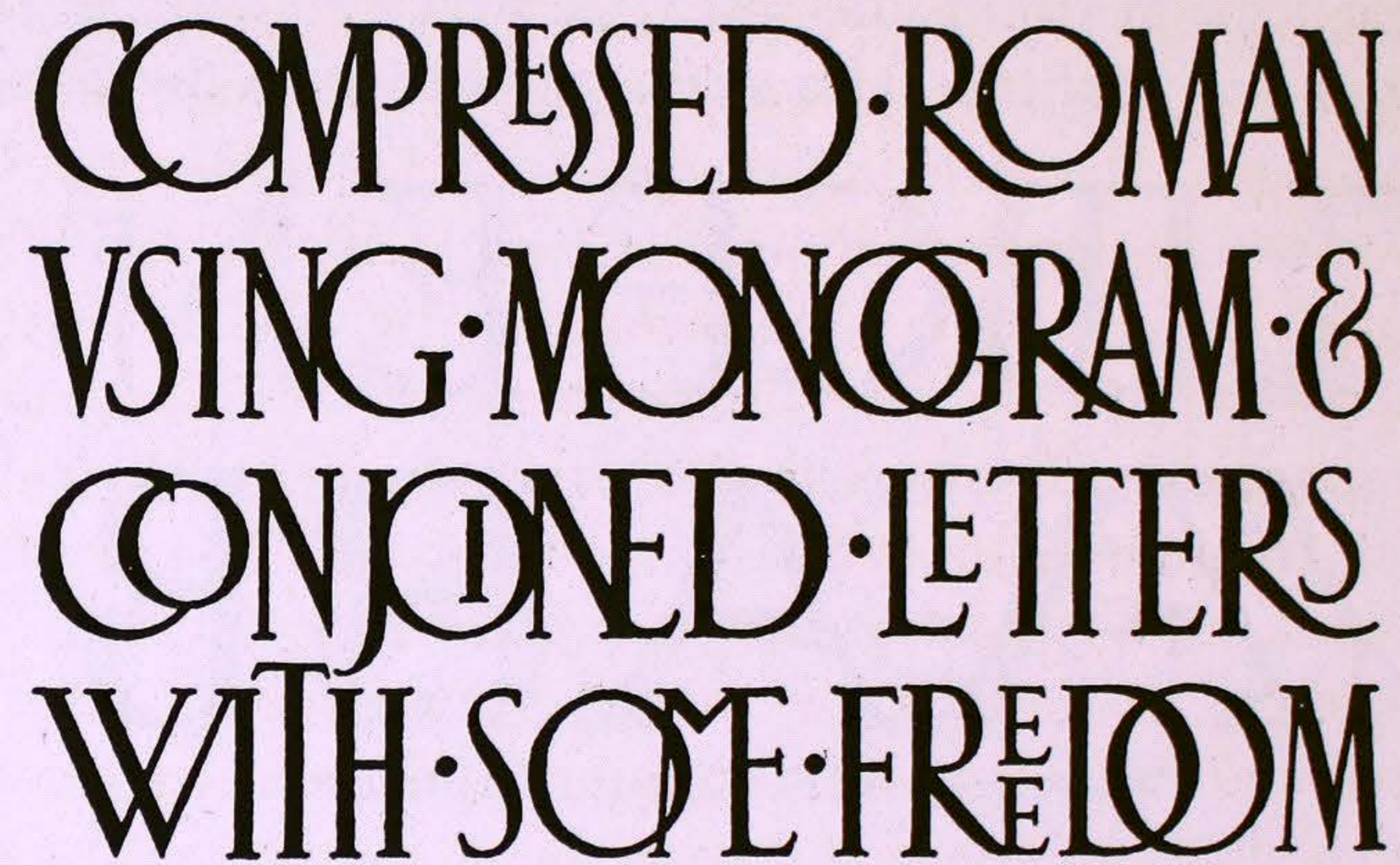


FIG. 52.

been squeezed out of round. The expedient of using common strokes in monogram-combinations, and of linking the round letters will often save the required space. Fig. 52 is an extreme example.

For careful work in design the Roman is to be regarded as a *drawn* letter, to be outlined and finished



as has been described. It may however be *written* effectively, after the manner of the old scribes, in single stroke with a broad pen, such as those of Fig. 72, tilted at a slight angle as shown in Fig. 53 and turned for the thin lines of M N W, etc. The figure shows also the little extra stroke used to form the fillet.



FIG. 53.—Broad Pen Roman Construction.

After the forms of the letters have been learned it is surprising how they almost shape themselves when done in single stroke with the broad pen.

Larger letters are built up of two strokes for the body mark, and for very large ones the full stroke of the pen may be made for the thin lines.

If a reed pen is used it may be cut either square across or at a slant, to fit the hand of the writer. Its

corner may be used for such touches as serifs on horizontal lines, etc.

Large Roman letters may be made easily and rapidly in single stroke with a flat sable brush held in the same position as the pen.

ROMAN · WRITTEN · IN  
SINGLE · STROKE · WITH  
THE · PEN · TURNED · FOR  
THIN · LINES · · B · C · J · Q · V · X · Y ·

FIG. 54.—Broad Pen Roman.

#### ROMAN LOWER-CASE.

The so-called Classic forms of the Old Roman consist only of capital letters, and in titles, inscriptions, and designs calling for stateliness or dignity of composition capitals would be used throughout. A paragraph or page of solid caps, however, is not easily read, as we read words by their shapes and are accustomed to these shapes in lower-case letter combinations, hence in longer sentences, quotations and the



like, a less formal effect and at the same time greater legibility is secured by using caps and lower case.



**H**ERE was only one source from which to take examples of this perfected Roman type, to wit, the works of the great Venetian printers of the fifteenth century, of whom Nicholas Jenson produced the completest and most Roman characters from 1470 to 1476.

—*W. MORRIS.*

FIG. 55.—Jenson Type.

Referring again to the history, the Roman lower-case letter was the final step in the evolution from the Caroline, and reached its definite form after the in-

vention of printing, so for models to combine with our Roman capitals we go back to the type forms of Jenson and the master printers of the fifteenth century. Type degenerated so steadily after that period that William Morris once exclaimed, "There has not been a decent book printed since the sixteenth century."

But we have the same freedom in our pen-drawn small letters as in the capitals, not being limited by the

aabccdeefggghijklmn  
 œpqrſstuvwxyz&

FIG. 56.—A Roman Lower-case.

size of the type body as are the printers, and can extend lines or combine shapes, giving an individuality to the lettered page impossible to the printed one. It is no compliment to a designer to say that his lettering looks like print. It should look much better, or at least very different.

The body letters are made from one-half to three-fifths the height of the capitals, with the ascenders



LETTERS IN DESIGN



Single-stroke Roman written with broad pen is a letter of much practical value as it is both artistic and legible.

FIG. 57.—Broad Pen Lower-case.

equal to the caps and the descenders slightly shorter. Much care and judgment must be exercised in having the small letters "fit" the caps; the usual fault is in getting them too light. The strokes will be thinner

EUERE KAISERLICH  
UND KÖNIGLICHE  
MAJESTÄT/ALLER  
GNÄDIGSTER HERR!  
Eine Empfindung beseelt  
unsere Herzen: die Treue  
zu Fürst und Land/welche  
seit Jahrhunderten die

FIG. 58.—A Light Face German Example.

than those of the caps but are not reduced in the same proportion as the heights, and the bodies of the letters will at the same time be a little wider in proportion than the corresponding capitals. The principal



difficulty in drawing lower-case letters is in keeping the page to a uniform color.

The simplest spacing for a page of lower-case composition is to divide the space between base lines into three equal parts, making the caps and ascenders

**A** MODERN TYPE FACE  
with a distinctive, classic  
beauty, named after a famous  
old family of art-craftsmen.  
abcdefghijklmnopqrstuvwxyz  
BGHIJKLQSUUVWXZ&

FIG. 59.—Della Robbia Type.

two-thirds and the bodies one-third, as shown in Fig. 57. The dots on the i and j are on the "t line" which is half-way between the "waist line" and the "cap line."

The letters of Fig. 57 are written with a broad pen held in the same position as for the single stroke capitals, turning it when necessary for such letters

as the w. Much practice must be spent in composition, with careful study of good examples, before satisfactory results with lower-case can be obtained.

Fig. 55 is a once popular type face, Fig. 56 a free pen-drawn style, Fig. 58 a light face letter from Dr. von Larisch's "Unterricht," and Fig. 59 a modern type-face of classic beauty.

The examples of printer's type are given as carefully studied examples of the individual letters. Their composition is not to be copied. Far less is the writer to try to imitate their regularity. The charm of the lettered page is in its freedom and individuality.

#### THE UNCIAL

In historical order the next letter for the designer is the Uncial, although it is the later or Lombardic form

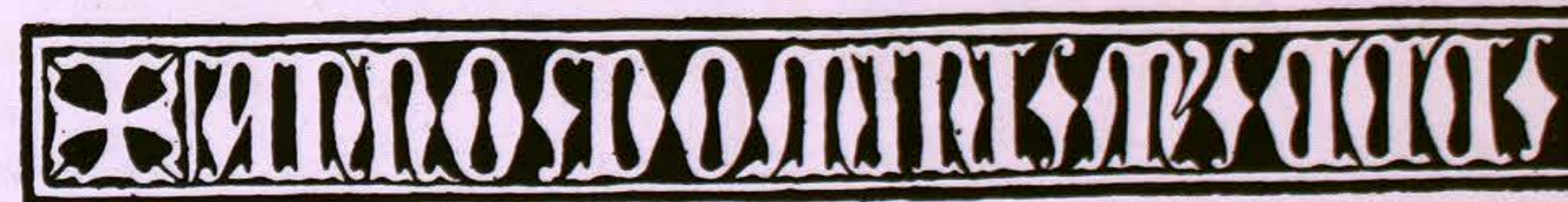


FIG. 60.—From a German Bronze.

that is of particular value and interest. There is not in this letter the fixed form of the Roman. It has many and wide variations developed by different



A B C D E F G H I J K  
L M N O P Q R S T U  
+ V W X Y Z +

GERMAN UNCIALS

A B C D E F G H I J K  
L M N O P Q R S T U  
+ V W X Y Z +

FRENCH UNCIALS

FIG. 61.—Two Practical Uncial Forms.



LETTERS IN DESIGN

scribes and in different countries, but its general characteristics are easy to remember and the letter is



FIG. 62.—Compressed Uncial.

not difficult to draw. These letters are sometimes called Versals from their use on the manuscript page to indicate the beginning of a section or paragraph.

Several practical working examples are given in the accompanying figures. The upper alphabet of Fig. 61 was drawn from German bronzes, and the lower

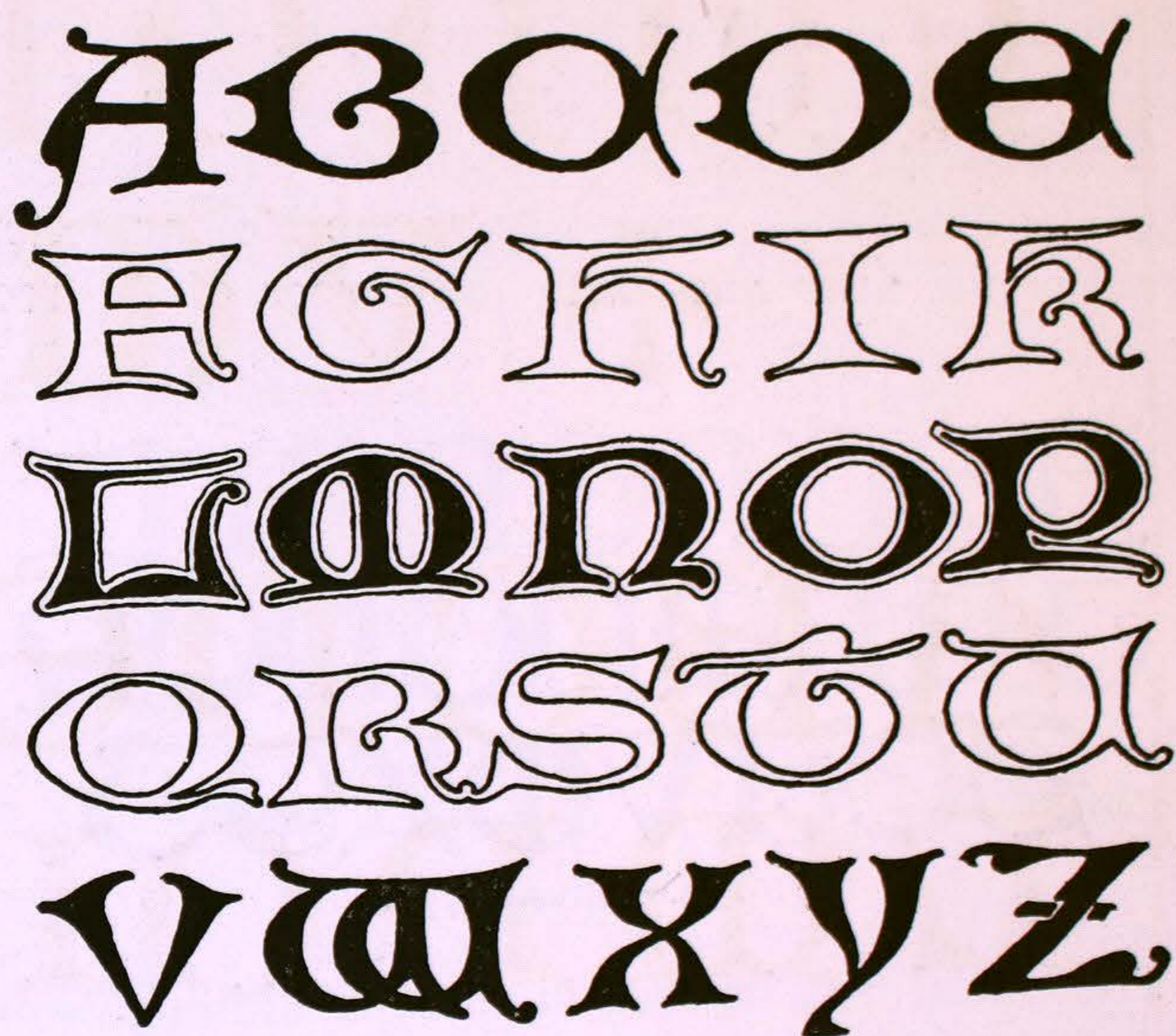


FIG. 63.—Extended Uncial.

adapted from French sources. The normal square proportion of these alphabets may be compressed as in Fig. 62 or extended as in Fig. 63.



LETTERS IN DESIGN

Fig. 64 is an American type form of pleasing design. Fig. 65 contains suggestions for treatment of ornamented initials, drawn from various sources. Much of the charm of such work, however, lies in the color, which cannot be indicated in black and white.

The Uncial bodies may be made successfully in single stroke in the same way as the Roman letters, drawing the finer lines with the corner of the reed, or with a finer pen.



FIG. 64.—Missal Type.

The Uncial may be used in all caps, although some regard must be had for the reading public's lack of familiarity with it. It is appropriate in ecclesiastical work or with any Gothic design, and is of particular value for initials, and as caps for Gothic lower-case letters. Lines of Uncial should be kept close together,



FIG. 65.—Ornamented Initials from Manuscripts.



always closer than the height of the letter. Fig. 66 from the shrine of St. Simeon illustrates the extreme of this close spacing, and Fig. 67 is a single stroke modern example that is well spaced.

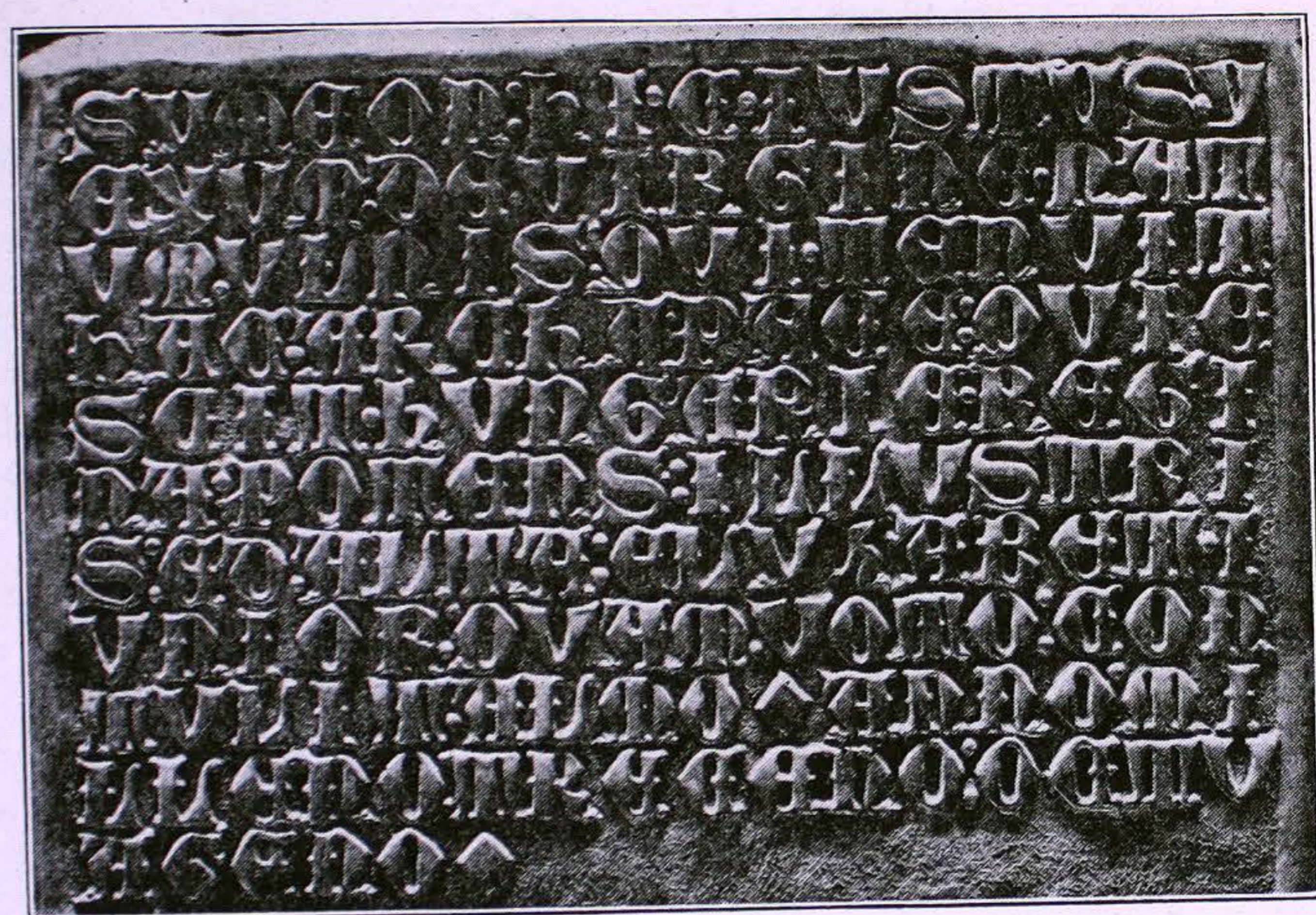


FIG. 66.—Embossed Silver, 1380.

THE CELTIC

The Irish half-uncial of the sixth and seventh centuries, known in design as Celtic, is a style that has been used recently with good effect. Many of its

forms are obsolete and must be modified to be decipherable, but it has a primitive strength that com-

VATER UNSER / DER DU BIST  
 IM HIMMEL / GEHEILIGET WER-  
 DE DEIN NAME / ZUKOMME  
 UNS DEIN REICH / DEIN WILLE  
 GESCHEHE WIE IM HIMMEL  
 ALSO AUCH AUF ERDEN. GIB  
 UNS HEUTE UNSER TÄGLICHES  
 BROT UND VERGIB UNS UN-

FIG. 67.—From Dr. v. Larisch's "Unterricht."

bines well with the characteristic spirals and interlacements of the ornament of that period. Fig. 68 is a

A a b c d e f g h i l m  
 n o p q r s t u x c z

FIG. 68.—Celtic Alphabet. Book of Kells.

working alphabet adapted from the Book of Kells and Fig. 69 is an example showing its derivation from



the Celtic, by Mr. Dwiggins, one of the artists successful with this style, and whose work for Mr. Alfred Bartlett, the publisher, is well known.

**O**NE day, with life and  
heart,  
Is more than time enough to  
find a world.                      LOWELL

FIG. 69.—By W. A. Dwiggins.

#### THE GOTHIC

The general term Gothic is given to the manuscript letters of the eleventh to the fifteenth centuries. They are essentially "written" letters made with one stroke of the pen, as distinguished from Roman and Uncial which may be called "drawn" letters. Their lower-case changes from the Round Gothic\* following the Caroline, to the pointed Gothic or "blackletter" of the twelfth and following centuries.

The blackletter as a printing type was gradually

\* The name proposed by Mr. De Vinne.

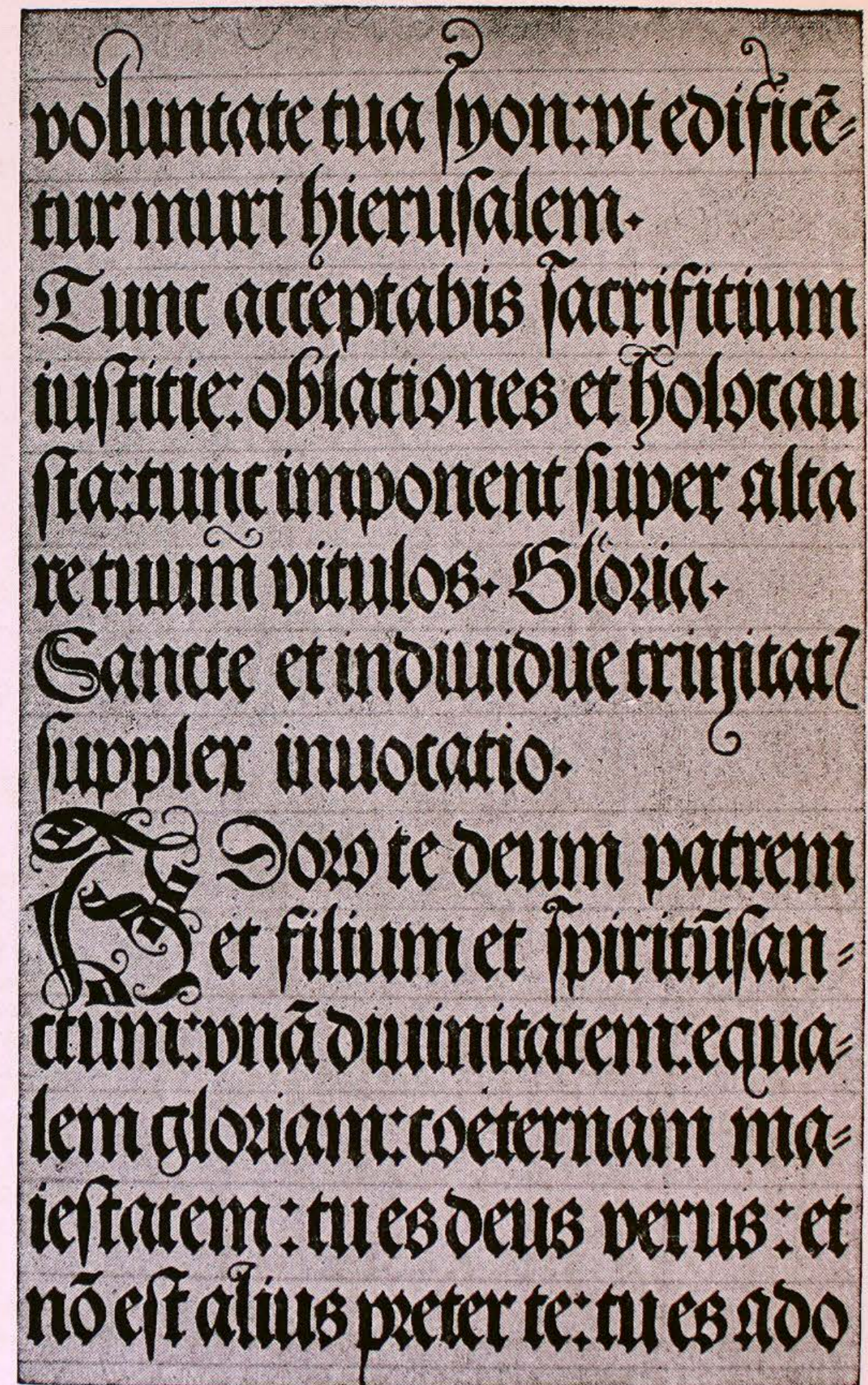


FIG. 70.—Gothic Page by Albrecht Dürer, 1515.



LETTERS IN DESIGN

displaced by the Roman, and by the seventeenth century Germany was the only country still using Gothic. As is well known that country now uses Roman for scientific publications, but adheres to the illegible German Fraktur as the popular type.

The letter generally known as **Old English** is to the ordinary reader the most familiar style of Gothic. Its bristling angularity shows it to be a late form. The capitals of these later forms become more complicated and weak in design, and their only advantage is that in such work as engrossing they

may be made without changing the direction of the pen. For all good design the stronger Uncial caps should be used with the Gothic lower-case. One absolute rule must be observed—**Never use all caps in Gothic.**

The Gothic is written with a broad pen tilted about 45°. Either a reed pen or a steel "round-writing" pen may be used. The steel pens, of which the "Sonneckens" are the best, are usually sold in sets of eleven numbered in half sizes from 1 to 6. When used alone they will only carry sufficient ink without

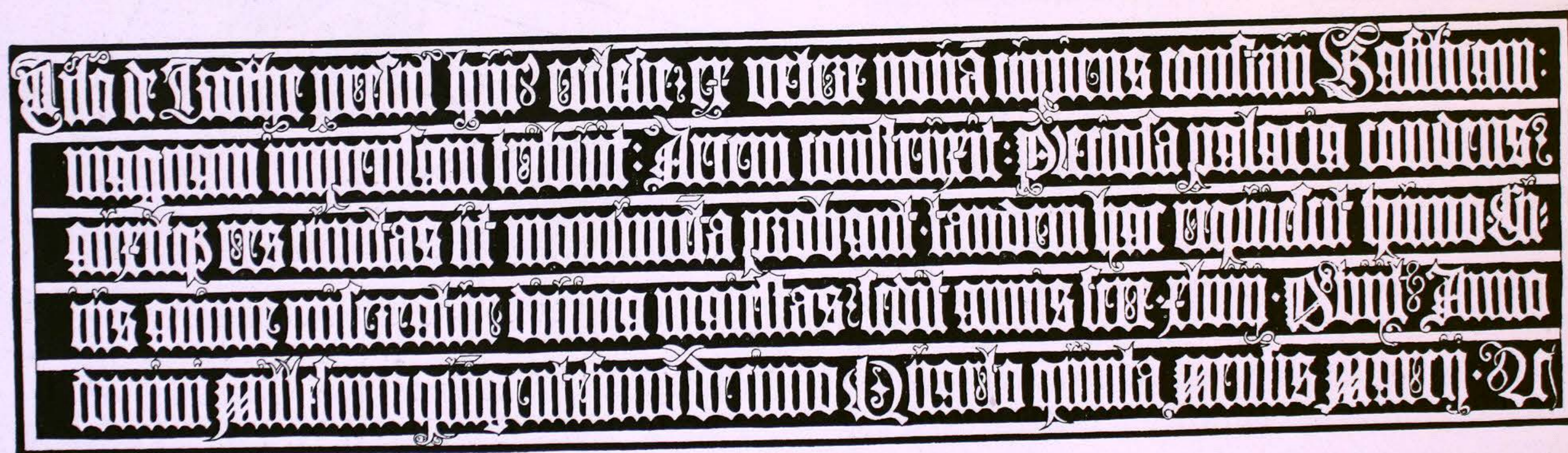


FIG. 71.—A German Bronze, 1514. (Weimar.)



## LETTERS IN DESIGN

blotting for one or two strokes. A brass clip is sometimes sold with them, but a more satisfactory ink holder may be made of a rubber band added as shown in Fig. 72. The ink is filled behind the rubber on the under side of the pen.

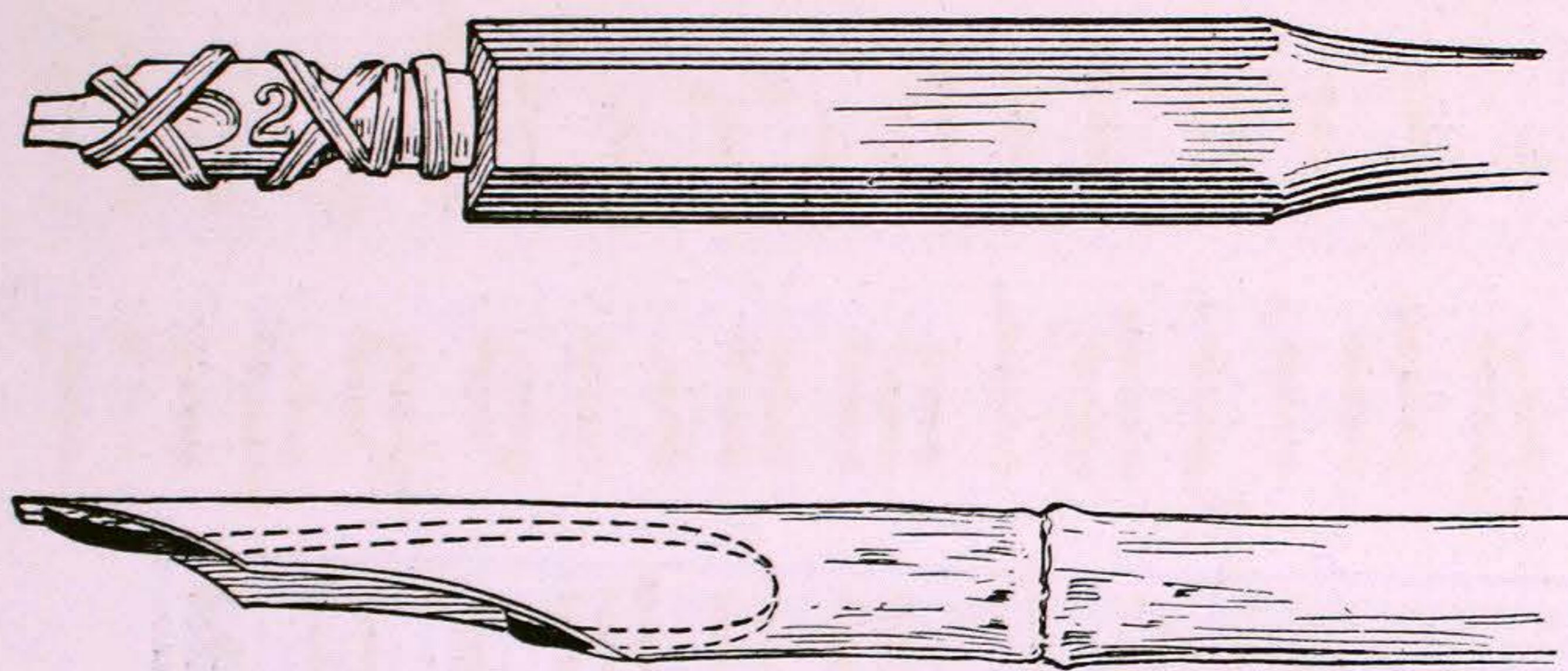


FIG. 72.—Steel and Reed Pens, with Ink Holders.

The reed pen is much more comfortable, as well as better artistically. It is cut to shape with a sharp penknife or narrow blade surgeon's scalpel and an ink holder of annealed watch spring bent and inserted as in Fig. 72. English or Japanese reeds are the most satisfactory, although those from India are thicker and harder.

Quill pens made from the wing feathers of turkey

or goose are sometimes used for smaller writing, but the average student has more trouble cutting a quill than a reed.

The pen is held as illustrated in Fig. 73, and the whole secret is to maintain this position and angle

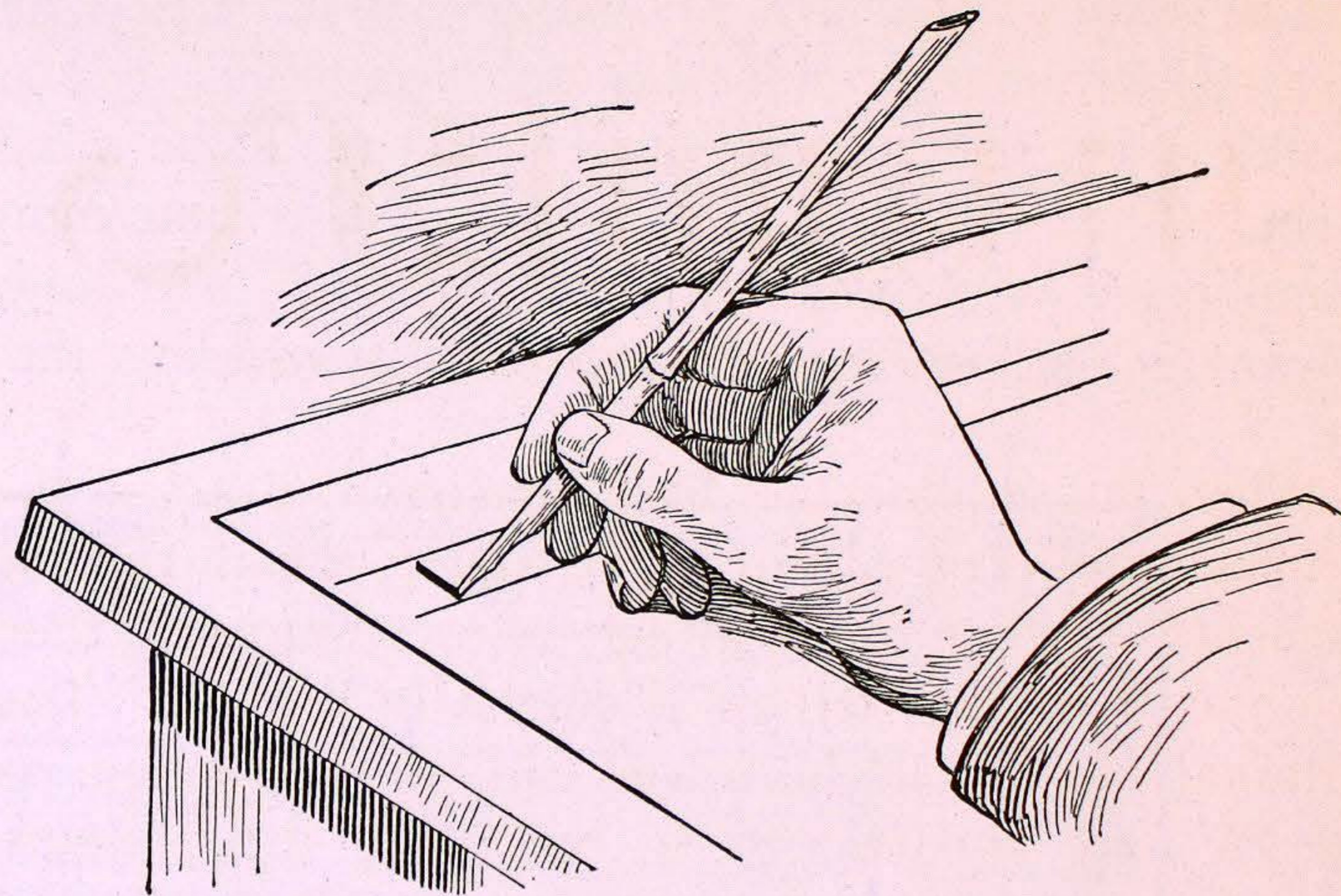


FIG. 73.—Position for Gothic Writing.

throughout, whatever the direction of the stroke. The first practice should be the drawing of the elements in Fig. 74. When these are mastered lettering in Gothic will be found to be easy and interest-



LETTERS IN DESIGN

ing. Select a pen as large as No. 1 1/2, rule guide lines three-eighths of an inch apart (ordinary ruled writing paper will serve very well), add some vertical direction lines and practice stroke 1 until it can be made confidently, always vertical and with its ends cut off clean at 45°.

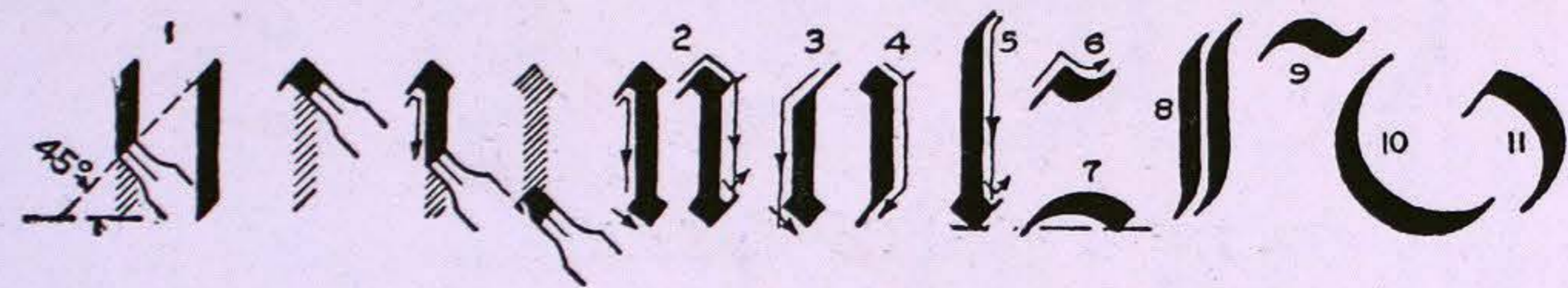


FIG. 74.—Practice Strokes for Gothic Writing.

When this motion has been mastered, practise the strokes numbered 2, 3, 4, 5, 6, and 7, which are the elements of which the small letters are composed, then combine them into letters as shown in Fig. 75. The terminal blocks on the lower end of such letters as the "i" are squares, made by lifting the pressure from the pen, and setting it back as shown in Fig. 74, and the spikes of the angles, if used, may be made with a little side slip of the pen while the stroke is being made.

In combining these letters into words the one requirement is to keep the letters close together, the

space between letters wherever possible being just the same as the space between strokes of the letters, which in turn should not be much if any more than the width of the stroke. A printed page of text letters is always unsatisfactory, because the letters cannot be set

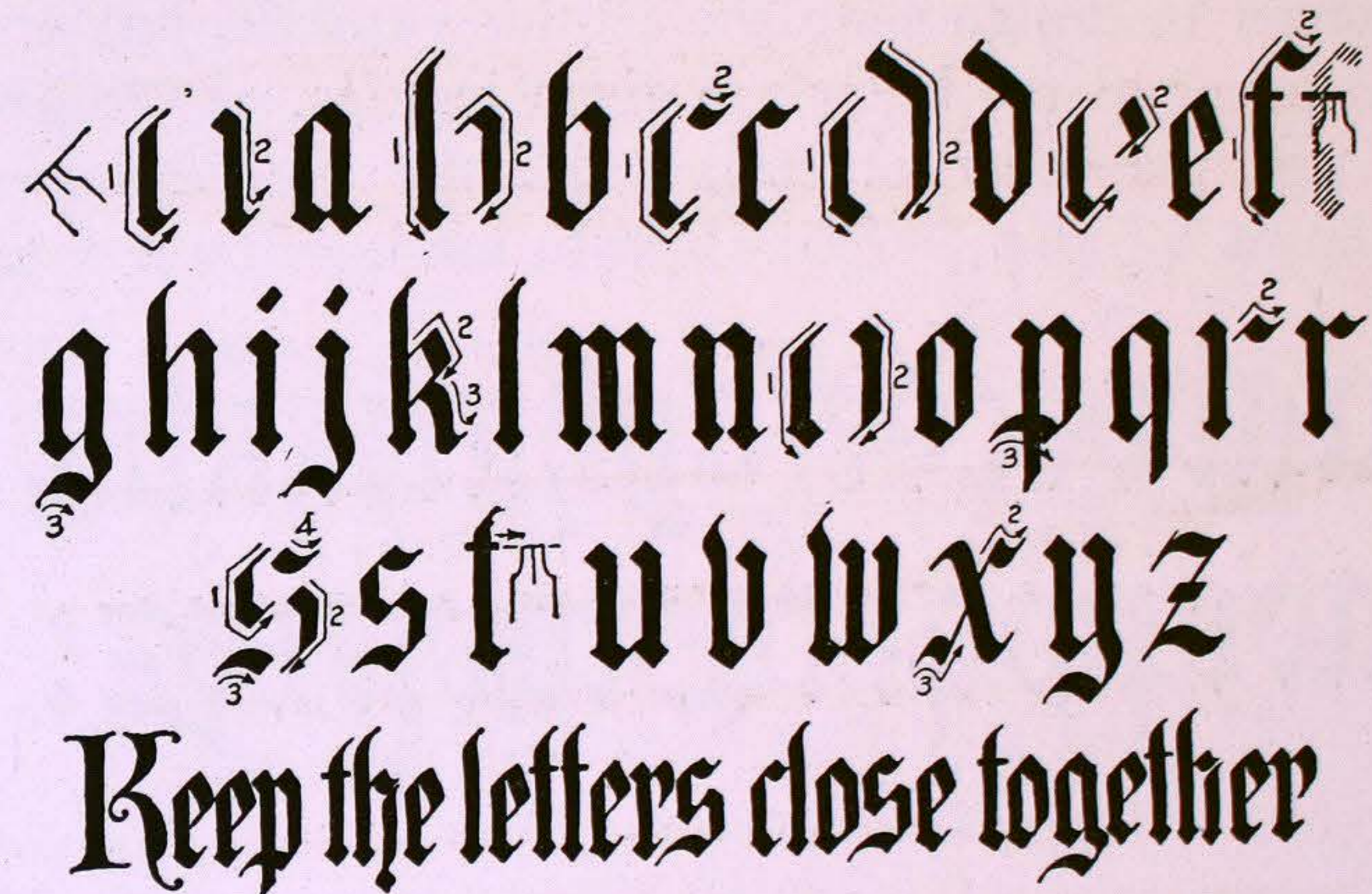


FIG. 75.—Analyzed Gothic Lower-case.

sufficiently close, and because of the machine-made exactness. It lacks the irregularity and spontaneity of the written page.

An alphabet of round forms similar to those used in Fig. 70 is given in Fig. 76. The order of strokes will



LETTERS IN DESIGN

be evident after practicing the angular. On account of the variety in combination this letter makes a more interesting page than the angular form.

The uncial capitals have already been recommended for use with the Gothic lower-case, as being much stronger in design than the Gothic capitals, but several forms of the latter are given in Figs. 79, 80 and 81 and the order of strokes for the typical letters is shown in Fig. 77. They may be made with the same



FIG. 76.—Gothic Alphabet. (After Dürer.)

pen as the small letters, making the small letters three-fifths to two-thirds the height of the capitals.

If the capitals are arranged in their family groups, their forms, which appear complicated, can be remembered without trouble. In the O family the C is the foundation letter, and from it the G, O, Q, T, and one form of E, U and W are developed as shown in Fig. 78.

Similarly B, H, I, K, L and R are closely related, all having the same beginning strokes.

The alphabet of Fig. 79 is a usual form of Old English. In this the spikes, hairlines and flourishes

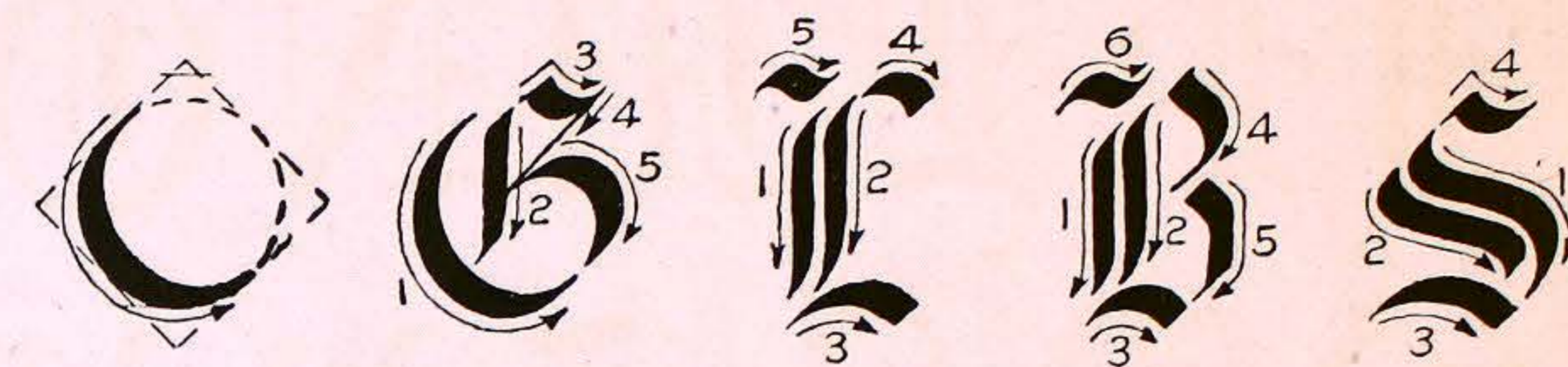


FIG. 77.—Typical Gothic Capitals Analyzed.

are added with a fine pen after the page has been written. Fig. 80 is a simpler form, written without retouching, and suitable for rapid engrossing and similar work.



FIG. 78.—Family Groups.

Fig. 81, adapted from the tomb of Richard II, is a letter of much beauty, and popular among designers, although not so well known and consequently not so legible to the general reader.



LETTERS IN DESIGN



FIG. 79.—“Old English.”

Fig. 82 is an old form of Fraktur or “German Text,” which may be of occasional value.

The paramount desire in the use of Gothic in design is for *blackness*, i.e., richness and “color,” in effect. Words should be separated only enough for legibility,



FIG. 80.—For Rapid Work.

and lines not spaced widely. Short lines are often filled out with space fillers of spots or running figures to avoid any white “holes” on the page.

Flourishes on the ascenders and descenders are characteristic of the later Gothic, and may be used judiciously with good effect.



## LETTERS IN DESIGN

The Gothic is essentially a letter for ecclesiastical and other serious work, and its misplaced or inappropriate use is a grave mistake.



FIG. 81.—English Gothic. (Westminster Abbey, 1400.)

Although Gothic is easier than Roman, it is worse maltreated by amateurs and inexpert designers, and impossible things in initials and designs are accepted

as good or allowed to pass, where equally poor Roman would be immediately condemned.

The beautiful letters of Albrecht Dürer, Fig. 70, are worth careful study. In the original, which is twice

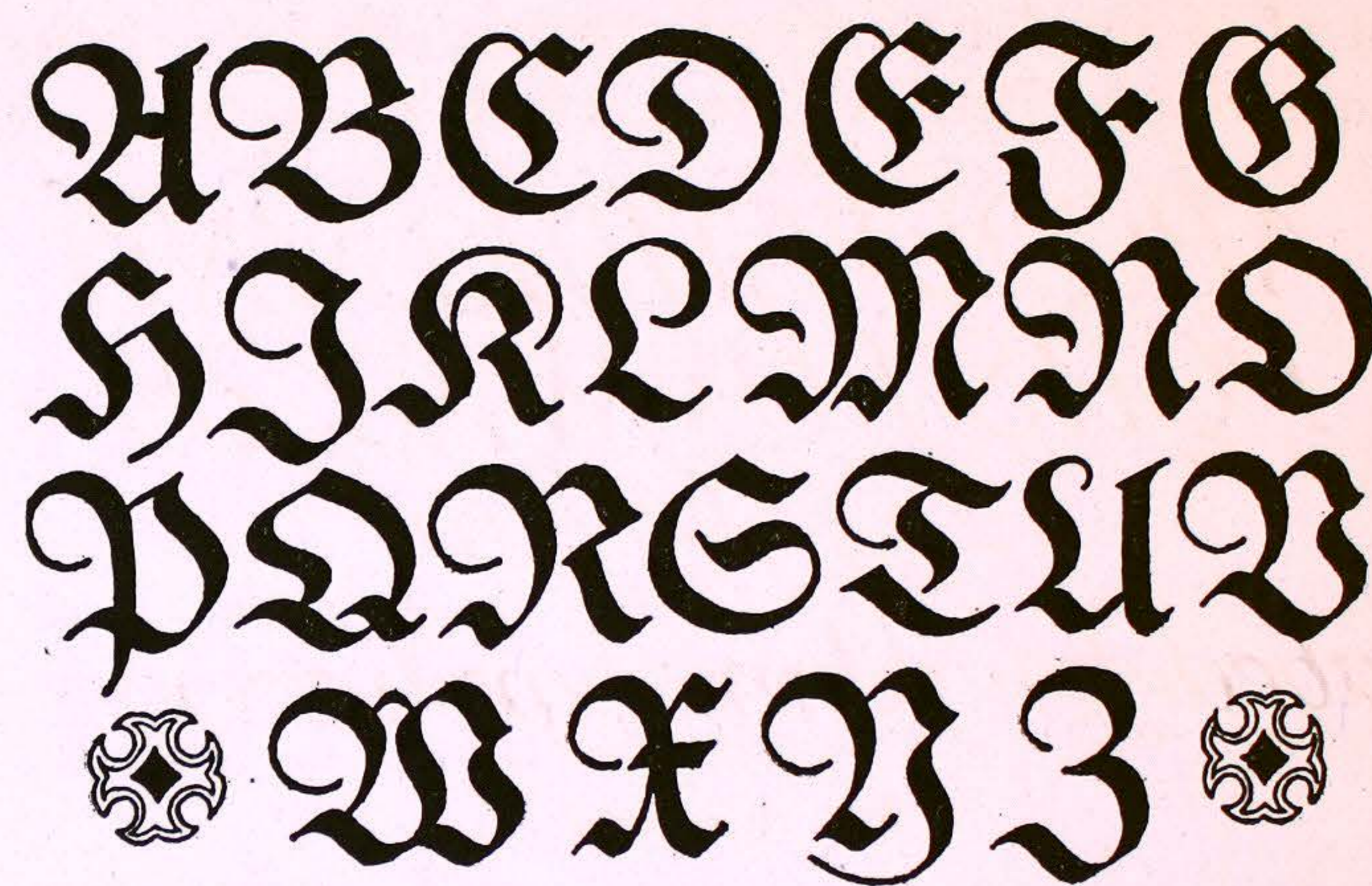


FIG. 82.—Old "German Text."

the size of this reproduction, the initial and the two lines just above it are in red, as are also the spacing lines.

### ITALIC AND SCRIPT

Thus far all the letters considered in this chapter have been upright forms. In the period of the Italian



LETTERS IN DESIGN

Renaissance some of the historians and scribes, probably from the habit of writing fast, acquired a slanted writing, which became much the fashion. When Aldus Manutius in the sixteenth century cut the first font of inclined type he selected a carefully written manuscript of Petrarch from which to model it. In



FIG. 83.—Italic.

its stiffest form now Italic is simply an inclined Roman, such as Fig. 36.

Script, in lettering, is a freer inclined or sometimes vertical letter showing its origin from the cursive or written form. For the designer the so-called French Script of the period of the Louis, a letter full of quaintness and grace is most interesting and valuable, as it admits of a freedom of treatment that gives individual-

ity to work in perhaps greater degree than any other. Its effect is the exact opposite of Gothic, giving lightness for blackness and caprice for dignity. The free ends of the unaccented strokes in the capitals become



FIG. 84.—French Script.

swash lines which often tie up with each other and with the ascenders and descenders of the small letters; but the curves must be spontaneous. A labored effect is fatal.

A general rule has been stated that styles of different slopes should not be used together. The notable



LETTERS IN DESIGN

exception to this rule is in the case of Old Roman and Script used in combination in what is sometimes called Colonial Composition, when the Roman is used for the display words and Italic or Script for the less important words and lines. Fig. 97 by Mr. Seymour, is an artistic example.



FIG. 85.—Script, by Rudolf Koch.

Italic and Script may be used in all caps or caps and lower-case.

In practising inclined letters such as Figs. 83, 84 and 85, slant direction lines should always be drawn

as explained on page 27. The angle of slant varies widely both in historical and modern examples and is a matter of individuality. Some are only a few degrees off the perpendicular, others are nearly 30 degrees. The 2 to 5 slope mentioned on page 25 is a pleasing average. If the Roman has been well mastered, the

*Die formale Schönheit eines Buchstaben bei denkbar günstigstem Anschluß an seinen Nachbar im Wort- und Satzbild giebt den Maßstab für den künstlerischen Wert einer Schrift, die dabei als Ganzes klar und übersichtlich zu lesen sein muß.*

FIG. 86.—Script, by Heinrich Wieykn. (Larisch.)

italic letter will not be difficult, but the script will require much practice, probably with discouraging results before the curves will come smoothly.

The heights of the lower case letters are made in the same proportion as the upright lower case, but their widths are somewhat narrower.

There must be careful discrimination and restraint in order that the flourishing shall not be overdone.



## LETTERS IN DESIGN

Fig. 103 is an appropriate and clever example of script in design.

### "ART NOUVEAU"

Under this general head we have classified all those variations which have been developed in the modern

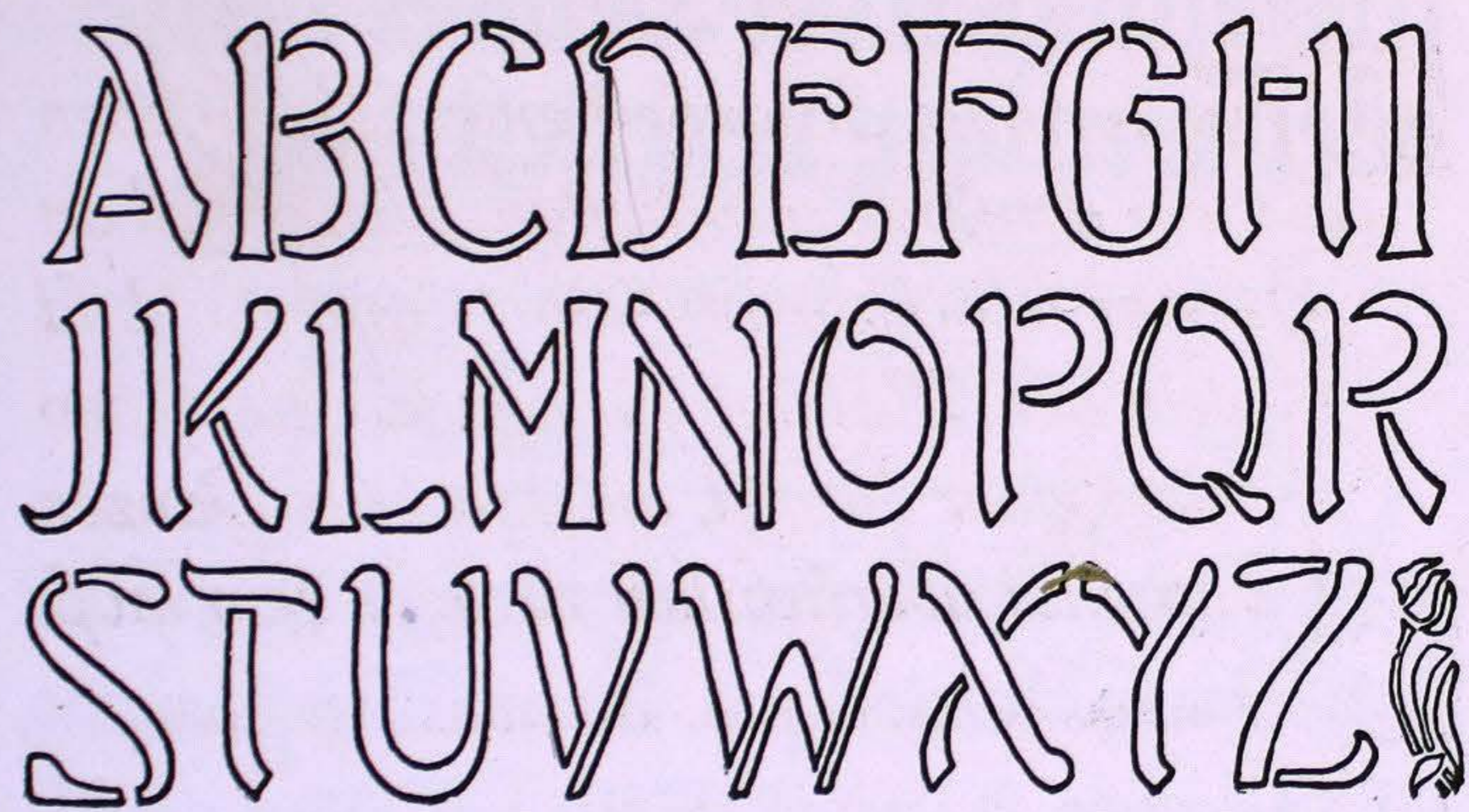


FIG. 87.—A Stencil Form.

school of "secessionists," particularly in Germany. Using the old forms as a basis a new life has been given them in their adaptation in the characteristic style of those artists, who appreciate so thoroughly the value of letters as ornament.

The apparently free or formless character must not

be taken as a license for carelessness. The lines of the letters have been studied with the same seriousness as the apparently free lines of the characteristic orna-

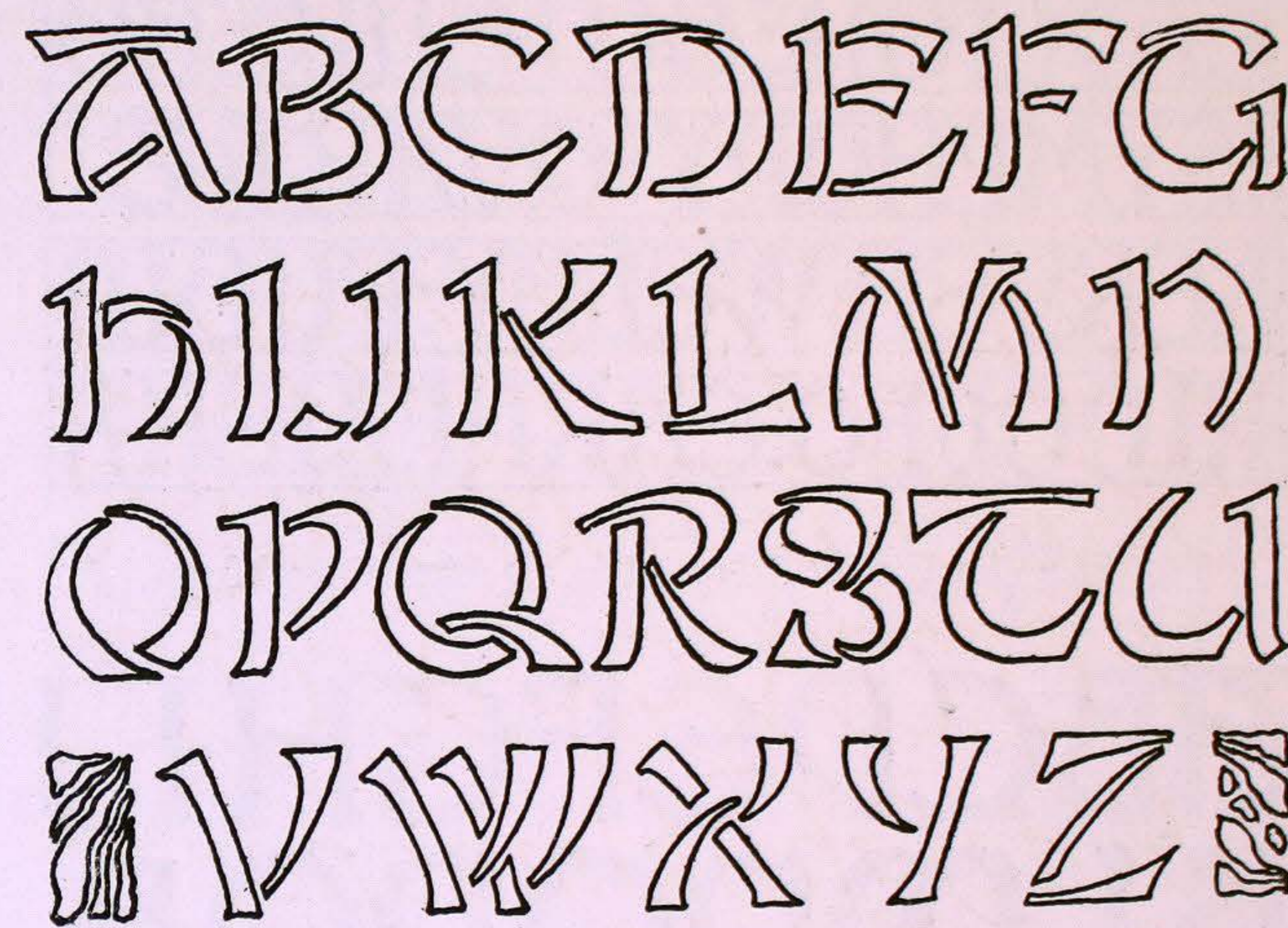


FIG. 88.—A Stencil Form. (After Grasset.)

ment of this school, which have their "points of interest" and rules of composition definitely established.

In range these modern letters extend from forms but slightly modified from the historical, through forms of good design but not so easily legible because of their newness and one's consequent lack of familiarity with



them, to weird conceptions inspired only by the wild desire for novelty.



FIG. 89.—An Uncial Adaptation. (After Otto Hupp.)



FIG. 90.—A Free Uncial Adaptation.

The modern forms of real value are all designed with an intimate acquaintance and regard for the

Es ist die Macht der Gewohnheit und der geistigen Trägheit, deren Schwergewicht alle Anstrengungen der Denker mehr oder weniger vereitelt. ¶

FIG. 91.—Gothic, by Rudolf Koch. (Larisch.)

**C**e paragraphe montre l'écriture caractéristique du maître français, M. George Auriol. Elle est d'un sentiment franchement moderne et possède une individualité très marquée. Les lignes interrompues augmentent de beaucoup cet effet. ¶¶¶¶¶¶¶¶

FIG. 92.—In the Style of George Auriol.



## LETTERS IN DESIGN

historical forms. Figs. 87 and 88 are modern adaptations of Roman in stencil form, Figs. 89 and 90 show their derivation from the Uncial, 91 is a modern Gothic and 92 a cursive or script form.

Fig. 93, an original alphabet by Mr. Hunter of East Aurora, is strongly Viennese. It is shown in composition in Fig. 98.

The tall letter of Fig. 94 is a good practical form which works well in monograms and marks.

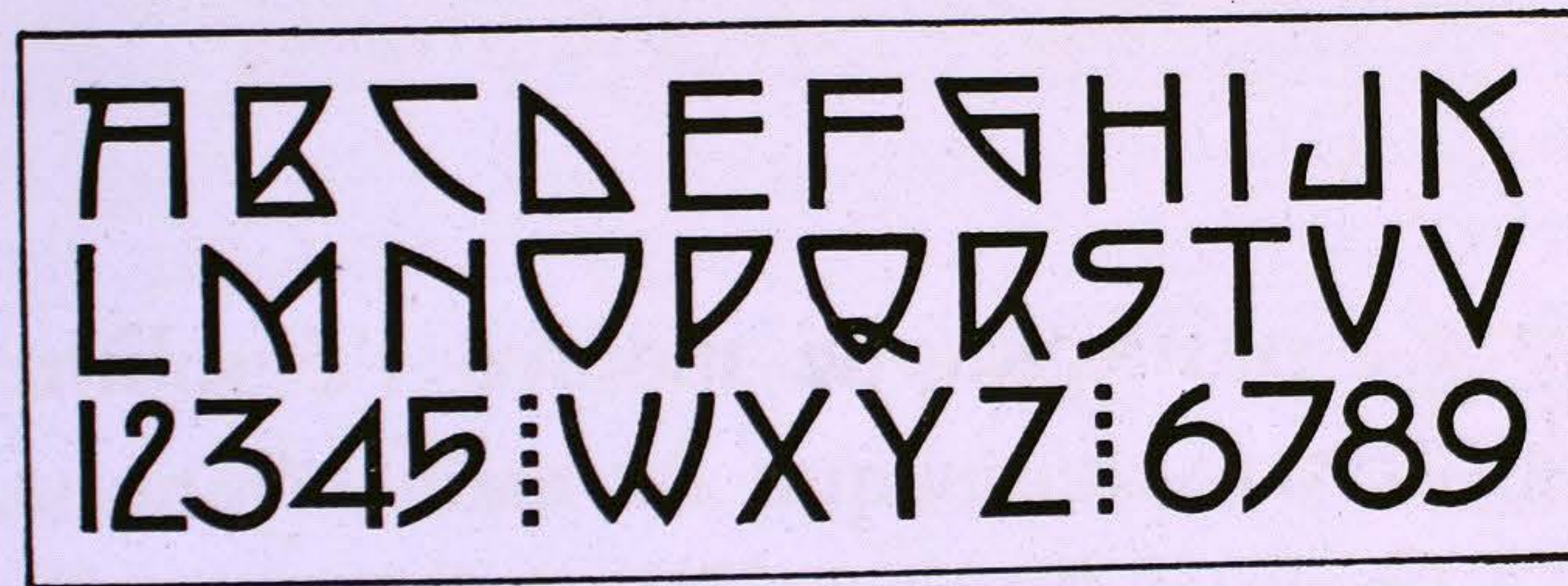


FIG. 93.—By Dard Hunter.

The “new art” letter naturally suggests itself for application in modern craft work in metals or leather, in carving, stenciling or needlework, and in posters and advertising, but its adoption in any design must be considered carefully. An inappropriate use will be offensive, and sometimes even a correct and appropriate use will be criticized by persons who although possibly incapable of judging, feel that they are being imposed upon.



FIG. 94.—A Compressed Form.



## CHAPTER VI

### DESIGN AND COMPOSITION

For the general designer or decorative artist the designing of lettering does not mean the invention of new shapes for the letters, it means simply the selection of suitable styles and their composition into pleasing form. The general shapes were designed long ago, and it would be inordinate presumption for an artist to create a new alphabet and through his design to say to the public: "This is my letter, you must learn to read it."

Mr. Lewis F. Day, the English designer and author, said:\* "There are two conditions on which the artist may be permitted to tamper with the alphabet: whatever he does ought, in the first place, to make reading run smoother, and, in the second, to make writing satisfactory to the eye."

No real letter shapes are ever invented, they are all evolutions. The new work of the continental artists shows a freshness and variety and beauty of line, and an originality of design that may in some cases almost

\* Alphabets Old and New.

be called invention, but as has been said these men are working with an intimate knowledge of the historical forms. It is but natural that in the attempt at novelty some designs miss the requirement of legibility, and others that of beauty, some both; but such forms are not to be taken seriously.

It is scarcely necessary to add here that lettering is essentially flat ornament, and that all the misguided attempts to make letters appear solid by adding shadows, by drawing them in perspective, or by making them of cobble stones or branches of trees like porch furniture, are eminently bad.

The designer's problem is then to select the appropriate combinations and by arrangement and spacing to make a pleasing effect. In this there should be considered (1) the period, (2) the purpose, (3) the material.

The *period* or general historical style of the other parts of the design or ornament must be noted, and the lettering must first of all be appropriate. Gothic



DESIGN AND COMPOSITION

letters for example would of course be out of place in a Renaissance or Barocco design. Similarly, if the



FIG. 95.—“RELIGION,” by E. A. Abbey.  
Copyright 1908, E. A. Abbey  
From a Copley Print, Copyright 1908, by Curtis & Cameron.

lettering is predominant the ornament must fit the letter selected even if the ornament be only a border.

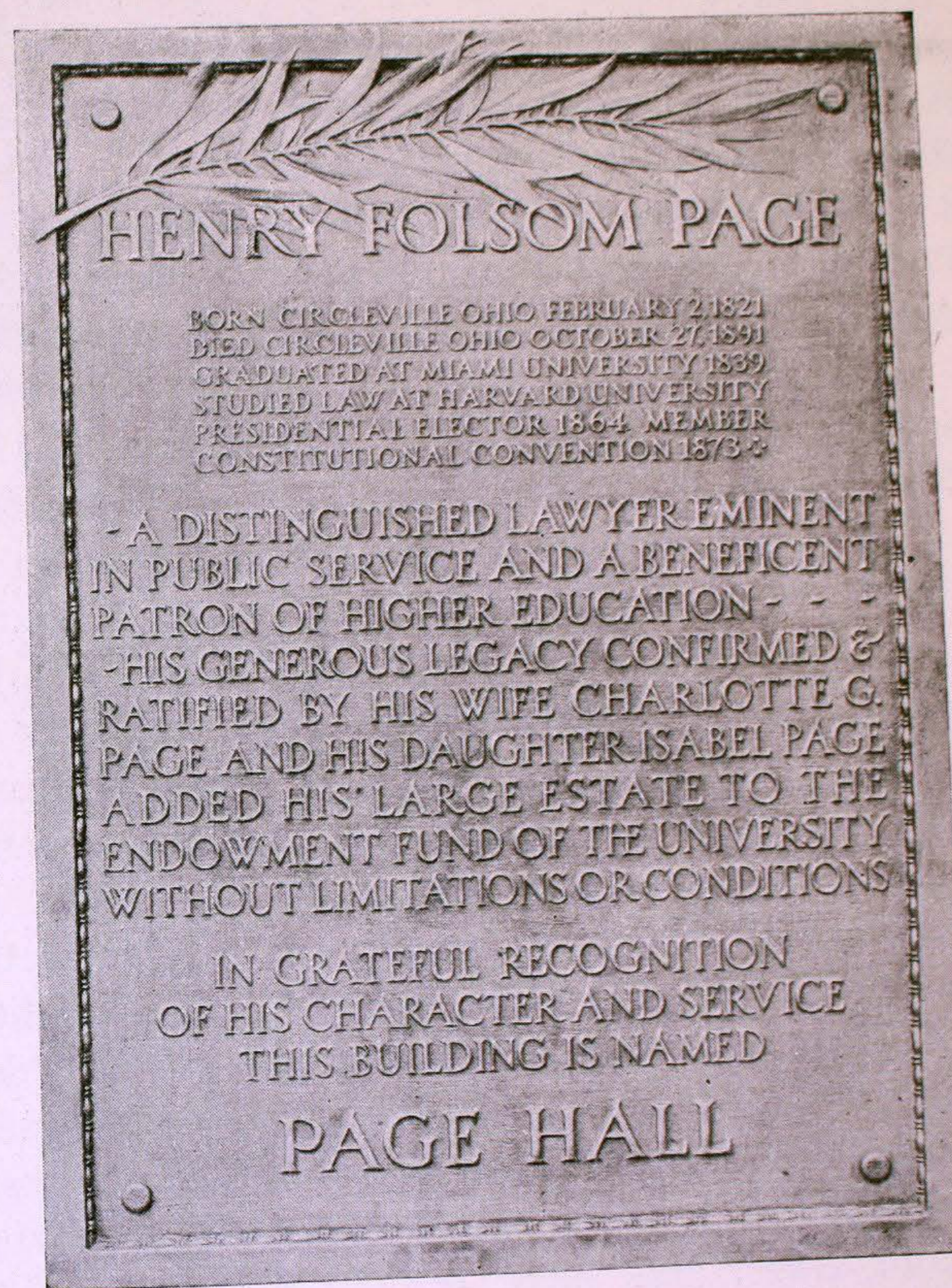


FIG. 96.—Bronze Tablet, by T. E. F.



## DESIGN AND COMPOSITION

On page 72 the letters discussed in Chapter V, and some of their appropriate uses have been set forth in tabular form and may be studied with profit in connection with the choice of letter combinations.

The *purpose* of the inscription is again an important consideration in the selection of the style. Examples will readily suggest themselves, but the key-word again is appropriateness.

Clearness and legibility are of course fundamental conditions, but these are relative terms; they do not necessarily mean the property of being read at a glance, what Dr. v. Larisch calls brutal legibility. The legibility of a sign or advertisement is not necessary nor even desirable in lettering used as ornament. Beautifully designed ornament assumes that the observer has time to examine it and enjoy its detail. An extreme example is shown in Fig. 95, a reproduction of one of the late Edwin A. Abbey's four medallions (Art, Science, Justice and Religion), in the Pennsylvania State Capitol. Mr. Abbey, one of the greatest of modern painters was at the same time the greatest master of lettering in decoration. Not since Albrecht Dürer has there been a great master so familiar with the details and the beauties of lettering.



FIG. 97.—Title Page, by Ralph Fletcher Seymour.



DESIGN AND COMPOSITION

The backgrounds of these medallions have not the legibility of an advertisement, indeed at first sight of the originals one does not notice the lettering at all.



FIG. 98.—By Dard Hunter.

HE IS WISEST WHO HAS  
THE MOST CAUTION.  
HE ONLY WINS WHO  
GOES FAR ENOUGH.

FIG. 99.—Roman, by W. A. Dwiggins.

The *material* upon which the lettering is to be done must of course be considered. In stone it is the shadow

and not the outline that defines the letter (page 40); the same is true to a lesser extent in wood or bronze, or other materials where the surface of the letter is the same color as the background. Stubborn materials such as beaten silver or copper, or cast metals, cannot have the same delicacy of design as engraved

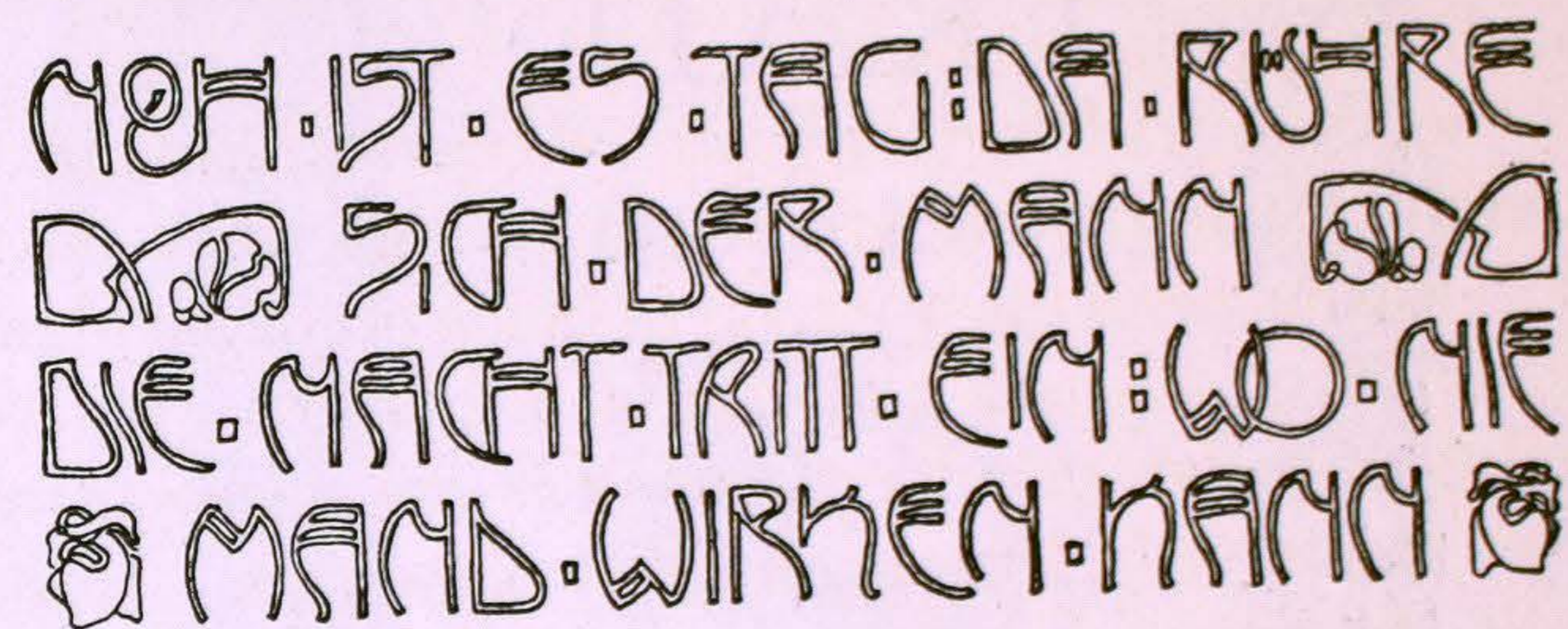


FIG. 100.—By Rudolf Melichar. (Larisch.)

metals. Rough paper demands bolder treatment than smooth paper. Letters for needlework, or leather, or stenciling must be designed strictly with reference to the surface and texture of the materials used.

When these three points have been considered the designer will begin his problem. After deciding upon the general form of the space to be used he will write



DESIGN AND COMPOSITION

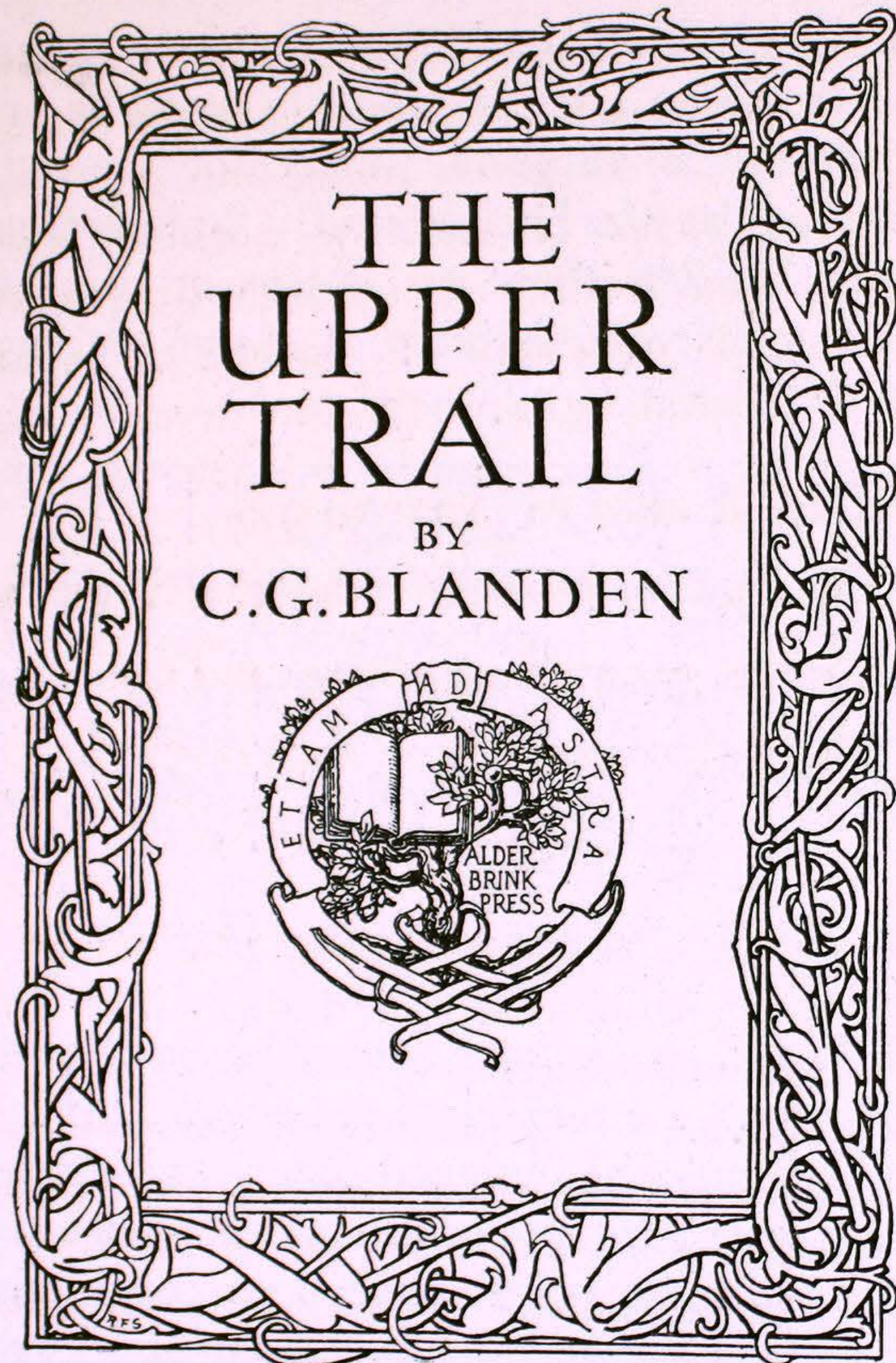


FIG. 101.—Title Page, by Ralph Fletcher Seymour.

out the inscription roughly, selecting the important words or lines for emphasis by size or position, and will



FIG. 102.—BRONZE TABLET, designed by McKim, Mead & White, Archts. Courtesy of Jno. Williams. Inc., N. Y.

make a number of miniature sketches, not more than an inch or two in height, for composition. This arrangement of the relation of white and black is the



## DESIGN AND COMPOSITION

important step, and the full size drawing cannot be started until a satisfactory scheme of composition has been determined.



FIG. 103.—Cover Design of "AN UNOFFICIAL LOVE STORY."  
Published by the Century Co., N. Y.

When the design in the little sketch seems to be balanced and harmonious the final drawing should be laid out carefully in the same proportion, penciling

top and bottom guide lines for each line of letters very lightly. If the design is symmetrical the method of procedure will be as given under the head of title designing on pages 35 and 36, working from the center line, and shifting letters and lines until the desired effect is obtained. If the design is unsymmetrical or massed, suitable treatment will suggest it-

**F**ROM far away we come to you,  
The snow in the street & the wind on the door.  
To tell of great tidings strange and true—  
Minstrels & maids, stand forth on the floor.

FIG. 104.—By W. A. Dwiggins.

self, but in every case the copy should be written down in the adopted arrangement and the letters counted for the approximate spacing.

The artist using letters in design is assumed to know the laws of design and will follow the same principles in the lettering as in any other part of the design. It is, however, more difficult to bring letters under these laws than landscape or figure composition.

When one has become a master of the letters he may



use them to form ornament, but it is safer for the amateur to preserve the historical forms and put his ornament on the background.

On account of the varying widths of Roman letters it is sometimes difficult to space a word to a given length by counting letters from a center line. Fig. 105 illustrates a method of spacing, on the old principle of similar triangles.

Suppose it is required to put the word PROBLEM on the line and to the length  $ab$ . A line  $ac$  is drawn from  $a$  at any angle, another line  $de$  drawn parallel to it and the word sketched in this space, starting at  $a$  and spacing each letter with reference to the one before it, allowing the word to end where it will. The end of the last letter (at  $c$ ) is connected with  $b$  and lines parallel to  $cb$  drawn from each letter, thus dividing  $ab$  proportionately. The proportionate height of  $bf$  is obtained from  $ce$  by the construction shown, after which the word can be sketched in its final position.

After one has become familiar with the letters the line  $ac$  only need be drawn and the proportionate widths marked on it starting at  $a$  as in the word "SPACING."

The final adjustment will be secured only after

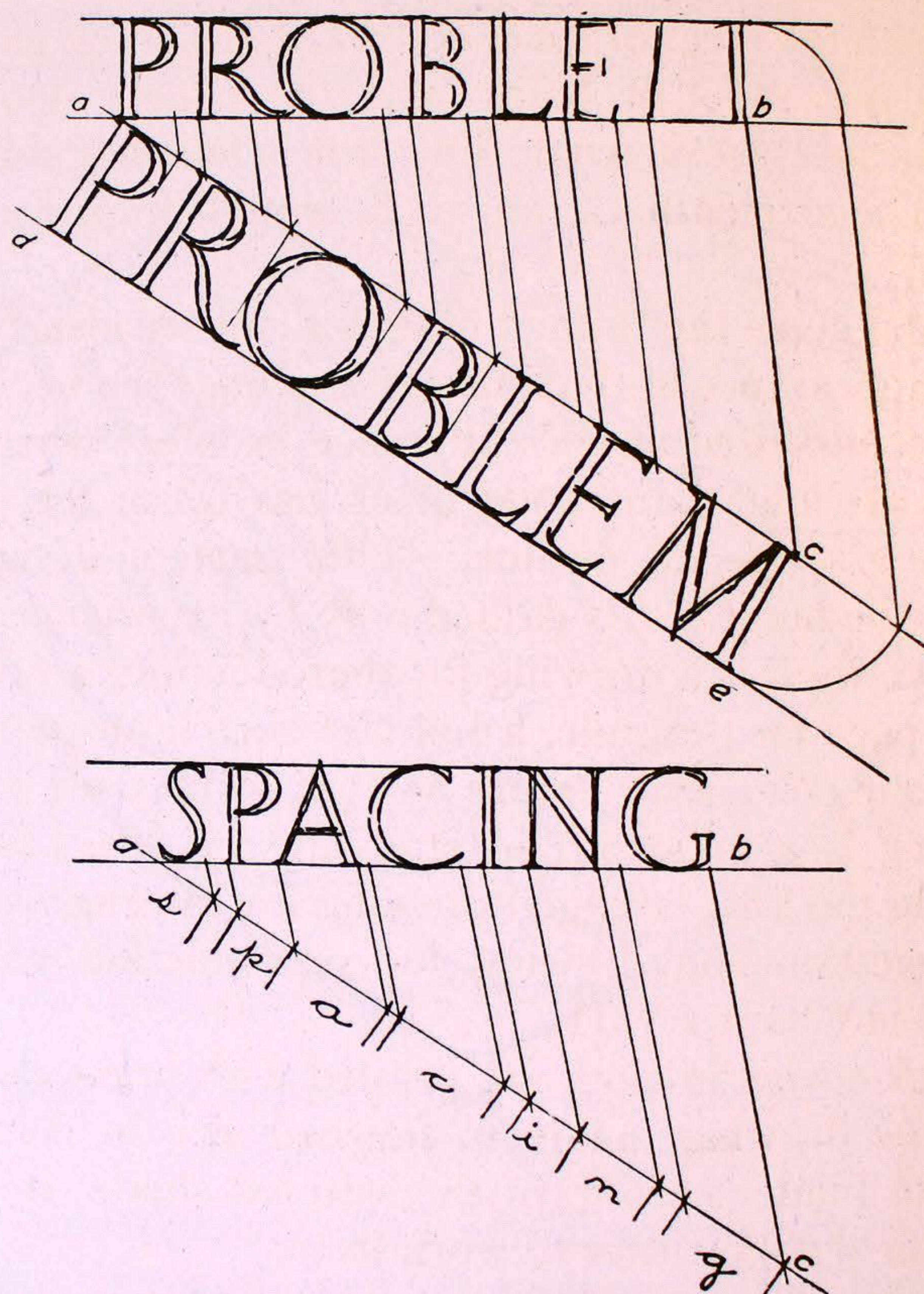


FIG. 105.—Method of Spacing to Given Length.



## DESIGN AND COMPOSITION

each letter has been adapted perfectly to its surroundings, with the areas of space so balanced that no gaping whites nor spots of black mar the effect. Do not hesitate to erase a whole line if it is felt that shifting it even a sixteenth of an inch would improve the design.

At this stage the trained designer can see clearly the exact appearance of the finished drawing; the beginner is often surprised at the difference in effect when the letters are inked, and solid black has taken the place of the gray pencil outline. This part of designing cannot be taught, it is gained only by experience.

If the work is a drawing for reproduction, a printed cover page for example, a full size sketch on paper of the same color and texture as that to be used in the printing is a great aid in studying the effect before making the final enlarged drawing for the engraver.

Suggestions on drawing for reproduction will be found in Chapter VIII.

Book covers in cloth are printed with brass stamps, and the drawing, made to finished size in color on smooth binder's cloth, of the selected shade, is often sent for the die-cutter to work from.

Designs for execution in stone or bronze are made

full size in pencil only, on detail paper or tracing paper and from this transferred to the material.

Fig. 106 is an alphabet designed with Japanese characters (there is no real *alphabet* in that language), for which occasional appropriate use may be found in







FIG. 106.—A Japanese Suggestion.

connection with Japanese design. It may be used in vertical panels. The two fillers on the last line are the well-known symbols, or words, for "good luck" and "long life."

The following page gives a summary, in tabular



## THE LETTERS AND THEIR USES

- |              |   |  |
|--------------|---|--|
| (Propriety)  | <b>OLD ROMAN</b>  | —The “general purpose letter.” For classic and renaissance design. All caps for architectural inscriptions, corner stones, tablets, signs, titles on drawings, initials. All caps or caps and lower-case for posters, book covers, book plates, etc. Permits of wide letter-spacing. |
| (Sincerity)  | <b>UNCIAL</b>          | —All caps, or caps and Gothic lower-case. For ecclesiastical work or with any Gothic design. Initials, versals, illuminating, monograms, etc. Lines close together.  |
| (Dignity)    | <b>Gothic</b>          | —Never all caps. Ecclesiastical work, inscriptions, illuminating, engrossing, work in medieval design; book covers of appropriate titles. May be etched or engraved on metal. Letters must be kept close together.   |
| (Caprice)    | <i>French Script</i>  | —All caps, or better caps and lower-case. For graceful, fanciful, quaint effects. Louis XV, XVI, &c., design. Book covers, ciphers, etc. With Old Roman for posters, titles, headings, etc. Colonial style.  |
| (Legibility) | <b>Roman lower-case</b>   | —Less formal than Roman capitals. A subordinate letter, but words more legible than all caps, hence should be used for sentences, paragraphs or solid pages.   |
| (Boldness)   | <b>COMMERCIAL GOTHIC</b>  | —All caps. Effect crude. Single letters readable at a greater distance than any other style. For bold brush-work, titles on working drawings, signs, inscriptions on stone, etc. Letters may be much compressed or extended but not widely spaced.                                   |
| (Monotony)   | <b>MODERN ROMAN</b>   | —For map work—titles and important features, all caps, less important land features, caps and lower-case. Water features inclined. Used by sign writers and engravers. Inartistic and useless in design.   |
| (Novelty)    | <b>ART NOUVEAU</b>   | —For all work in the “moderne stil.” Etching, stenciling, saw-piercing, arts and crafts work in general. Monograms, marks, posters, etc.   |



form, of the letters used in design, with suggestions as to the appropriate uses for each style. The characteristic designation given to each may seem fanciful, but it is simply an effort to "personify" the styles and to aid in giving that sympathetic acquaintance which the successful designer must feel.

To attempt to go into detail in any of the branches of design in which lettering is used would carry us past



FIG. 107.—By R. F. Seymour.

the limits of this book. The lettering on a book-plate for example is really the most important part of it, but the design of *ex libris* is a subject in itself. Fig. 108 is a book-plate in which letters have been used as design.

Another special subject into which we cannot enter is the art of illuminating, which may be defined as the brightening of a page by the use of colors and gold and silver. As an art it flourished throughout the Middle

Ages, and naturally declined after the invention of printing. In the present revival of lettering, when the beauty of the hand-written page is appreciated more than at any time since printing was invented, the "Art of Illuminating" is coming again to a rightful place among the arts.

Beautiful things may be done easily by the student of lettering, on vellum, parchment, Japan papers or even "cover papers," by designing a page of writing, usually in Gothic or Roman lower-case and illuminating the initials and border. In the simplest design it would mean only the boxing of the initials as in Figs. 55 and 65. Real illuminating always implies the application of metals in addition to color. Pure gold, burnished, should be used, either in the form of shell gold, or leaf. Gold and silver bronzes are useful only for temporary work.

The student wishing to go into illuminating is referred to the books mentioned in the last chapter, particularly to "Writing and Illuminating and Lettering," by Edward Johnston.

It is recommended that the student in practicing lettering for application in any branch of design do not simply copy alphabets, but that he set a definite prob-



DESIGN AND COMPOSITION

lem, as a book cover or title page, and gain from it not only knowledge of the letter forms, but experience in the far more important part, the composition.

The figures in this chapter are given to illustrate good design and composition in a variety of subjects, and should have careful study.



FIG. 108.—Book Plate by Thomas Moring.  
From "One Hundred Book Plates."



## CHAPTER VII

### MONOGRAMS, CIPHERS AND MARKS

One of the severe tests of a designer's skill and originality is in the design of letter combinations in monogram or cipher. It requires not only knowledge of the laws of design, and intimate and sympathetic acquaintance with the letter-forms, but a certain ingenuity and inventive ability—a power to devise combinations where none are evident.

A monogram, strictly speaking, is a combination of two or more letters in which a part of each letter forms part of another. It is common to speak of any combination of interwoven or superimposed letters as a monogram, but if each letter is separate and complete such devices are not really monograms, but ciphers; and although usage and even some dictionary definitions have sanctioned the broader use of the word, we shall make the distinction, mainly for convenience in reference.

As a rule the designing of a monogram requires more ingenuity than a cipher, and is consequently more interesting as a problem, but the result is often

not as pleasing as a well designed cipher. A mongrel combination of the two, in three letter designs, in which two of the letters are monogram and the third a separate letter is, however, to be avoided if at all possible. It should be pure monogram or pure cipher. In this distinction it should not be understood that a monogram is better than a cipher as a design. The device is for ornament, indeed *is* ornament and an essential requirement is beauty. It is very often true that a given combination of letters cannot be made into anything but an ugly monogram, it is very seldom the case that the same combination cannot be combined into satisfactory, if not beautiful, cipher.

The laws of unity, balance, symmetry, etc., will of course apply in this as in any other branch of design. Absolute symmetry about a central axis is not at all necessary, but balance must be maintained.

The period, purpose, and material must again be considered. The *period* or style must be appropriate, and the letters must all belong to the same style. It



## MONOGRAMS, CIPHERS AND MARKS

is absolutely intolerable to mix styles. The desire should be for simplicity and purity of line and composition. The florid "Louis XV" designs sometimes used by engravers are of no value to craftsmen. Excessive ornamentation is an acknowledgment of weakness. The important letter (the last, in initials of persons) is to be prominent by position, size or strength. The monogram to be perfect must read in the correct order.

The *purpose* will again determine the legibility. A trademark or commercial device must read easily, while a private mark may be decipherable with difficulty but both must be decorative, and hence good design.

The *material* on which the device is to be executed will influence the style of letter, the amount of ornament and the character of the background.

Monograms and ciphers may be either *superimposed*, *successive* or *continuous*. In the superimposed design the prominent letter will be emphasized by its size, by the quality of line composing it or by its position on top. The successive and continuous designs will read naturally from left to right, the continuous being formed in one stroke and therefore having only two

free ends. Sometimes in the successive form the last letter is made much larger than the others and placed in the middle.

Care must be taken, especially in three-letter combinations, not to get an "accidental" letter, as such an event will destroy the value of the design however good it may be.

It is permissible to reverse any letter but the last. The device of the Rookwood Pottery, Fig. 117, is a well-known example. Many of these are found in the French designs of the seventeenth century, when perfect symmetry about the vertical axis was particularly sought for.

In comparatively rare cases a reversible monogram reading either from top or bottom can be made. These are of particular value in applied design in craft work. Fig. 109 illustrates possibilities with all the letters of the alphabet.

In attacking the problem the shape of the space is the first consideration. If the monogram is to be enclosed in a circle or other geometrical outline it must be arranged to fit the space, and even if to be used as free ornament its proportions must be designed for the place it is to occupy.



MONOGRAMS, CIPHERS AND MARKS

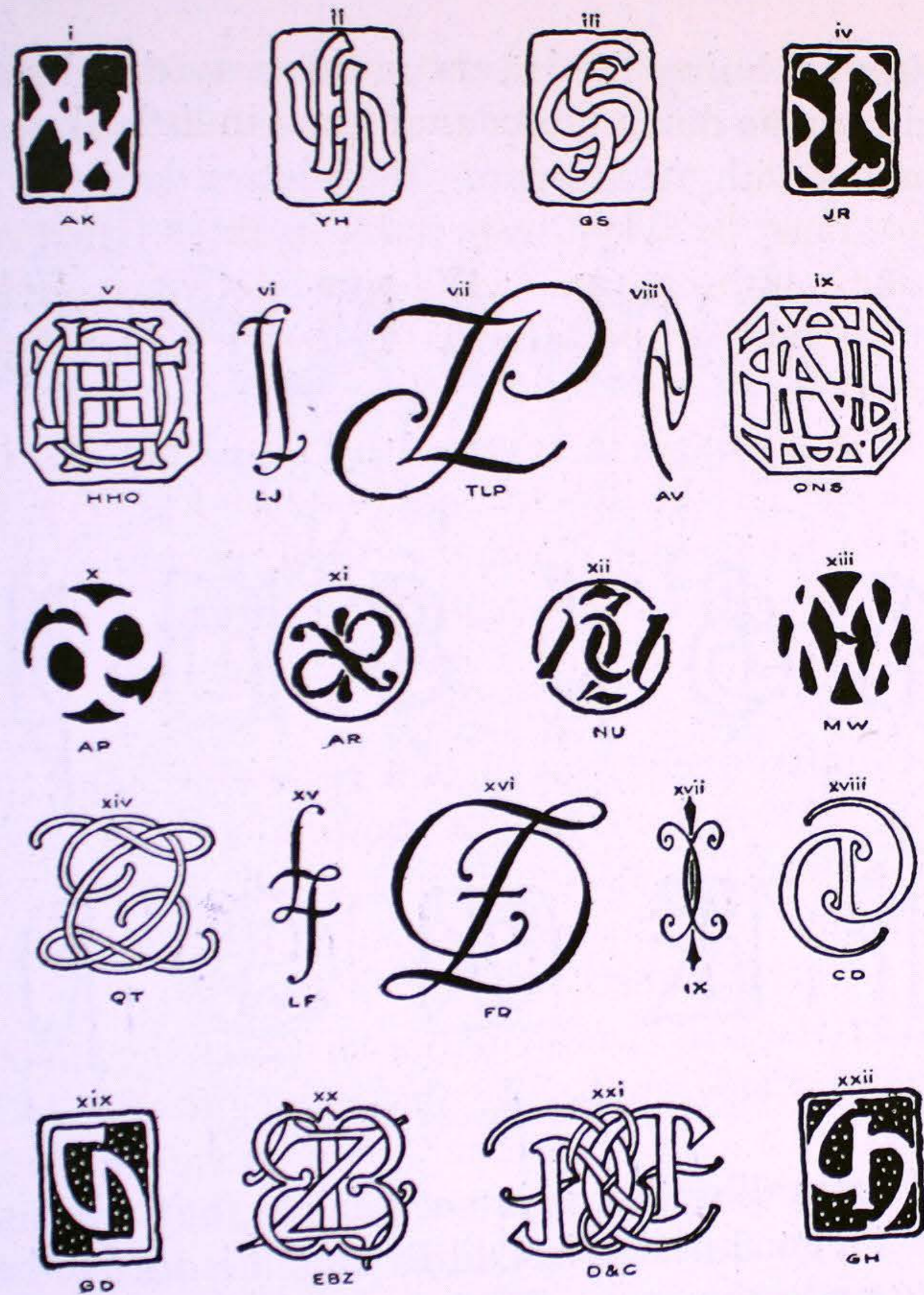


FIG. 109.—Reversible Monograms and Ciphers.

The letters to be combined should be set down and studied. A H I M O T U V W X Y are symmetrical, and several of them reversible (upside down) along with N S and Z. If the given letters are included in this group it is evident that the first form, a symmetrical superimposed device, is an easy solution. Fig. 110.

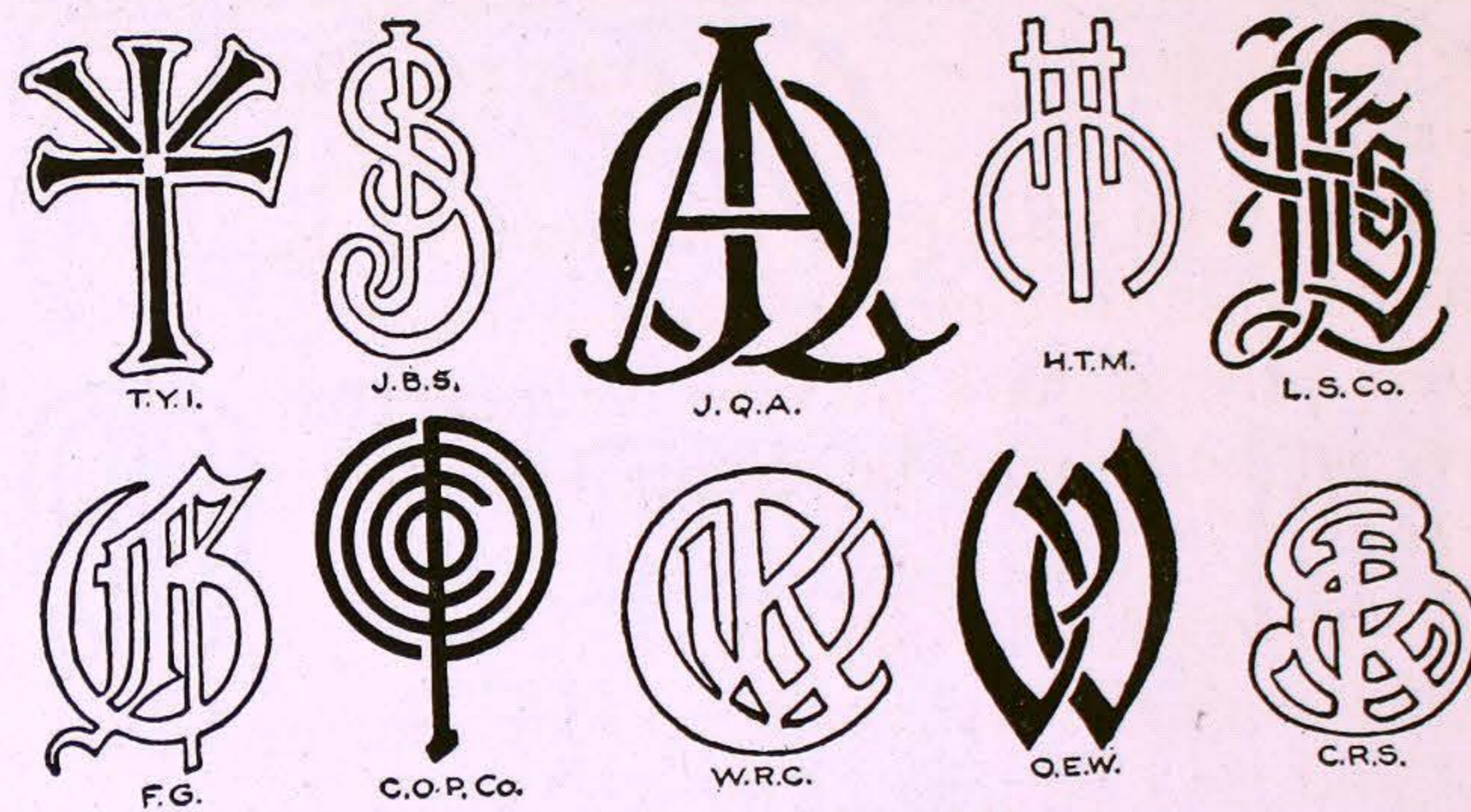


FIG. 110.—Superimposed Forms.

Pairs such as CD, CO, GD, EB (script) and doubles as HH, OC, OD, etc., balance left and right and suggest the possibility of symmetrical arrangement in either the first, or second, the successive, form, Fig. 111. This form is possible oftener than the first, and is usually more legible.



## MONOGRAMS, CIPHERS AND MARKS

If strict monogram is being striven for, a careful study should be made to find common strokes. Thus in M R L, Fig. 112, the M has four possible lines for use as stems for the R and L. Evidently using the first stem would give a faulty result, as in (i), reading R M L.

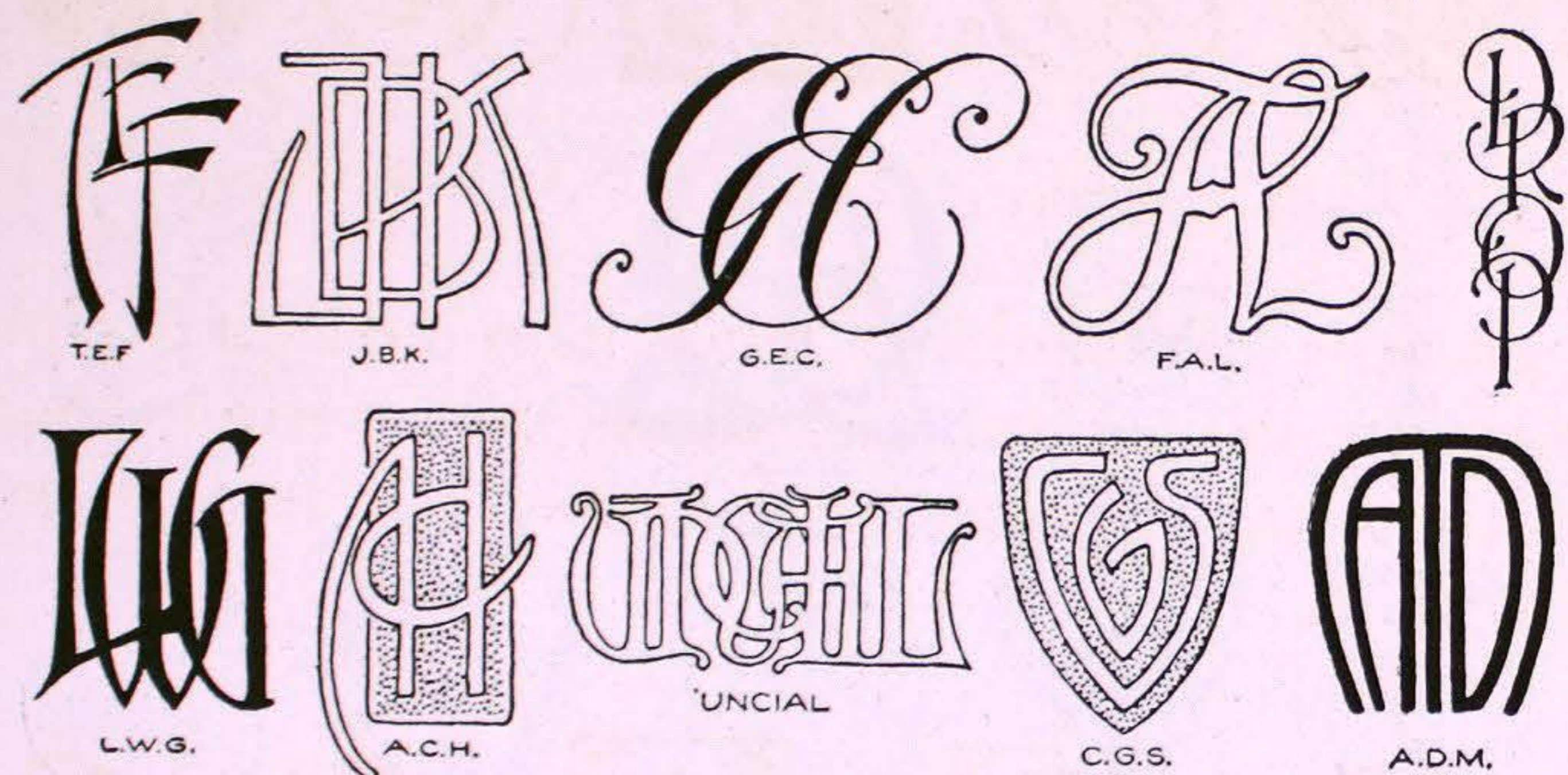


FIG. 111.—Successive Forms.

The free ends of each letter should be studied with reference to the possibility of connecting them into continuous monogram, Fig. 113. Sometimes free ends may be improvised as in E B. A vertical script is a useful letter for continuous forms, Fig. 115. For autograph monograms the continuous device is particularly good.

After analyzing the letters in this way the designer should try the different styles of letter in little sketches, beginning with the Roman. This letter does not per-

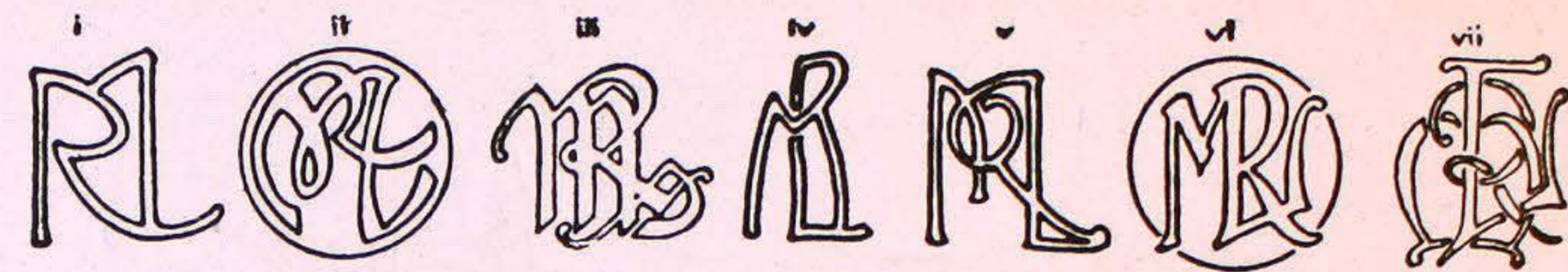


FIG. 112.—M. R. L. Illustrating Common Strokes.

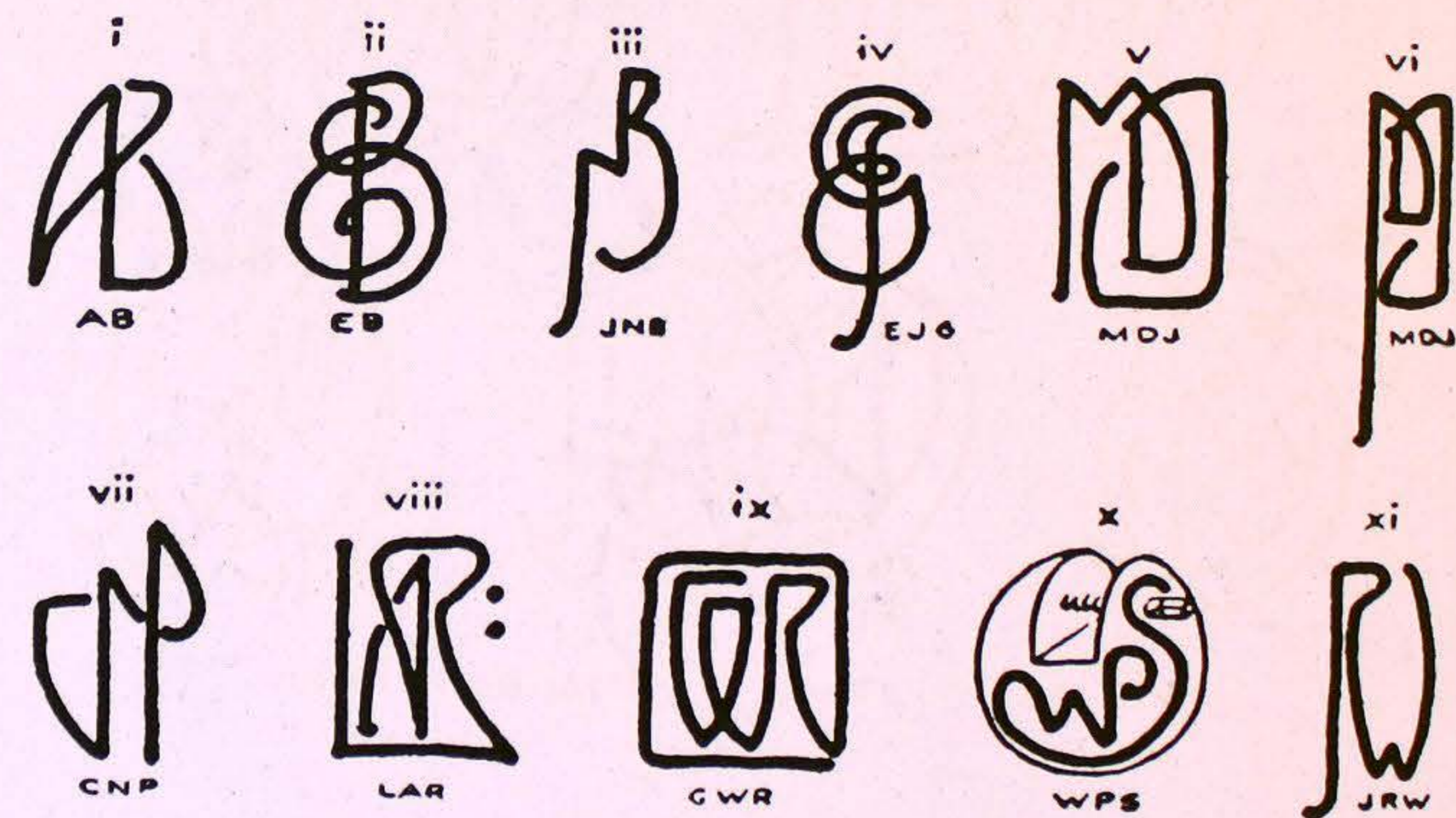


FIG. 113.—Continuous Monograms.

mit of many liberties, it is not flexible, but when one does get a good design in Old Roman it is sure to have dignity and character. If after a half dozen trials no



MONOGRAMS, CIPHERS AND MARKS

possibilities seem to suggest themselves pass on to the Uncial, which on account of its admitting of more variation is much more amenable to treatment; and probably with the given letters there will be several

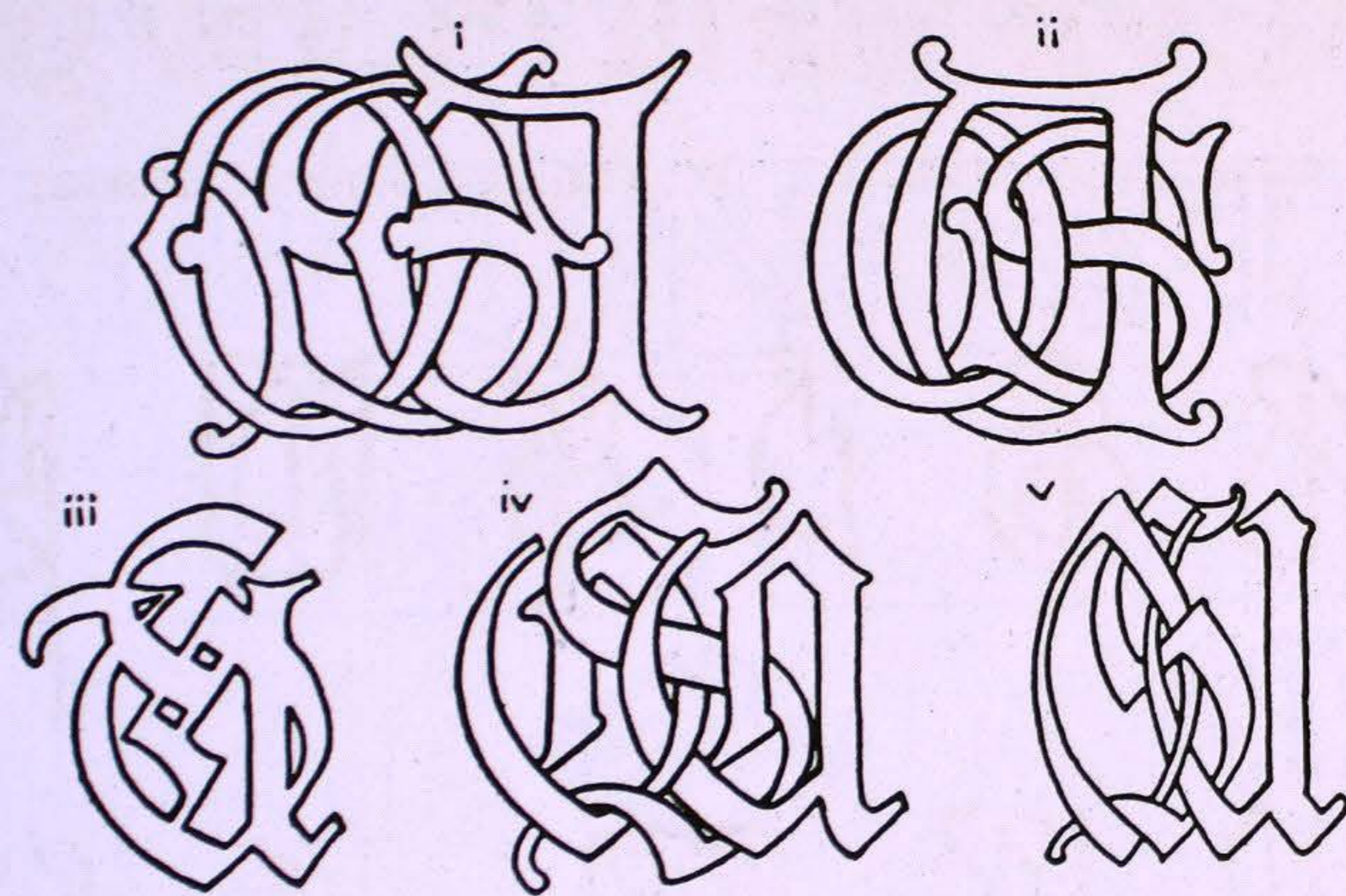


FIG. 114.—O. S. U. Uncial and Gothic.

suggested Uncial combinations, in both monogram and cipher, Fig. 114.

Gothic may be tried next. Old English capitals are themselves sufficiently complicated as not to invite further complication, but the simpler forms can often

be worked into acceptable design in either monogram or cipher.

The next form, script, is the favorite letter of the



FIG. 115.—Script, Designed by A. A. Turbayne.

engravers. It combines much more easily into cipher than into monogram, and allows such freedom that it is safe to say that any combination may be done passably in it.

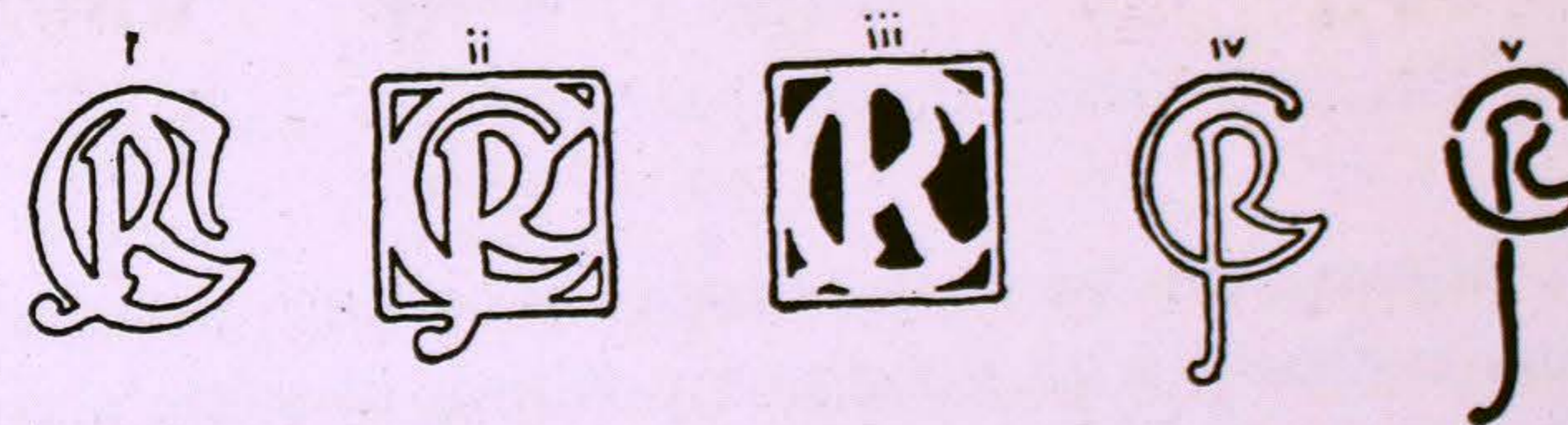


FIG. 116.—J. R. C. Various Treatments of the Same Monogram.

The modern, "new art," letters offer the most attractive field for the ingenious monogram designer. The variations of form which they present, and the



## MONOGRAMS, CIPHERS AND MARKS

possibilities for originality and individuality make them the most interesting of all to play with. This style naturally suggests itself for use in the art-crafts, in etched, pierced, and stenciled work. Striking effects are secured by cutting the letters from a black background. Often a pleasing device, although not a



FIG. 117.—Various Historical and other Devices.

real monogram may be made by using separated letters enclosed with good composition in some shape, Fig. 118.

The modern cachet or mark bears much the same relation to an individual that a trade-mark does to a business house, being the stamp of individuality with which he may mark his productions or possessions.

It may be a monogram, or initial, or even a device without letters; it need not be legible but it must be distinctive. The possession of such marks is very common among the literary and artistic people of France and Germany.

M. George Auriol is the acknowledged master of

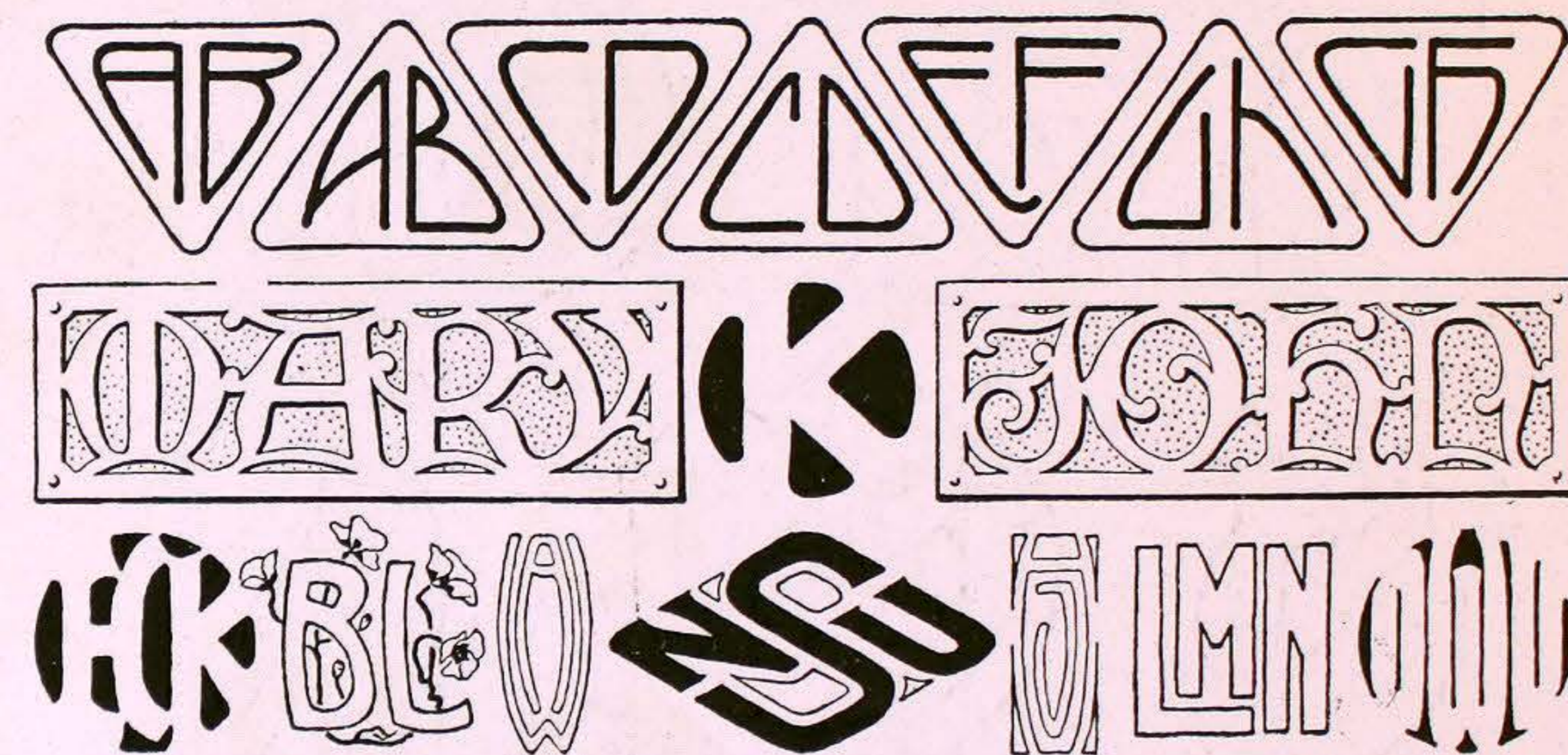


FIG. 118.—Designs with Separate Letters.

this decoration, and his published drawings of these designs form two most fascinating little books. Fig. 119 shows examples of his style, the first device being his own characteristic signature.

The illustrations of this chapter are selected from monograms designed by the authors (except as cred-



## MONOGRAMS, CIPHERS AND MARKS

ited), and, with some exceptions, are in actual use; and it may be said for the benefit of the beginner who may think his initials are impossible of combination, that

while some unite easily and others with difficulty, a satisfactory monogram or cipher in some style is possible with any two or three letter combination.

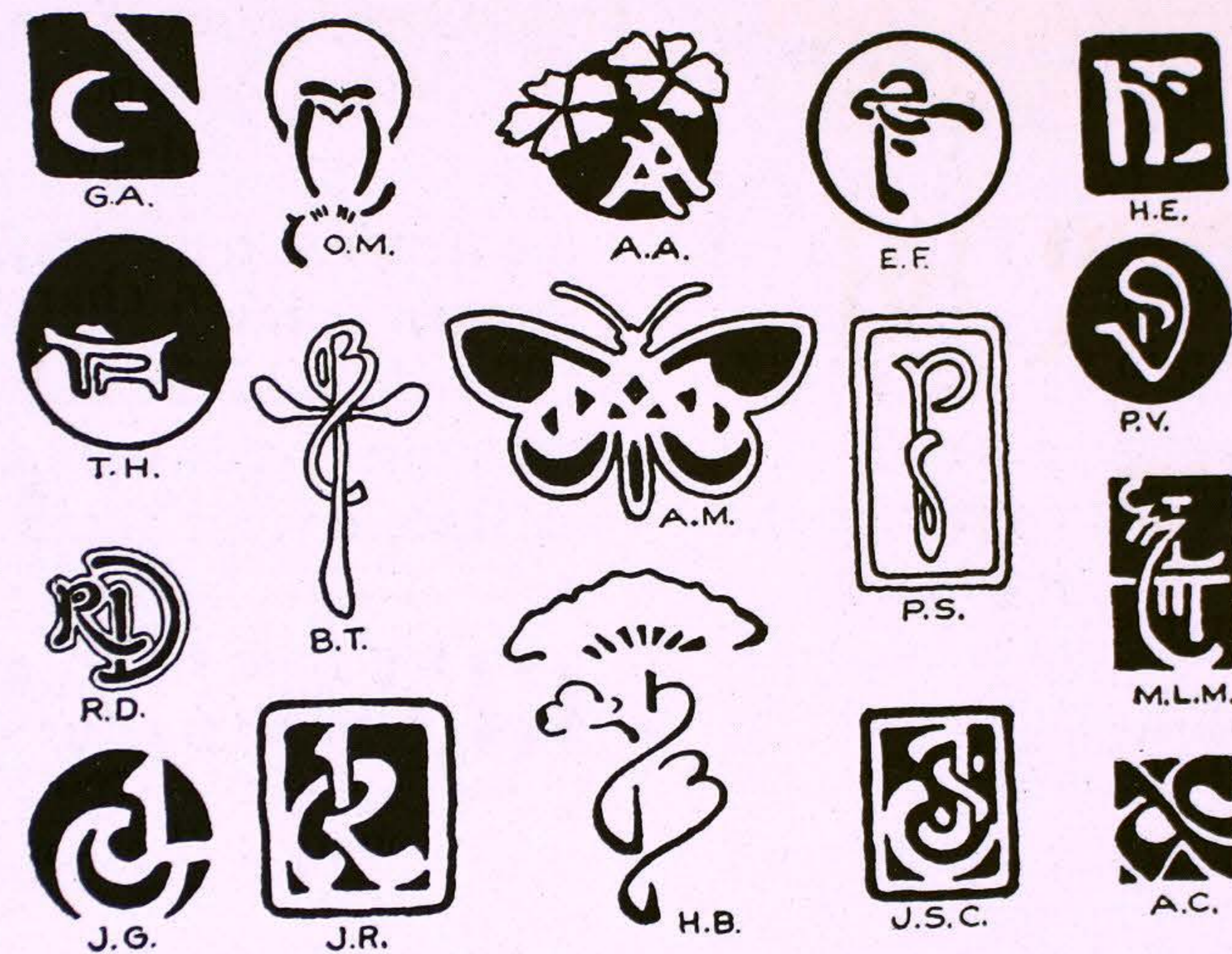


FIG. 119.—Designs by George Auriol.



## CHAPTER VIII

### DRAWING FOR REPRODUCTION

As the greatest amount of designed lettering done is for reproduction the student should make himself familiar with the modern graphic processes and the requirements necessary in drawing for them. Line drawings are usually reproduced by the photo-mechanical process known as zinc etching, in which the drawing is photographed on a process plate, generally with some reduction in size, the negative film reversed and printed so as to give a positive on a sensitized zinc plate (when a particularly fine result is desired a copper plate is used), which is etched with acid leaving the lines in relief, and giving, when mounted type-high on a wood base, a printing block which can be used along with type on an ordinary printing press. Wash drawings and photographs are reproduced in a similar way on copper by what is known as the half-tone process, in which the negative is made through a ruled "screen" in front of the plate, which breaks up the tints into a series of dots of varying size.

Drawings for zinc etching should be made on com-

paratively smooth white paper (Bristol board is generally used, and tracing cloth works very successfully), in black drawing ink, and preferably larger than the required reproduction. If it is desired to preserve the hand-drawn character and quality of the original the reduction should be very slight, but if a very smooth effect is wanted the drawing may be as much as three or four times as large as the cut. The best general size is one and one-half times, linear. A reducing glass, a concave lens mounted like a reading glass, is sometimes used to aid in judging the effect of the drawing on reduction. If lines are drawn too close together the space between them will choke in the reproduction and mar the effect.

As suggested on page 71 a sketch the size of the finished cut should usually be made to work from. The proportions of this sketch may be enlarged to the desired size by proportional dividers, or by making a paper scale, or by diagonals as illustrated in Fig. 120. If a diagonal  $ab$  across the original sketch  $afbg$  be



DRAWING FOR REPRODUCTION

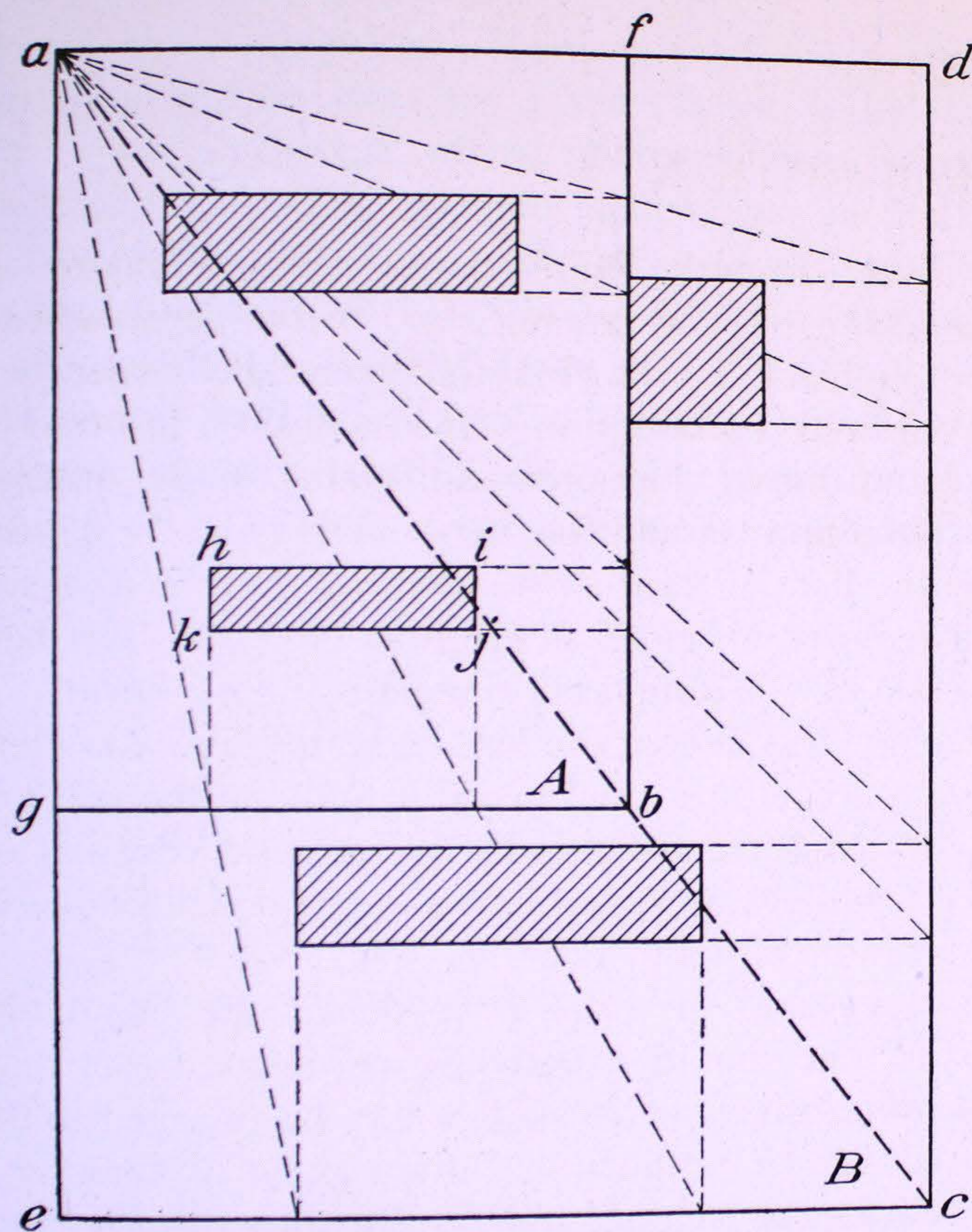


FIG. 120.—Method of Enlarging a Drawing.

extended, lines  $cd$  and  $ce$  may be drawn from any point on it, as  $c$ , and will enclose a rectangle  $adce$  of the same proportion as the original.

A line of letters, as the block  $hijk$ , may be located both for size and position by extending its sides to the edges of the original sheet and drawing lines through these points from the corner  $a$ . Where these lines intersect the edges of the enlarged sheet will give points from which the enlarged block may be located, as shown.

If more than one color is to be used, for example, if some letters or parts of the ornament are to be red, these parts may be drawn with an opaque vermilion, which will photograph the same as black, or they may be drawn in black and the color indicated on the margin. The engraver will make two plates from the same negative, and will block out the colors on the zinc, giving two plates, one for the red and one for the black, of exactly the same size, and which will consequently register accurately in the printing.

One very convenient thing not permissible in other work, may be done on drawings for reproduction—any irregularities may be corrected by simply painting out with French white (*blanc d'argent*). If it is



## DRAWING FOR REPRODUCTION

desired to shift a line after it has been inked it may be cut out and pasted on in the required position. The edges thus left will not trouble the engraver as they will be tooled out when the etching is finished.

Often time may be saved, and in many cases effects not possible in drawing may be secured with the aid of the engraver. If a design or border is symmetrical about a center line, one-half only need be drawn and the engraver can reverse the design for the other side.

Plates may be "grained" to imitate very closely charcoal or pencil texture, and tints, backgrounds and textures may be added by the engraver's use of the method of mechanical shading commonly known as the Ben Day process. In this the drawing is made in outline, with the patterns to be used indicated on it by numbers. The shading films, which come in a great variety of stipples, cross-hatchings, grains and lines, are inked and applied directly on the plate, or in some cases on the drawing.



## CHAPTER IX

### BIBLIOGRAPHY

The title of this book indicates its limits. For the student who expects to go into the subject thoroughly and seriously it is only an introduction. The aim has been not to multiply examples, but to give an adequate number of practical working styles for the ordinary draftsman and designer, with examples of composition in sufficient variety to illustrate the text. An indexed clipping file of good work in lettering and design should be started, and the habit of studying critically the work found in the magazines and other artistic publications cultivated.

The following list of books is given to aid those who will pursue the study. Some of these will be found in most public libraries. Those marked \* would be of particular value in the designer's library.

#### (1) HISTORY, ETC.

Clodd, Edward—The Story of the Alphabet. Appleton, 1907.

An interesting little book on primitive writing, hieroglyphics, etc., disputing some theories of Taylor.

De Vinne, Theo. L.—Plain Printing Types. The De Vinne Press, 1900.

A history of printing types by the best American authority.

Gress, Edmund G.—The Art and Practice of Typography. N. Y. The Oswald Publishing Co., 1910.

A history of printing, with reproductions of the work of early masters, and excellent chapters on composition, with many modern examples. 160 pp., over 600 ill. and specimens.

Skinner, H. M.—The Story of the Letters and Figures. Orville Brewer, Chicago, 1905.

A popular story for boys and girls, of the development of letters from the Phoenician. Good for supplementary school reading.

Strange, Edward F.—\*Alphabets. Geo. Bell & Sons, 1898.

A valuable book, both historical and practical. 298 pp. 200 ill.



## BIBLIOGRAPHY

- Taylor, Isaac—The Alphabet. Its Origin and Development. 2 v. 2d ed. London, 1899.  
The most exhaustive and authoritative work on the subject.
- Thompson, Sir E. M.—Handbook of Greek and Latin Palaeography. Appleton, 1893.  
A standard work on the history of writing.
- (2) PRACTICAL BOOKS FOR DESIGNERS
- Brown, F. C.—\*Letters & Lettering. Bates & Guild, 1902.  
By an architect. A collection of alphabets and examples with accompanying text. 214 pp. 211 ill.
- Day, Lewis F.—\*Alphabets Old and New. 3rd ed. Revised and enlarged. Scribners, 1911.  
An Essay on "Art in the Alphabet," and nearly 200 working alphabets. 256 pp.
- Day, Lewis F.—\*Lettering in Ornament. Scribners, 1906.  
Many historical examples on stone, wood, bronze, etc. Chapters on monograms, ciphers, conjoined letters, initials, etc. 218 pp. 186 ill.
- Johnston, Edward—\*Writing & Illuminating & Lettering. The Macmillan Company, 1906.  
In the Artistic Crafts series of Technical Handbooks. Complete practical instruction in preparing reed and quill pens, formal writing, manuscript books, laying and burnishing gold, etc. 500 pp. 218 ill. 23 pl.
- Larisch, R. von—\*Unterricht in Ornamentaler Schrift. Second ed., enlarged. Wien, 1909.  
Dr. v. Larisch is the recognized European authority on modern letters.
- Stevens, Thos. W.—\*Lettering for Printers & Designers. Inland Printer, Chicago, 1906.  
An artistic and useful little book, particularly for Roman lower-case. 117 pp. 65 ill.
- Strange, E. F.—\*Alphabets (See 1).
- (3) COLLECTIONS OF ALPHABETS, ETC.
- Johnston, Edward—\*Manuscript and Inscription Letters. London, John Hogg, 1909.  
A valuable working supplement to Writing & Illuminating & Lettering. 16 pl.
- Koch, Rudolf—Klassische Schriften, Dresden.  
25 plates illustrating the letters of Gutenberg, Dürer, W. Morris, Koenig, Hupp, etc.
- Larisch, R. von—Beispiele Künstlerischer Schrift. Anton Schroll, Wien. 3v., 1900-1906.  
Drawings illustrating composition, by well known artists in their characteristic letters.



## BIBLIOGRAPHY

- Lehner, Jos. and Mader, Ed.—*Neue Schriften und Firmenschilder Im Modernen Stil*. Wolfrum & Co., Wien, n. d.  
A collection of Art Nouveau composition. Beautiful color schemes. 60 pl.
- Petzendorfer, L.—\**Schriften Atlas*. Jul. Hoffman, Stuttgart, 1898.  
A varied collection of type specimens and drawn alphabets and initials. 123 pl.
- Petzendorfer, L.—\**Schriften Atlas. Neue Folge*, Stuttgart, 1905.  
Newer type specimens, initials, monograms and examples of composition in Art Nouveau. 141 pl.
- Rhead, G. W.—*An Alphabet of Roman Capitals, together with three sets of lower case letters, etc.* B. T. Batsford, London, 1903.  
Old Roman from Trajan's column. 26 plates, one letter 7 in. high on each plate.
- Smith, P. J.—*Lettering and Writing*. B. T. Batsford, London, 1908.  
By a pupil of Edward Johnston. 15 plates of pen drawn Roman.
- Turbayne, A. A.—*Alphabets and Numerals*. Van Nostrand, 1904.  
17 pp. 27 pl. Large letters.
- Weimar, William—*Monumental Schriften*. Gerlach und Schenk, Wein, 1898.  
68 plates of inscriptions on stone, bronze and wood.
- (4) ILLUMINATING
- Bradley, John W.—*Illuminated Letters and Borders*. Board of Education, South Kensington, 1901.  
A history of the Art of Illumination, and list of manuscripts in the Victoria and Albert Museum. 175 pp. 19 pl.
- Bradley, John W.—*Illuminated Manuscripts*. London, Methuen & Co. 1905.  
An interesting and scholarly story of the art of illumination. 16mo., 290 pp. 21 pl.
- Delamotte, F.—*A Primer of the Art of Illumination*. London, Crosby, Lockwood & Son, 1897.  
43 pp. 20 pl.
- Johnston, E. F.—\**Writing & Illuminating & Lettering* (See 2).
- Herbert, J. A.—*Illuminated Manuscripts*. Putnam, 1911.  
An exhaustive history of manuscript books with illustrations in color. 51 pl. 356 pp.
- Laing, J. J.—\**Manual of Illumination*. Windsor & Newton.  
A practical little handbook. 100 pp.



## BIBLIOGRAPHY

- Laing, J. J.—\*Companion to Manual of Illumination. Windsor & Newton.  
“Borders, capitals, texts and detail finishings, etc.”  
28 pl.
- Middleton, J. H.—Illuminated Manuscripts in Classical and Mediaeval Times; their Art and their Technique. Cambridge, 1892.
- Petzendorfer, L.—Schriften Atlas (See 3).  
Contains many illuminated initials.
- Quaile, Edward—Illuminated Manuscripts. Liverpool, Henry Young & Sons, 1897.  
An interesting sketch of their origin, history and characteristics. 149 pp. 26 pl.
- Robinson, S. F. H.—Celtic Illuminative Art. Dublin, 1908.  
A beautiful book with full sized reproductions from the Gospel books of Durrow, Lindisfarne and Kells. Colored plates.
- Stokes, Margaret.—Early Christian Art in Ireland. Board of Education, South Kensington.  
An illustrated handbook.
- Whithard, Philip.—Illuminating and Missal Painting, London, Crosby, Lockwod & Son, 1909.  
A practical treatise on materials and methods of working. 145 pp.

The older books, such as Shaw, Humphreys and The Art of Illuminating by Wyatt, now out of print, may be found in many of the large libraries.

### (5) MONOGRAMS

- Auriol, George—\*Le Premier Livre des Cachets Marques et Monogrammes. Paris, Librairie Centrale des Beaux-Arts, 1901.  
A most artistic little book.
- Auriol, George—\*Le Second Livre des Cachets, Marques, Monogrammes et ex Libris. Paris, Henry Floury, 1908.  
Uniform with the first book.
- Benker, H.—Das Monogramm der Gegenwart. Plauen, C. Stoll.  
20 plates of monograms especially for needle work.
- Bergling, J. M.—Art Monograms and Lettering. Chicago, 1912.  
A portfolio of modern designs particularly for engravers.
- Day, L. F.—\*Lettering in Ornament (See 2).
- Diebener, Wilhelm—Monogramme und Dekorationen. Leipzig, 1910.  
“Für Uhren und Edelmetall-gravierung.” 145 plates of Monograms and Devices.



## BIBLIOGRAPHY

- Nowack, Hans—Das Moderne Monogramm. Wien, Ferd Schenk.  
26 plates containing 676 two-letter ciphers.
- Petzendorfer, L.—Schriften Atlas, Neue Folge (See 3).  
Contains about 20 plates of modern monograms.
- Turbayne, A. A.—\*Monograms & Ciphers. The Caxton Co., London, 1909.  
135 plates containing all the two-letter and many three-letter combinations drawn in large size, with 27 plates of alphabets and numerals.

### (6) ENGINEERING LETTERING

- Jacoby, Henry S.—A Text-Book on Plain Lettering. McGraw-Hill Book Company, New York.  
3d ed., 1909.  
Written for Civil Engineers. Elaborate rules for mechanical spacing. 82 pp. 48 pl.
- Reinhardt, C. W.—Lettering for Draftsmen, Engineers and Students. Van Nostrand, 1895.  
"A practical system of freehand lettering for working drawings." 23 pp. 8 pl.
- Sherman, C. E.—The Theory and Practice of Lettering. Midland Publishing Company, Columbus, Ohio. 6th ed., 1904.  
Showing in detail the construction and strokes of

- modern Roman Capitals, and stump letters. One of the original text-books on the subject. 49 pp. 11 pl.
- Wilson, Victor T.—Free-hand Lettering. John Wiley, New York, 1903.  
Development of letter-forms and composition by the sketch-method. 95 pp. 23 pl.
- Daniels, Fish, Esser, Valpey, Parsons, Copley, Meinhardt, Cromwell and many others have prepared text-books or collections of alphabets for draftsmen.

### (7) SHOW CARD AND COMMERCIAL LETTERING

- Dauids, Thaddeus—Dauids' Practical Letterer. New York, 1903.
- Heyny, William—Modern Lettering, Artistic and Practical. Comstock, 1909.
- Strong, Chas. J.—The Art of Show Card Writing. Detroit School of Lettering, Detroit, Mich., 1907.

### (8) SCHOOL WORK, ETC.

- Bailey, Henry T.—The School Arts Alphabet Sheets. School Arts Press, Boston, Mass.  
Every public school art teacher should have this set.
- Bull, Schuyler—The A B C of Lettering for Public Schools. Rochester, N. Y., 1908.  
Four plates and sheet of instructions.



## BIBLIOGRAPHY

Shaylor, H. W.—Book of Alphabets for Use in Schools.  
Ginn & Co., 1908.

A 24-page copybook of good forms.

The cards and leaflets issued by Alfred Bartlett, Boston; Paul Elder, San Francisco, and other publishers give beautiful and suggestive examples of lettering in design.

Photographs of Trajan's Column and other classical inscriptions may be had from the Director of

Victoria and Albert Museum, S. Kensington,  
London.

This should not be considered as a complete bibliography, but it contains most of the better known works in the various divisions. Many books out of print and rare are not included, as they would not ordinarily be accessible. The list contains sufficient titles to guide in the selection of a reference library for school or individual.



## INDEX

- Abbey, E. A., 66  
Accidental letter, 76  
Alcuin of York, 2  
Aldus Manutius, 59  
Alphabets, books of, collections of, 86  
Ampersand, 14  
Applied design, 71, 72  
Appropriateness, 64  
Architects' use of letters, inscription lettering,  
    40, 41  
    office lettering, 39  
Architectural drawing, contents of title, 34  
    forms of titles, 37  
Art-crafts, 63, 72, 80  
Art Nouveau, 3, 61, 62, 63  
    uses of, 63, 72  
Auriol, George, 62, 80, 81  
Autograph monograms, 78  
  
Beginners' mistakes, 29  
Ben Day films, 84  
Bibliography, 85  
Blackletter, 3, 52  
  
Blank title forms, 38  
Block letter, 19  
Bold face, 4  
Book covers, 71  
Book of Kells, 2, 51  
Book plates, 73  
Books on lettering, 85  
Boxed title, 37, 38  
Brackets, 6, 8  
Broad pens, 44, 46, 47, 50, 54, 55  
Bronze tablets, 41, 65, 68, 71  
    shrinkage, 41  
Brush letters, 19, 44  
  
Cachets, 80  
Caroline minuscule, 2  
Celtic, 2, 51  
Charlemagne, 2  
Ciphers, 75  
Civil engineers, 15  
Colonial composition, 60  
Color in reproduction, 83  
Commercial Gothic, 3, 19  
  
Commercial Gothic alphabets, 20, 21, 23  
    for signals, etc., 41  
    uses of, 72  
Composition, 64  
    Colonial, 60  
    freedom in, 42  
    Reinhardt in, 29  
Compressed letters, 4, 29, 43  
Contents of titles, 34  
Continuous monograms, 78  
  
Day, Lewis F., 64  
Della Robbia type, 47  
Design, in lettering, 64  
    of monograms, 75  
    laws of, 69  
    symmetrical, to reverse, 84  
    with separate letters, 80  
Development, 1  
Devices, historical, 80  
    separate letter, 80  
Drawing instruments, 9  
Drawings, for reproduction, 82



## INDEX

- Drawings, to enlarge, 82  
to correct, 83  
Drop line, 46  
Dürer, Albrecht, 52, 58, 66  
Dwiggins, W. A., 52, 67, 69
- Ellipses, 14  
Engineering lettering, books on, 89  
Engraving, 82  
Engrossing, 56  
Evolution, 1  
Extended letters, 4, 24
- Fillets, 6, 8, 14  
Flourishes, in Gothic, 57  
in script, 60  
Follows, G. H., 25  
Fractions, 29  
Freedom in composition, 42, 43  
French script, 59  
uses of, 72
- General proportions of letters, 4  
Geological survey, 15, 41  
Geometrical construction, 9, 14  
German text, 3, 53, 58  
Gothic, 52, 62  
alphabets, 55, 56, 57, 58  
commercial (see Commercial Gothic)
- Gothic, in monograms, 79  
position for writing, 54  
uses of, 58, 72  
Government Bureaus, 15
- Half-tone process, 82  
Half-uncial, 51  
Henry VII, tomb of, 7  
Historical devices, 80  
History, books on, 85  
Hunter, Dard, 63, 67
- Illuminating, 73  
Incised letters, 39  
Inclined Roman, 30, 31  
single stroke caps, 25  
alphabet, 26  
Individuality, 40, 45, 80  
Initials, ornamental, 50  
Inking, 5, 12, 18, 19, 25, 36  
Invention of printing, 3  
Irish half-uncial, 2, 51  
Italic, 3, 30, 58, 59
- J, use of I for, 8  
Japanese, 71  
Jenson type, 45
- Kells, Book of, 2, 51
- Koch, Rudolph, 60, 62
- Larisch, Dr. v., 47, 66  
Laws of design, 69, 75  
Legibility, 28, 44, 66  
Leonardo da Vinci, 14  
Light face, 4  
Lombardic letters, 47  
Lower-case, Roman, 44  
proportion of capitals, 46  
single stroke, 28
- Machine drawing title, 34  
Manuscripts, 2  
Map title, 34  
Map work, 19, 31, 41  
Marks, 80  
Marsuppini monument, 7  
Material, 67, 76, 82  
Mechanical construction of Roman, 14  
Missal type, 50  
Modern Roman, 3, 15  
alphabets, 16, 17  
uses of, 72  
Monograms, 75  
books on, 88  
definitions, 75, 76  
Morris, William, 45



## INDEX

- New Art, 61  
 in monograms, 79  
 uses of, 63, 72
- Old English, 3, 53
- Old Roman, 1, 9  
 alphabets, 6, 7, 10, 11, 13, 39, 40  
 angle of tilt, 14  
 compressed, 43  
 for architectural work, 39, 40  
 geometrical construction of, 10, 11, 14  
 in design, 42  
 inking, 12  
 in monograms, 78  
 in titles, 37  
 monogram-combinations, 43  
 proportions, 8  
 spacing, 33  
 wide letter-spacing, 37, 43  
 written with broad pen, 44  
 uses of, 72
- Optical illusions, 4, 15
- Order and direction of strokes, for Old Roman, 12  
 for Commercial Gothic, 22  
 for Gothic capitals, 56  
 for Gothic lower-case, 55  
 for single stroke upright letters, 23  
 for single stroke inclined letters, 26
- Ornament, 70  
 Celtic, 51  
 excessive, 76  
 flat, 64  
 in monograms, 75  
 on titles, 37
- Ornamental initials, 50
- Paper scale, 9, 15
- Patent office drawing, 41
- Pencil texture, to imitate, 84
- Penciling, 9, 18, 33
- Pens, 22, 31, 44, 53  
 to prepare, 24
- Photo-mechanical processes, 82
- Practical books for designers, 86
- Practice strokes, for Gothic writing, 55  
 for stump letters, 31  
 inclined single stroke, 27  
 upright single stroke, 24
- Printing, invention of, 3  
 plates, 82
- Pumpkin seed letter, 31
- Punctuation marks, 37
- Quill pens, 54
- Record strip, 38
- Reducing glass, 82
- Reed pen, 44, 54
- Reinhardt, Charles W., 28
- Reinhardt letter, 28, 29, 40, 41
- Renaissance Roman, 5, 7, 8
- Reproduction, drawing for, 82
- Reversible monograms, 76, 77
- Richard II, tomb of, 56
- Roman letter, 5  
 accented lines, 5  
 in design, 42  
 lower-case, 44  
 alphabets, 45, 46, 47  
 uses of, 72  
 modern, 3, 15, 16, 17  
 uses of, 72  
 old (see Old Roman)  
 "oldstyle," 5  
 Renaissance, 5, 7, 8  
 rules for shading, 6
- Round Gothic, 52, 55
- Round-writing pens, 53
- Rules, of stability, 4  
 for composition, 29  
 for Gothic letters, 53  
 for shading Roman letters, 6  
 for spacing, 33
- Rustic, 2
- Sans-serif, 19



## INDEX

- Script, 3, 58, 59, 60  
    in monograms, 79  
Serifs, 6, 8, 9, 14, 18  
Seymour, R. F., 66, 68, 73  
Show-card lettering, books on, 89  
Signals and signs, 41  
Single-stroke letters, 22  
    inclined caps, 25  
    inclined lower-case, 28  
    vertical caps, 24  
Sketches, 68, 71  
Slope of inclined letters, 25, 27, 60  
Sonneck pens, 53  
Space fillers, 57  
Spacing, 32, 33, 57, 70  
Stencil letters, 61  
Stone, letters on, 40, 71
- Stump letters, 31, 41  
Superimposed monograms, 77  
Symmetrical title, 25
- "t" line, 47  
Table of letters and their uses, 72  
Tablets, bronze, 41, 65, 68, 71  
Taylor, Isaac, 1  
Text letters, 55  
Tomb of Henry VII, 7  
Trajan's column, 1, 6  
Triangles, slope, 25  
Type, Della Robbia, 47  
    Jenson, 45  
    Missal, 50
- U, use of sharp V for, 8
- Uncial, the, 2, 47  
    alphabets, 48, 49, 50, 89, 90  
    in monograms, 79  
    use of, 50, 72  
    use with Gothic, 53  
Upright single stroke, 23, 24
- Versals, 49  
Vertical single stroke caps, 24
- Waist line, 18, 47  
White, use of, 83  
Wieyck, Heinrich, 60  
Working drawing titles, 37, 38, 41
- Zinc etching, 82



