

CONSTRUCTIVE
LETTERING

BY

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I dedicate this book to my Wife
THERESE BUTLER STREETOR
whose help and counsel
have made this work
possible

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FOREWORD

This Book has been planned as a guide for the beginner, and for those who feel the need of set rules to make or draw letters by a simple and practical method.

Its mission is concerned with the drawing and making of letters, not attempting their after arrangement or set-up.

The fundamental principles of the single-stroke letter are learned first, then the outer dressing, such as the thick and thin lines, serifs, etc., all of which requires study and practice.

These rules are not to be followed blindly, but as a guide to make the study of letters more clearly understood; the designer has all the liberty he desires in using or adapting them to his purpose.

The most vital element in lettering is the fundamental principle upon which the letters are constructed, then the ability to select the fine from the commonplace, and a certain individuality in executing the work.

If there is an understanding knowledge of forms, proportions, and methods of construction, the making of letters becomes an almost unconscious effort.

Its aim, then, is to show in a definite way the fundamental principles for constructing letters, with an explanation of their several lines, and of the relations which one line holds to another; their shapes, comparative widths and spacing, with hints and suggestions in the making of them, also some things to avoid.

Letters are simple shapes and are capable of infinite modification; but always with due regard for the underlying principles upon which they are constructed.

To excite curiosity or create inquisitiveness is not all that is necessary. Readability comes first; after that correctness of shape.

The study of letters will be found far more interesting than would seem possible at first glance.

The standard of all letters is the Roman, which we have inherited from the past. Of all letter forms, it is the most readable, and its basic principles have been accepted for centuries by the best designers. No one in all this time has been able to improve its shape or proportions, or to increase the readability of a single letter.

It is absolutely essential for the designer to have a clear idea of what he is trying to do, and a knowledge of the various forms and combinations which enter into letter construction. To achieve individuality and personal expression should be his aim.

There is no place for odd or illegible letters.

INTRODUCTION

The Alphabet is a series of symbols or characters called letters, which, when grouped together, form words for the purpose of conveying thought.

Letters have fixed shapes founded on well defined lines and principles and are not subject to many variations.

Each letter is an arbitrary symbol or character denoting one or more sounds. "A" must be an "A" and nothing else, nor should it be mistaken for any other letter. There should be no necessity for a reader to unravel its meaning.

Letters are original only in-so-far as the maker puts individuality and character into them, without changing their fundamental forms.

It is the personal touch, not the meaningless embellishments or unnecessary lines which lend distinction and character to the work.

In taking up the subject of lettering, the student will find that every letter is built on a skeleton or frame-work. Just as in the human figure the muscles touch or cross the skeleton at the same certain places, regardless of race or color, height or weight, so the lines which form letters all touch or cross the skeleton or frame in practically the same places, whether they be Roman or Gothic, Italic or Old English, light or heavy face, extended or condensed.

It is for this reason that the fundamental principles of lettering can be taught by rule.

After mastering the principles of construction, the student should endeavor to give that touch or style to his work which will impart a smart and attractive appearance, raising it above the ordinary. This can be accomplished more readily by drawing the letter

free-hand without the aid of the T square, compass, triangle or dividers; thus educating the eye to see and training the hand to do.

Simplicity of design and true shapes should be one of the first considerations when drawing a letter, emphasizing the characteristic points without impairing the readability or changing the fundamental principles.

The styles of letters today are due to the efforts of artists, designers, pen or poster-men, sign writers and other craftsmen, each using a style best suited to his purpose.

In some instances simplicity is disregarded, and even readability, the most essential quality in all lettering, is overlooked.

It is in such cases that the letterers do not realize that straying from the beaten path of true lines, is defeating the purpose for which letters exist.

The neglect of fundamental principles inevitably distorts the letter and lessens its eye appeal. This accounts for the many poor and indifferent styles which, from time to time achieve a short lived popularity. Remember, that which is considered the style today may be out of style to-morrow, and that the best styles of yesterday, to-day and to-morrow are, and always will be founded on simplicity and sound principles.

Copying of letters is not all that is required. Creation of distinctive styles or shapes can be accomplished as in other lines of art, first by studying the construction and fundamental principles, then by practice. By practice and experience, a deftness and skill will be gained which with natural ability will complete the work, and the art of lettering will be mastered.

THE WHY OF LETTERS, WORDS, AND GROUPS OF WORDS

Letters, words or groups of words should be attractive and interesting in appearance, and after getting the attention of the eye, it should be possible to read them at a glance.

This can be accomplished by giving them the characteristics of simplicity, harmonious proportions, dignity, force and rhythm.

Simplicity

Free from elaborateness, no meaningless or unnecessary lines, and true in form and shape.

Harmonious proportions

That the letters or words are well made and spaced, that the lines of arrangement are well thought out and symmetrical with each other, the whole presenting a pleasing mass or shape.

Dignity

Being impressive in character and refined in appearance.

Force

Have them forceful in style, strong and powerful in effect, and commanding in attention value.

Rhythm

The due combinations and correlations of parts as a whole, in the completion and perfection of an artistic construction.

The essential qualities of good lettering are, Readability, Beauty and Character.

1st. Readability

They should be distinct, the characteristics of each letter being strongly marked, true in shape, with no dwarfing or exaggeration of the component parts.

2nd. Beauty

The beauty of a letter is dependent on the construction of its several parts, the parts well proportioned and in harmony with each other, so that it has freedom and swing in its handling, with the lines well balanced, the thick with the thin, the ceriphs well placed, showing rhythm and grace.

3rd. Character

Individuality, unaffected boldness, strong in character and family resemblance throughout the entire line of work.

To achieve these essential qualities should be the aim and ambition of the student.

These are things that the student, and he alone can decide and do. No two persons will agree what the exact proportions of a letter should be. He should be guided or governed by his knowledge or intuition, for by so doing, he will get individuality and character into his work, and achieve that perfection which constitutes true smartness.

THE LINES OF A LETTER

Lines and a combination of lines are used to form a letter, the elements of which are lines founded on the Roman or Gothic letters, consisting of lines, different shapes and angles, Perpendicular, Diagonal, Horizontal and Curved.



The letters of the Alphabet are and can be built with the lines shown above, or combinations of them.

PERPENDICULAR LINES

The character or thickness of a perpendicular line is dependent on or governed by the motion with which the line is made, whether ascending or descending, up or down stroke.

All ascending lines, beginning at the bottom and going up, are upstrokes, and therefore thin.



All descending lines, beginning at the top and going down, are down strokes, and therefore thick.



DIAGONAL LINES

With only one exception, the slant of a diagonal line to the left or right is the key to its thickness.

If the slant is ascending from left to right, it is a thin line.

If the slant is descending from left to right, it is a thick line.



The one exception mentioned above, is the letter Z, which slants the same as a thin line, but as this diagonal line starts at the top and descends to the bottom line, it is a down stroke and therefore a thick line.

HORIZONTAL LINES

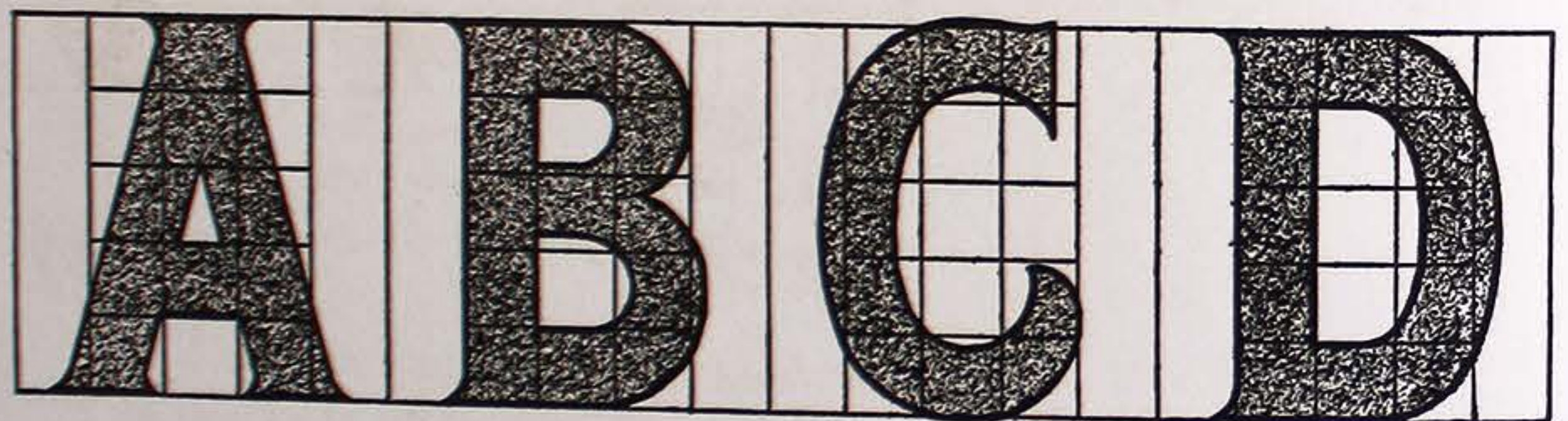
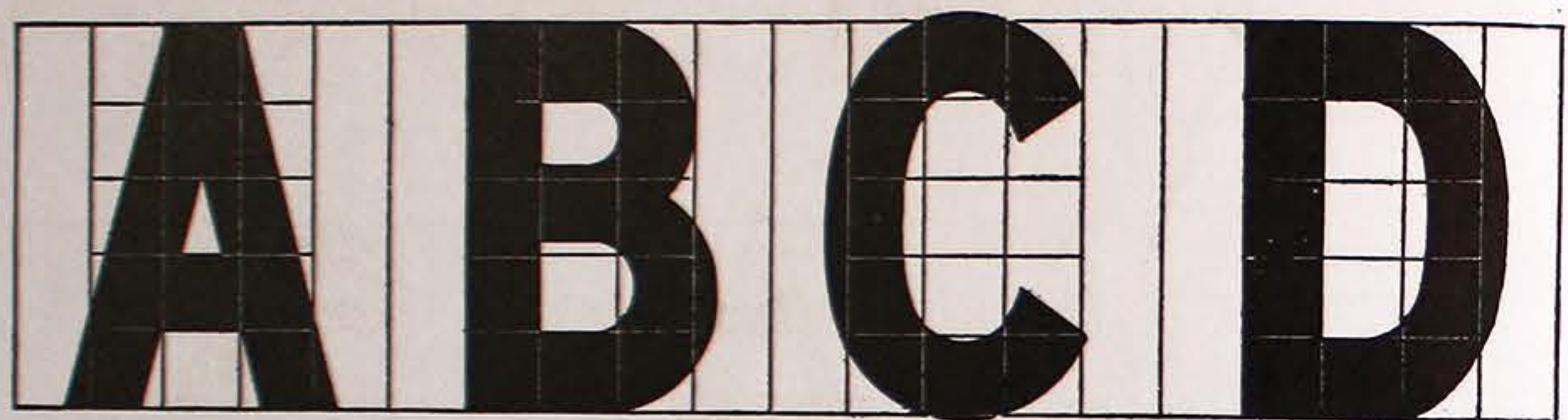
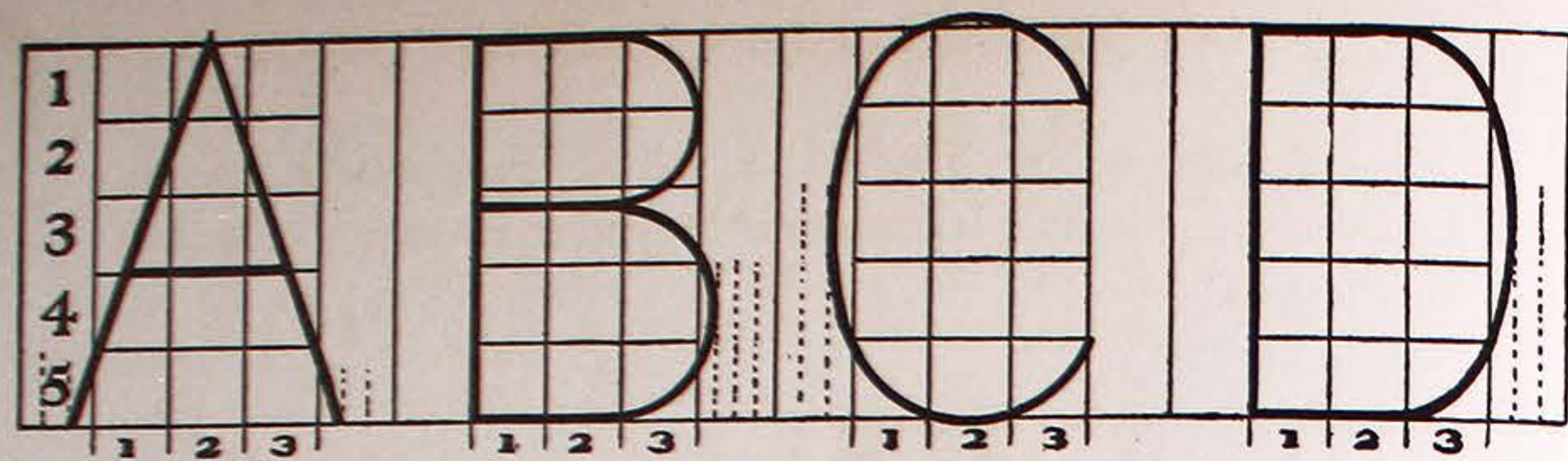
All horizontal lines, no matter where placed on a letter, or what that letter may be, either square, wedge-shaped or round, are thin lines.



CURVED LINES

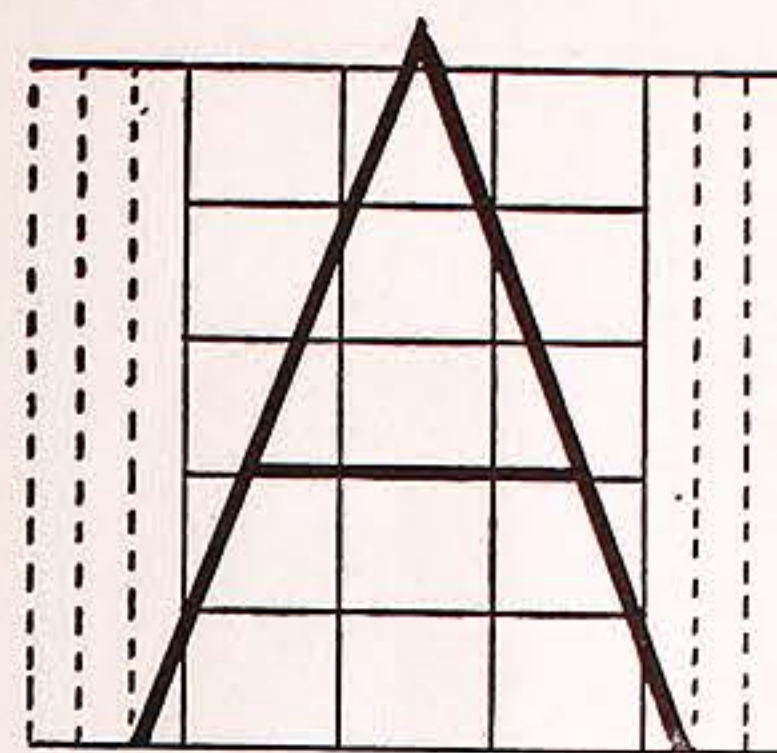
The upright on a round letter or a combination of square and round, is a down stroke and therefore thick.



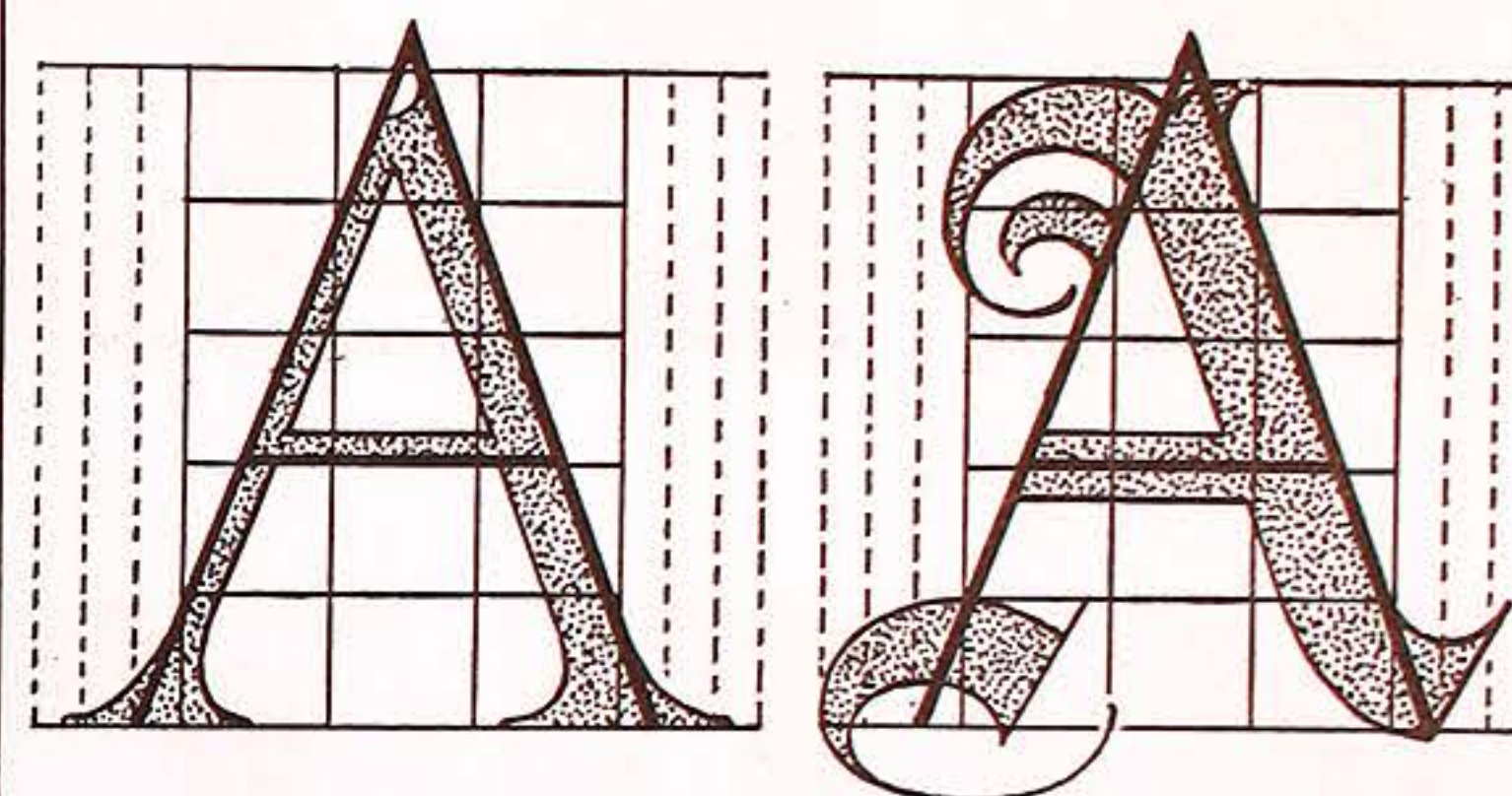


WHAT THE SKELETON OF A LETTER IS

All Alphabets used are founded on the one great principle, which has been used for ages. It has never changed and probably never will be changed.



That principle is the single-stroke letter, defined here, as the skeleton.



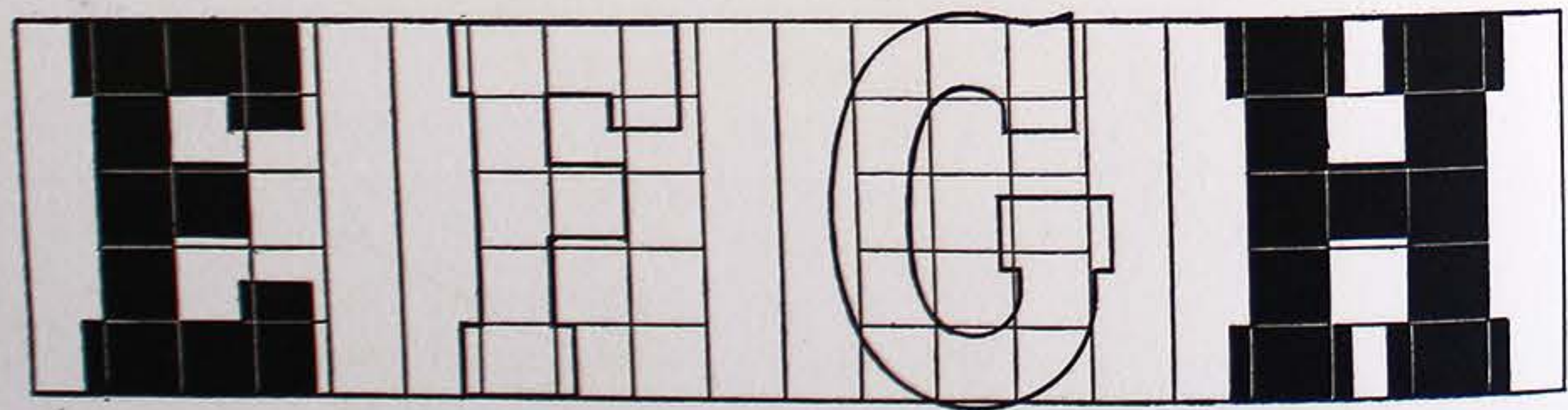
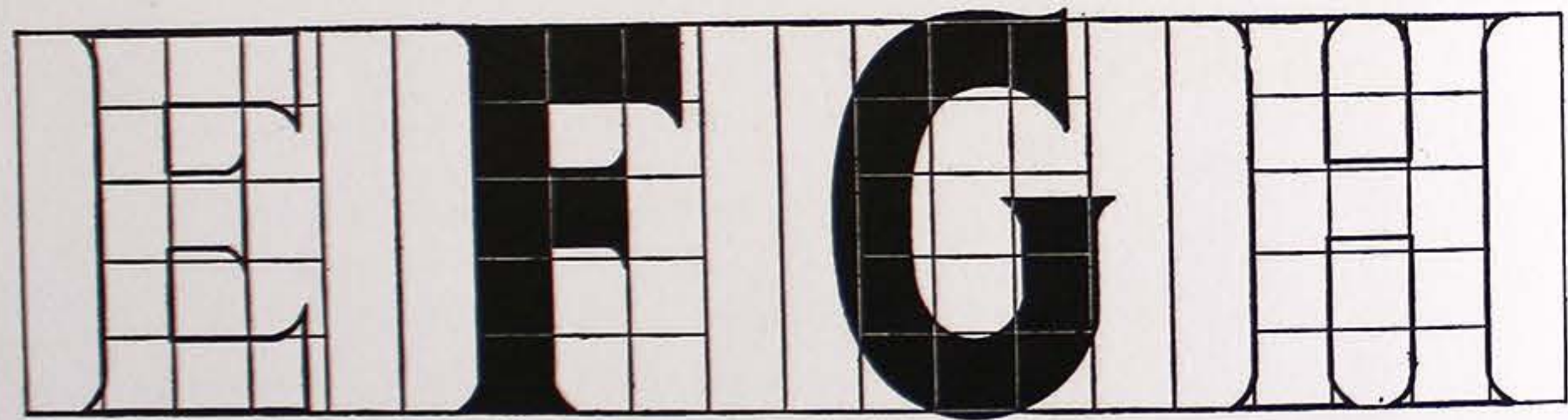
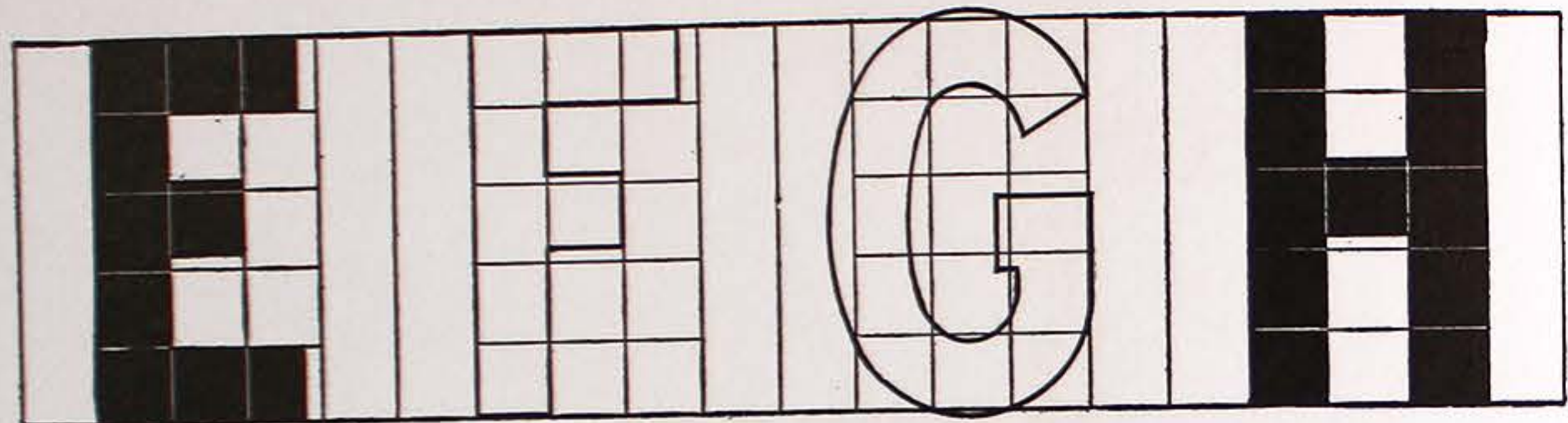
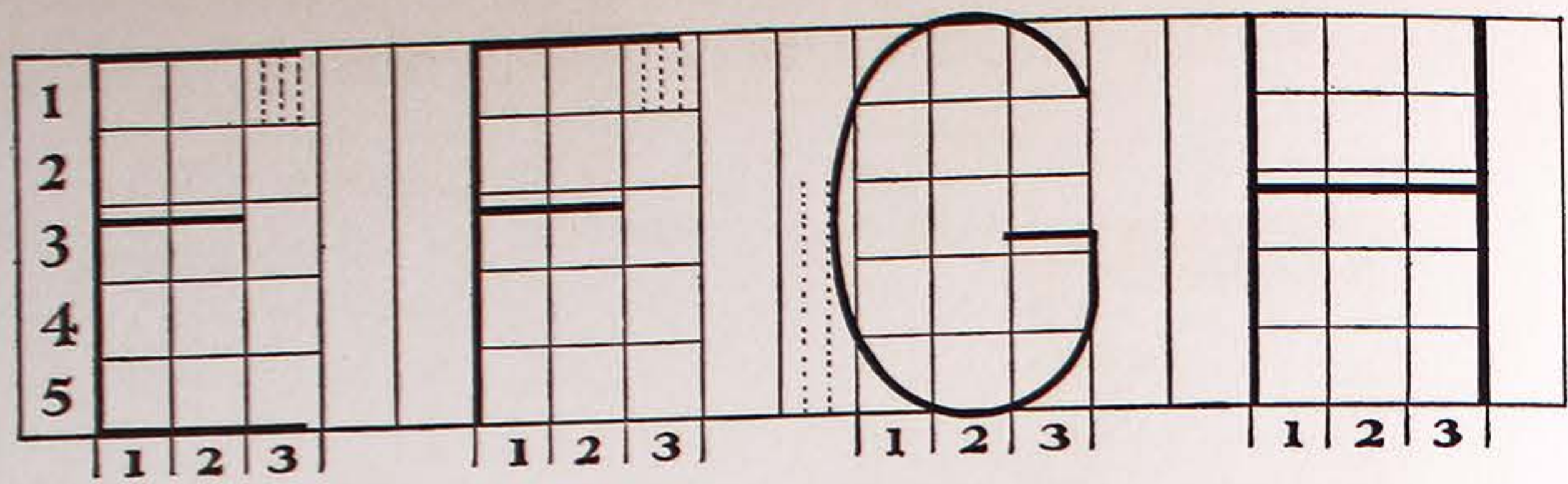
It is the same for letters of the same denomination, regardless of character or style.

The design of a letter may change in its outer-dressing, such as the thickness of certain lines, the shapes of its ceriph, etc., but in all cases the principle of the skeleton should be felt.

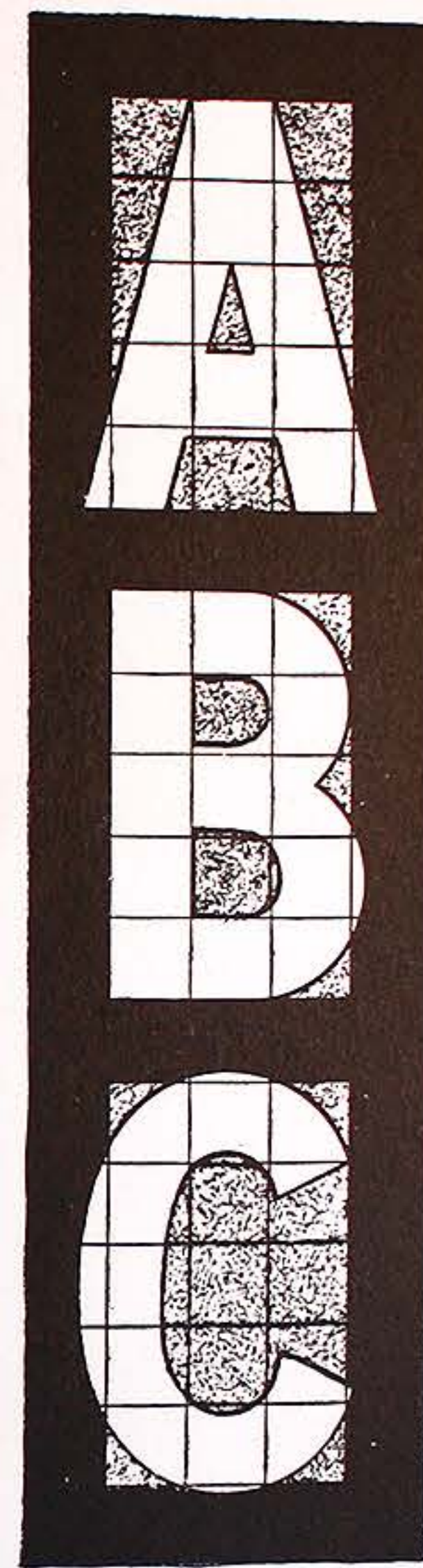
All different styles of accepted Alphabets are founded on this principle and no other.



The design and outer-dressing of a letter can be changed; the skeleton will remain practically the same.

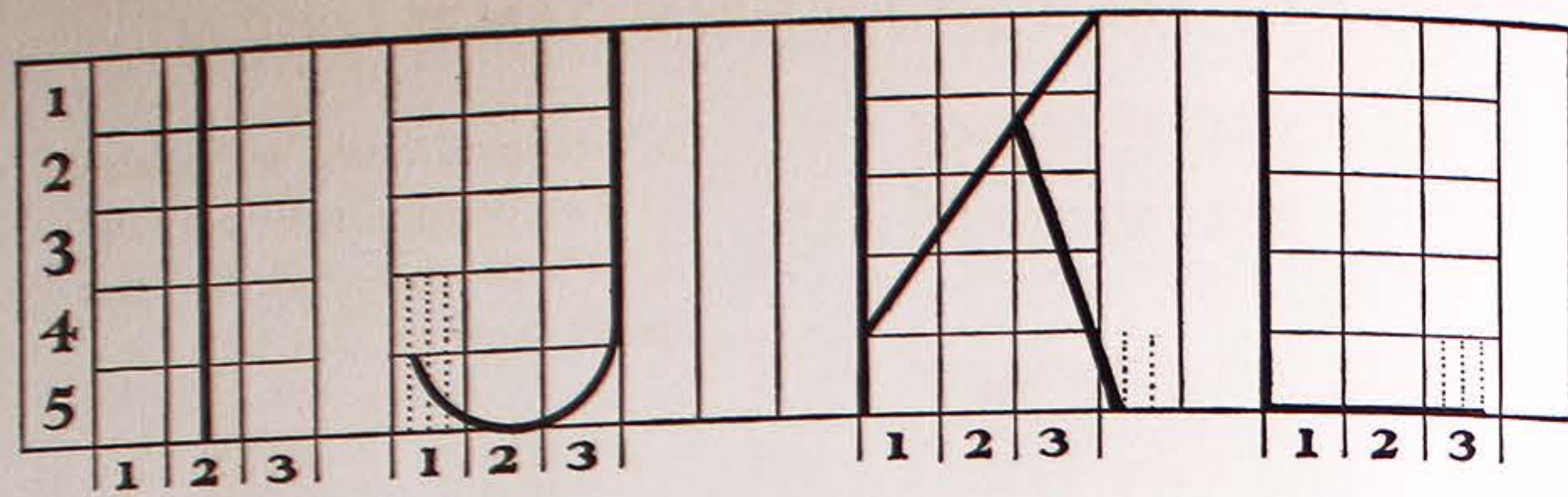


THE CONSTRUCTION OF LETTERS

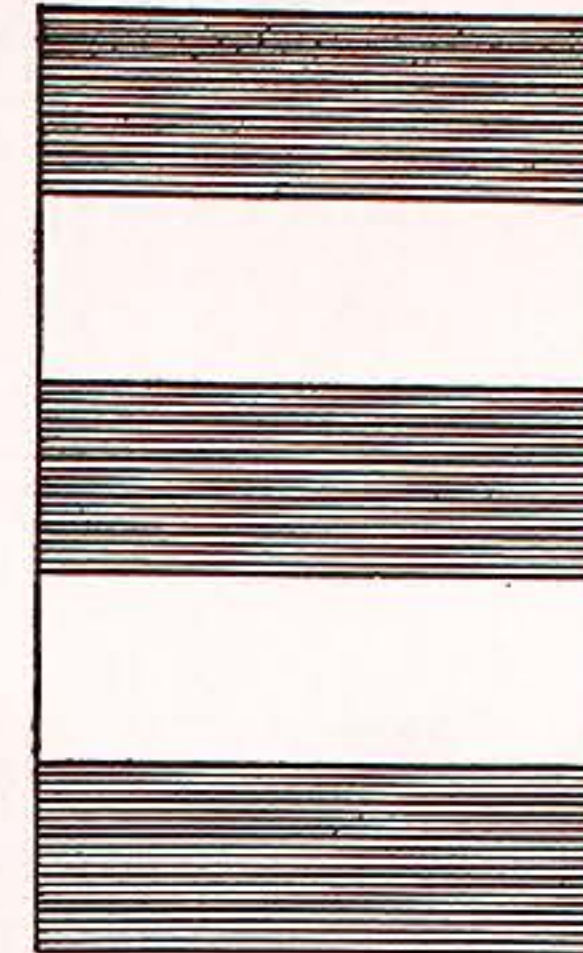


Letters are built upon or around the skeleton, giving them shape and style. These are placed or formed on a frame five spaces in height and three in width, thus showing their comparative widths and proportions.

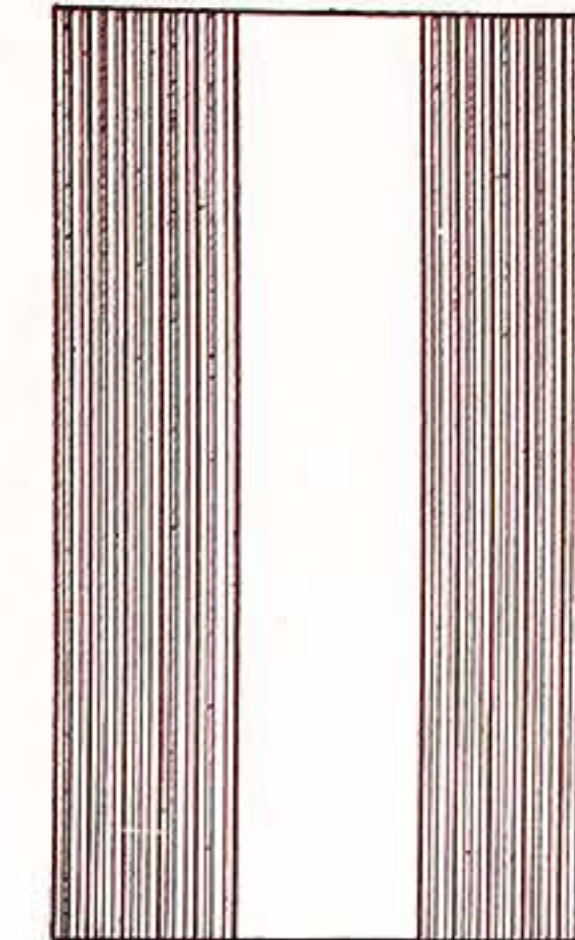
By referring to the Alphabets on the following pages, it will be seen that lines of the same letter, regardless of the classification, group or style to which it belongs, will touch or cross at or about the same places on the ruled frame. It may be Roman, Gothic or Old English, but this rule of construction remains the same.



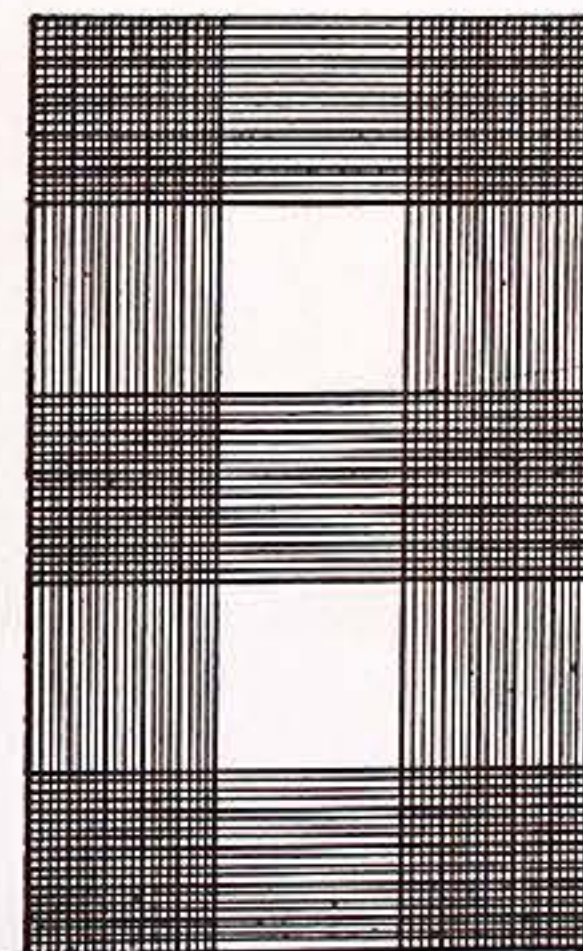
WHY THE 5 TO 3 SPACE SYSTEM IS LOGICAL



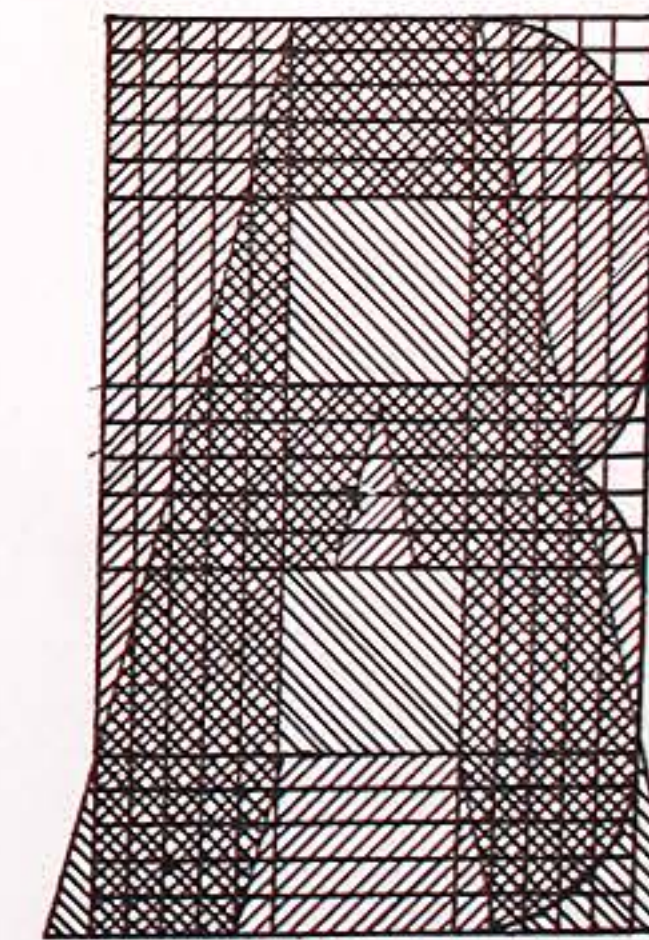
A horizontal frame with spaces for two perpendicular bars and one blank space, making three spaces in width.



A perpendicular frame with spaces for three horizontal bars and two blank spaces, making five spaces in height.

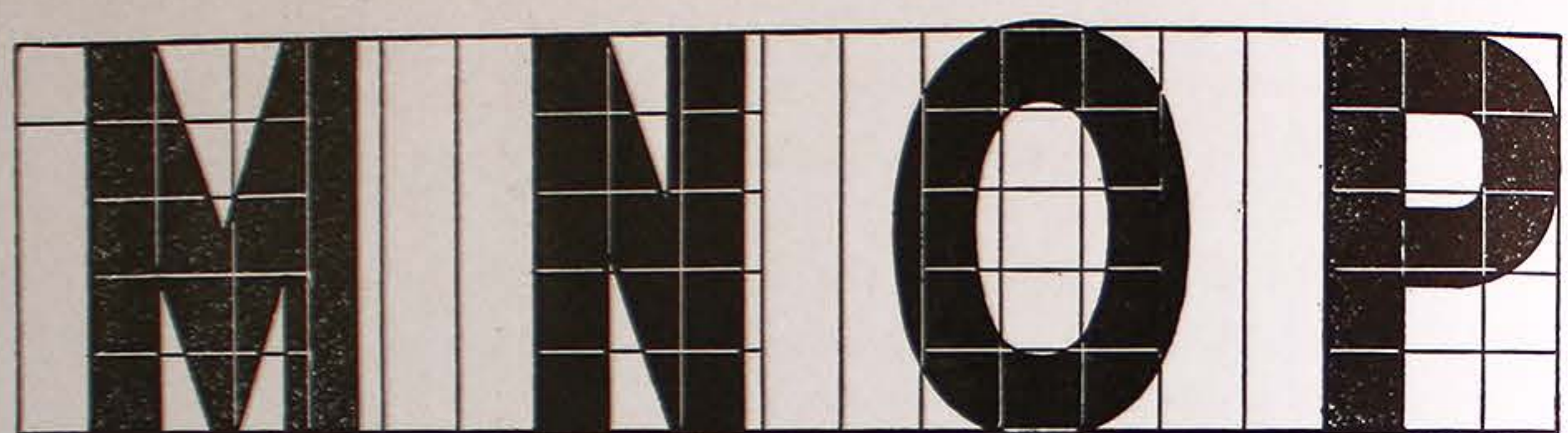
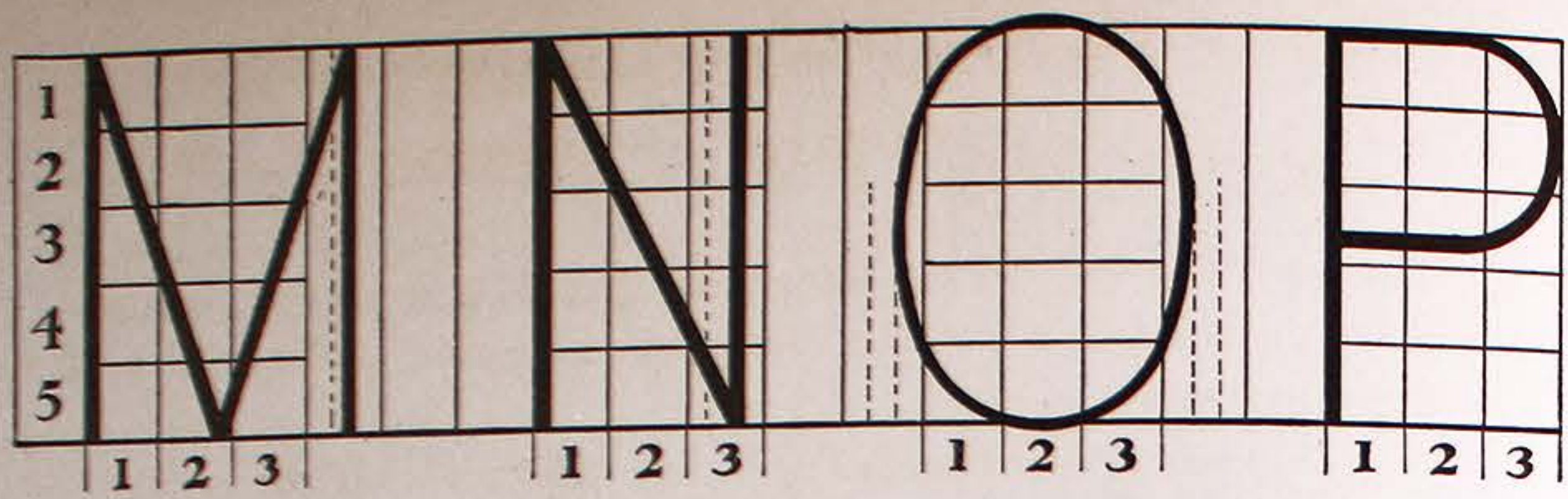


On a frame of this formation the different shapes of the letters and the numerals can be formed.



A combination of these two frames constitutes a frame of five spaces in height and three in width.

Their comparative widths are shown on the following pages.



TO CREATE UNIFORMITY IN THE WIDTH OF LETTERS

Most persons are under the impression that all letters are the same in width, but this is not the case. Letters are the same width in appearance only.

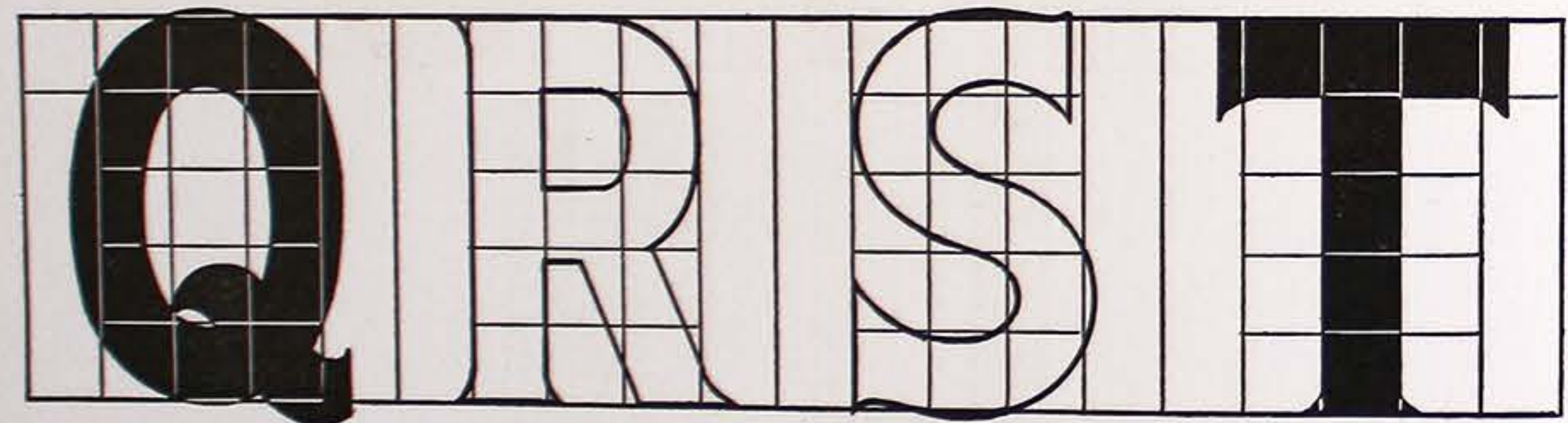
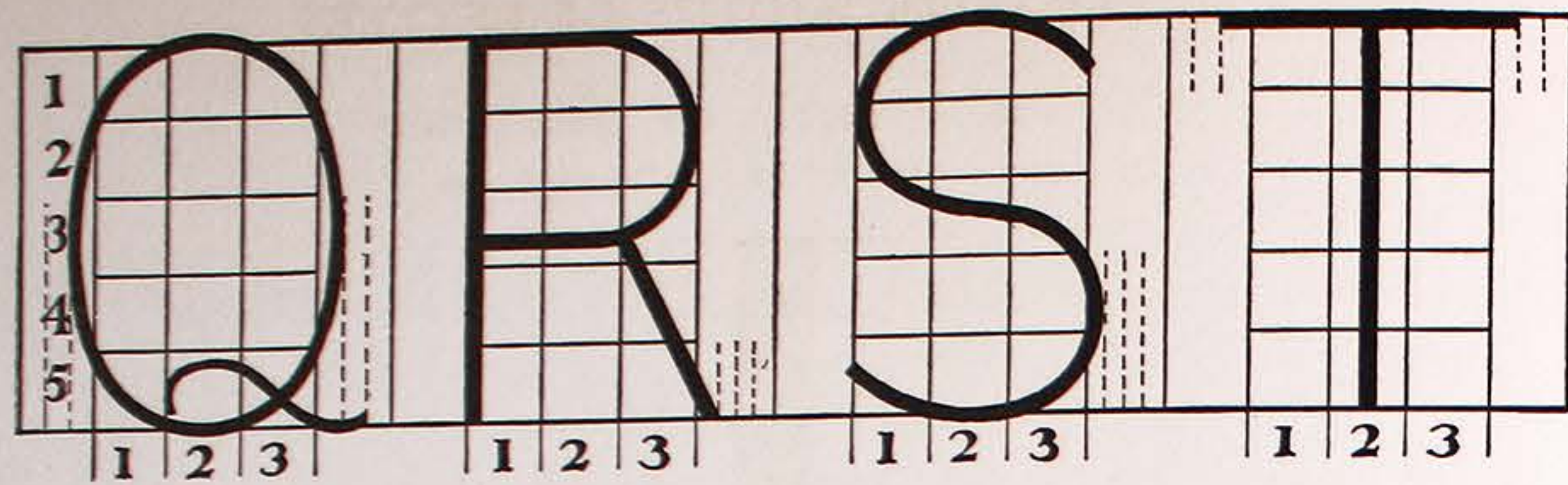
In order to create the effect of a uniform appearance in the widths of letters, it is necessary to make some of the letters more or less than the three spaces in width.

An E would appear wide if made the same width as an H which is normal or three spaces in width, or an A or an O would appear narrow if made the width of an H.

The comparisons given on the following pages are to be used by the student only as a help and guide to enable him to become familiar with the width of letters.

The measurements presented here were brought about by years of comparison, observation and measurement; by the comparison of the width of one letter with another, by observing the work of many different letter-men, and by the comparative measurements of letters in type forms.

These measurements are nearly correct, but are not absolute, the final result should be judged by the eye.

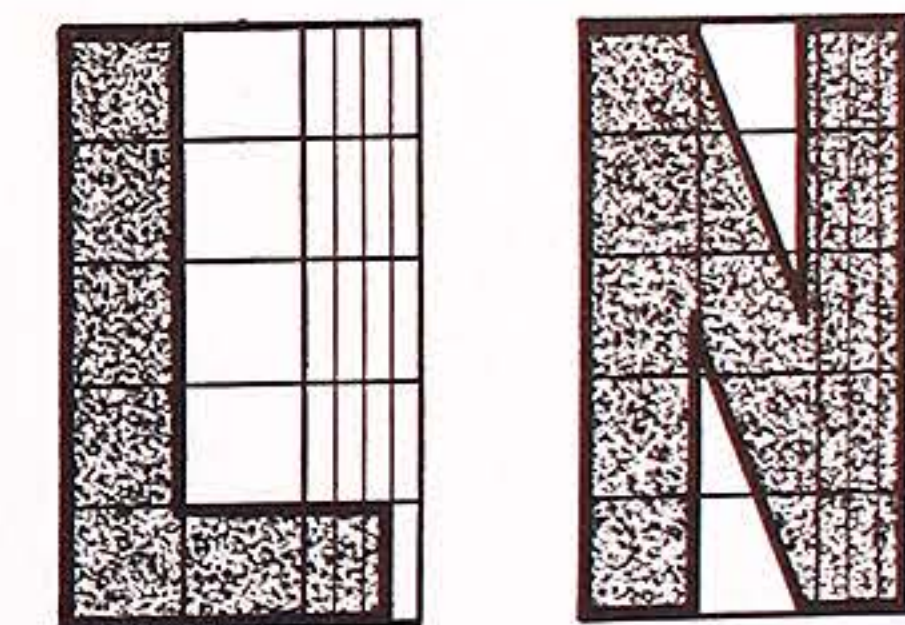
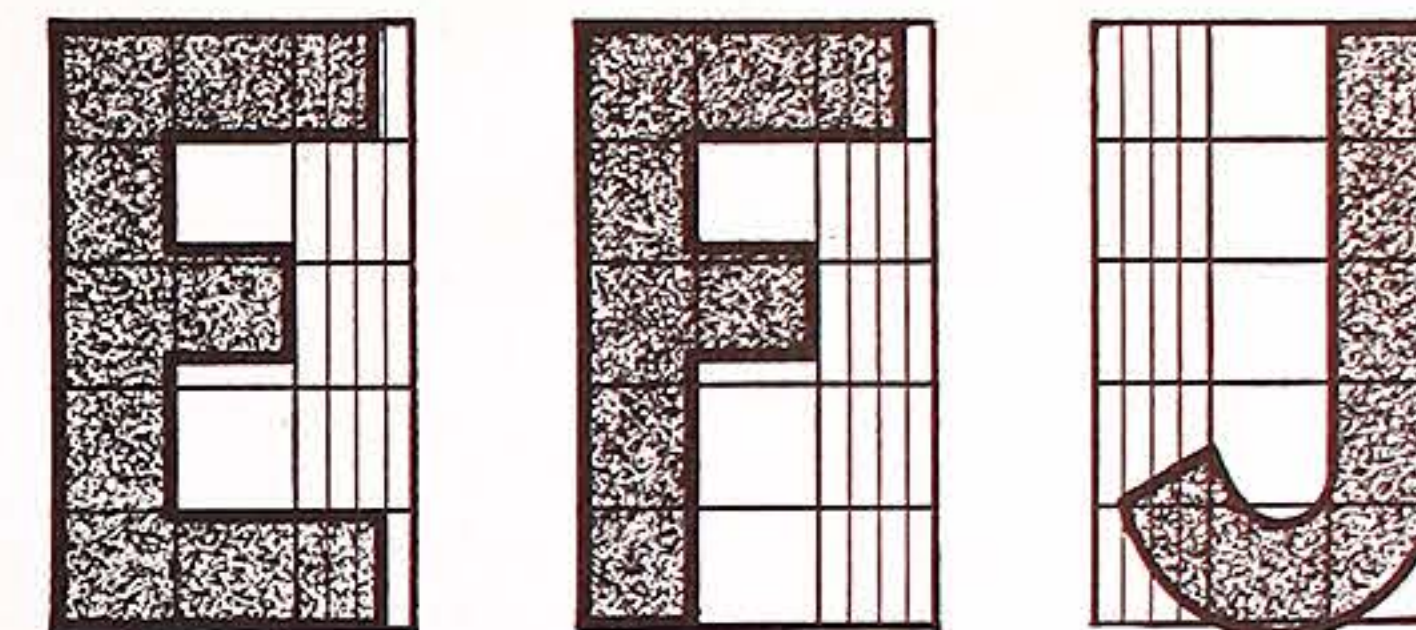


COMPARATIVE WIDTHS OF LETTERS

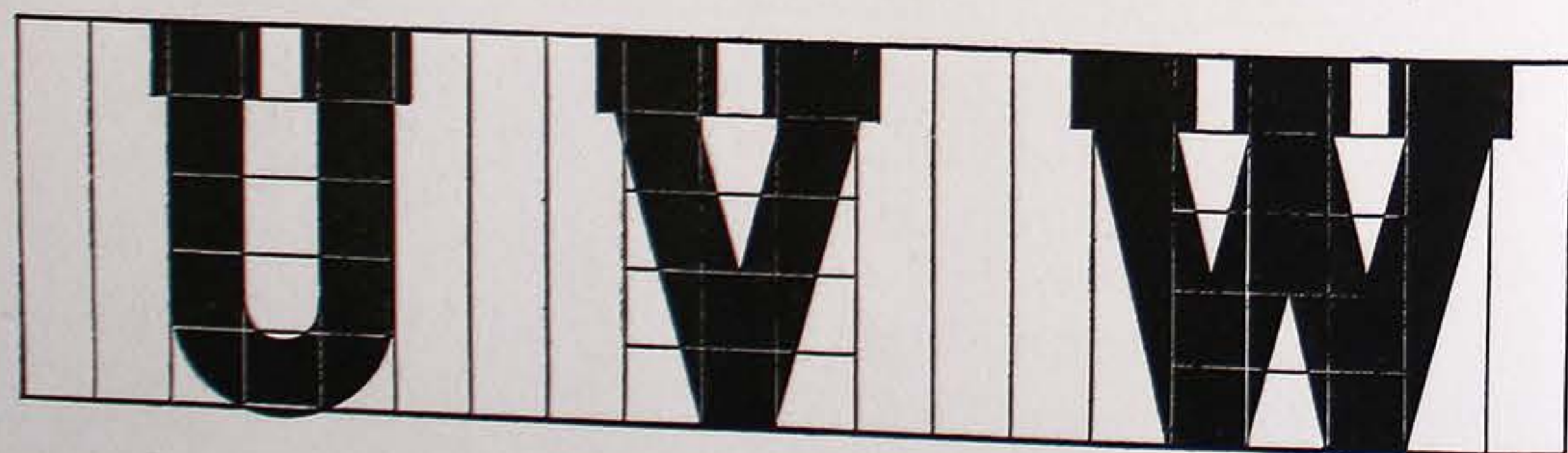
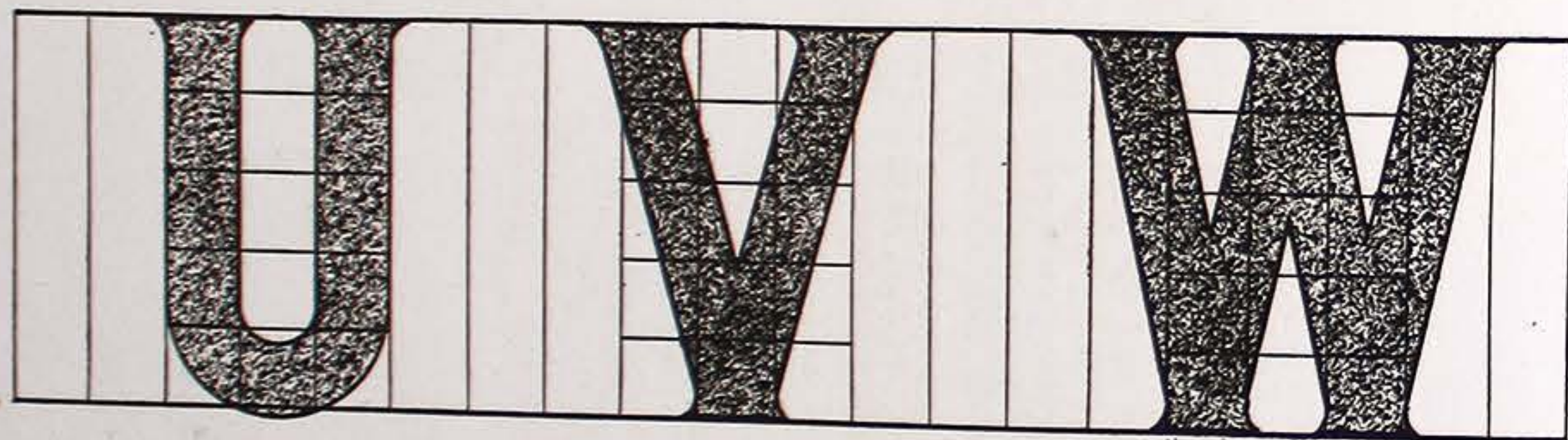
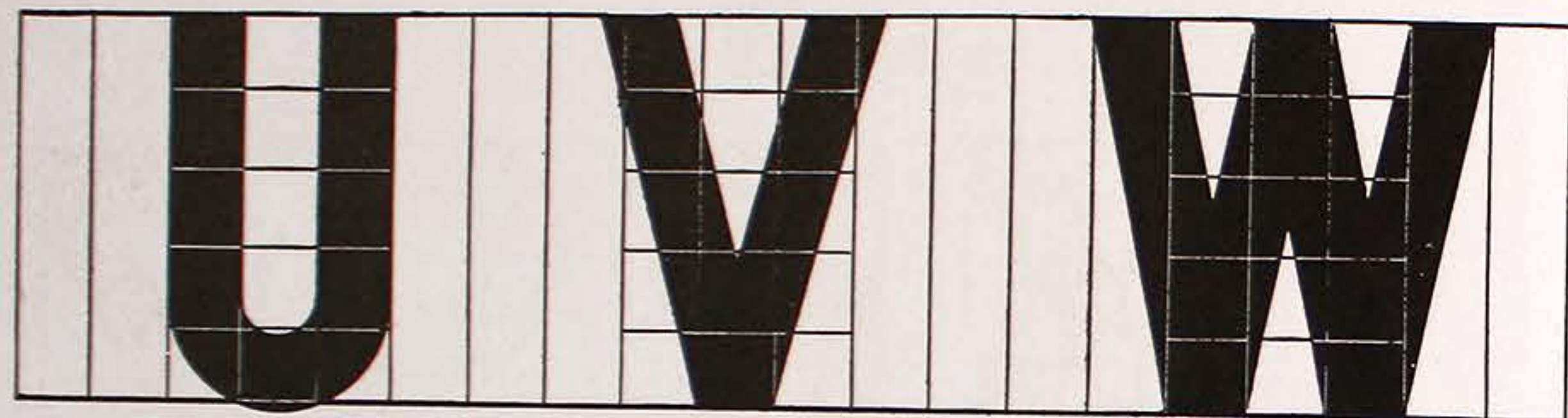
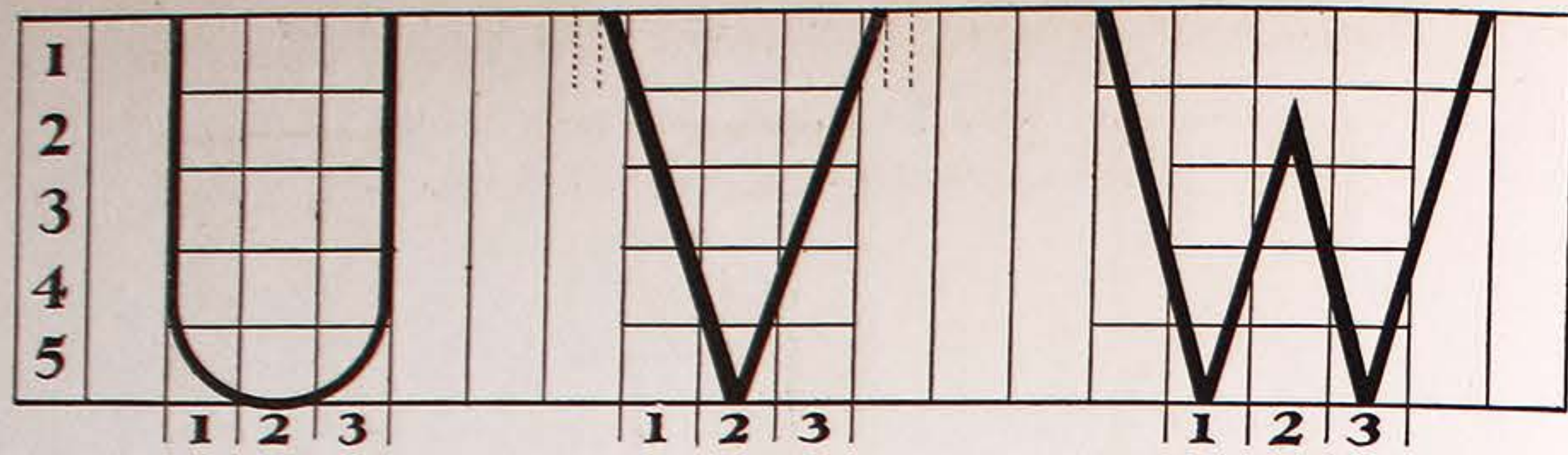
The letter I occupies one space, being the narrowest letter in the alphabet.



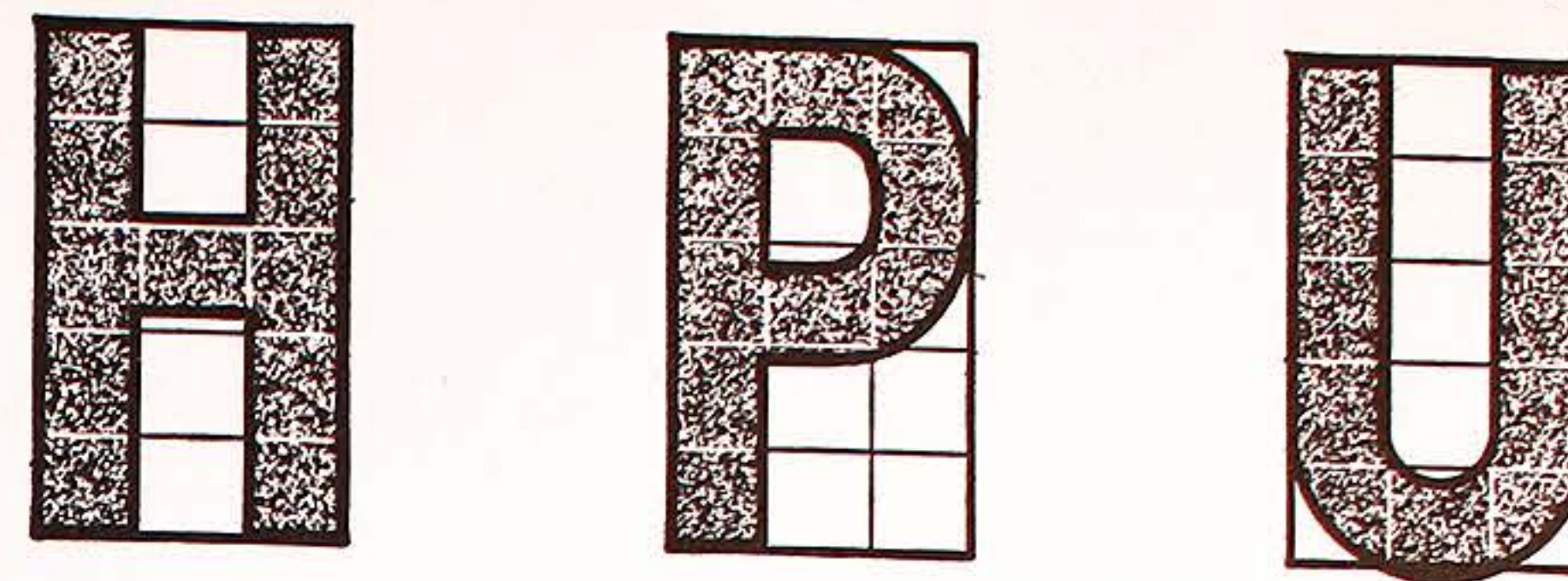
The letters E, F, J, L, N, occupy $2\frac{3}{4}$ spaces.



The reason they are not three spaces wide, is that the horizontal lines extend the full width of the letter, thus carrying the eye to the extreme corners, and in the case of N, the diagonal line seems to spread the perpendicular lines. This gives the impression that these occupy more space than they really do, and to overcome this impression, it is necessary to make them less than the three spaces wide.



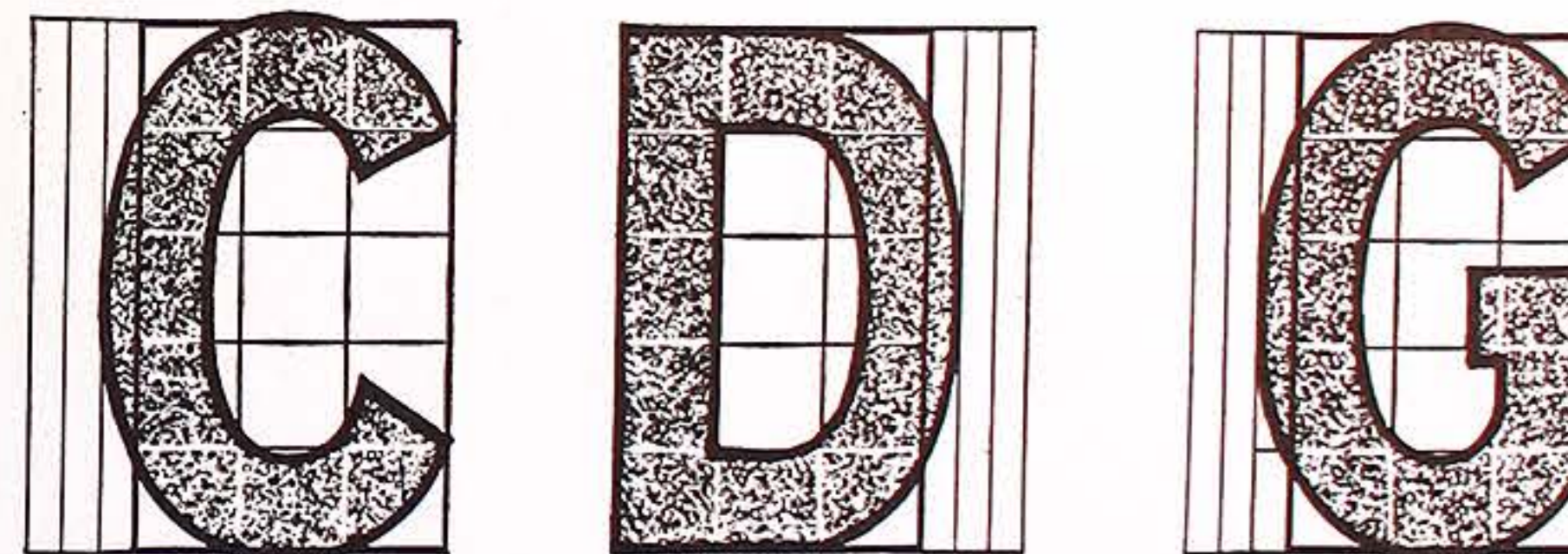
The letters U, P, H, being normal in width, occupy three spaces.



The letters B, K, R, S, Z, occupy $3 \frac{1}{4}$ spaces.

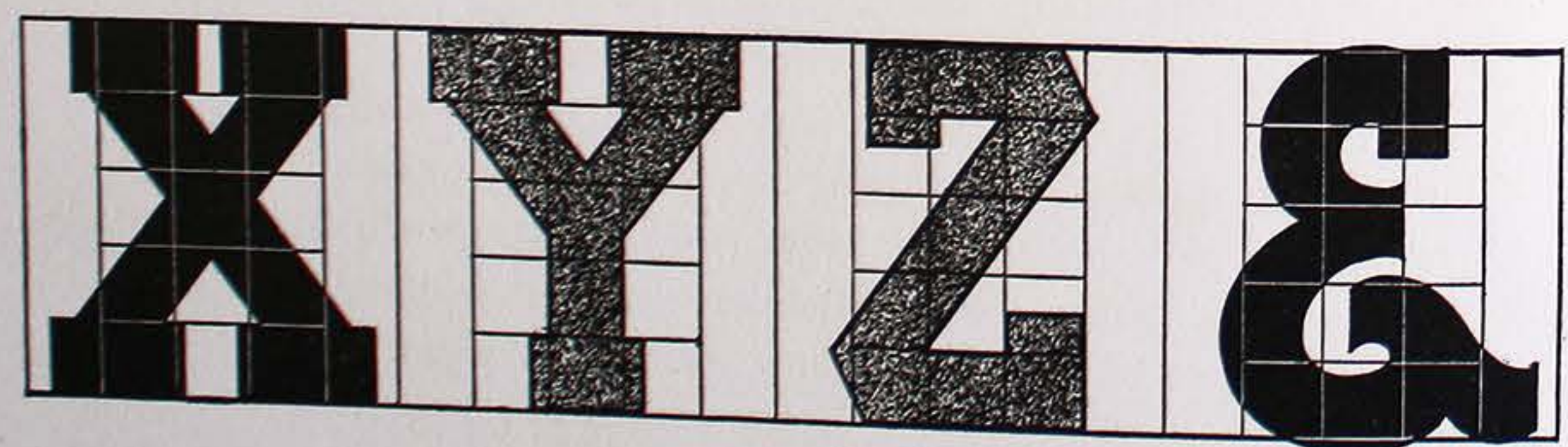
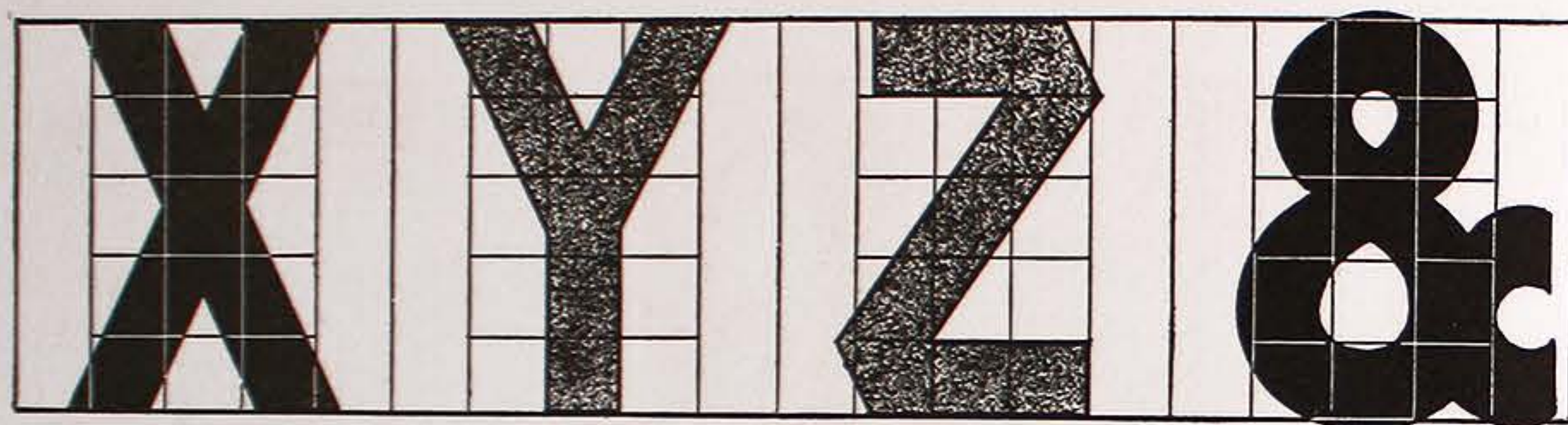
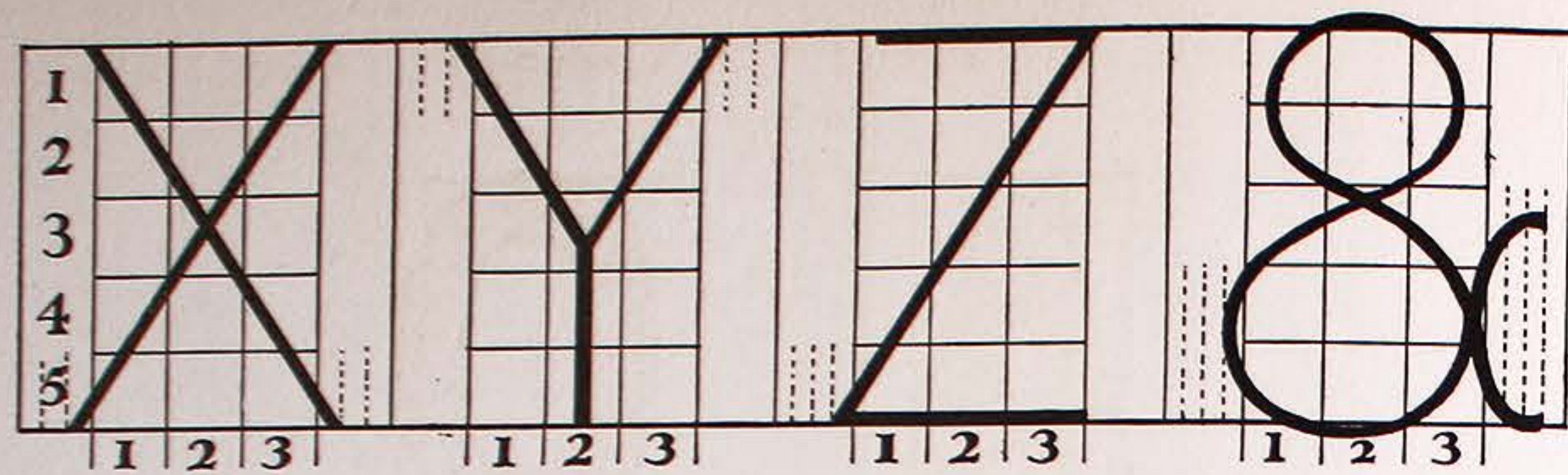


The letters C, D, G, occupy $3 \frac{1}{3}$ spaces.

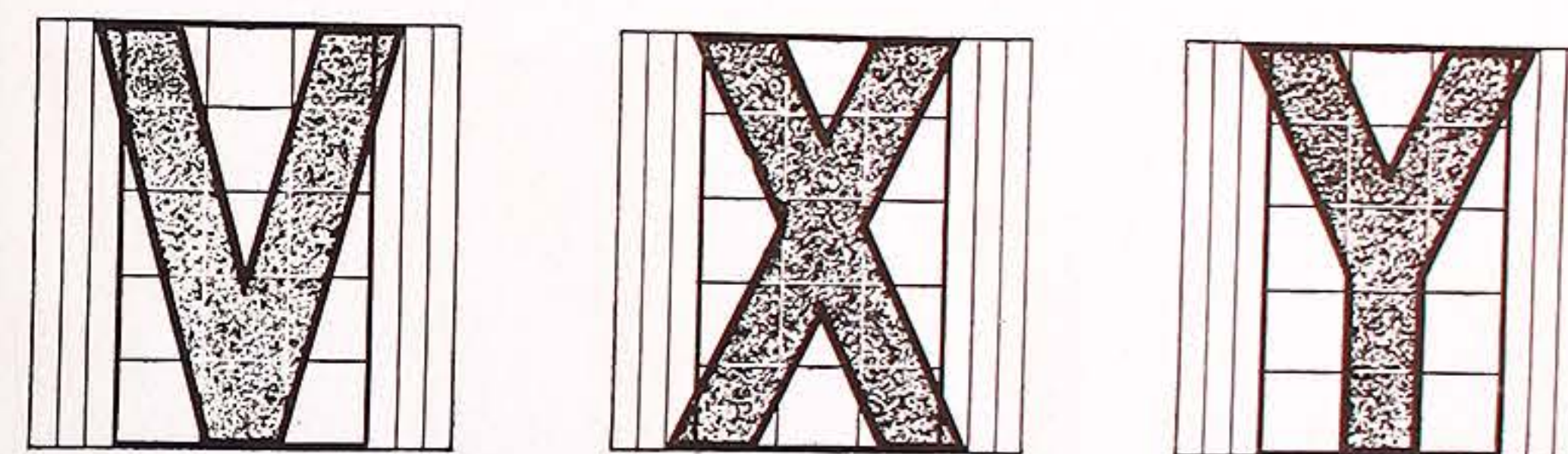
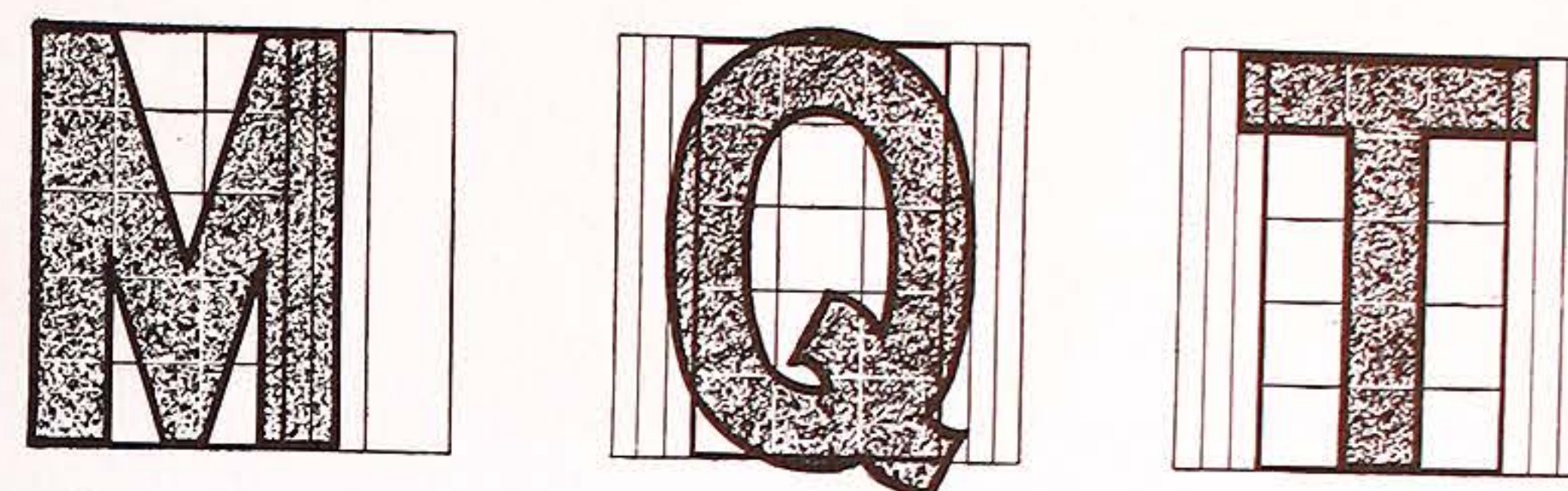
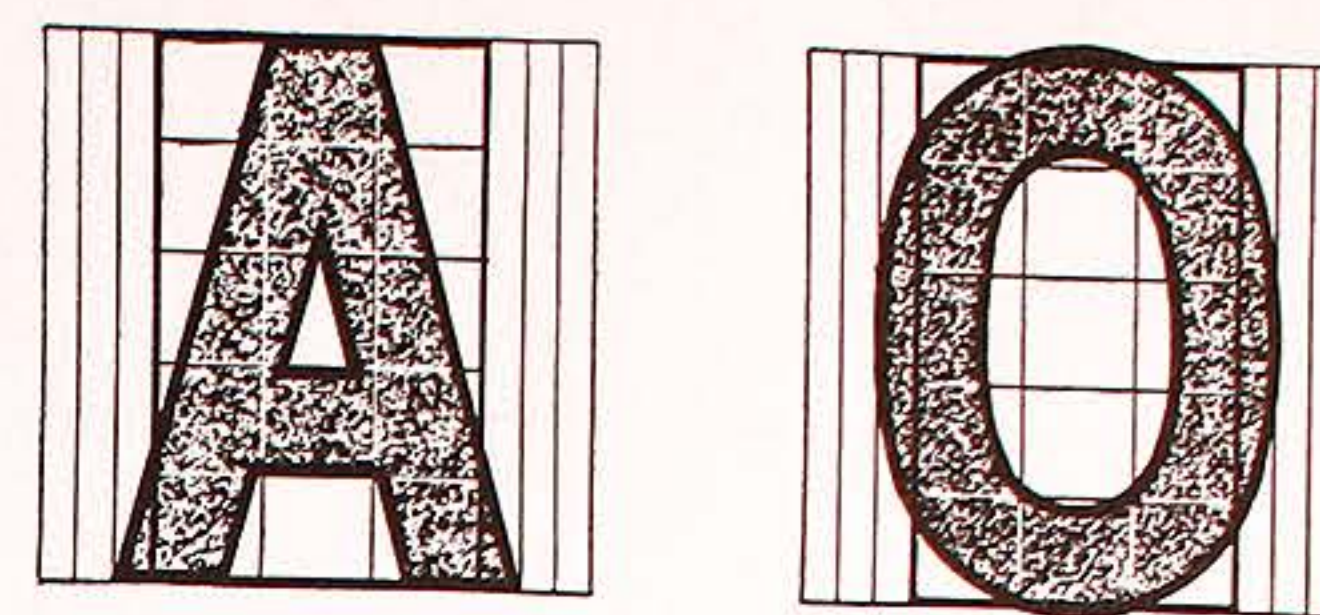


The round and combination square and round letters and the wedge-shaped letters, and combination square and wedge-shaped letters extend beyond the boundaries of the 5 to 3 space frame, top, bottom and sides.

The formation of their elements seems to diminish their area in appearance to the eye, so it is necessary to increase them in width to conform to the square letters in appearance of uniformity.

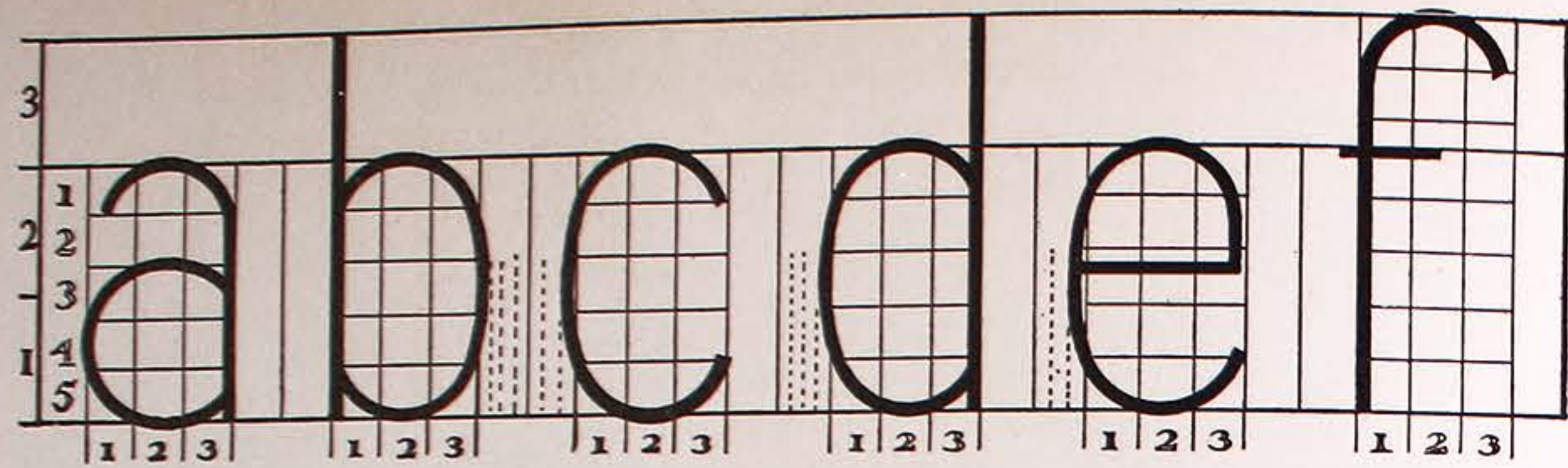


The letters A, O, M, Q, T, V, X, Y, occupy $3 \frac{2}{3}$ spaces.

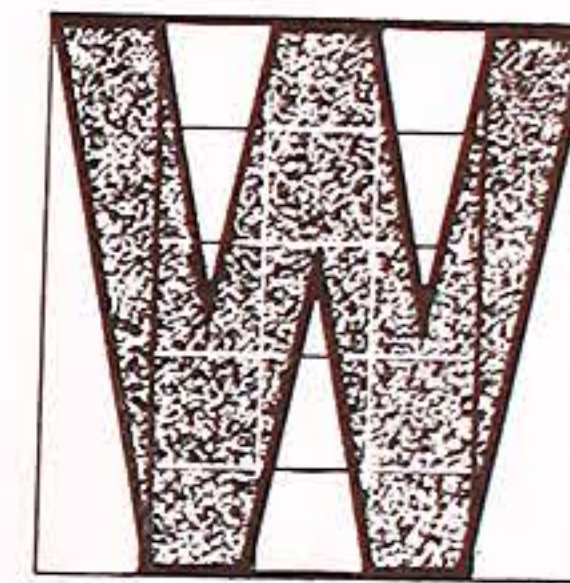
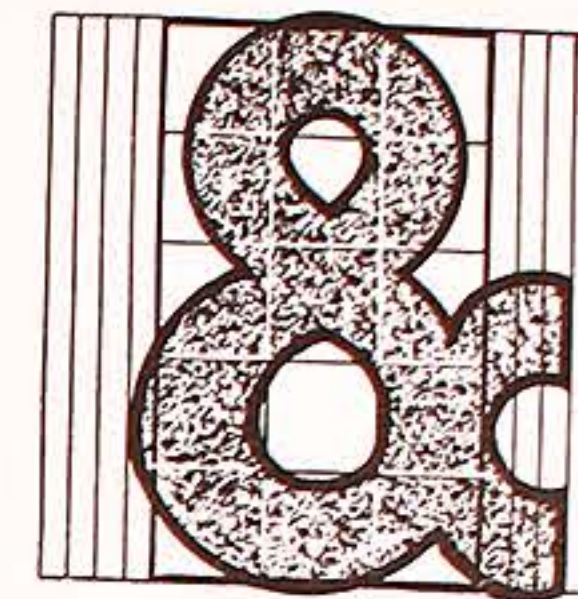


Inasmuch as they are round and wedge-shaped letters, it is necessary to extend them beyond the 3 spaces in order to preserve a uniform appearance with the square letters in width.

Although T is not actually a wedge-shaped letter, it can come under that heading. By drawing two lines from the extreme ends of the horizontal line or bar to the bottom of the perpendicular line or vertical bar, making a V shape, and giving the impression of a wedge-shaped letter, one can show why the T belongs in this class.

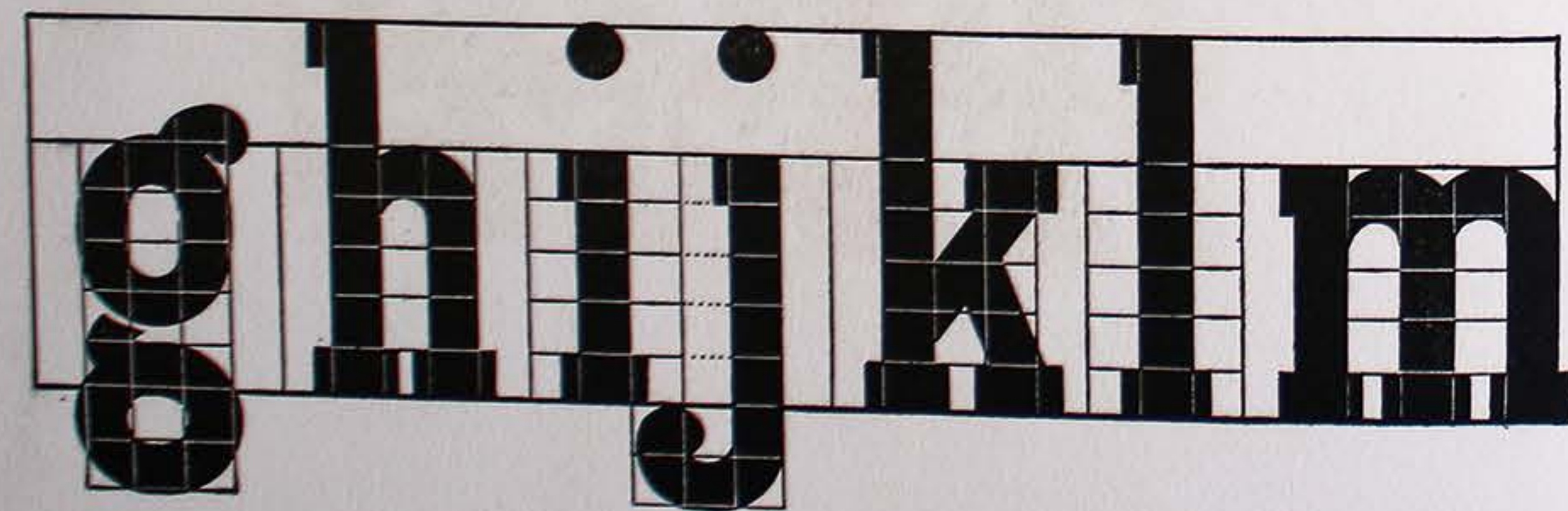
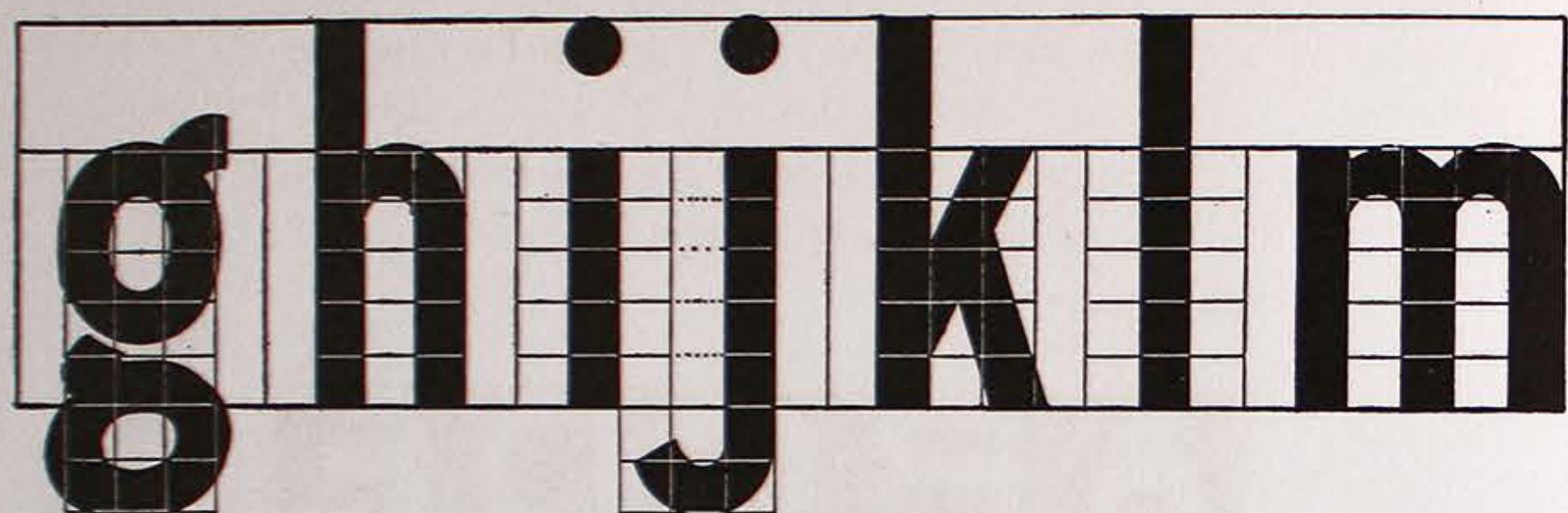
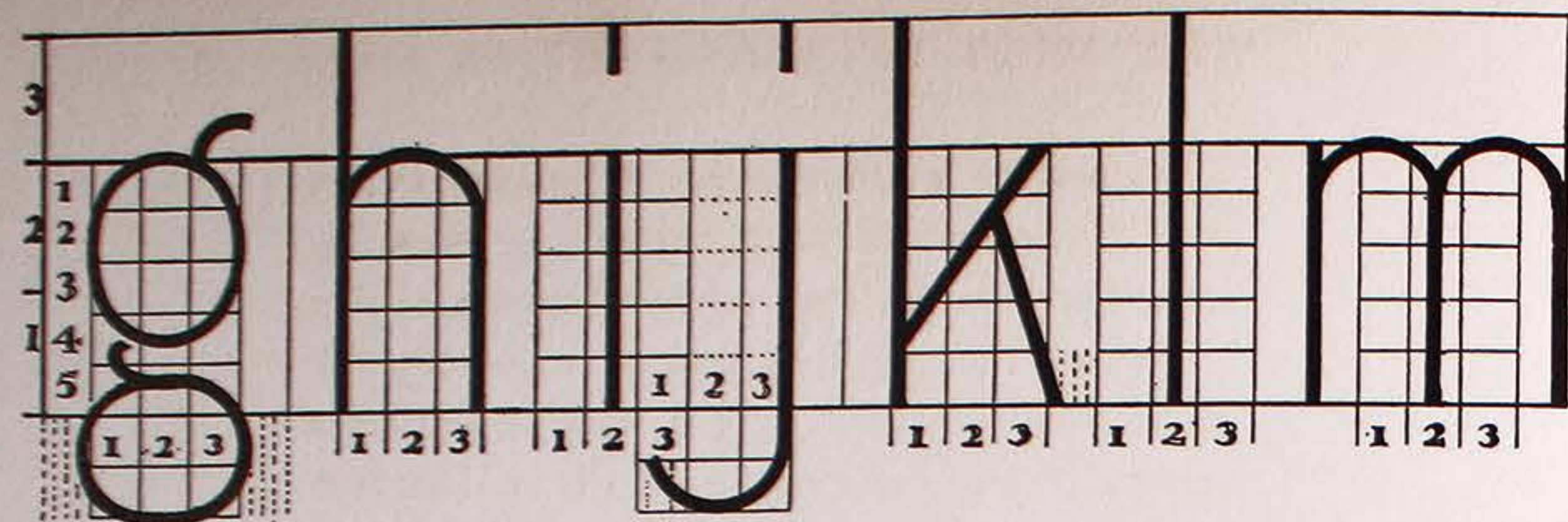


The character & is in the round letter class, therefore it is made wider than the three spaces. Owing to the various forms or shapes it is anywhere from 3 and a fraction to 4 or more spaces in width.



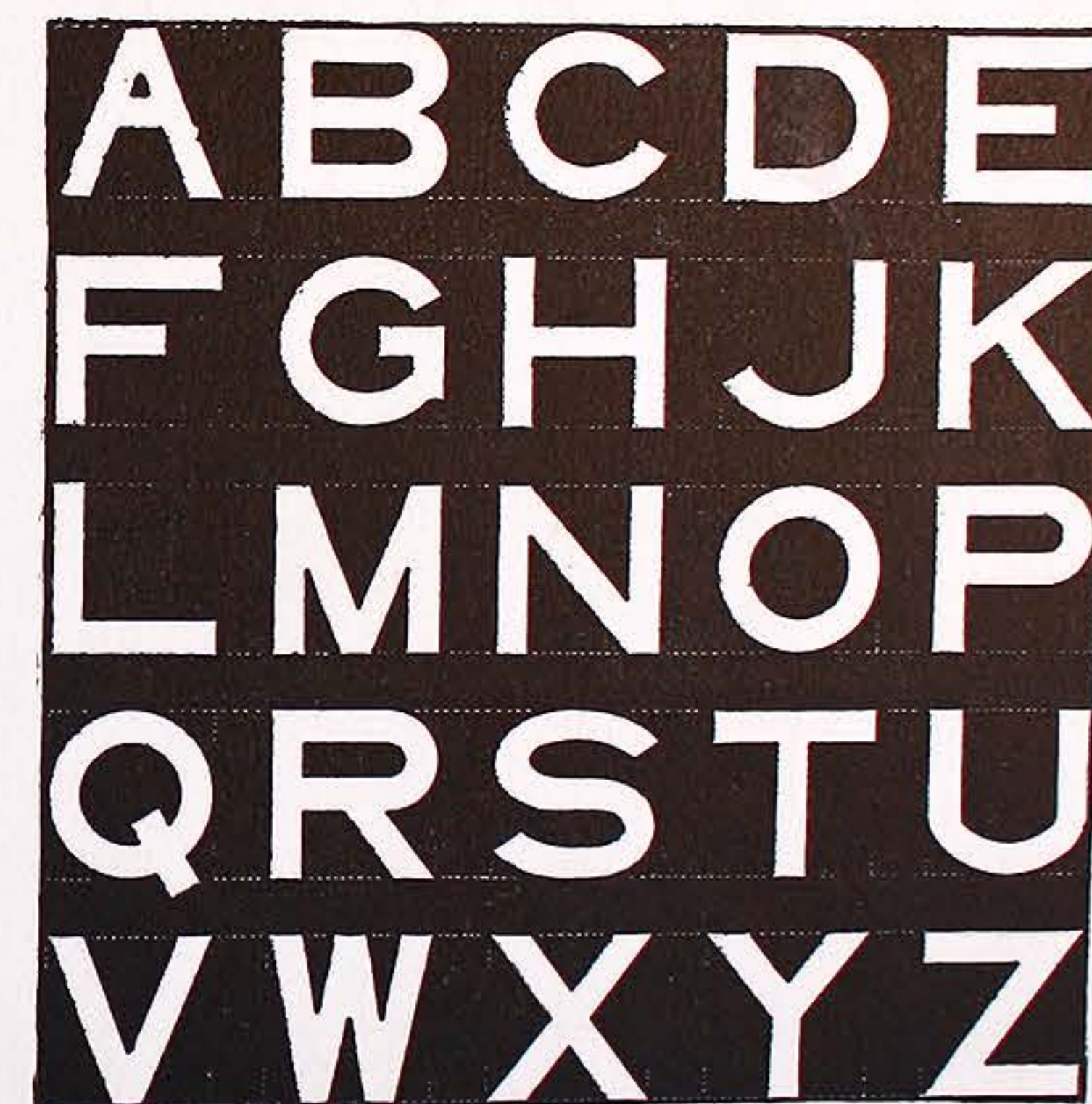
The letter W is a combination of two Vs placed side by side, touching or overlapping each other. Being the widest letter in the alphabet, it occupies 5 spaces.

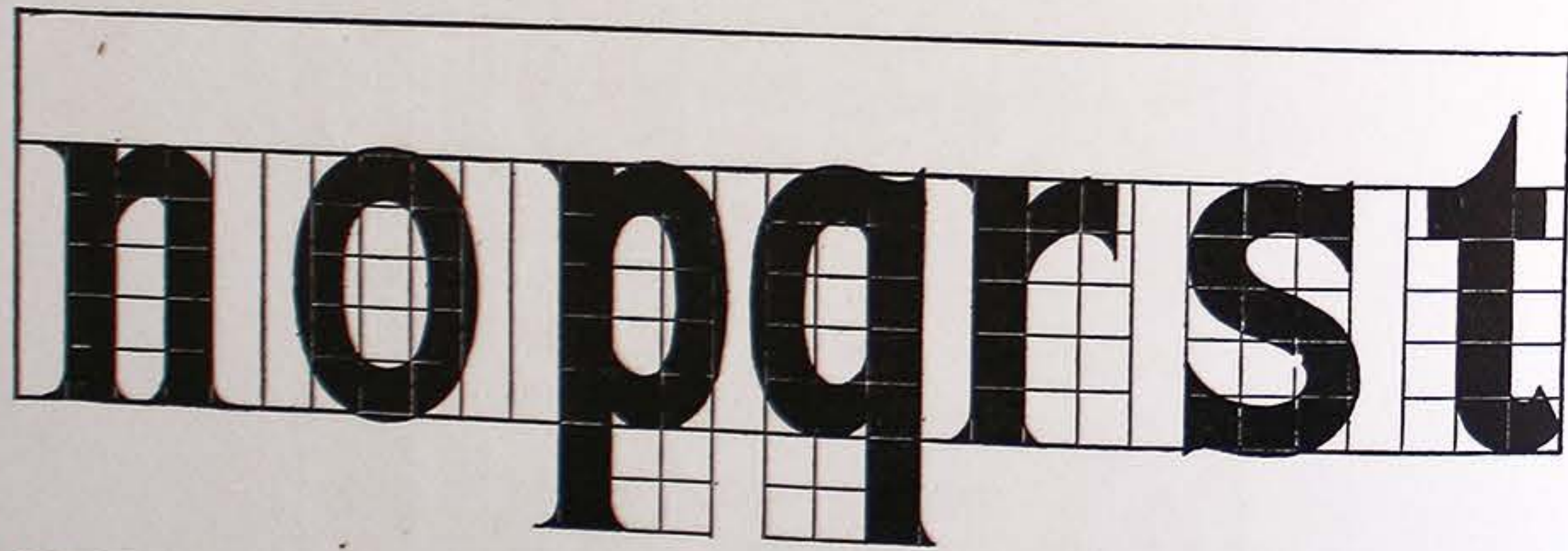
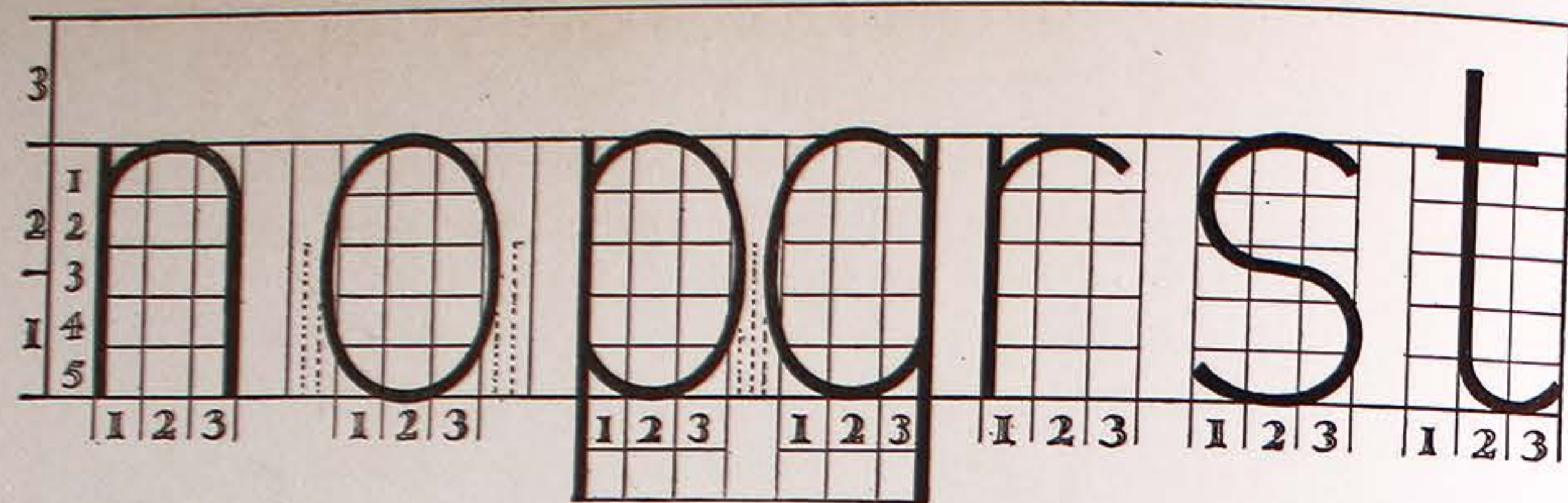
When measuring the width of a letter, do not include the ceriphs.



WHY MUST LETTERS VARY IN SIZE?

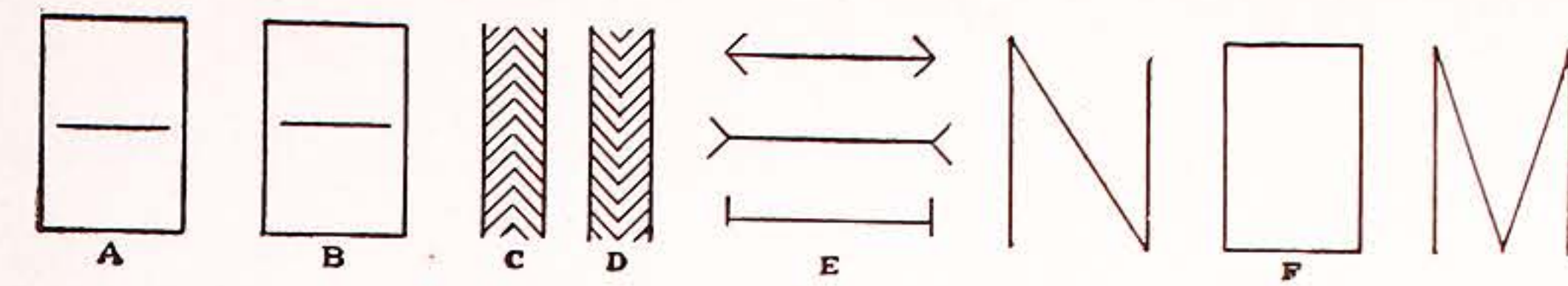
The question is often asked: Why must letters be different widths and heights, or why are some letters wider than others? In the alphabet shown on this page, all letters are exactly the same size, width and height, each occupying a square of the same size with the middle bars on center. Some letters appear wider and some higher than others, the middle bar appears high on some and low on others. This illustration seems to be the best answer to the question, Why are letters different widths and heights?





OPTICAL ILLUSION

Do not overlook the fact that "things are not always what they seem." The different lines used in forming a letter create optical illusions.

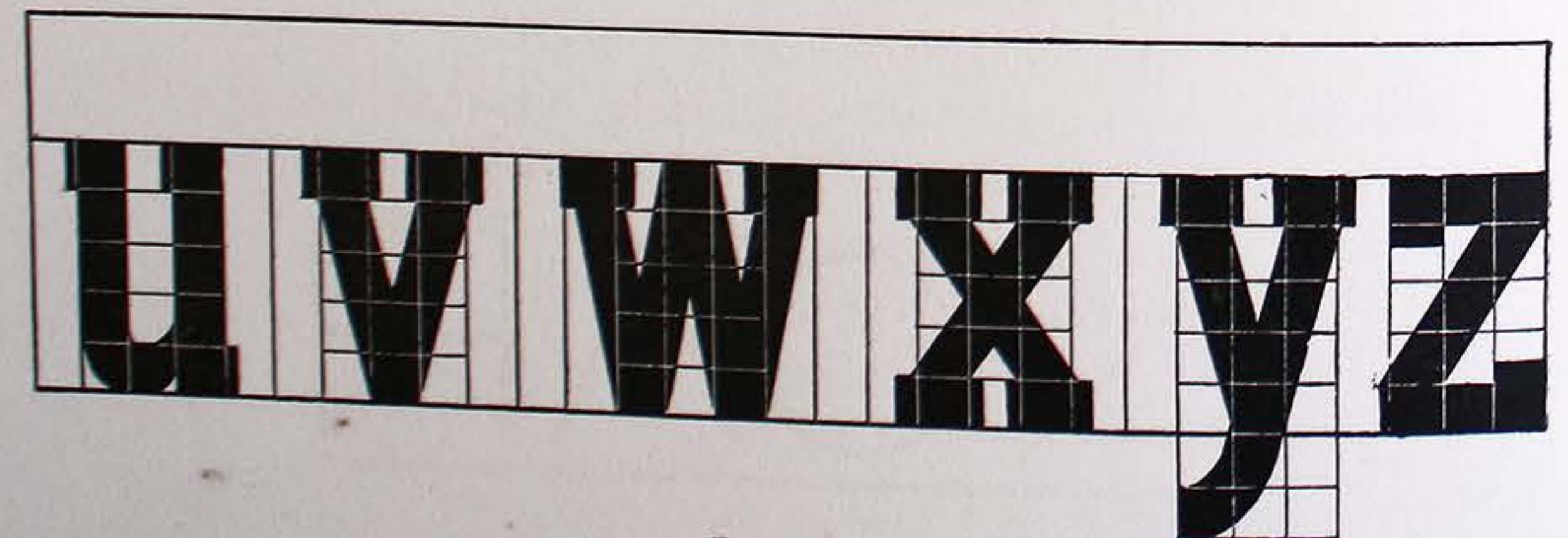
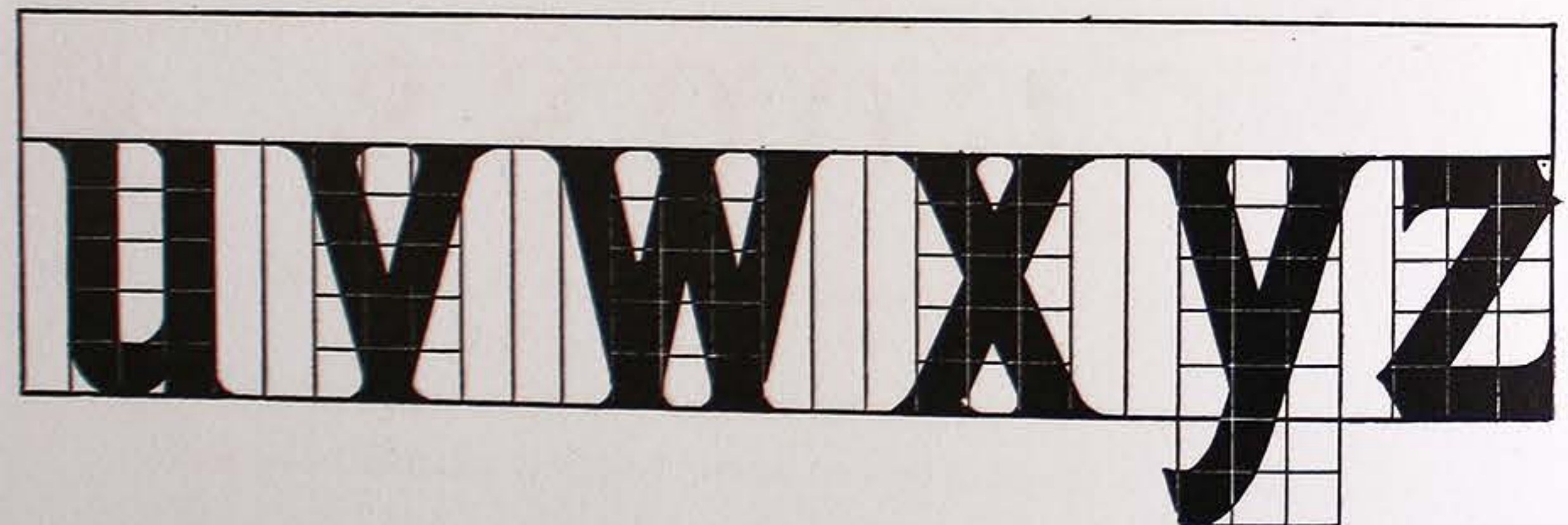
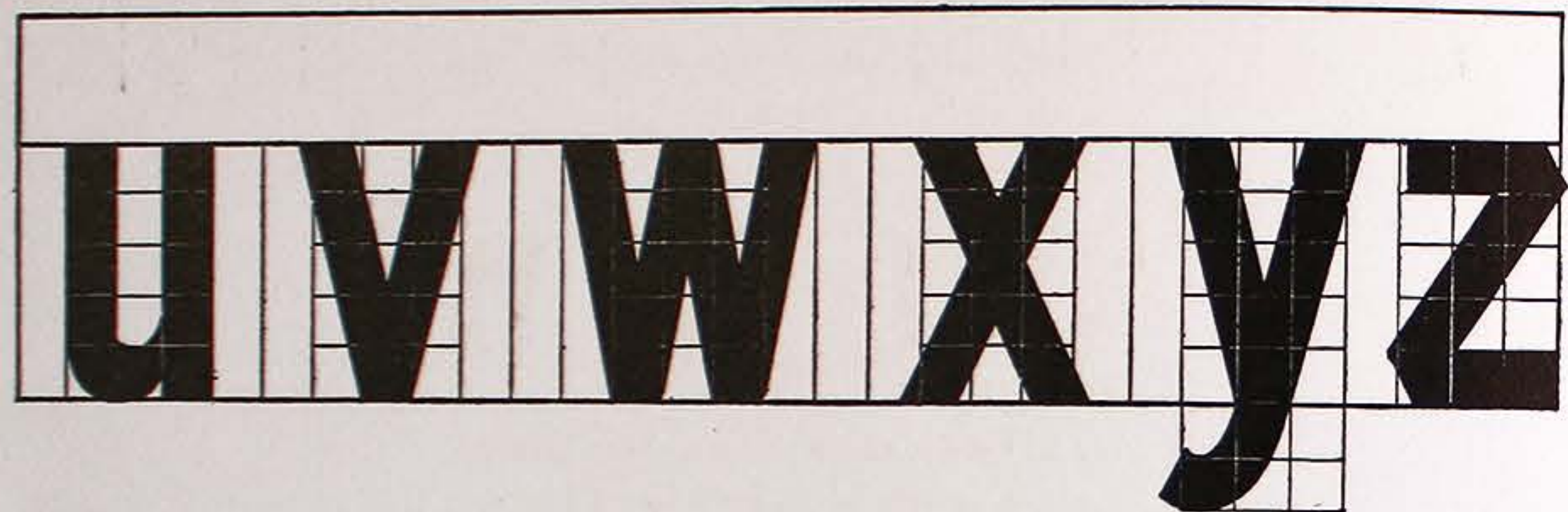
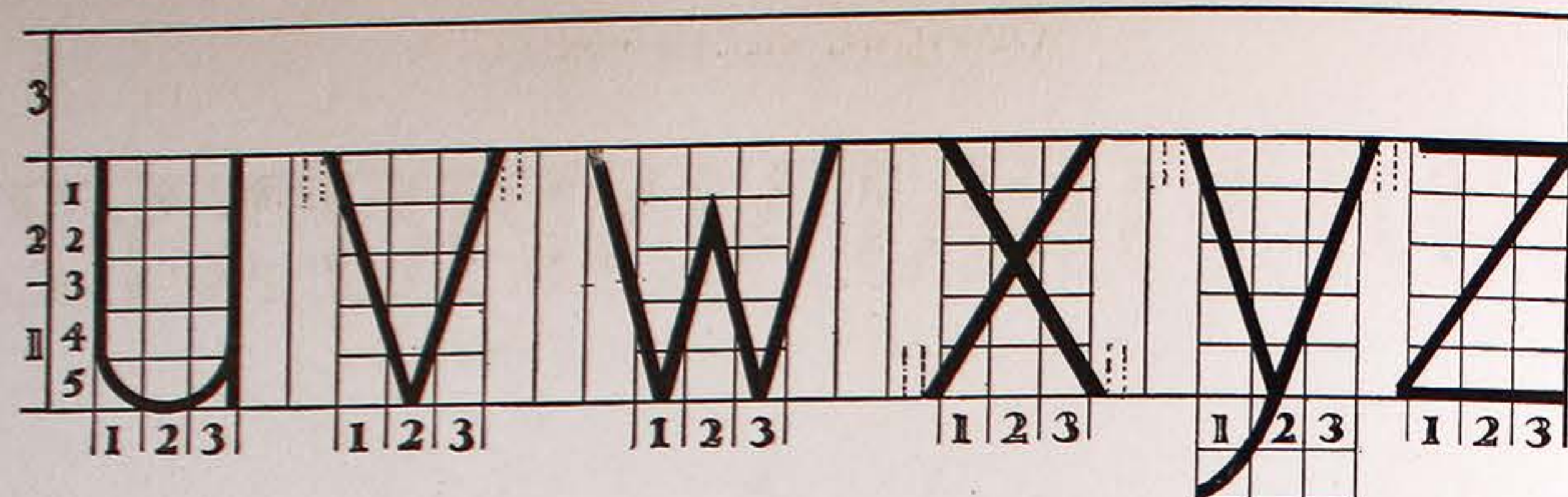


See squares A and B, the cross bar in A is on center, but appears low; in B, though placed above the center, it appears to be on center.

In C and D, C appears to be wide at the top and tapering at the bottom; in D, it is just the reverse, though in both cases the vertical lines are parallel.

The three horizontal lines marked E are the same length, the diagonal lines on the ends of two of these pointing in and out, and the cross lines on the third cause some to appear longer than others.

In F, the letters N, O, M are the same width, the diagonal lines in the N and M making them appear otherwise.



HEIGHTS OF LETTERS

BDEFHIKLMNPRTXYZ

Touch the top line and rest on the bottom line.

A

Extends above the top line and rests on the bottom line.

J U V W

Touch the top line and extend below the bottom line.

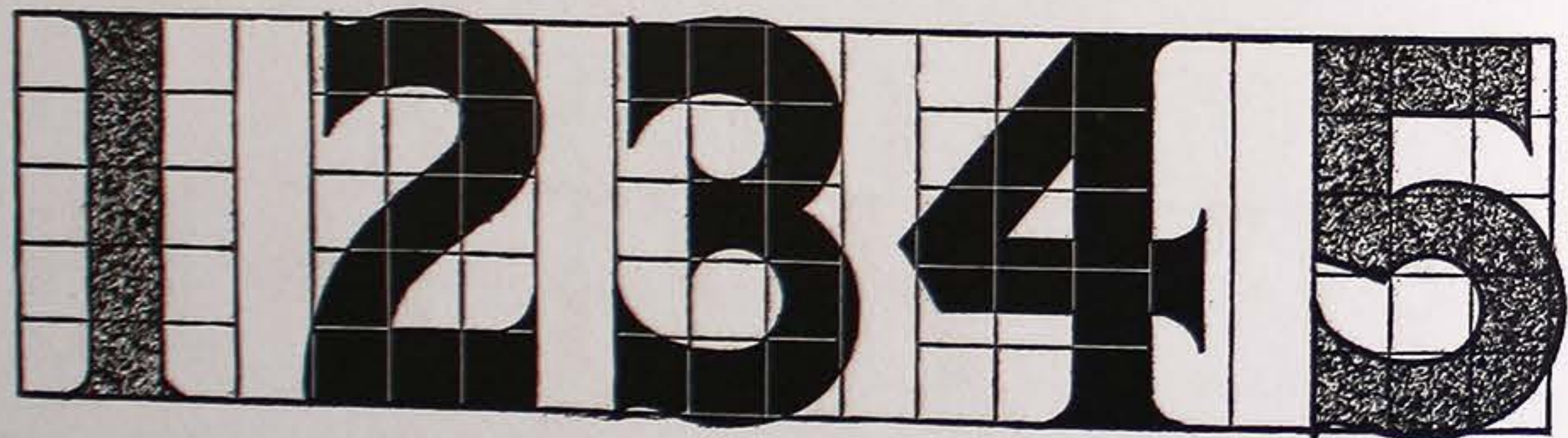
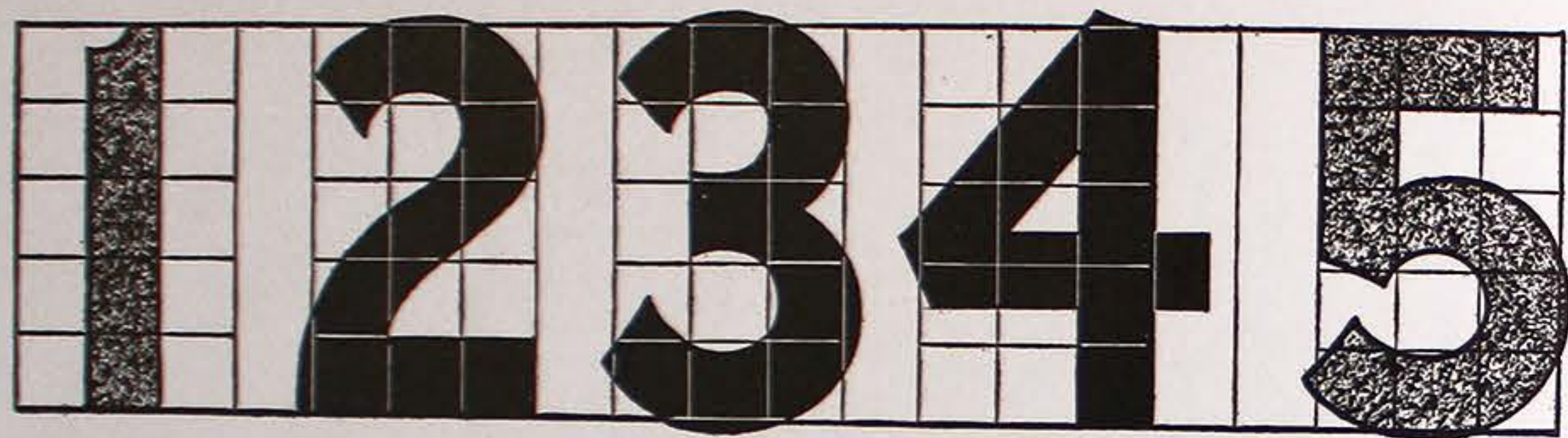
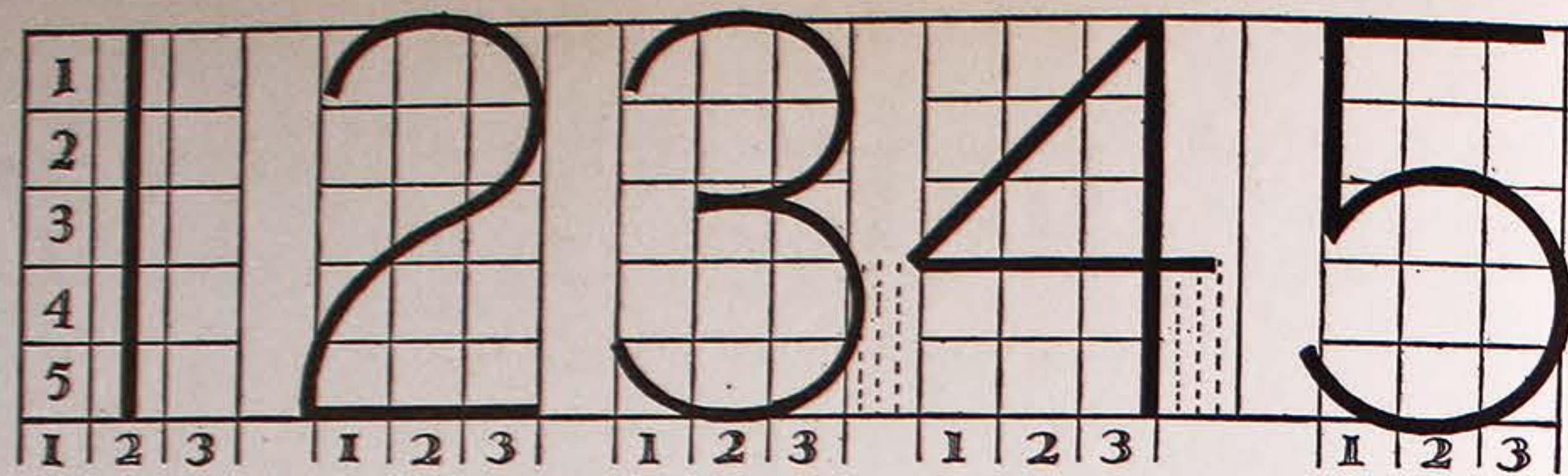
C G O Q S &

Extend above top line and below the bottom line.

Only the round and wedge-shaped letters extend above or below the line. Because of optical illusion in the heights and widths of letters, the unexpected happens.

Here are four letters of the same height and width, but being of different shapes, the O and A seem smaller than the N and H.

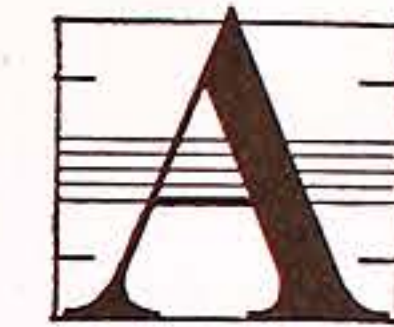
NOAH



MIDDLE LINES OR BARS OF A LETTER

The middle bars or lines of a letter vary in height; some are placed above and some below center. If all were placed on the true center some would appear high and others low.

Divide the middle space into four equal parts, each part representing a line; mark the center line "C" then, 1 and 2 lines from the center each way.



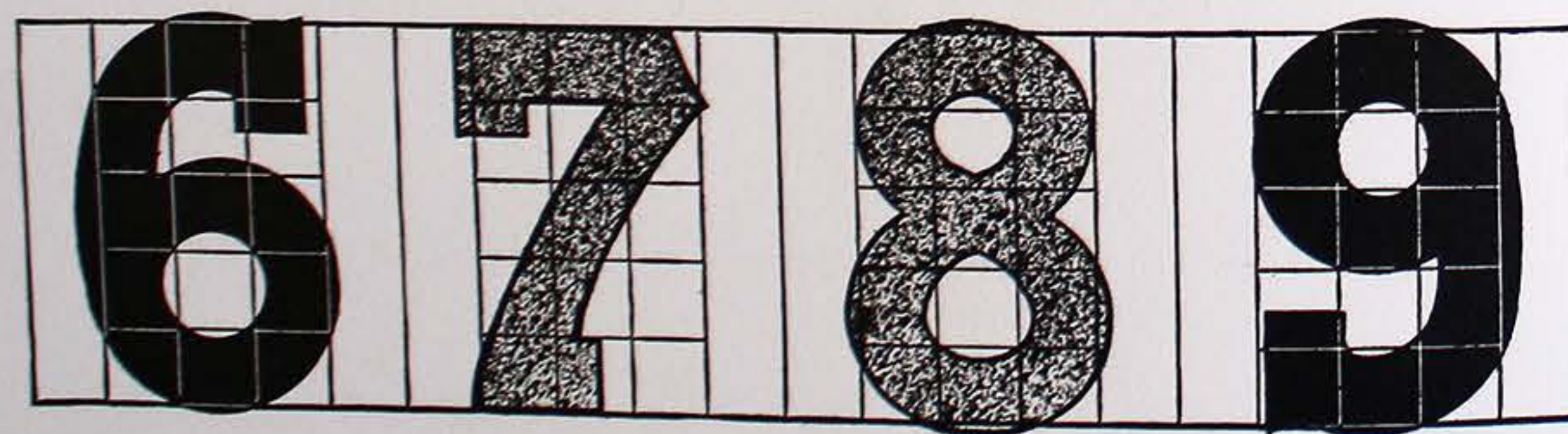
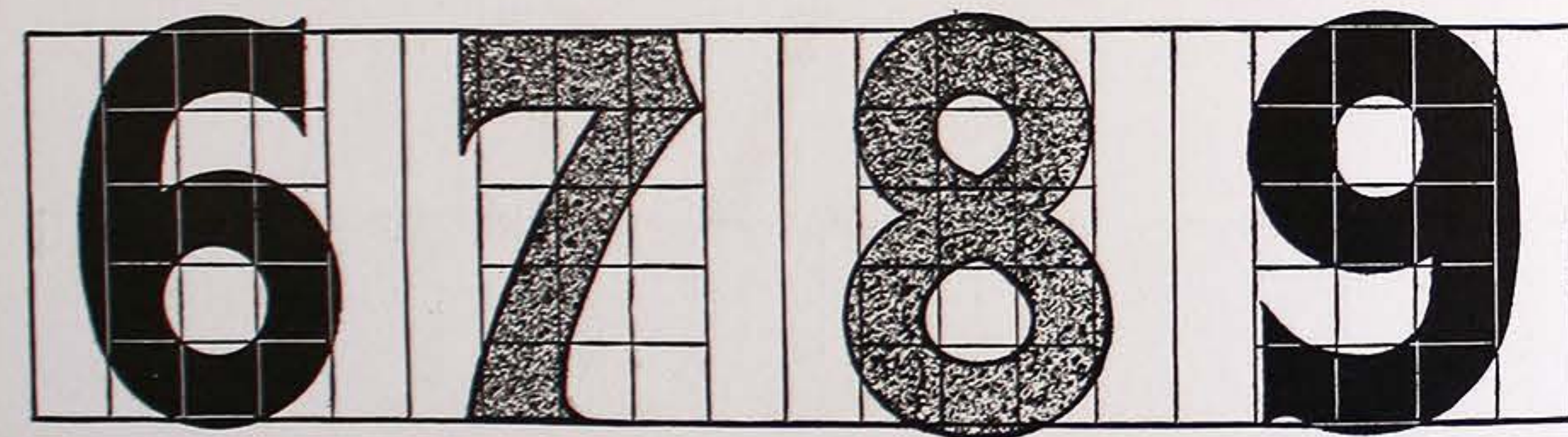
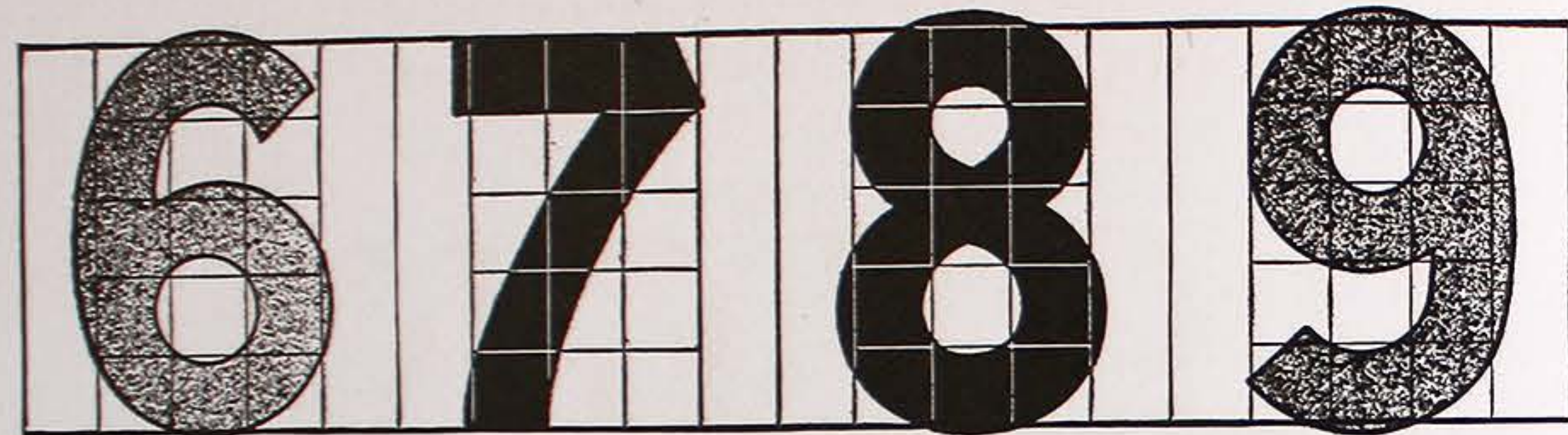
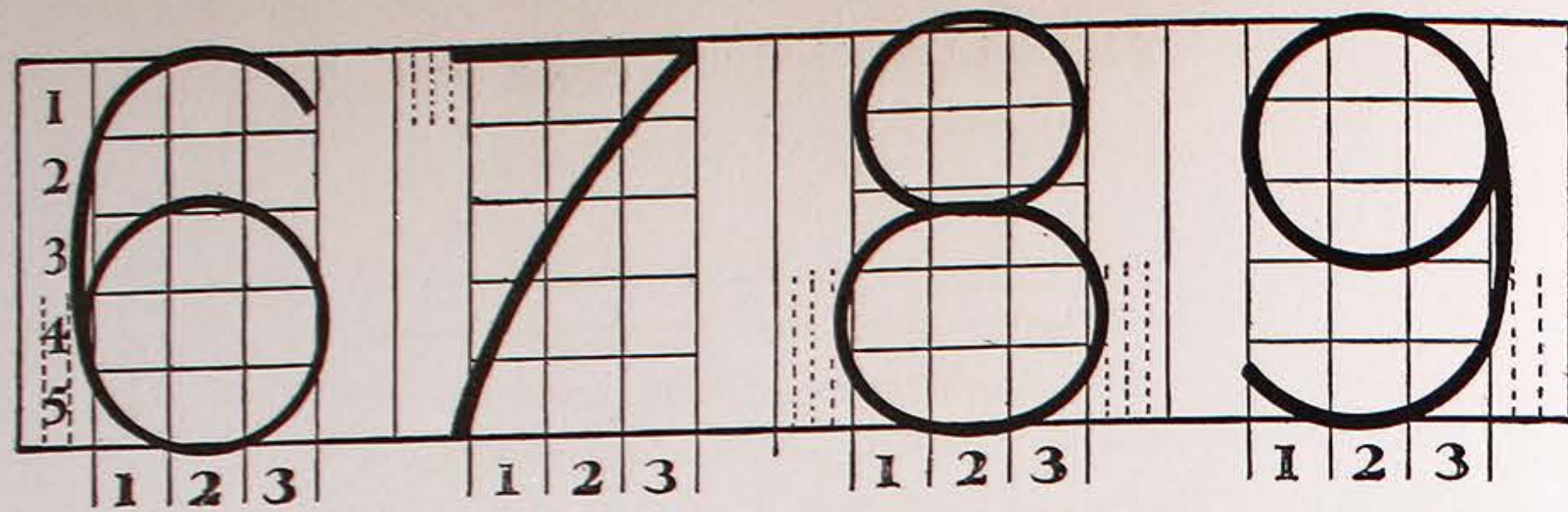
The middle bar is two lines below center.



The middle bar is one line above center

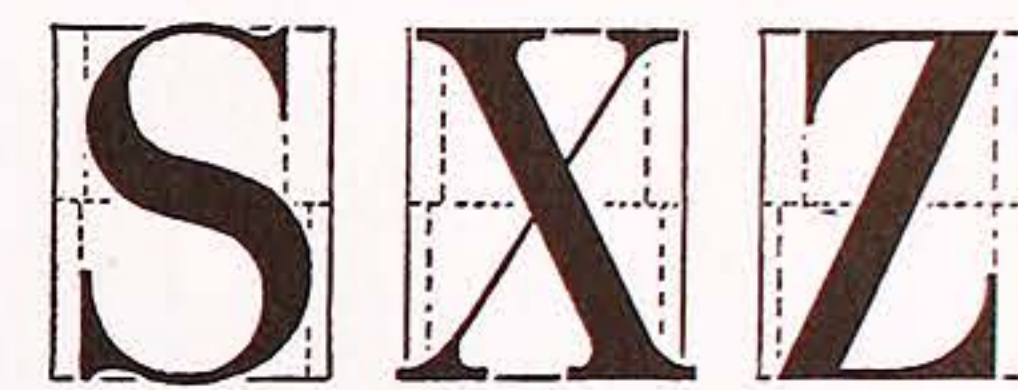
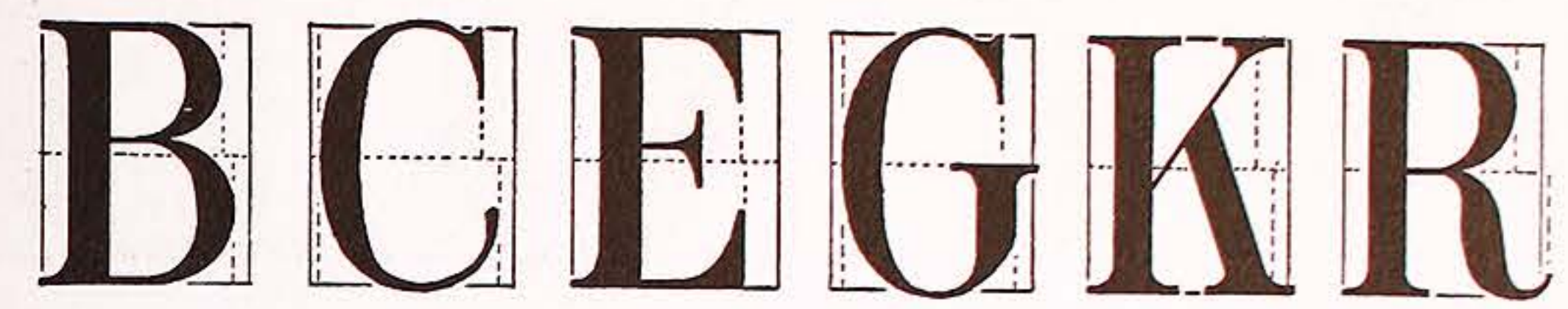
The middle bar is one line below center.

This is done to preserve the appearance of balance in the letter.

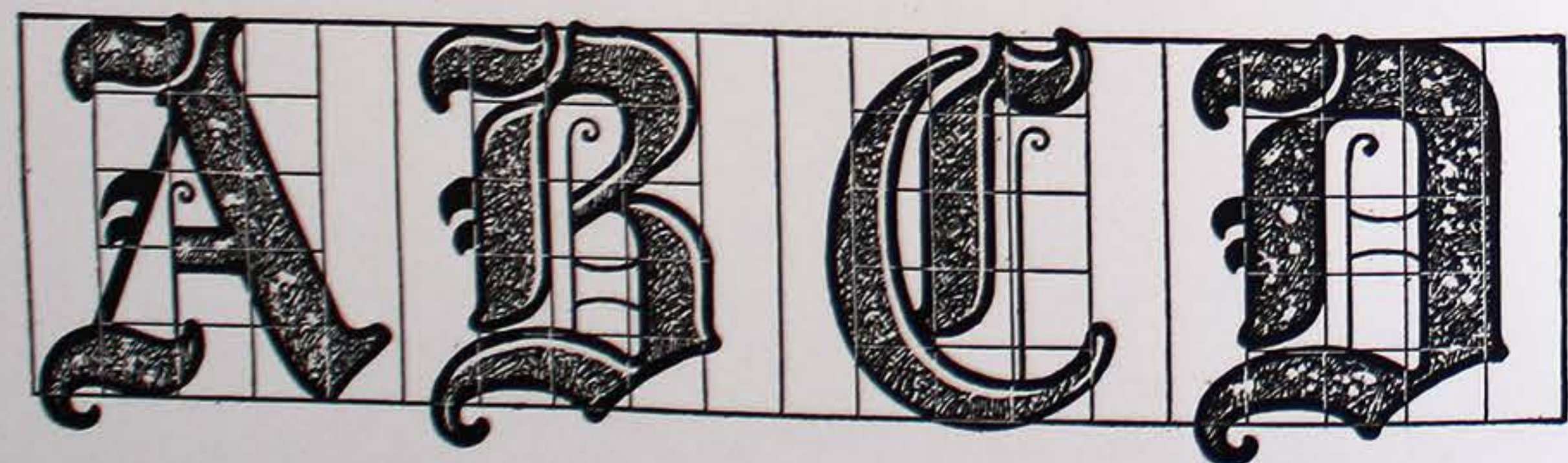
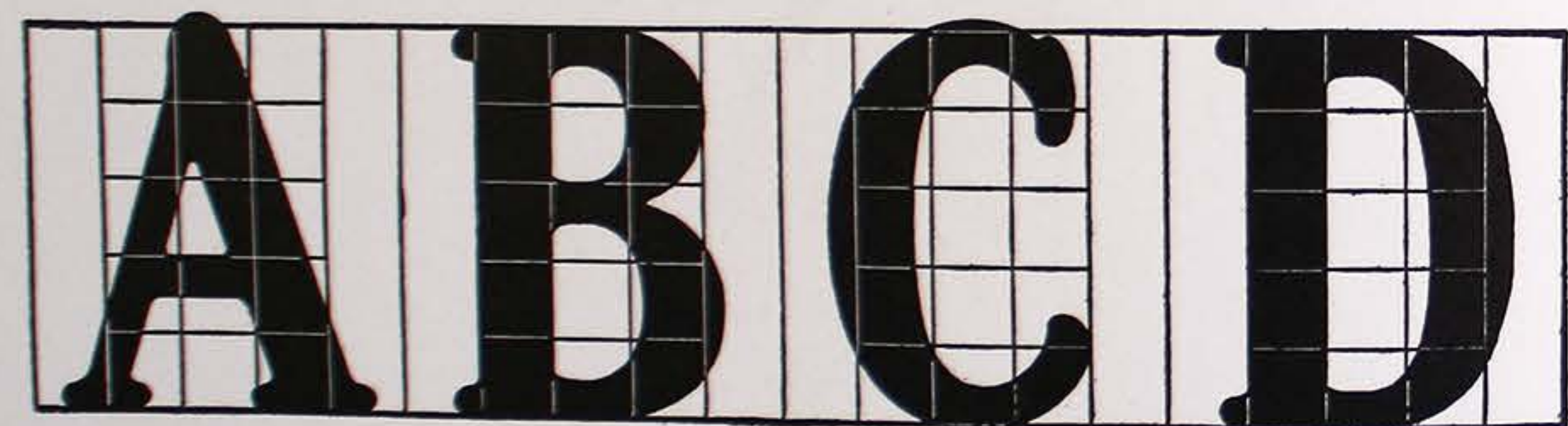
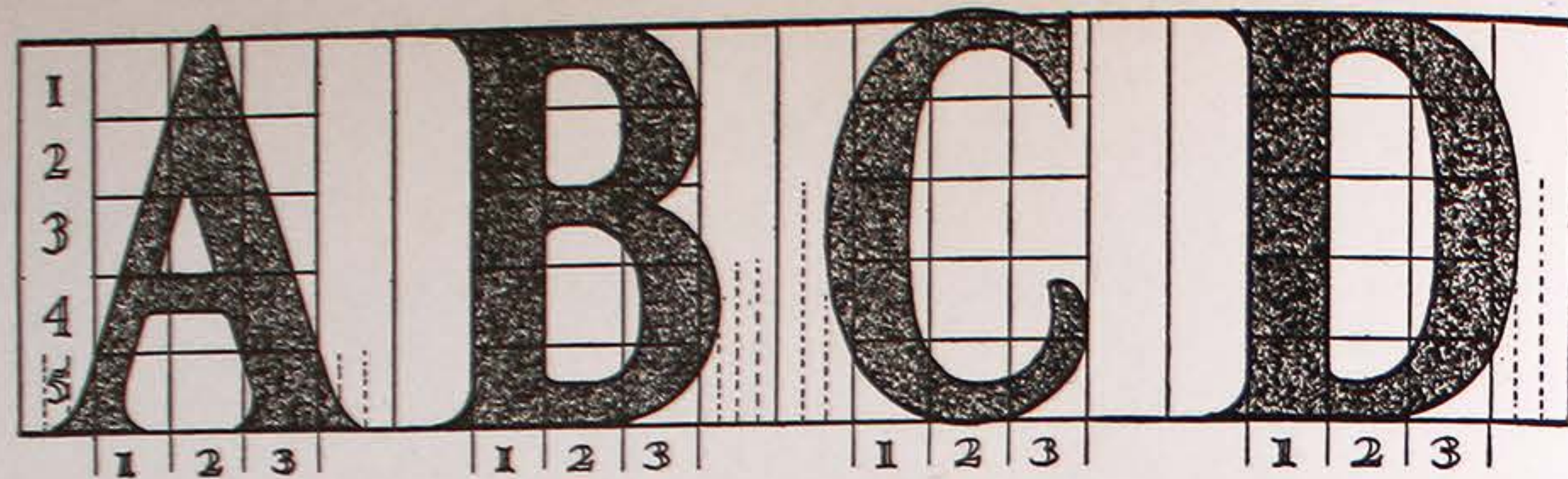


THE UPPER AND LOWER PORTIONS OF A LETTER

In constructing some letters, it is better to make the upper portion a trifle smaller than the lower. This is done to preserve an equal balance, giving the letter a base to stand on, as well as to prevent it having the appearance of being top-heavy.



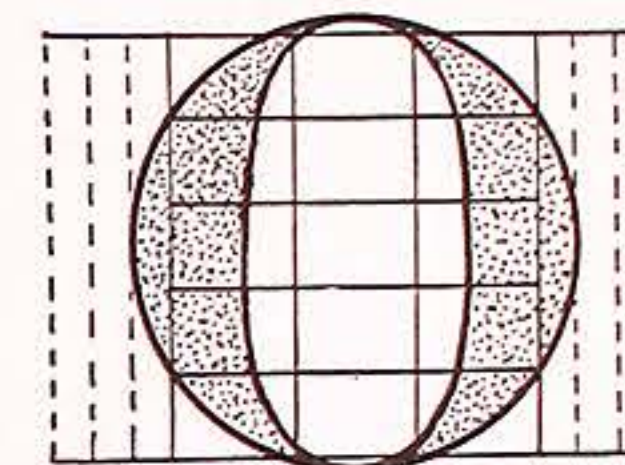
This should be done in such a manner that it will not be noticeable; the differences must not be great.



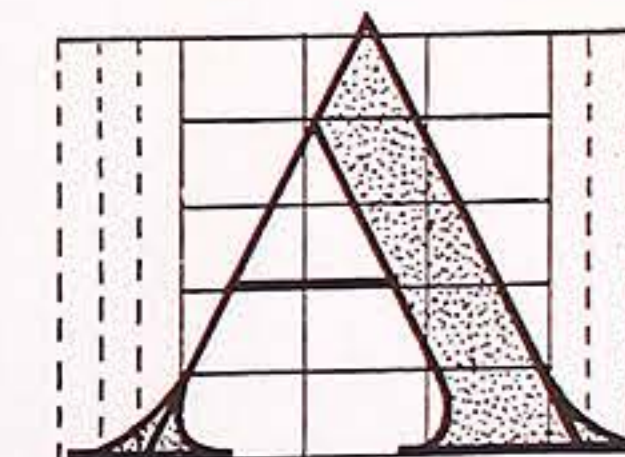
LETTERS VARY IN WIDTHS AND HEIGHTS

Proportion, or the relation in size of one letter to another, is most important in keeping a uniform appearance of size in the different shaped letters.

In order to keep this appearance of uniformity throughout a line of letters it is necessary to have all round letters extend a trifle beyond the lines of the 5 to 3 space frame, top, bottom and sides.

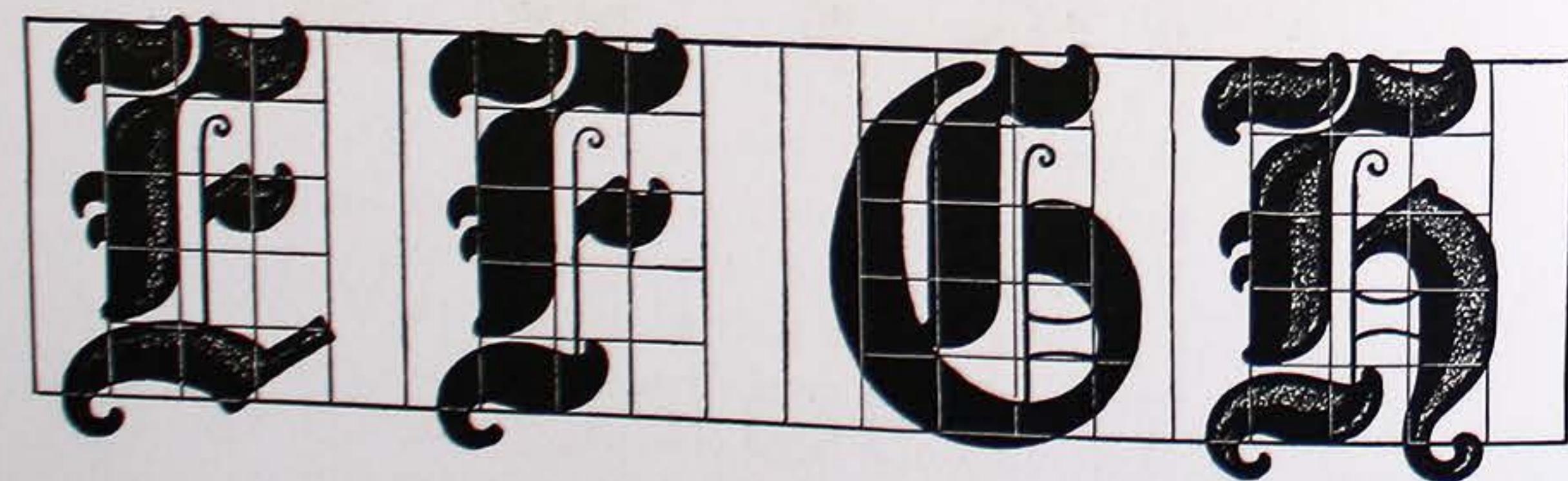
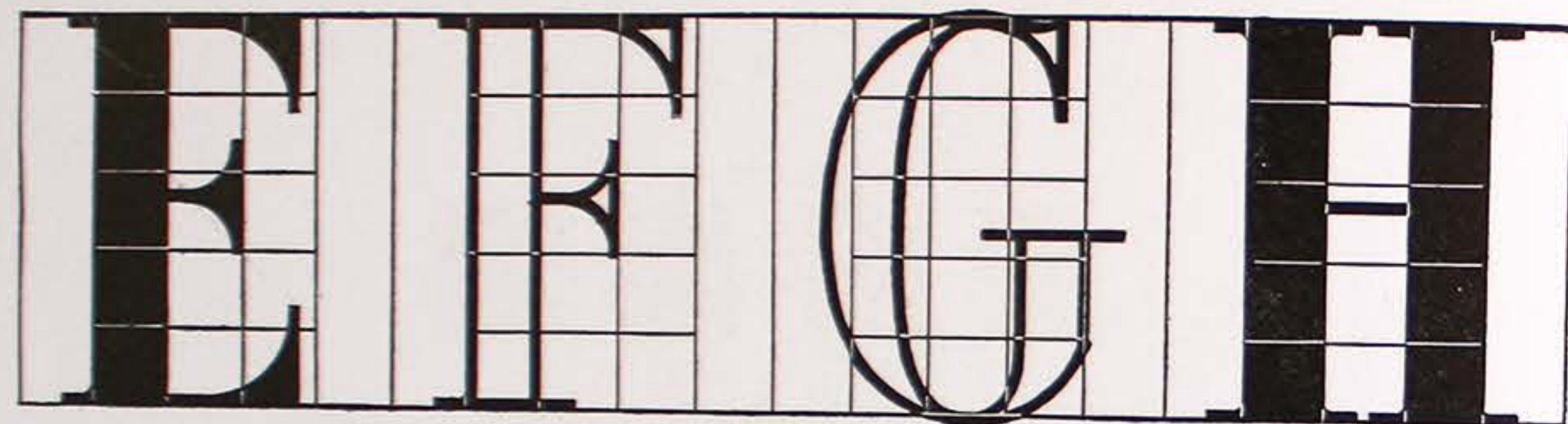
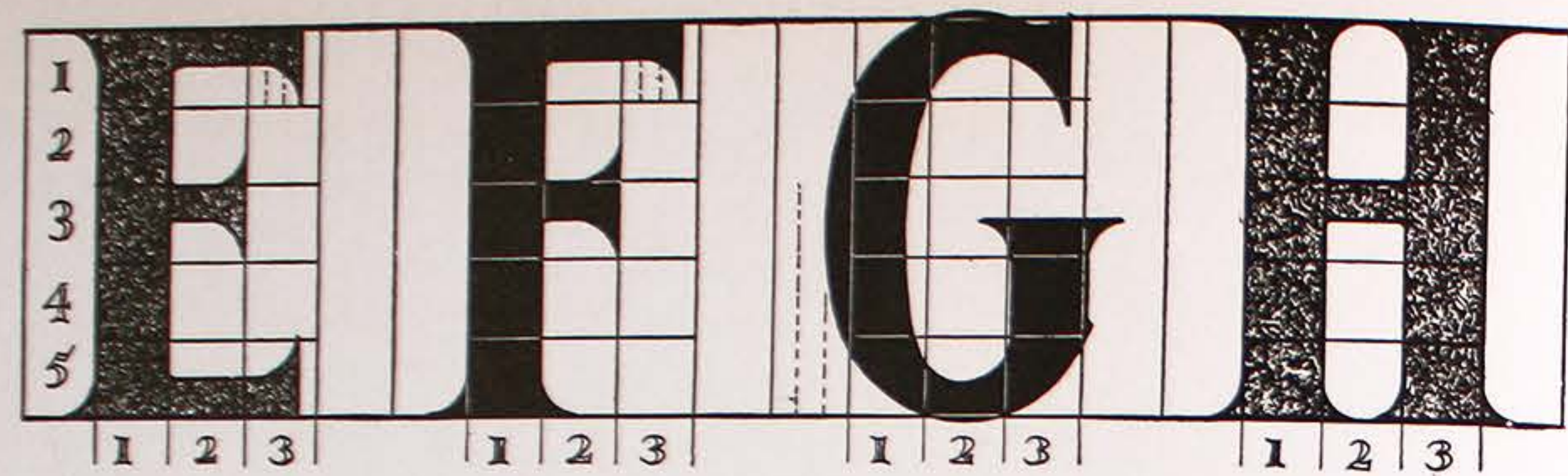


The same rule is applicable to the wedge-shaped letters; however, in this instance, it is the corners or points of the wedge that extend beyond the frame.



If these rules are not observed the round and the wedge-shaped letters will appear less in height and width than the square letters in the same line with them.

No matter how well made letters may be, if they are not related as to size or well proportioned, they will not harmonize, and the labor is lost.



LETTERS HAVE FIXED SHAPES

Originally all letters were symbols created to make thoughts legible. These symbols having shapes which when once created and repeated often enough became recognizable to the eye as letters. To draw or make letters it is well to become familiar with these shapes.

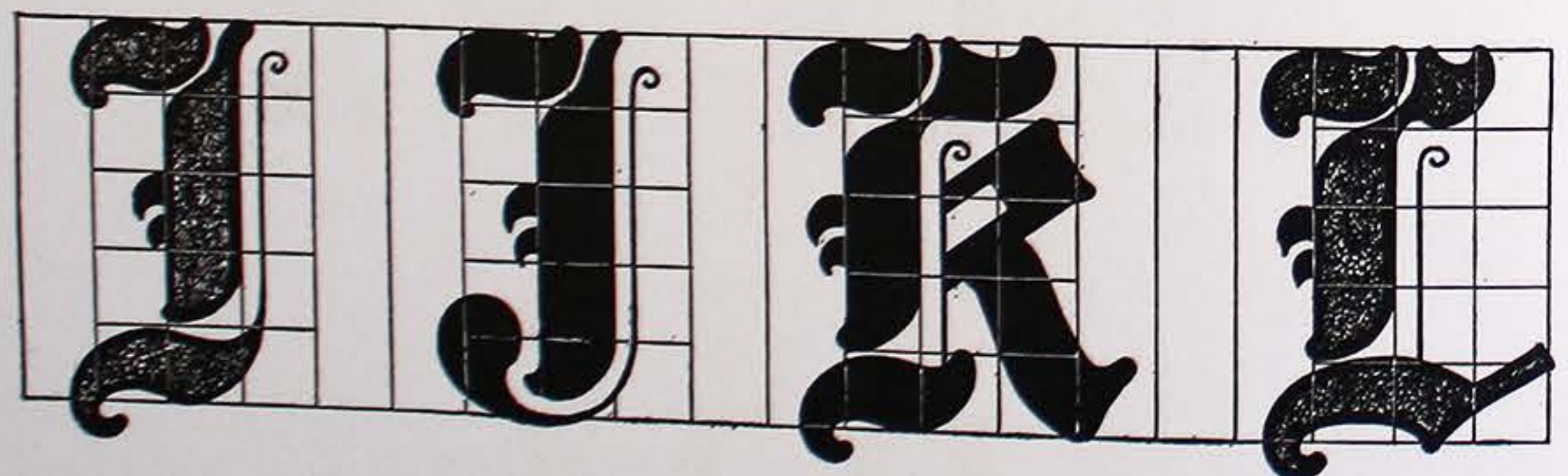
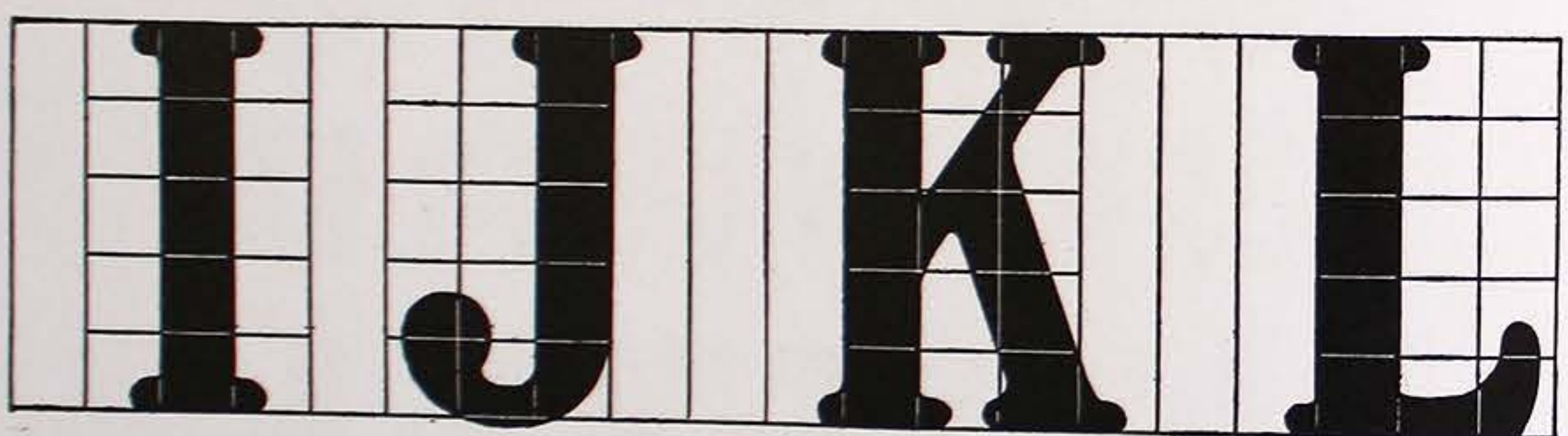
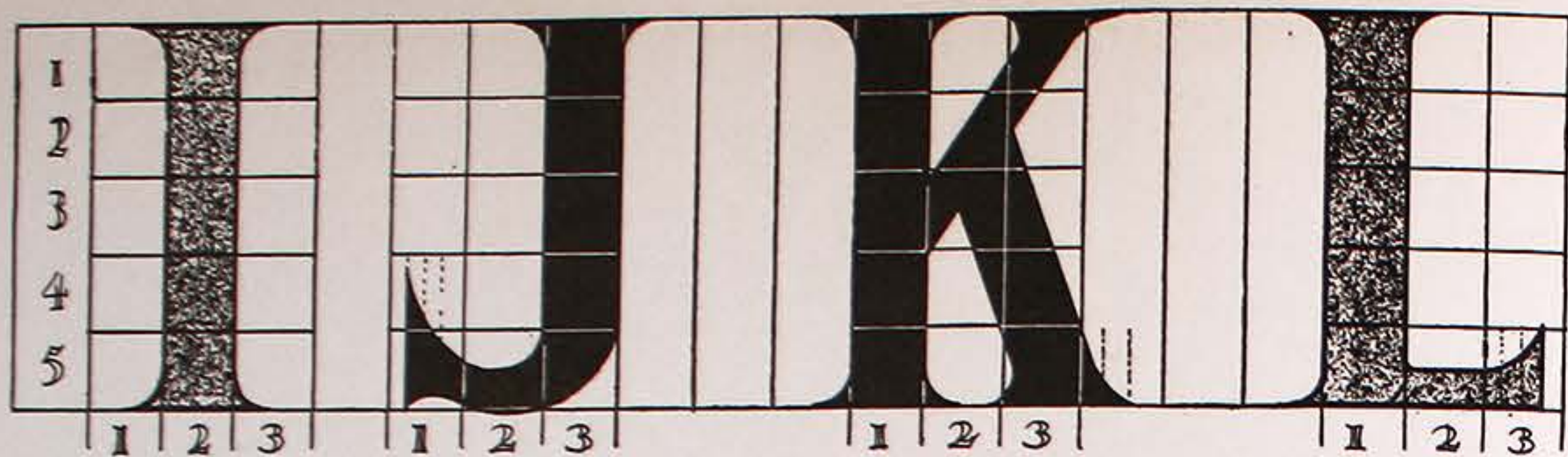
There are four major shapes: Square, round, wedge and triangular, and combinations of these shapes: square-and-round, square-and-wedge and double-wedge.

The nearer these established shapes are adhered to, the more legible the work will be.



Some letters are made entirely of straight lines, while others are made of curved lines, or a combination of curved and straight lines.

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



LAWS WHICH GOVERN THE THIN OR THICK LINES

There is a reason for all things which holds true in the case of thick and thin lines, and the laws that govern them.

LETTERING IS WRITING

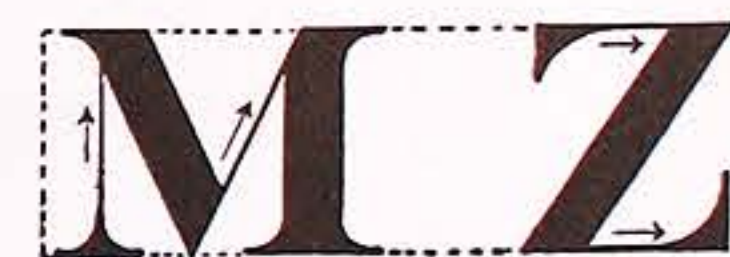
Whether made with pen, brush or chisel, the law that governs one, governs the other.

The thick or thin lines are the accents of the letter, the result of having been made with a pen. Due to the uneven pressure we put upon the pen when used, the up-stroke is light, making a thin line, the down-stroke heavy, with a thick line resulting. The same law holds good in lettering.

ABCDEFGHIJKLMNOPQRSTUVWXYZ

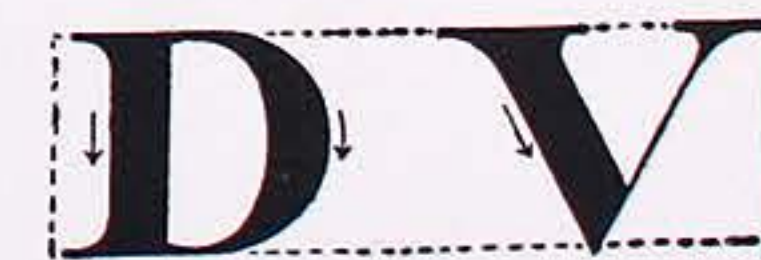
THIN LINES

There are three kinds, Perpendicular and Diagonal up-strokes and Horizontal lines.



THICK LINES

There are also three kinds, Perpendicular, Curved and Diagonal, made with a down-stroke, hence thick.





THE LAWS WHICH GOVERN THE THICK AND THIN LINES

From time to time the query is heard from the beginner or student. Is this a thick or thin line? Just think for a moment, then remember the following hints. Consider the motions which are used in the construction of a letter. It takes from one to three.—Start with and then follow the direction of the arrow to the end of the line as shown below.

One motion letters

C I J L M N S U V W Z &

Two motion letters

A B D E F G O P R T X Y &

Three motion letters

H K Q

Bear in mind that all up and horizontal strokes are thin, that down and curved strokes are thick.

N A E Z I V B R O S

Only three letters have thin perpendicular up-strokes, M, N, U, all other perpendiculars are down-strokes, therefore thick. The diagonal up-stroke is thin going up from left to right, the down-stroke going down from left to right is a thick line.

The construction of a letter with the fewest possible motions will aid and determine which are thick lines and which are thin. This explanation and the examples given should enable one to decide promptly on this point.

CERIPHS OR SPURS

A ceriph or spur is a line crossing or projecting from the ends of the main lines or strokes of a letter, either at the top or bottom, forming the terminal or finishing stroke. They should be well considered. (Gothic letters have no ceriphs.)

A few of the more common in use are:



and so on. There seems to be no end, for each and every person has his own pet way of making them.

Uniformity of style should be used throughout a line of lettering; avoid using a straight ceriph on one letter with a diagonal on another.

The ceriph of the lower case should be at right-angles to the ceriph of the capital letter as shown below.



For instance, if the ceriph of the capital is
it must be this on the lower case letter,
or if the ceriph of the capital is
it must be this on the lower case letter



CERIPHS

Ceriphs when used are one of the important elements of a letter. They add grace, are an embellishment, lend character and aid in its readability. This is demonstrated with the following example.

Using the word

EAGLE

Dispensing with the thin lines but retaining the thick lines and ceriphs, the letters are very readable,

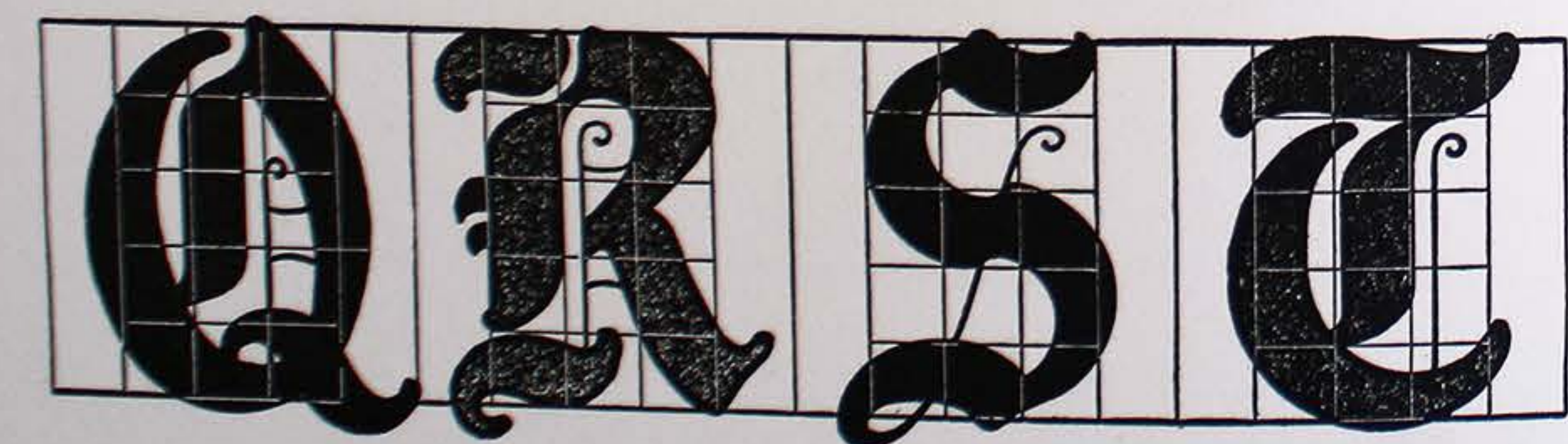
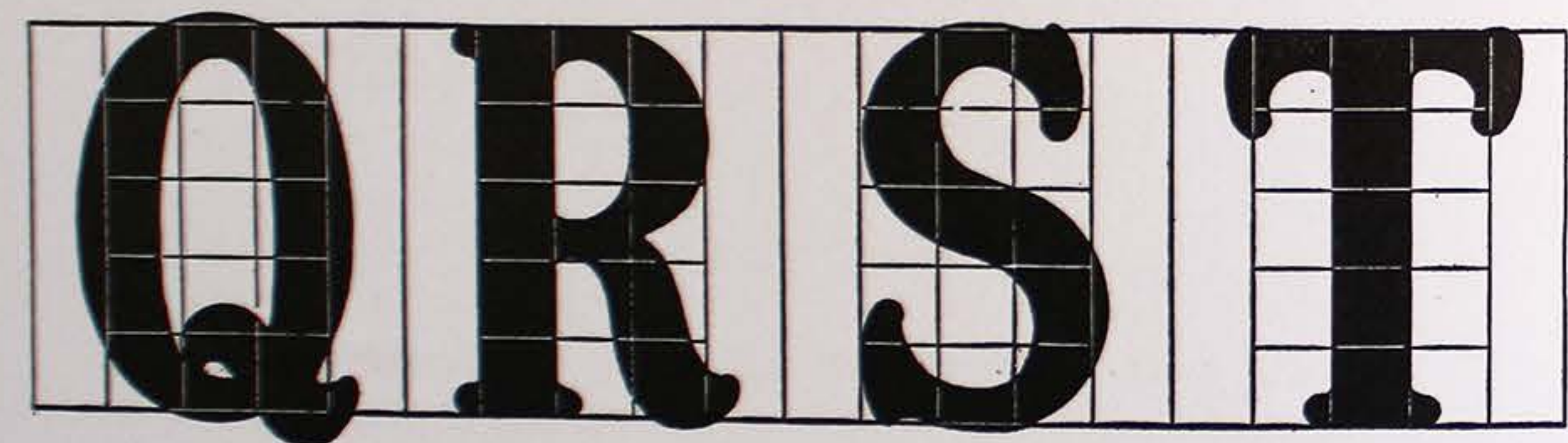
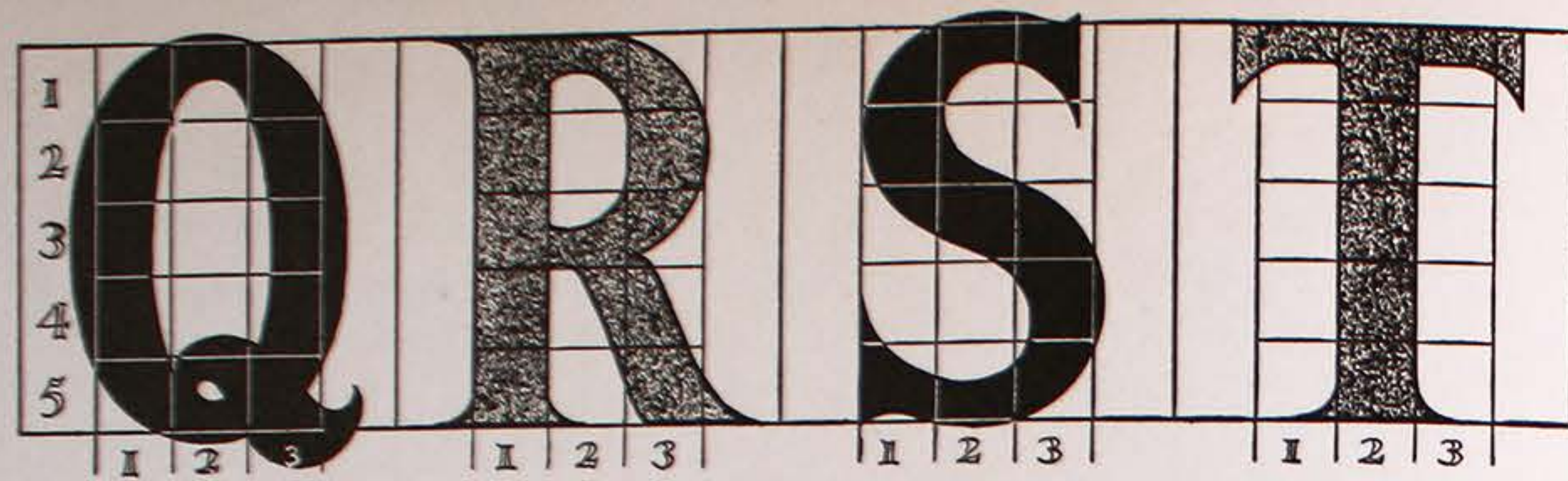
EAGLE

Then dispensing with both the thick and thin lines, but retaining the ceriphs alone, the letter can almost be conceived, and can be read with little difficulty,



Thus demonstrating the paramount importance of the ceriph.

A letter well proportioned, the thick and thin lines evenly balanced, ceriphs correctly placed and in keeping with the letter, does not have to be read—the mind comprehends it at once. This should be the mission of a letter. A good letter seldom depends upon chance, but upon determination and skill to make it.



SPACING

The spacing of letters is the relation of space one letter holds to another, maintaining a uniform effect of space between them.

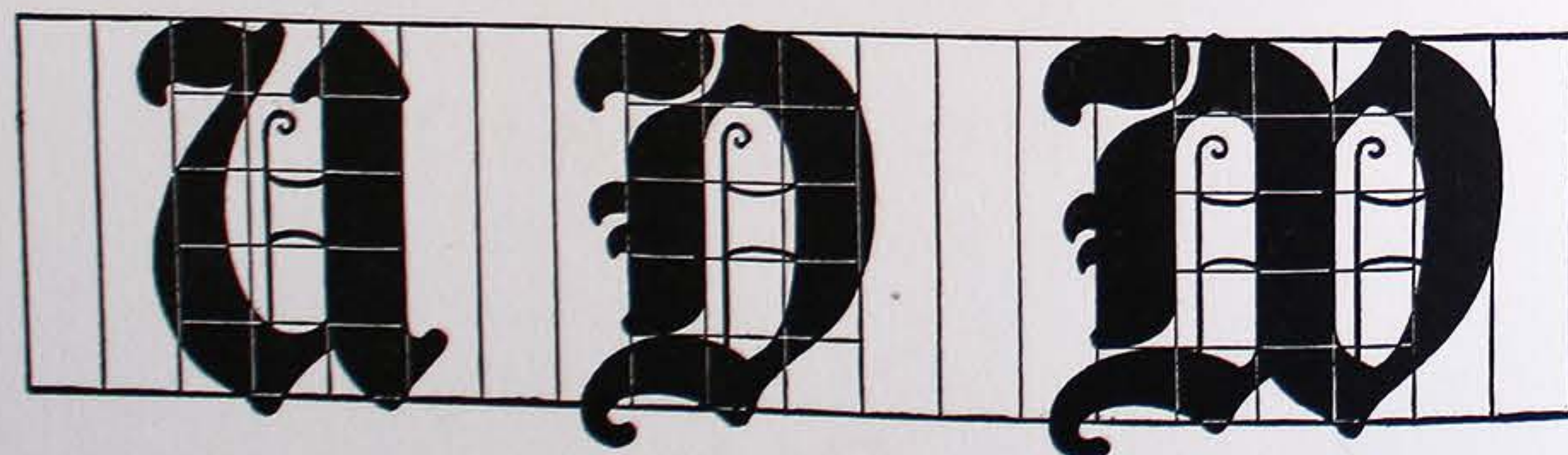
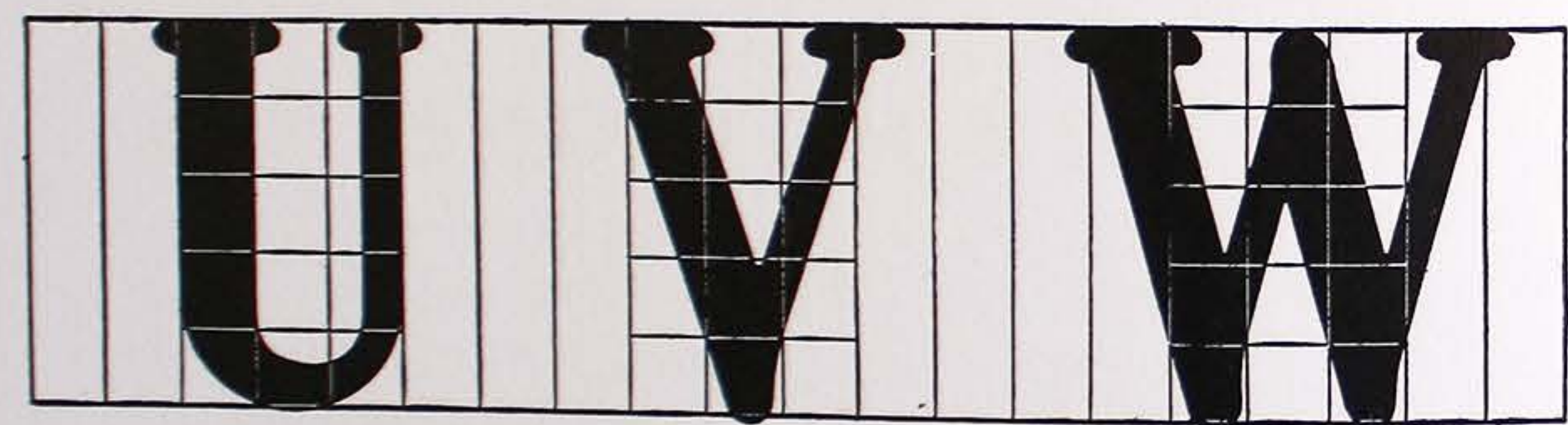
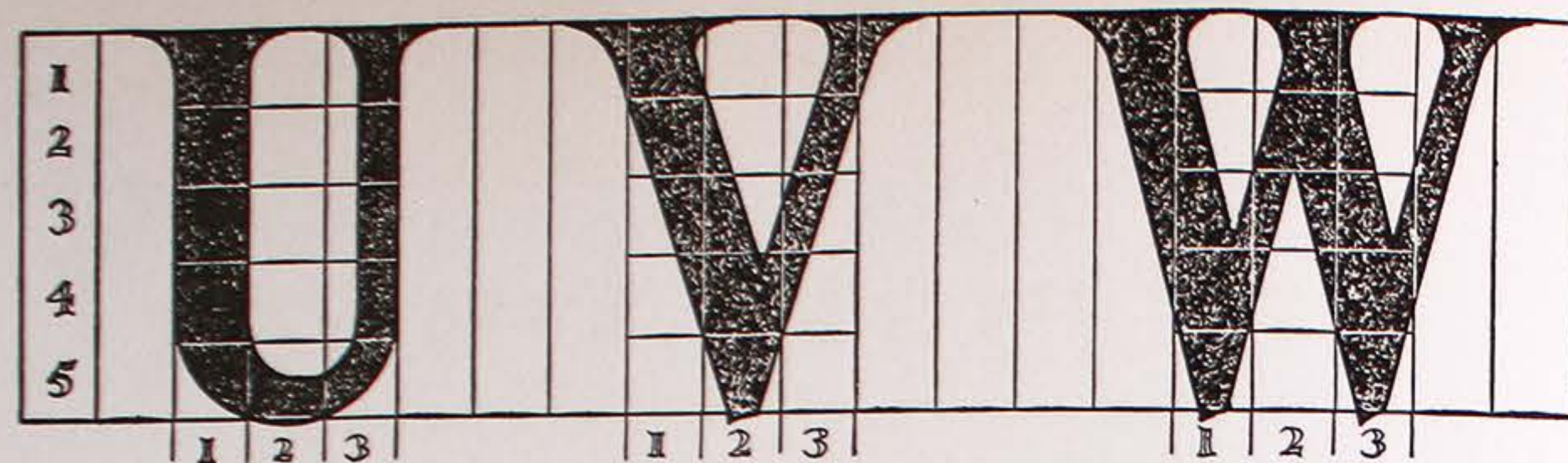
Spacing can be done by rule to a certain extent, but the eye alone should be the final judge.

The normal unit of space between letters is $\frac{1}{3}$ to $\frac{1}{2}$ the width of a square letter: "H" for instance, and fractions thereof.

The object or purpose is to make the blank spaces between letters have the appearance of equal air-space around and between each letter, so that some are not crowded and others left standing alone. The feeling for spacing can be developed by observation and by analyzing specimens of good lettering.

When reading, one sees words and not letters. The eye grasps the word as a whole and not each individual letter.

Letters and words are not to be read; they are to be conceived or grasped at a glance. If letters are not well made or the word not properly spaced, they are hard to read and therefore have to be spelled out.



SPACING

When A, L, T, V, W, Y are followed by a straight or square letter, use one half space,

AIR LID THE VIM YEN

When A and T follow or precede each other, the bottom of the A comes directly under the top of the T,

When A and V or A and W follow or precede each other, they should be one space apart on the diagonal,

HAT TAN VAT WAR

When L is followed by T, V, W, Y, the top of the T, V, W, Y, comes directly over the lower right corner of the L.

HILT VALVE ILWIN ELY

When a round letter such as C D G O Q S, comes next to a straight or square letter, they are placed closer together than if both were straight or square letters,

NIC DIN HUG ONE HIS

When two round letters come together like OC, OG, OO, the space between the letters is closer than if they were next to a straight or square letter; it amounts to what might be termed the overhang.

JOG NOC HOOD

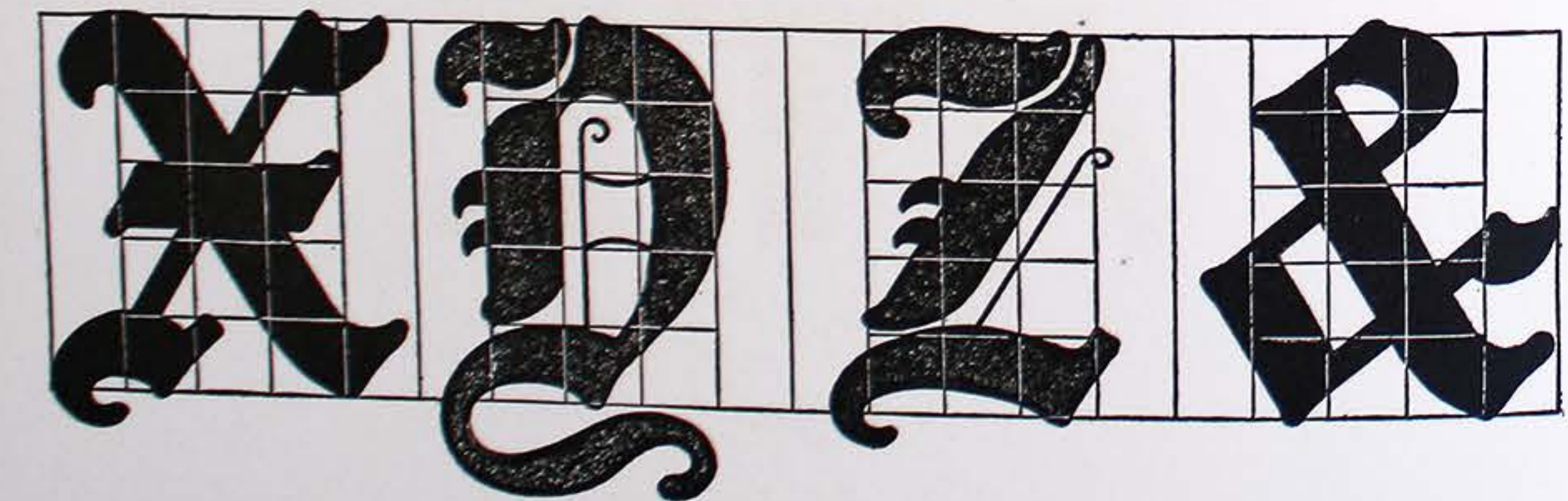
When a letter follows the open letters, C, E, F, G, K, P, place it a trifle closer than if they were two square letters,

CID END FIN KID PIN

Being open on one side makes this necessary.

When P is followed by A, the lower left corner of the A comes directly under the loop of the P, as in

PAL



SPACING

When A is followed or preceded by Y, the bottom of the A comes directly under the top of the Y,

PAYABLE

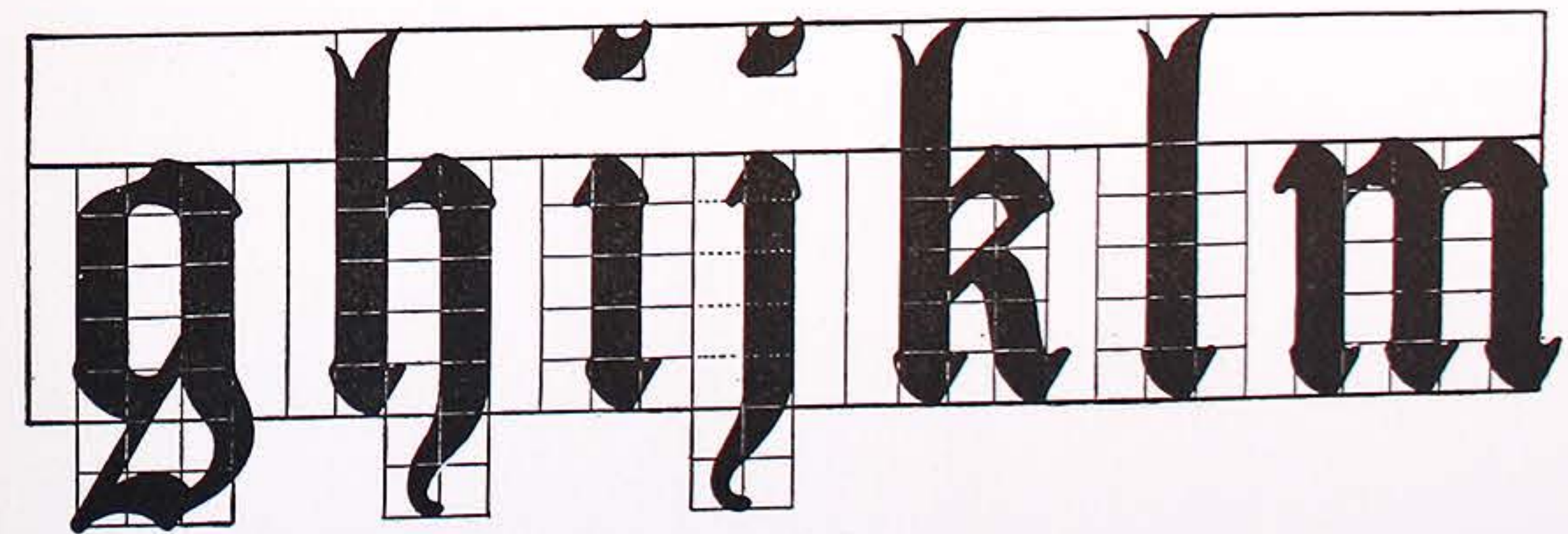
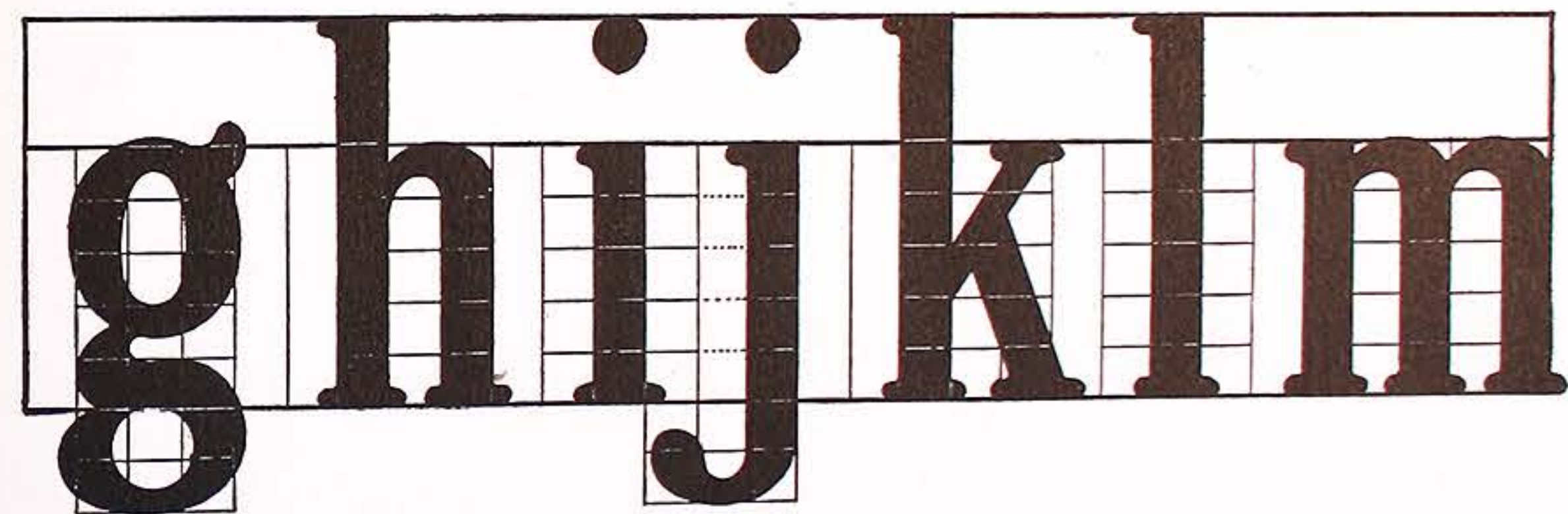
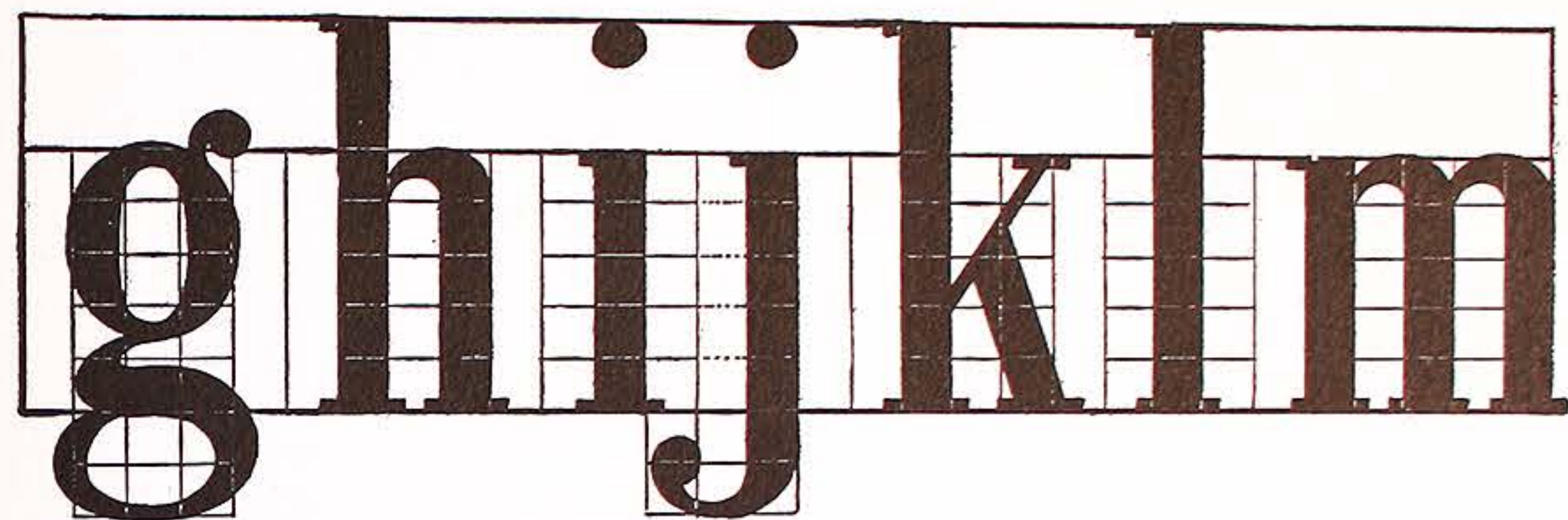
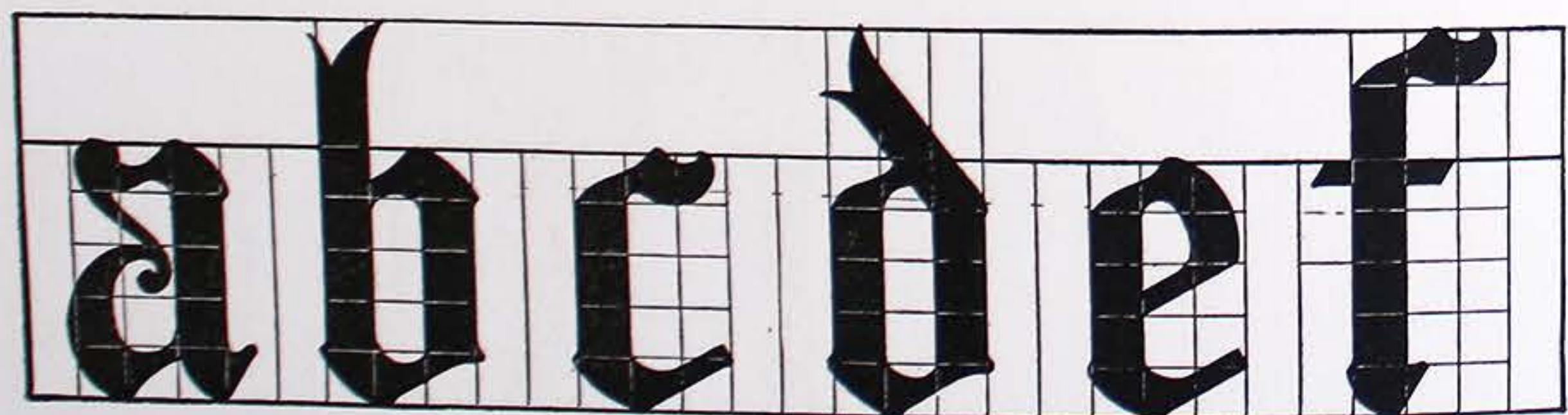
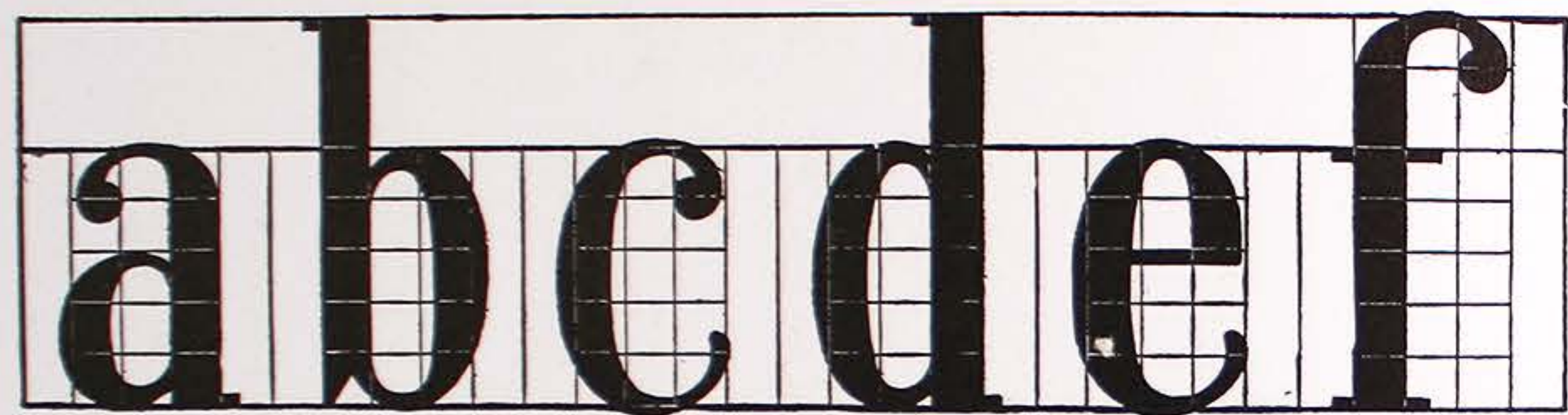
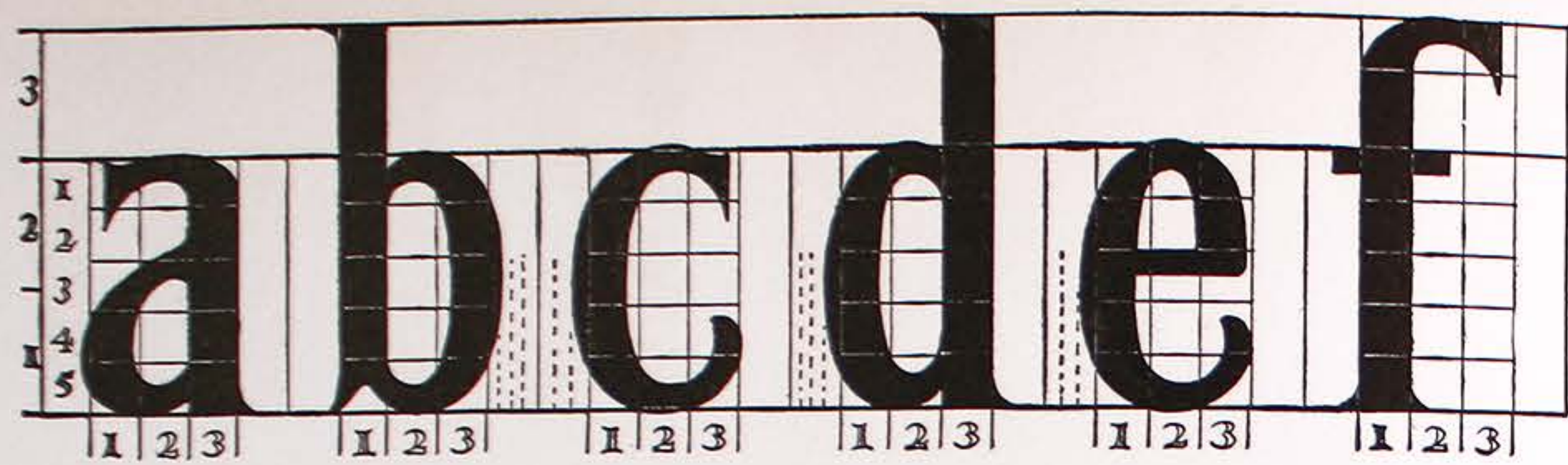
When O or A or a round or open letter is next to a wedge-shaped letter, place it a trifle closer than if it were a straight letter,

TOWN

The same letter placed in a line may occupy more or less space, according to their arrangement, as shown in the three words, EAT, TEA, ATE. The words EAT and ATE occupy less space than the word TEA.

EAT
TEA
ATE

These rules apply to normal spacing; if spaced more or less than normal the space between letters is governed accordingly.



3
1
2
3
4
5
n o p q r s t
1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3

n o p q r s t

n o p q r s t

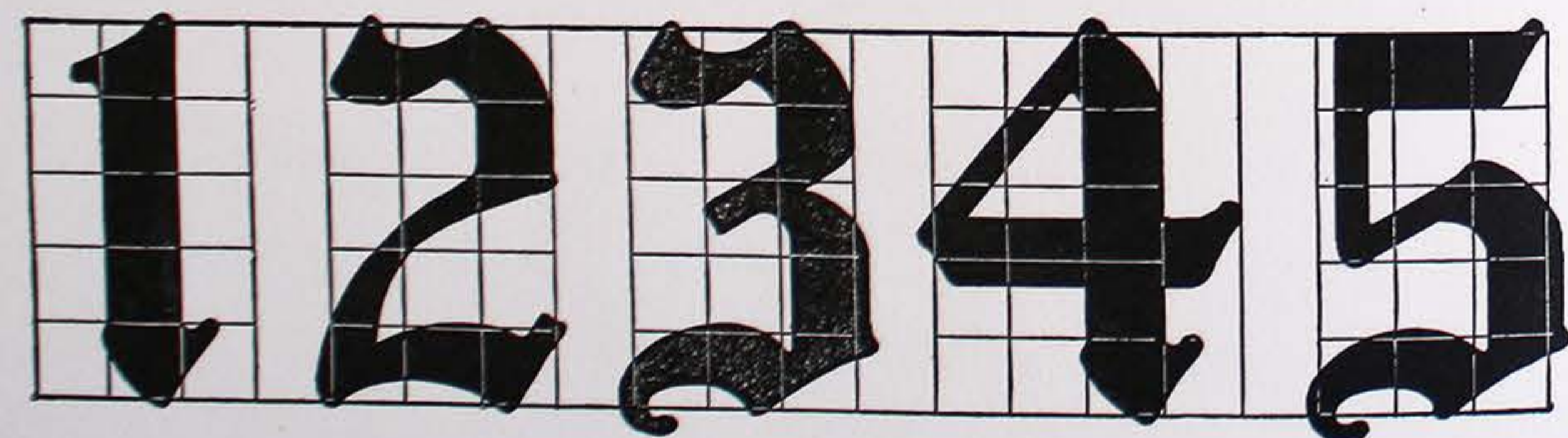
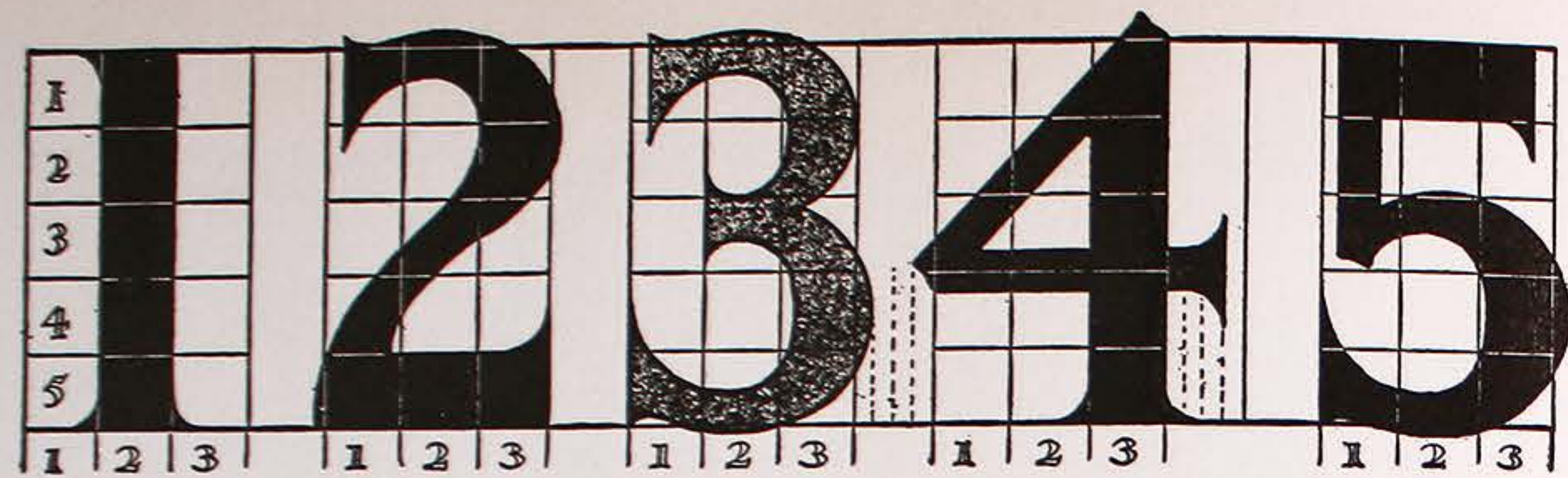
n o p q r s t

3
1
2
3
4
5
u v w x y z
1 2 3 1 2 3 1 2 3 1 2 3 1 2 3

u v w x y z

u v w x y z

u v w x y z



IDENTIFYING THE FACE OF A LETTER

When one speaks about the face of a letter, he says, heavy or light face, which means the boldness or weight. Letters that are very heavy and massive in appearance are called heavy face, or as some say, bold or fat face. Those that are fine and delicate are called light or lean faced.

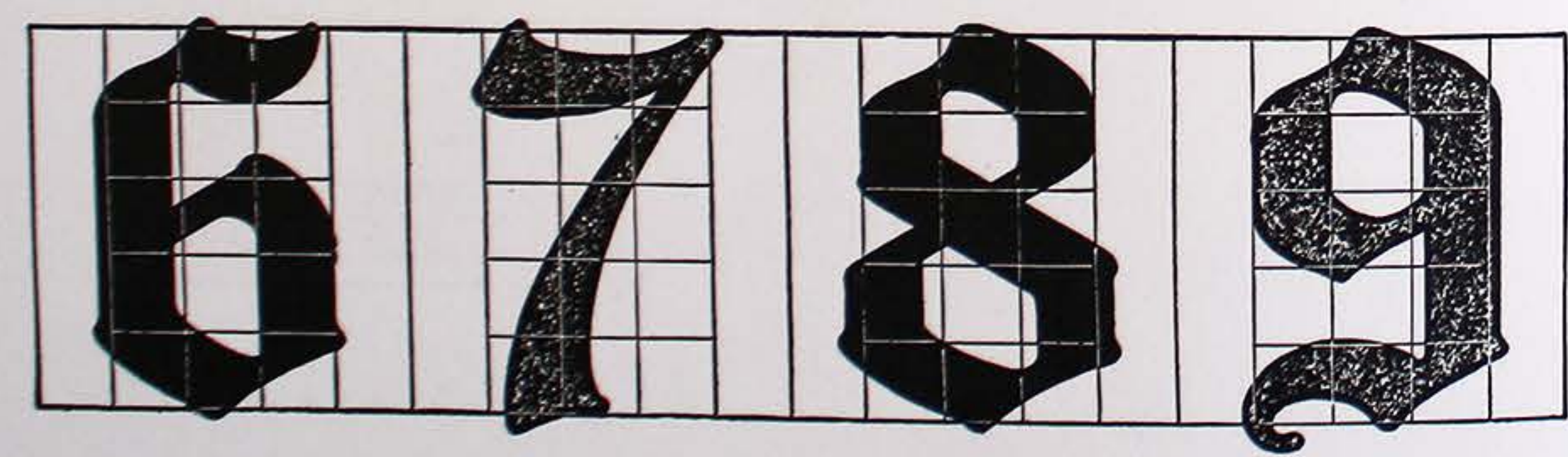
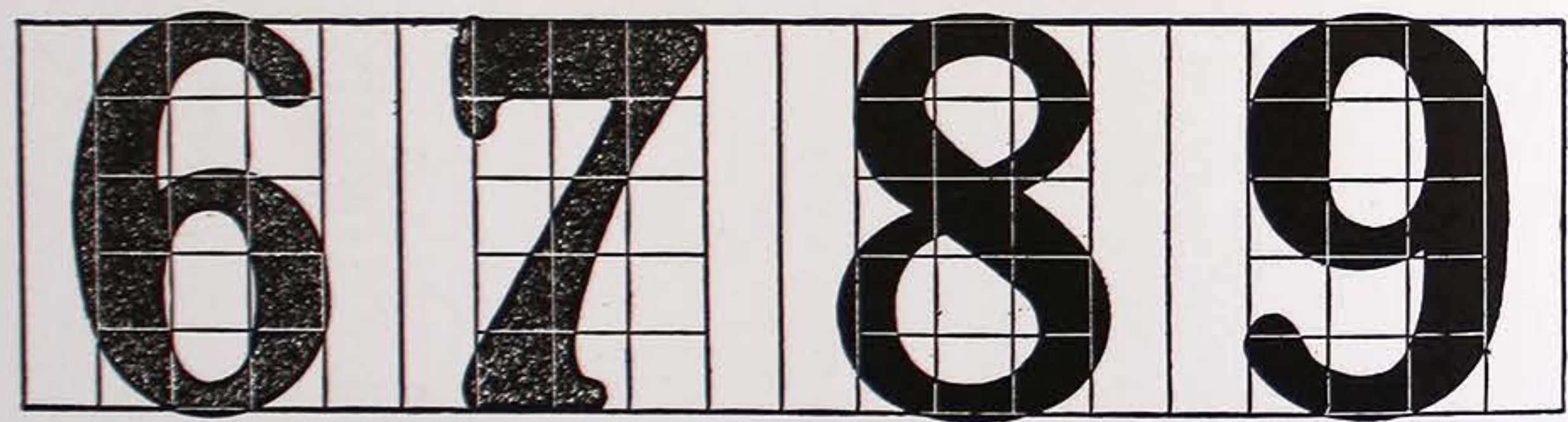
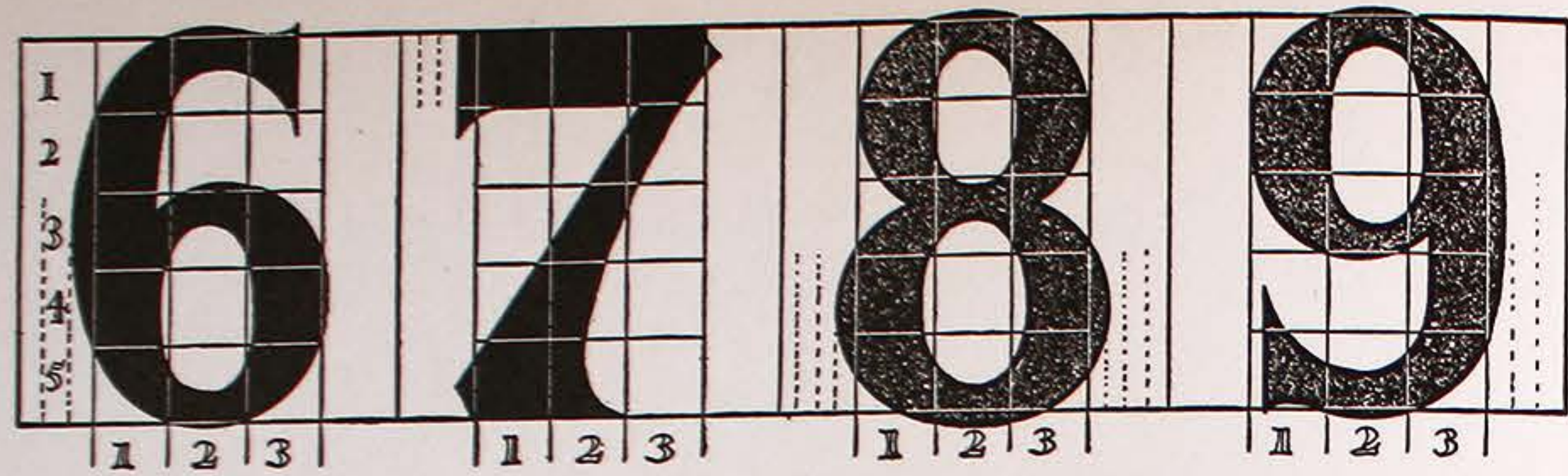
It is not at all necessary that all lines should be thick or heavy on a bold or fat faced letter.



Nor do all lines have to be thin on a light or lean faced letter

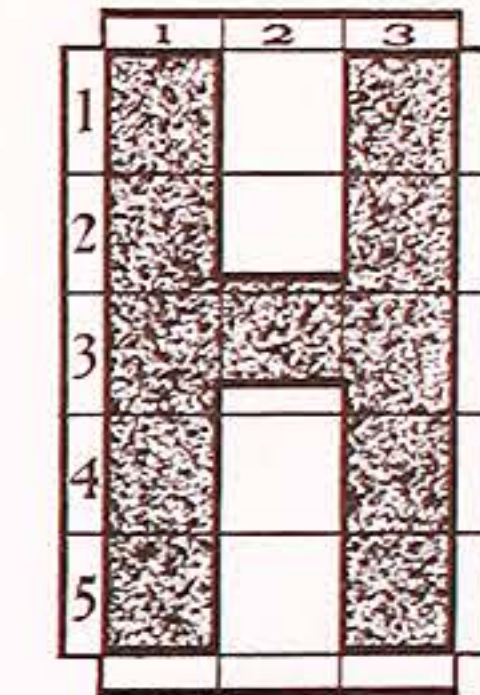


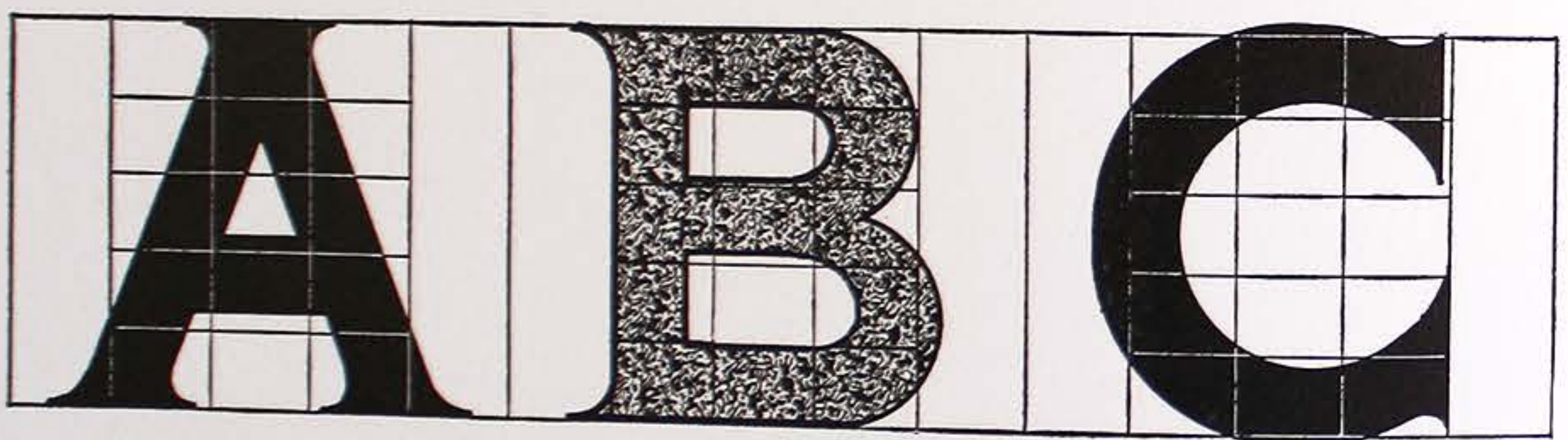
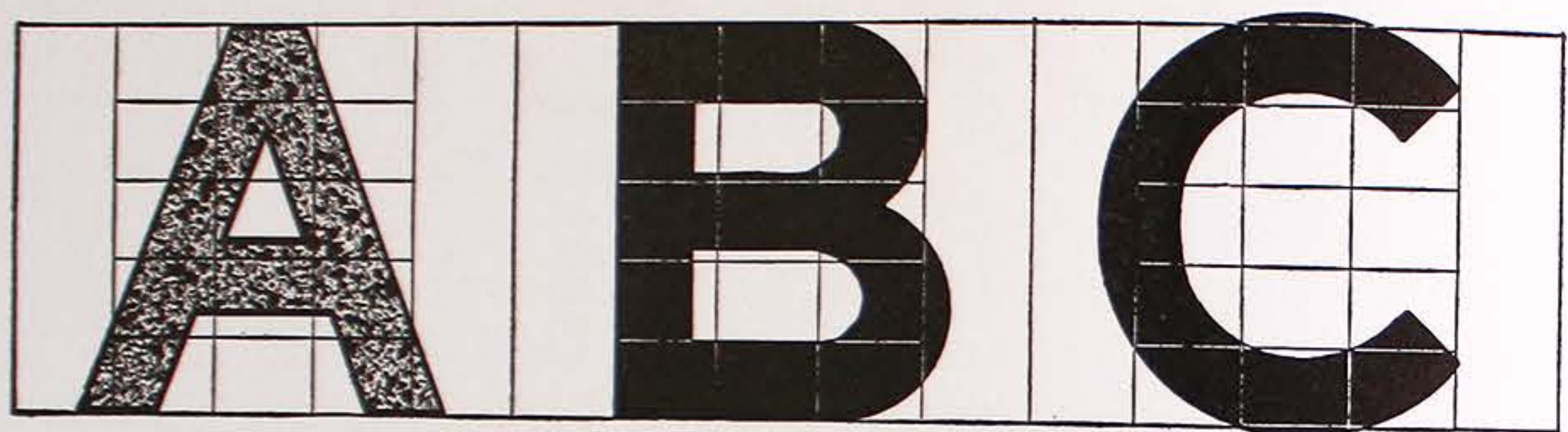
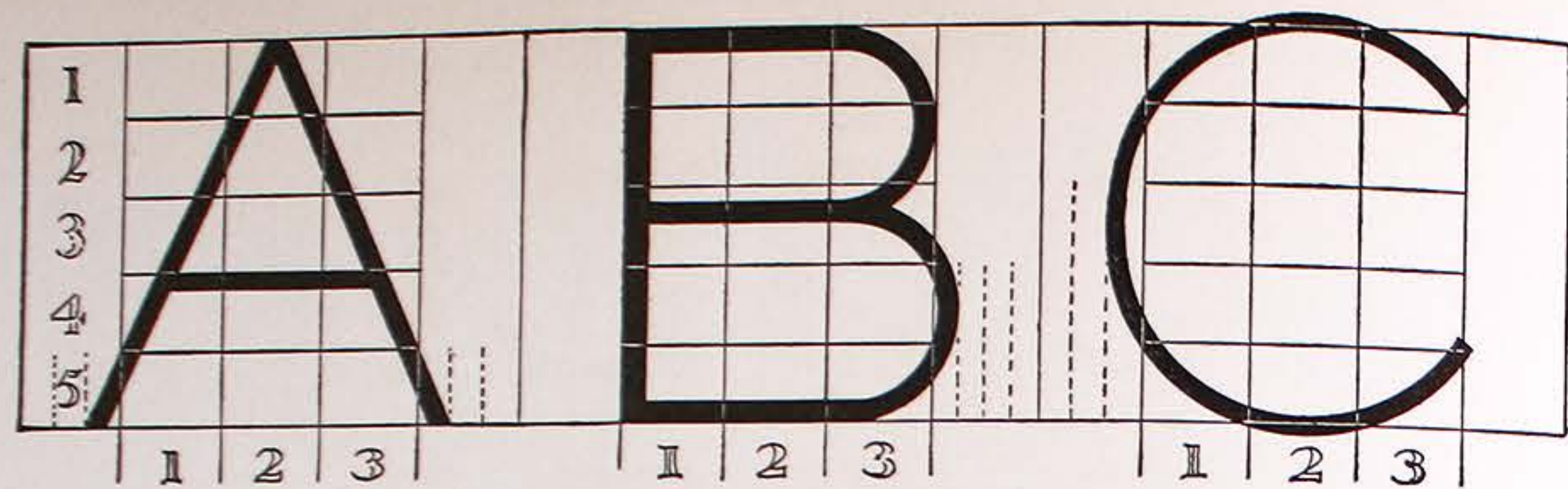
It is the general appearance of a letter that makes it heavy, medium or light face.



TO INCREASE THE WIDTH OF A LETTER

To increase the width of a letter it is only necessary to increase the width of the spaces without increasing the height.

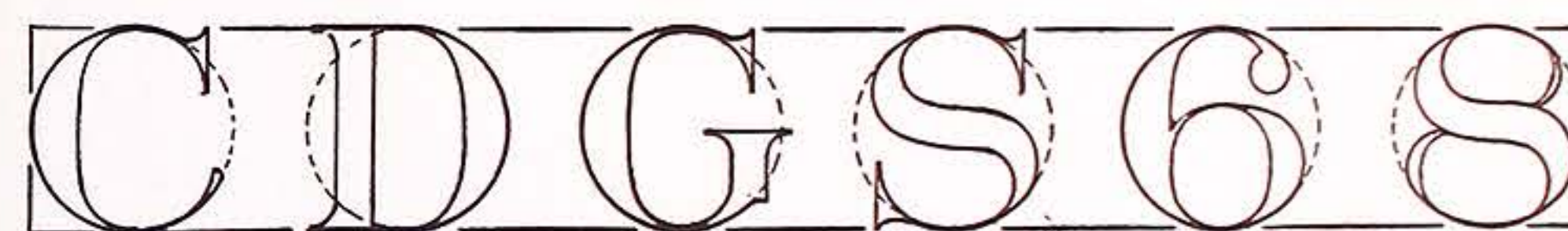




HELPFUL HINTS



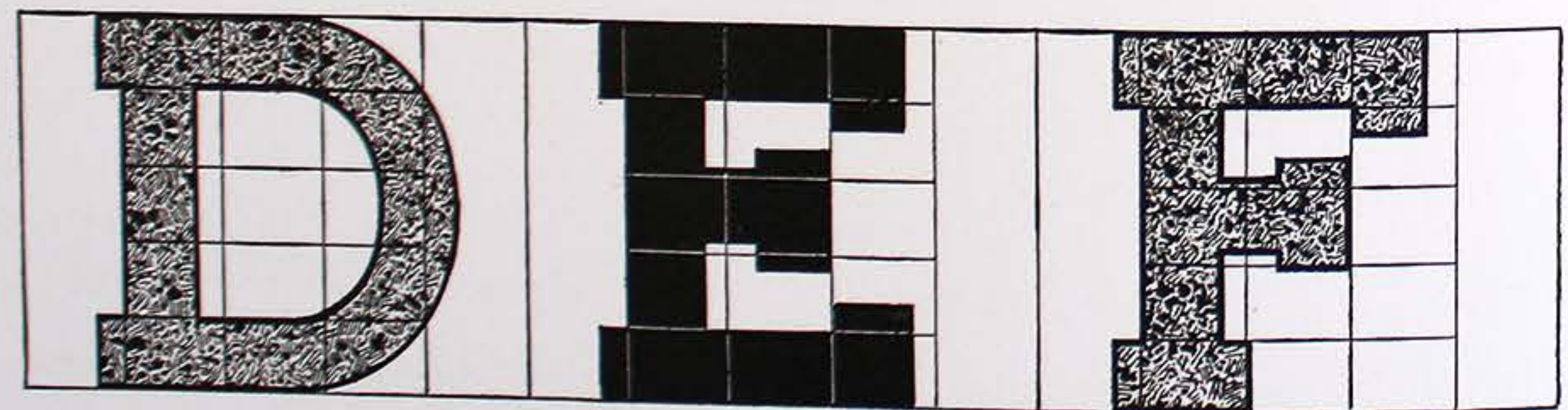
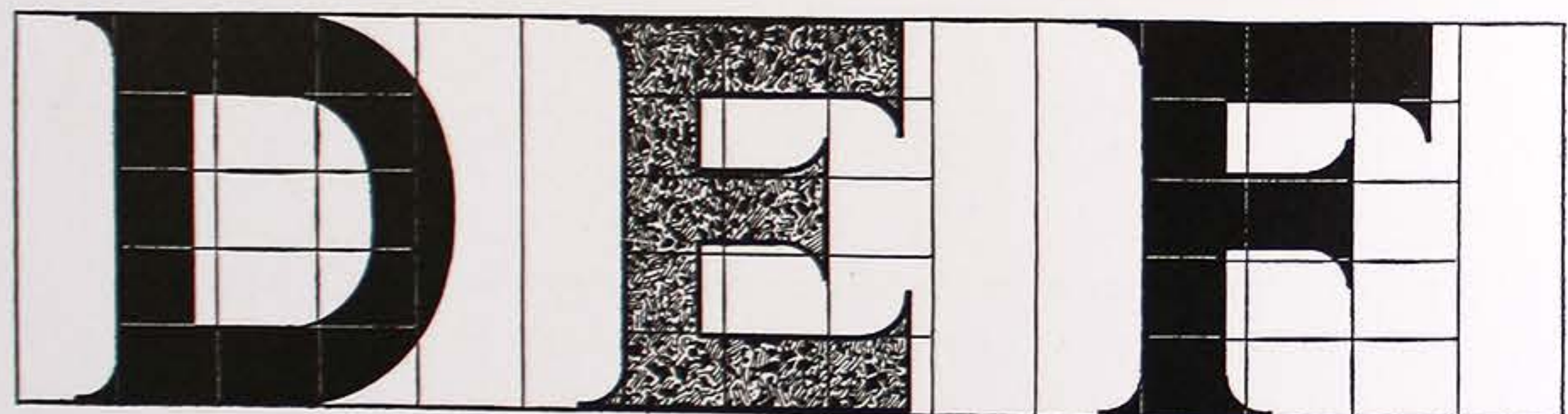
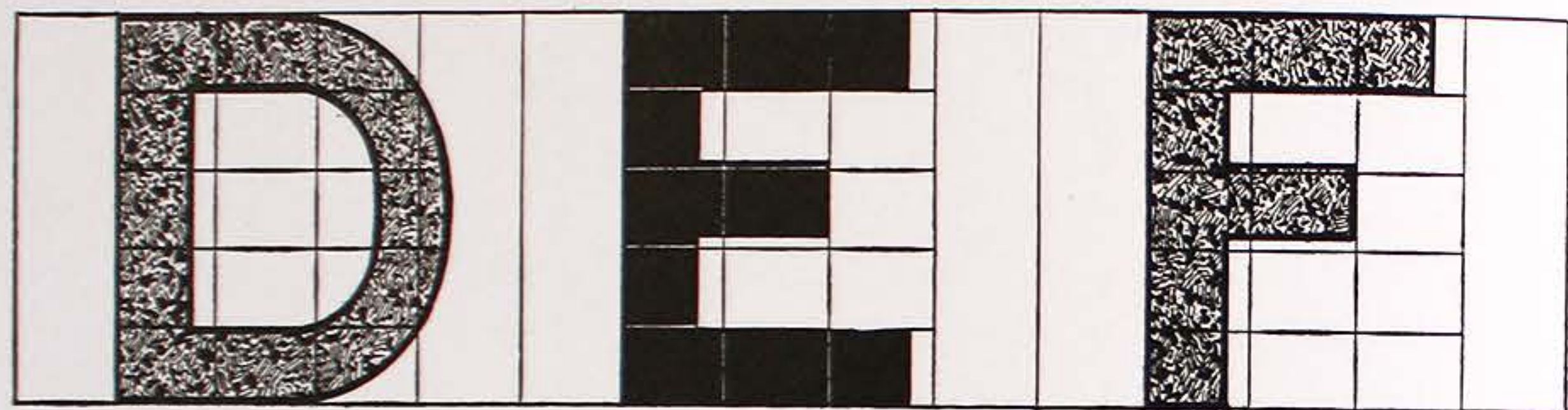
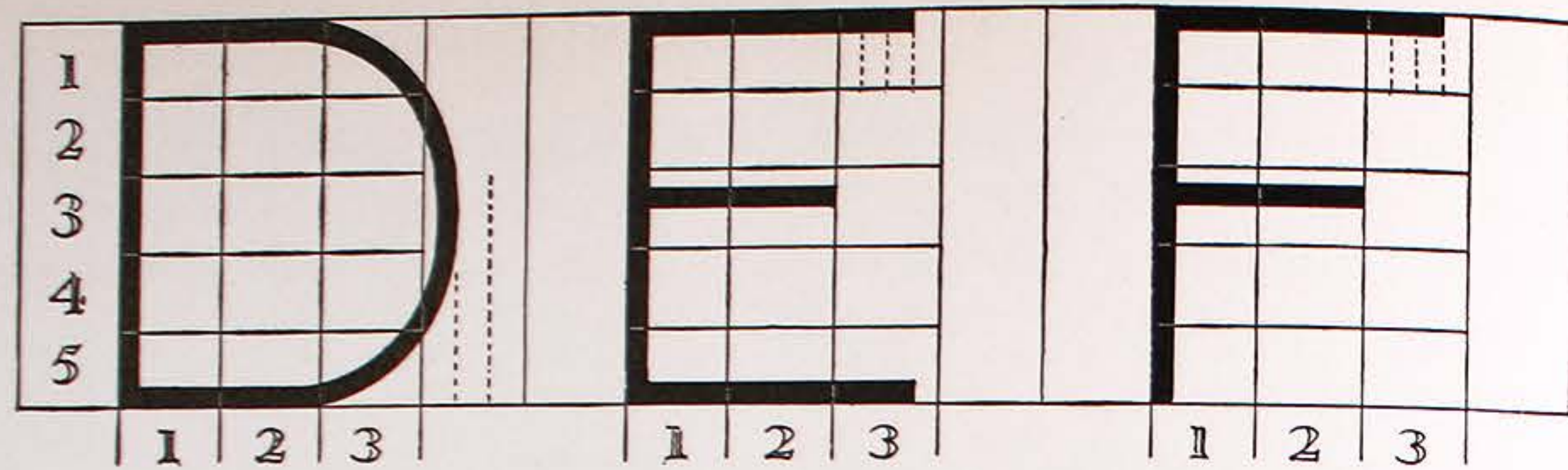
The ceriph of the capital and lower-case or small letters are governed by the angles of the diameters of the round letters, as is indicated on the diameters of the letter C. If the diameters are at an angle, the ceriph are at the same angle. If the diameters are perpendicular and horizontal, so are the ceriph perpendicular and horizontal.



The round letters are founded on the circle and can be drawn within the bounds of one, as shown above.



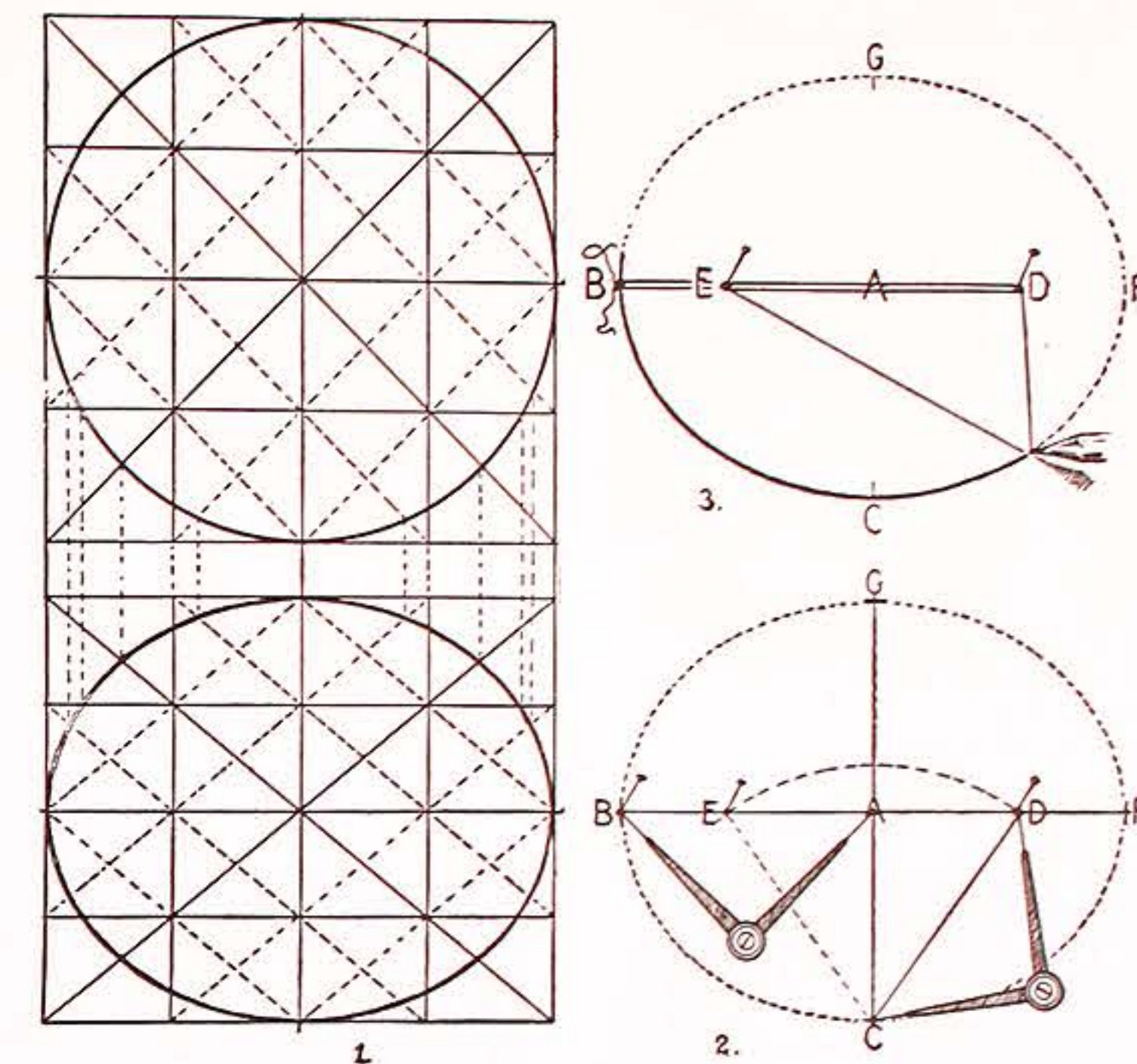
In making an extended or condensed letter, use an extended or condensed oval as a foundation for the letters in place of the circle.



OVALS: HOW TO DRAW THEM

Diagram 1. An oval is an elongated circle, as will be seen by looking at the squared up diagrams. Notice that the circumference of either the Circle or Oval cross or intersect the squared line on the diagram at the same point in each case.

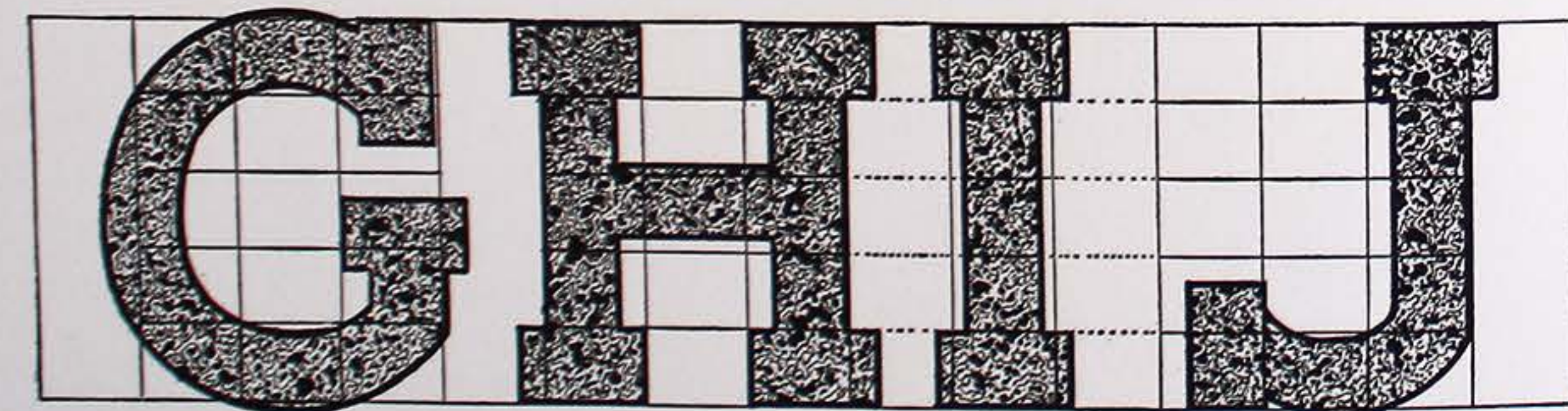
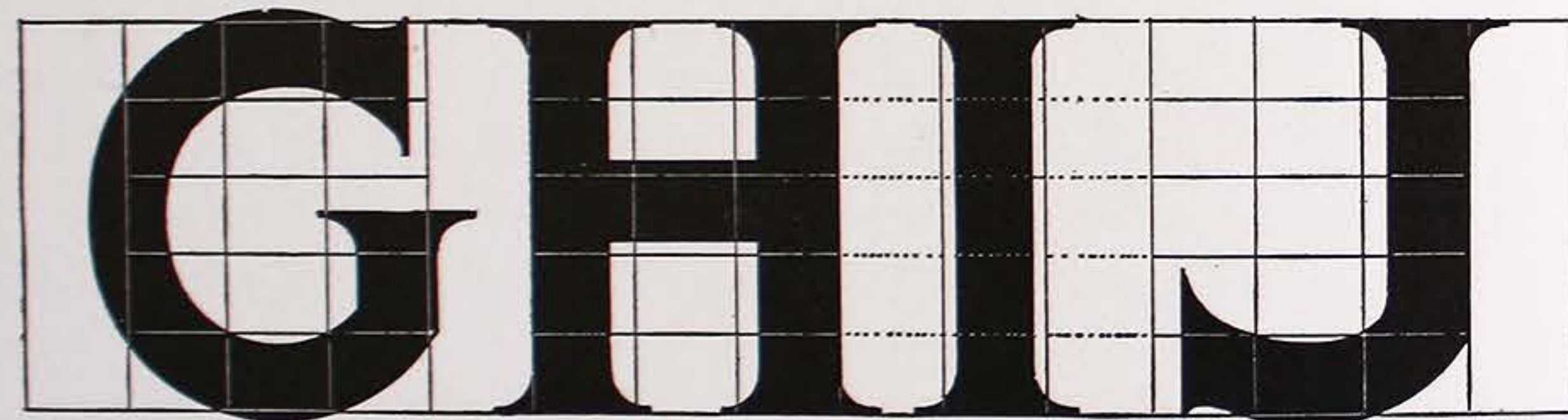
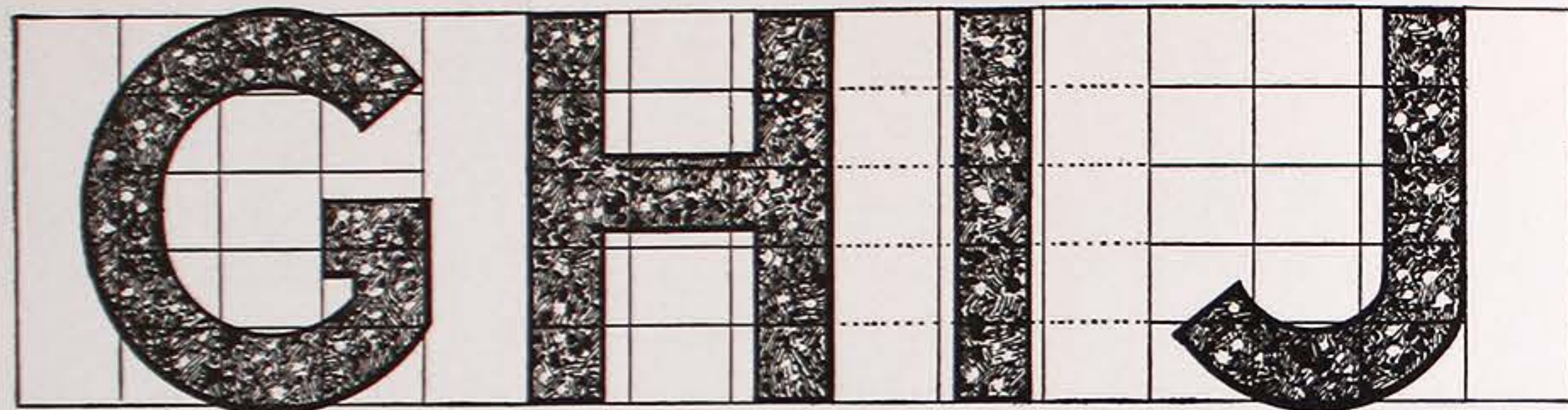
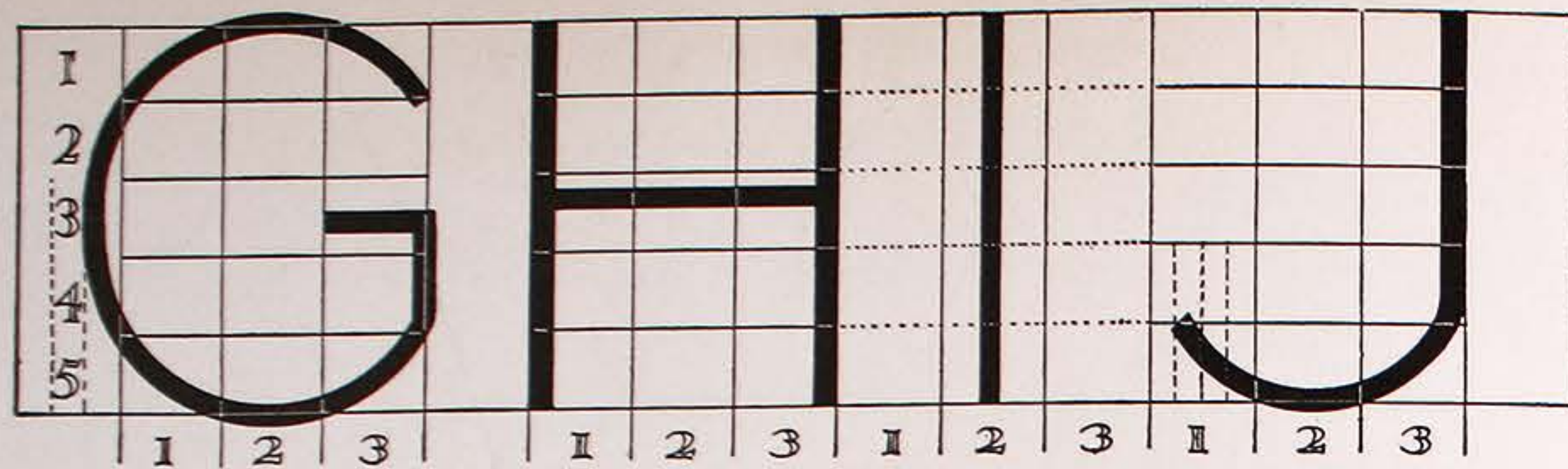
Diagram 2. To draw an oval, locate the center at A, and marking how long the oval should be, at B and F (equal distances from the center at A). This gives the long diameter. Now mark off how wide to make it, marking on the other diameter, the points C and G (equal distances from the center A). This gives the short diameter. With



a compass, measure on the long diameter from the center A, to the circumference B; now, without changing the compass, place one point at C, then describe an arc, and where it crosses the long diameter, will give the points E and D, which might be called the two centers of the oval. The distance from A to B equals the distance from C to D, or C to E.

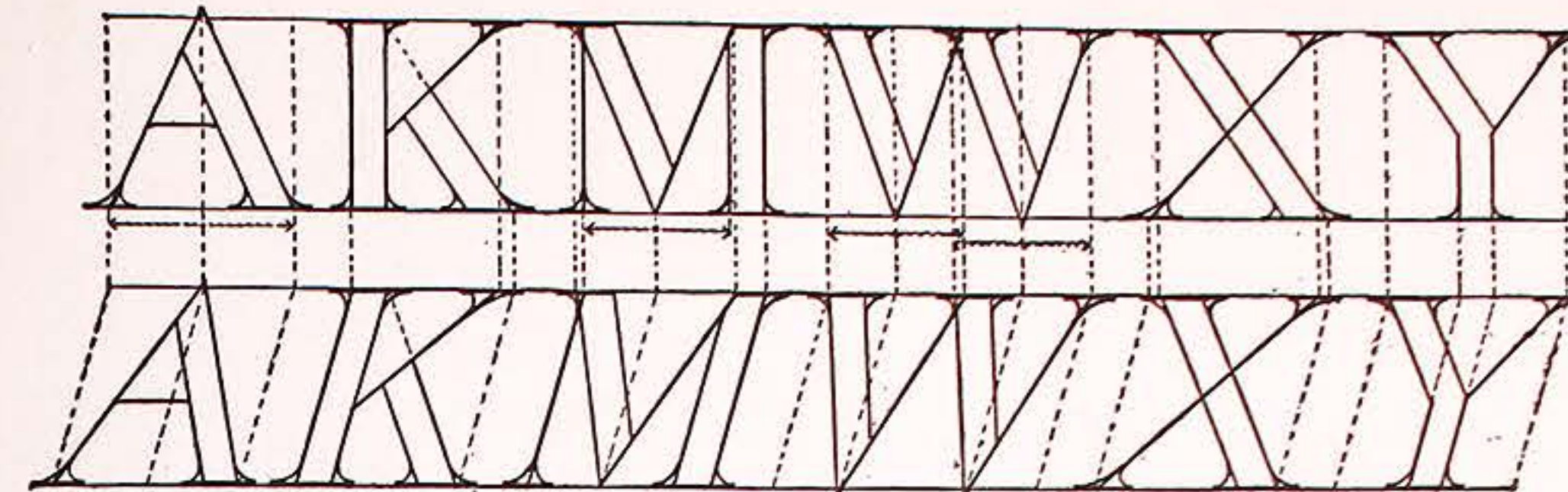
Diagram 3. Take three pins, sticking one at B, one at E and one at D. With a piece of thread (linen is the best, as it does not stretch), loop it from B to D, and tie the two ends together at B, making a knot that will not slip. Remove the pin at B, letting the thread form a loose loop from D to E. Placing a pencil in the loop will cause it to make the line of the circumference of the oval.

The distance from E to the pencil point on the circumference, then to D, is always equal to the long diameter from B to F.

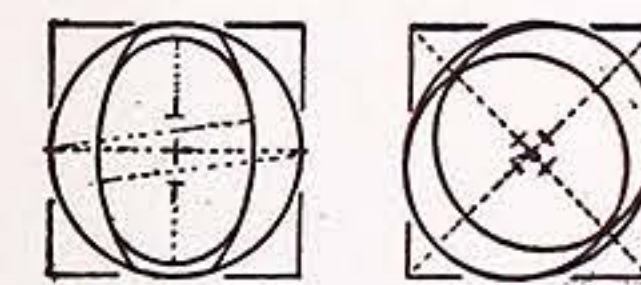


WEDGE-SHAPED LETTERS


G, THE KEY LETTER OF THE ALPHABET





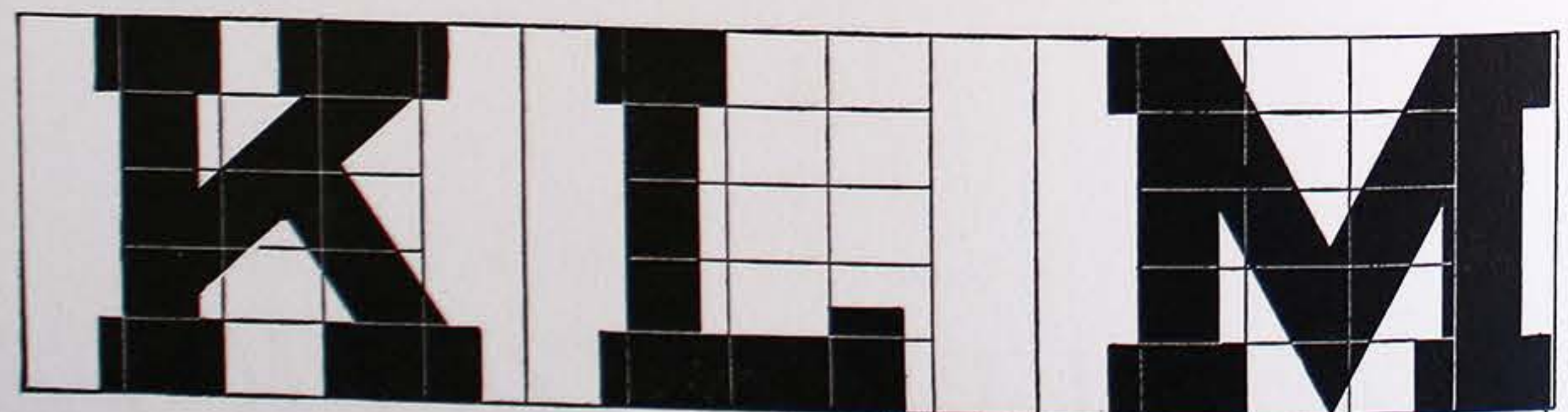
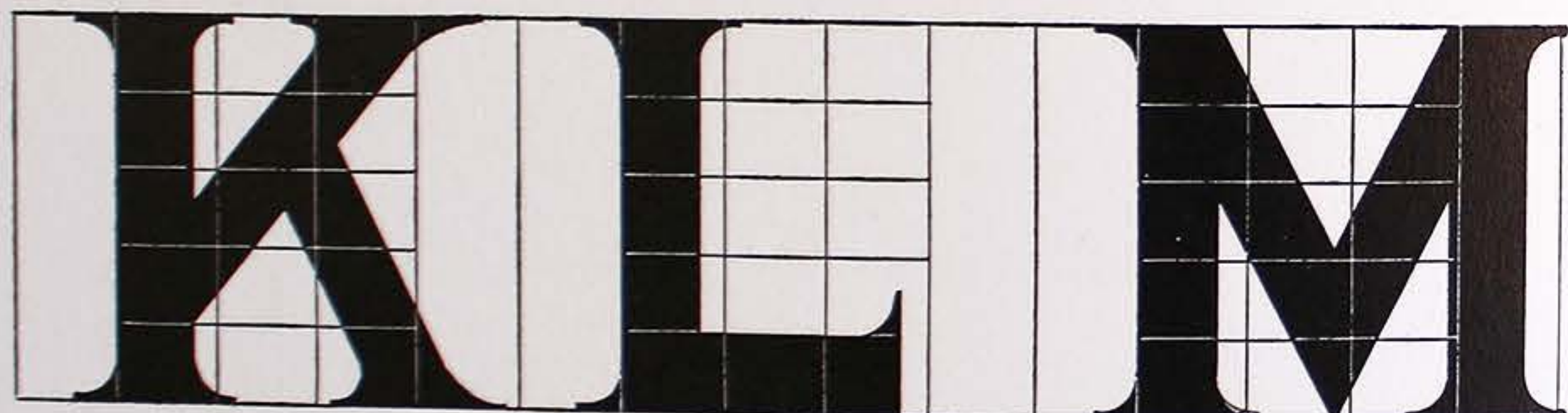
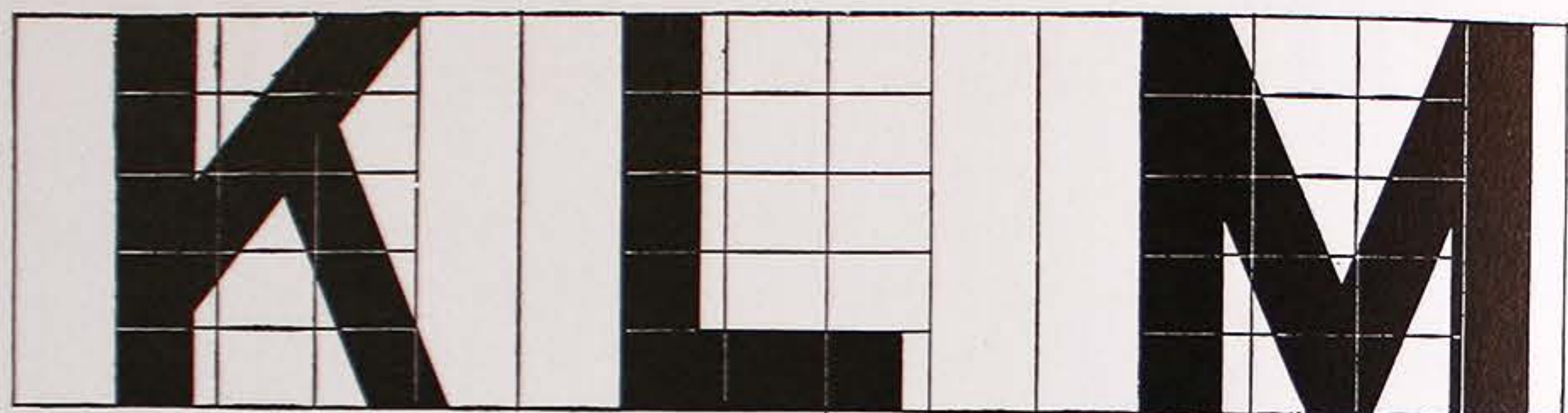
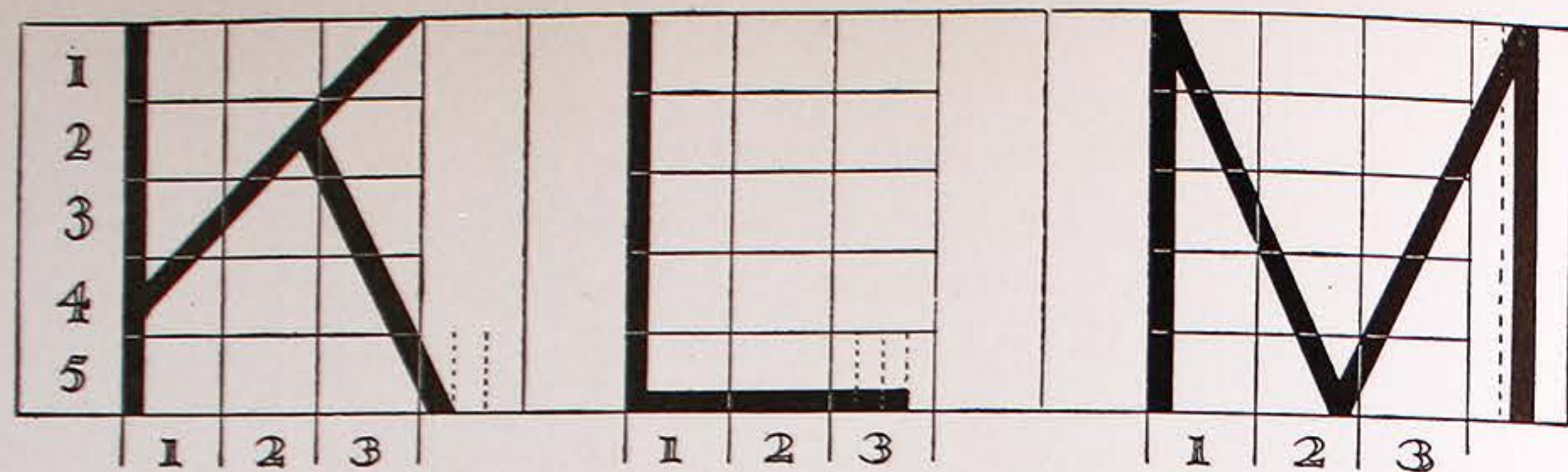
In the above plate are shown some helps in the drawing of the wedge-shaped letters (vertical and slant). The peak of the A is on a center line between the two extreme outside edges. The incline of the tail of the K should strike (if continued), the top of the perpendicular line. W is formed by two Vs, joined or overlapped. In the Italic or slanted letters, the slope or incline of the center line of the wedge-shaped letters is the same slope or incline as the perpendicular of a square letter.



The upright O is a simple letter; sometimes tilted, and in that case all the curves of the round letters are likewise tilted.

O is generally considered the Key letter of the alphabet, but an I is needed. It is better to use a capital G as the Key, for if properly made, it is a combination of O I C. Given a G of any alphabet, a good guess can be made at the remaining letters. 

 To attach this style of tail to an R is not easy. Start at the top of the inside loop or bow and make a sweeping double curve to the end of the tail as shown by the heavy line. This is a simple and easy method. 



DON'TS

Horizontal ceriph on upper part of all ascenders and perpendiculars of lower case letters extend from one side only, pointing to the left except the wedge-shaped letters when they extend on both sides of the diagonal line as k v w x y.

DON'T make a reversed d for a b, nor put a ceriph on the lower part of the ascender.

b b DON'T make a reversed b for a d. **dd**

DON'T make a reversed p for a q. In some fonts it is made like a reversed p which is incorrect. Its only ceriph extends to the right one side of the descender.

qq

DON'T use an upper case J with a dot over it for a lower case j.

J j

uu DON'T make an inverted u for an n.

DON'T use an upper case C for a lower case c. It has a knob in place of a ceriph.

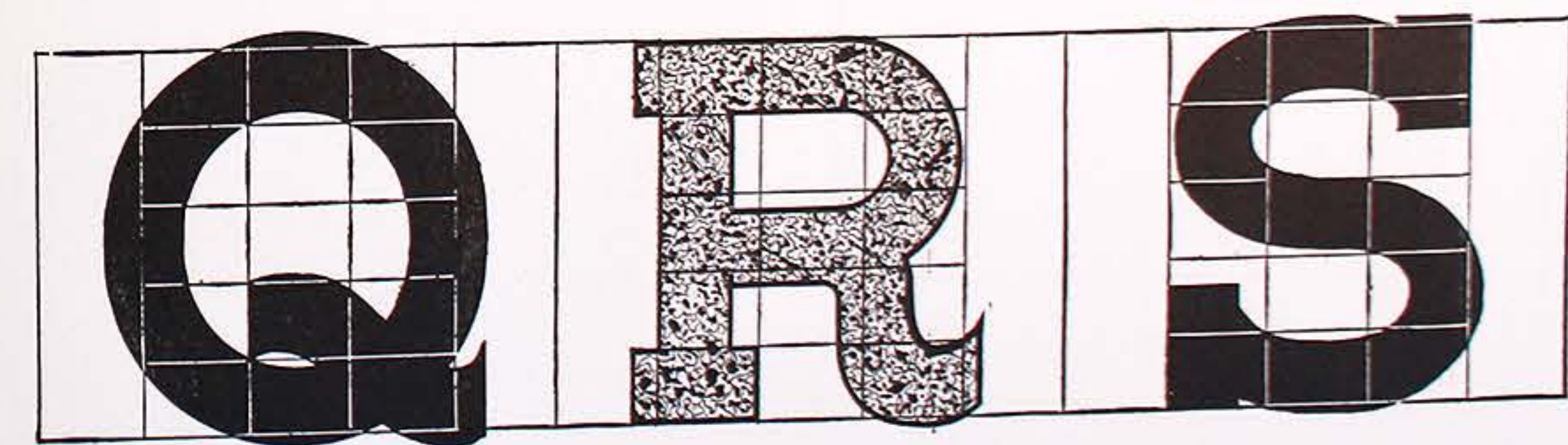
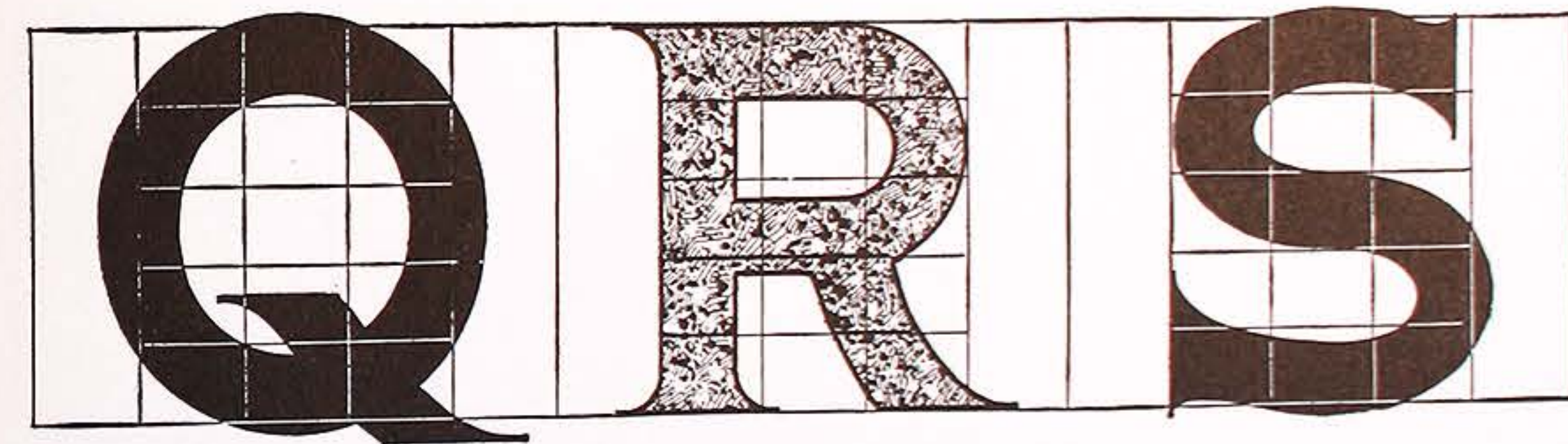
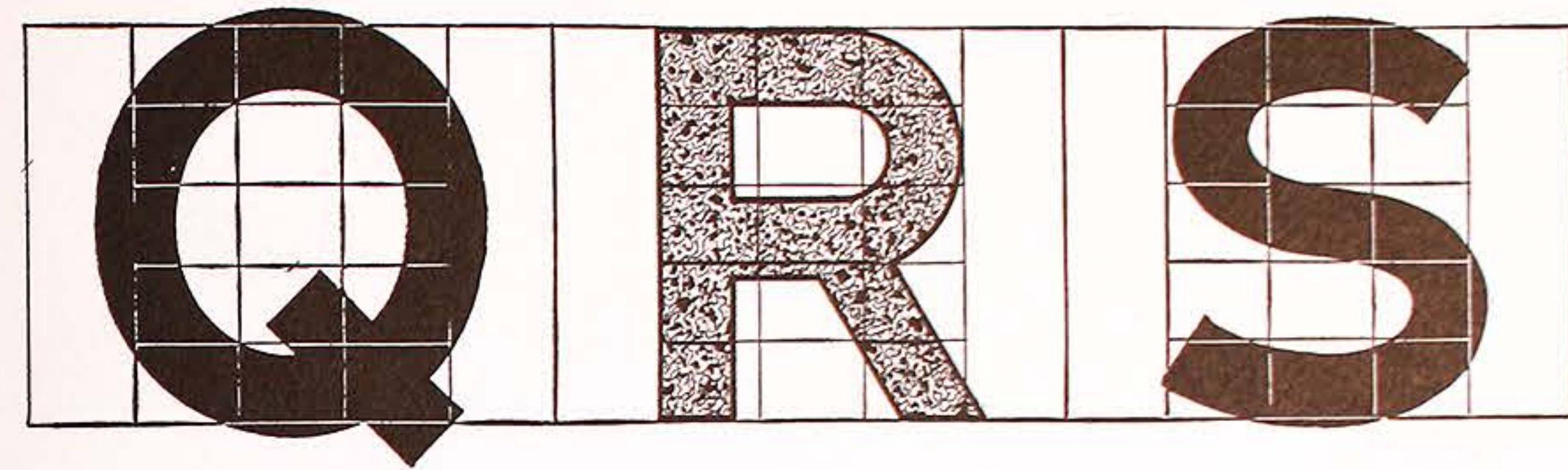
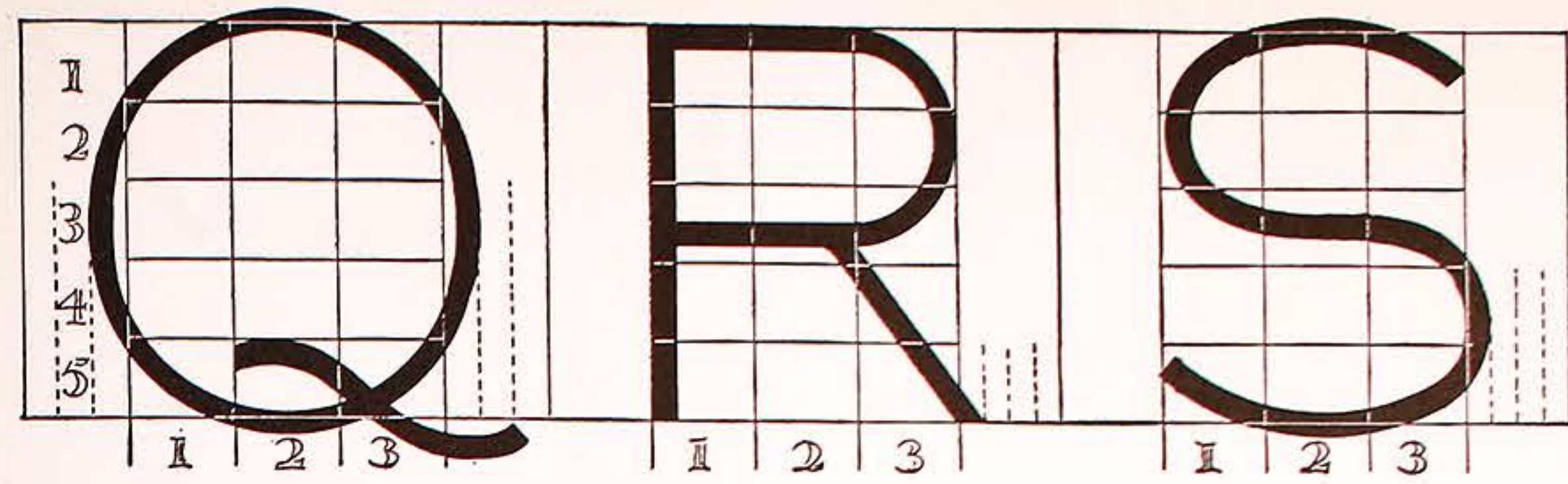
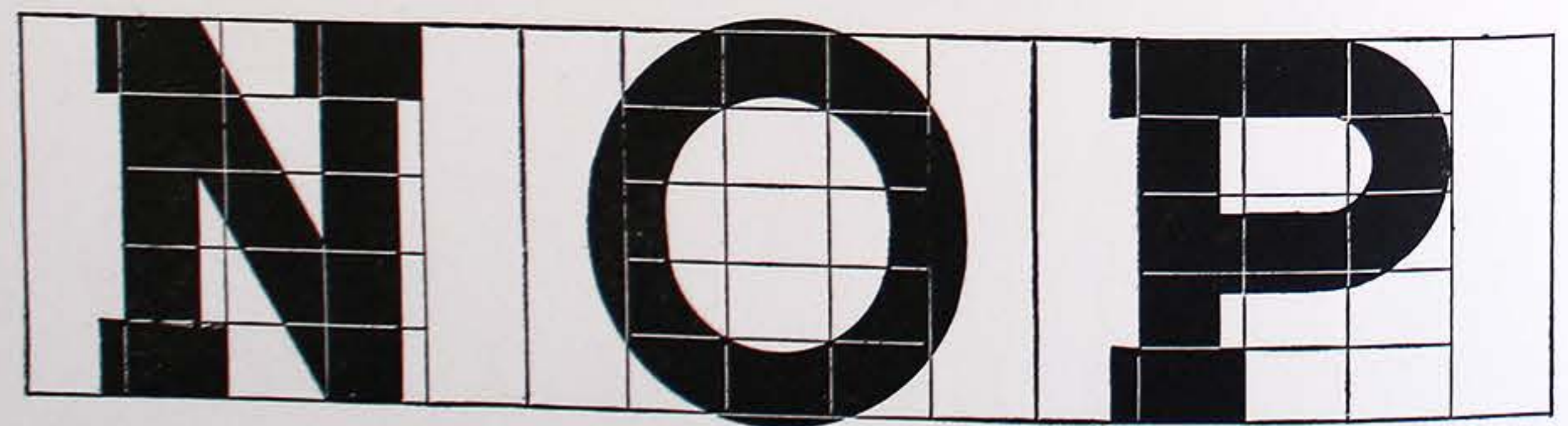
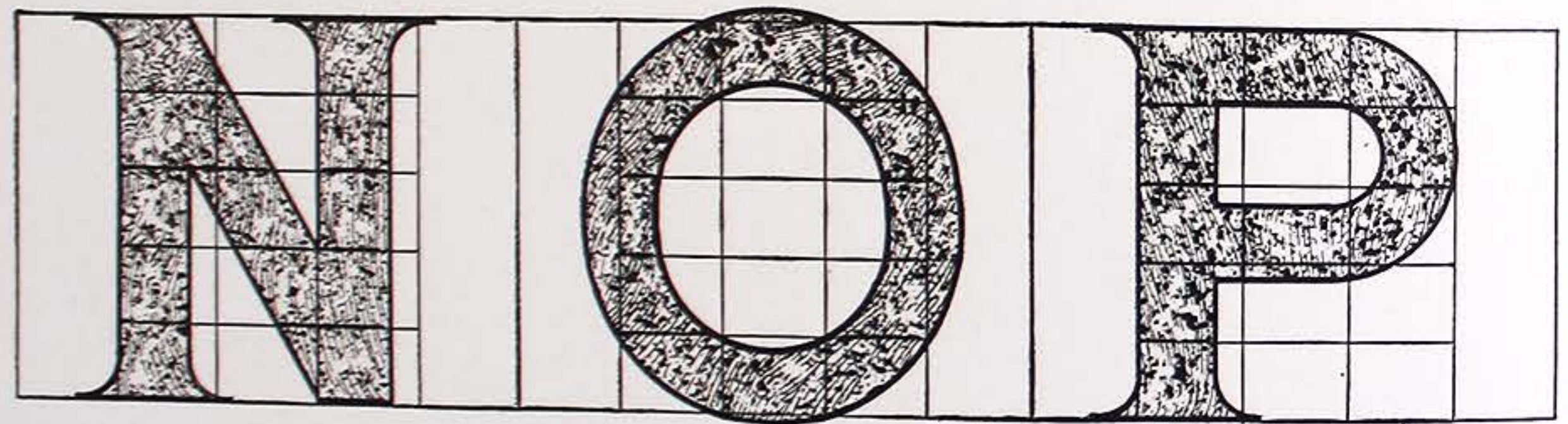
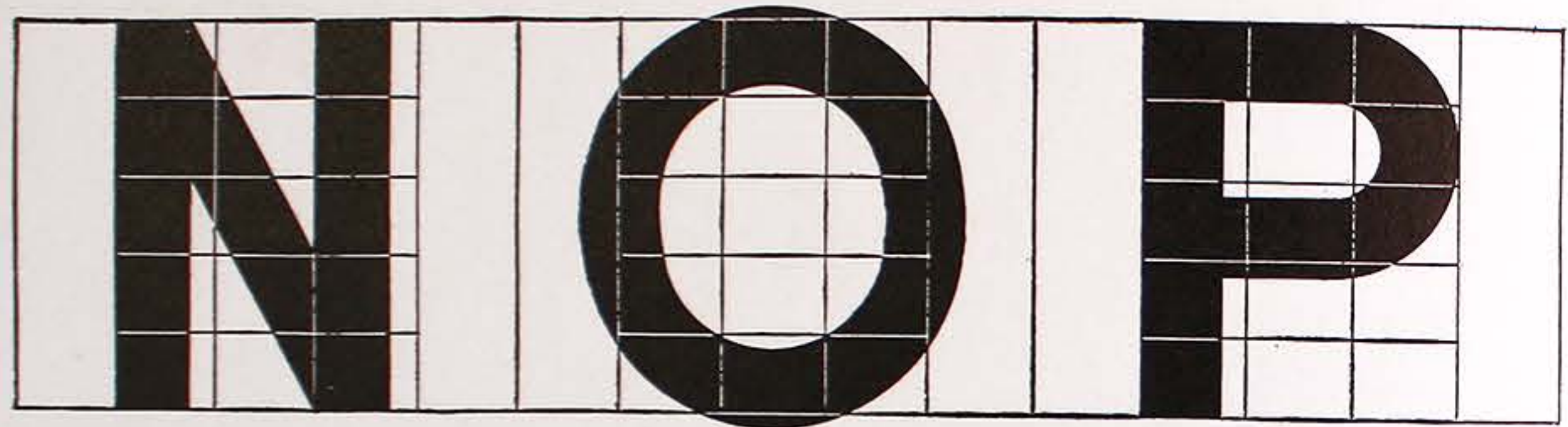
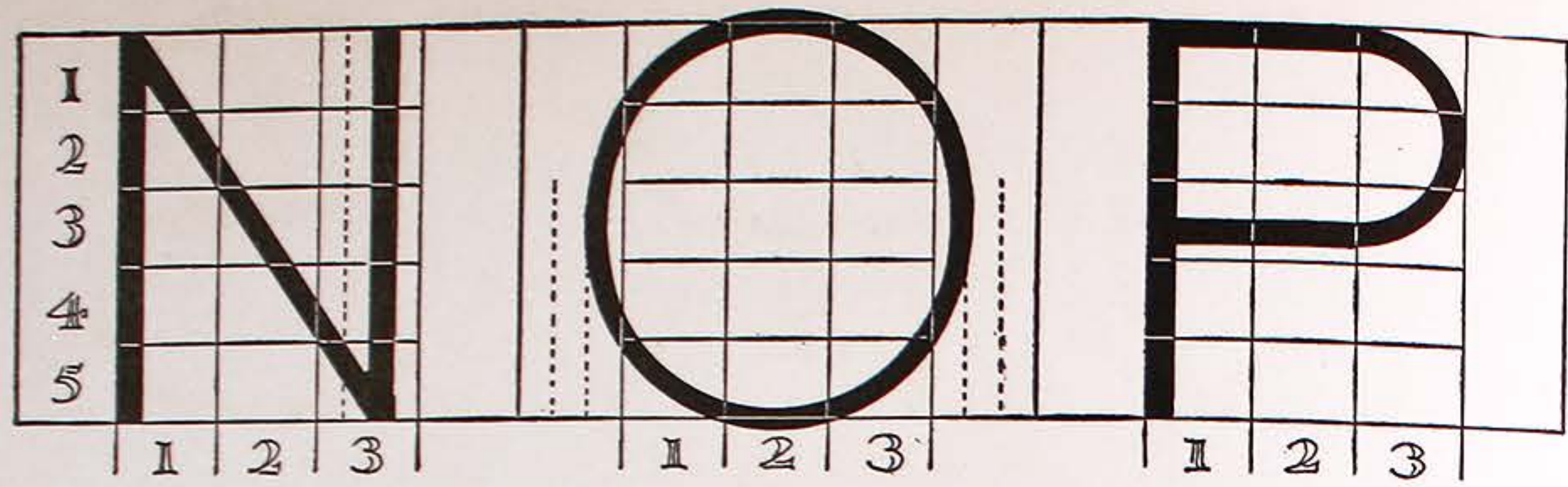
C c

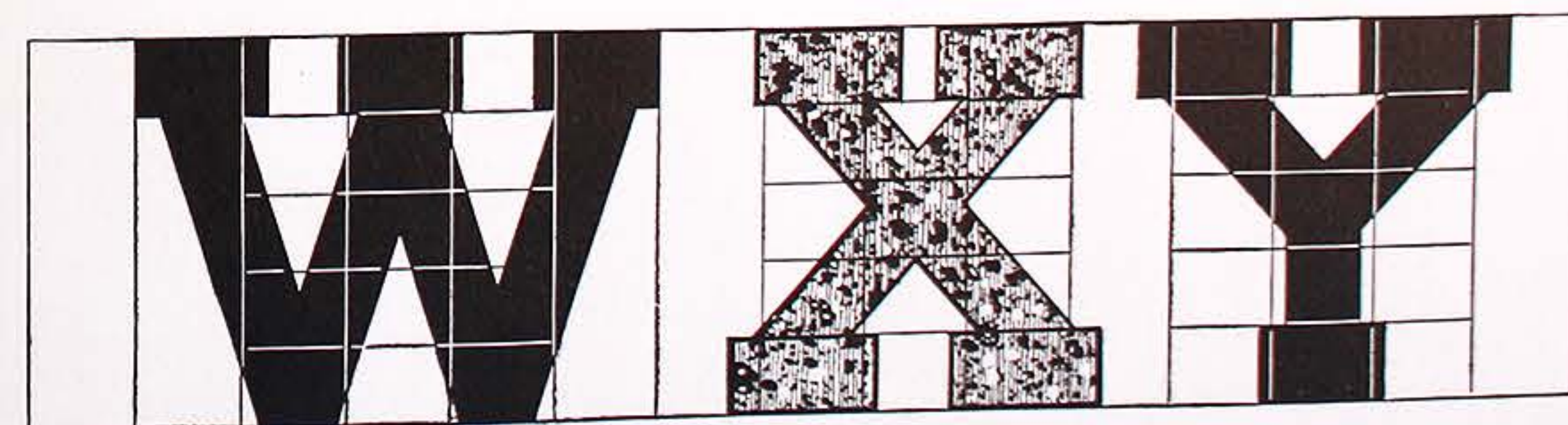
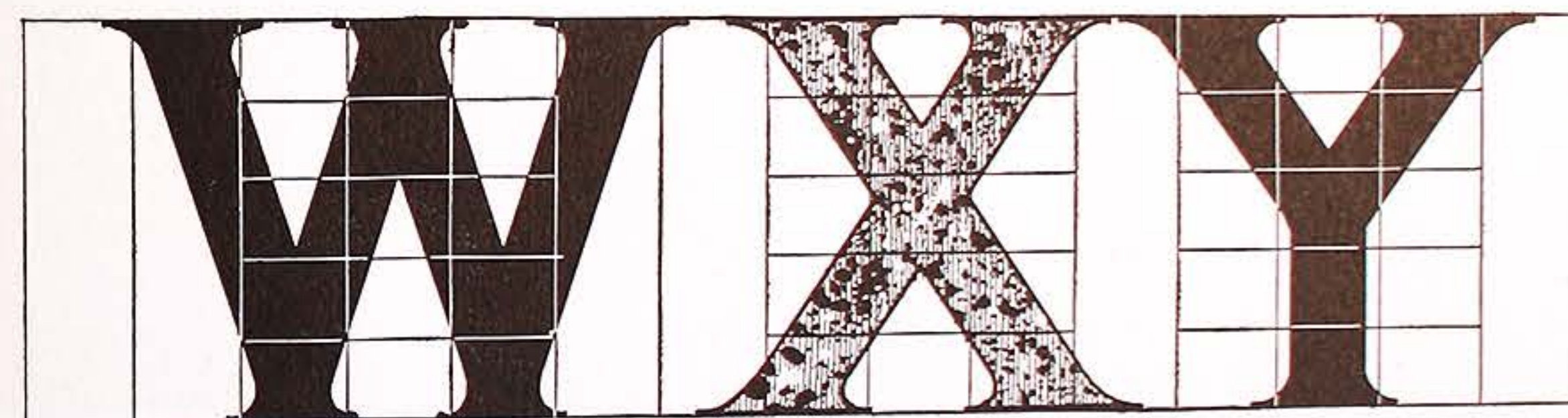
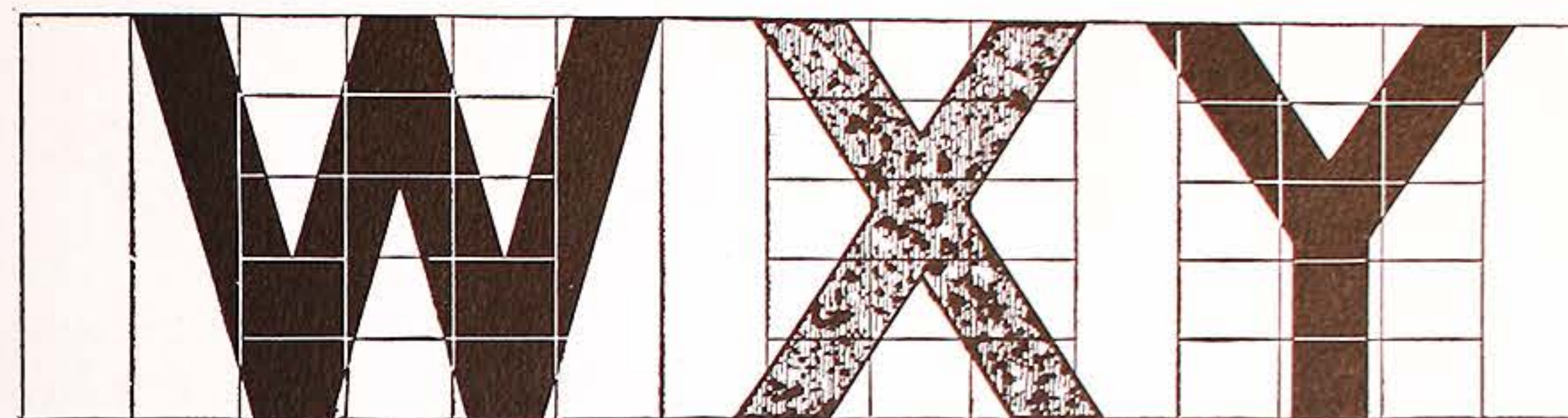
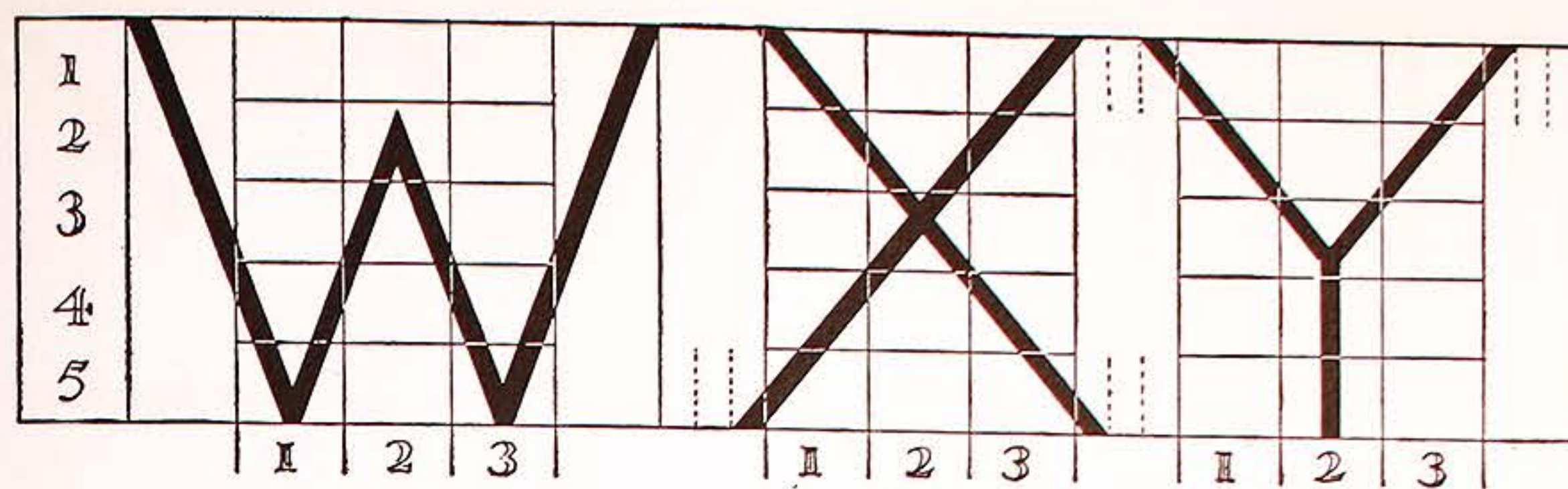
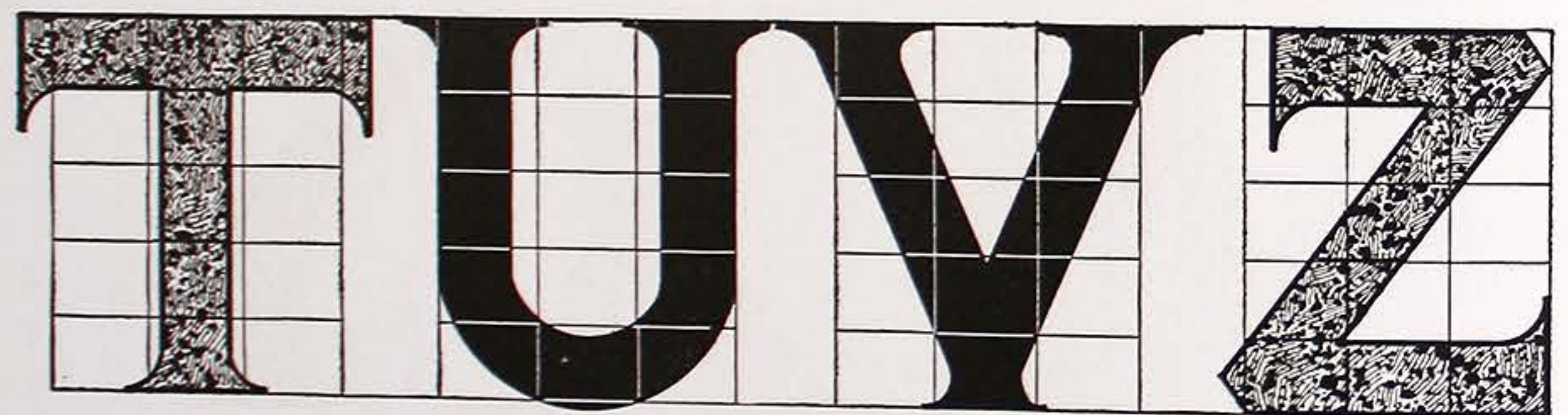
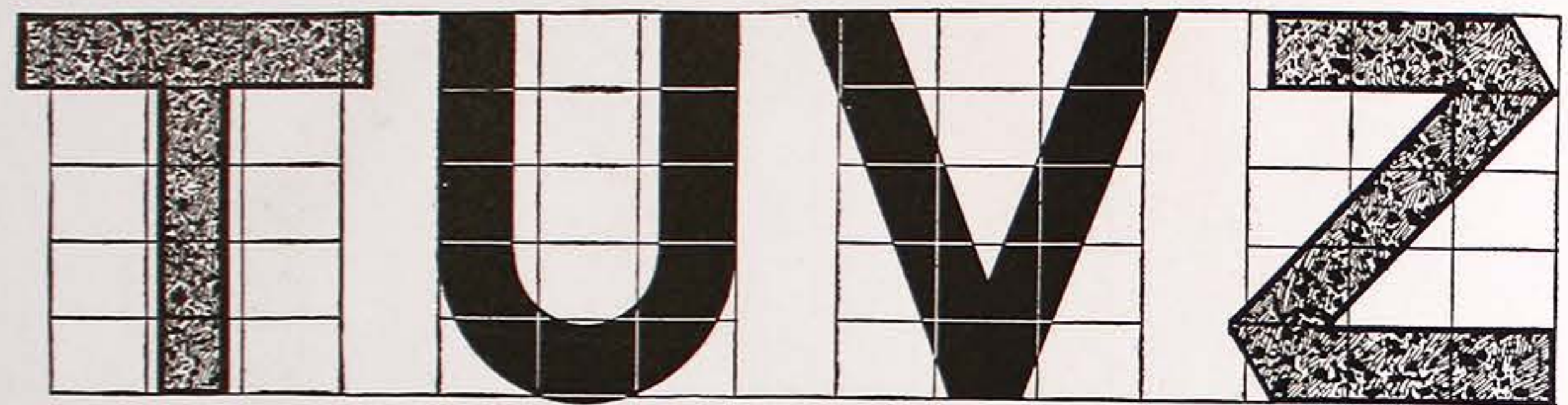
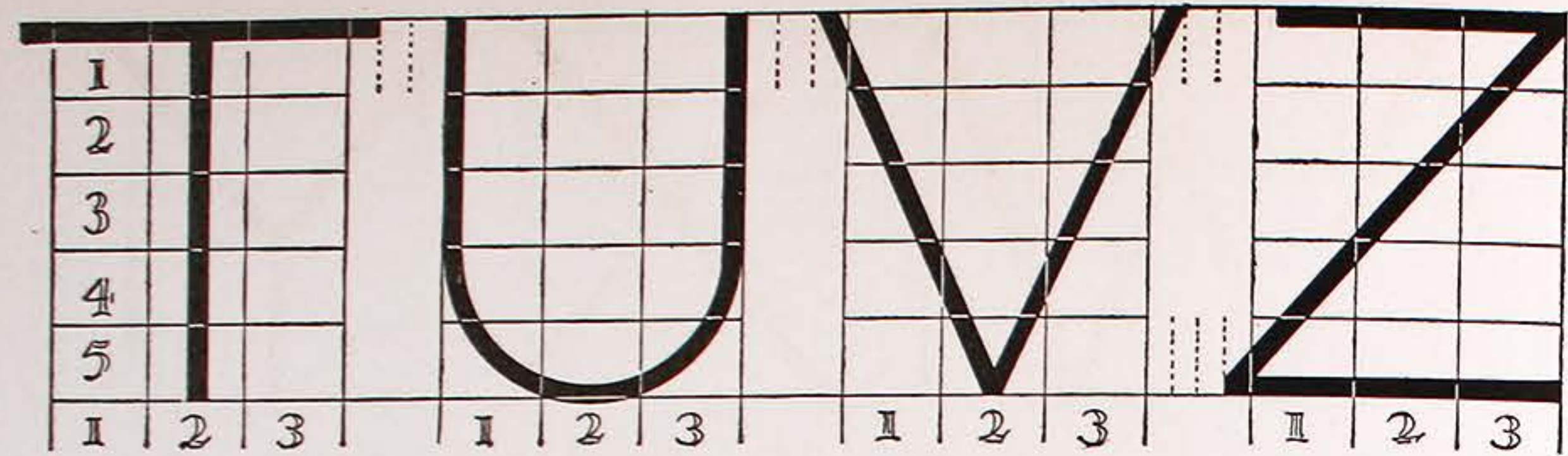
DON'T make an italic s for a straight s. It has a ceriph instead of a knob.

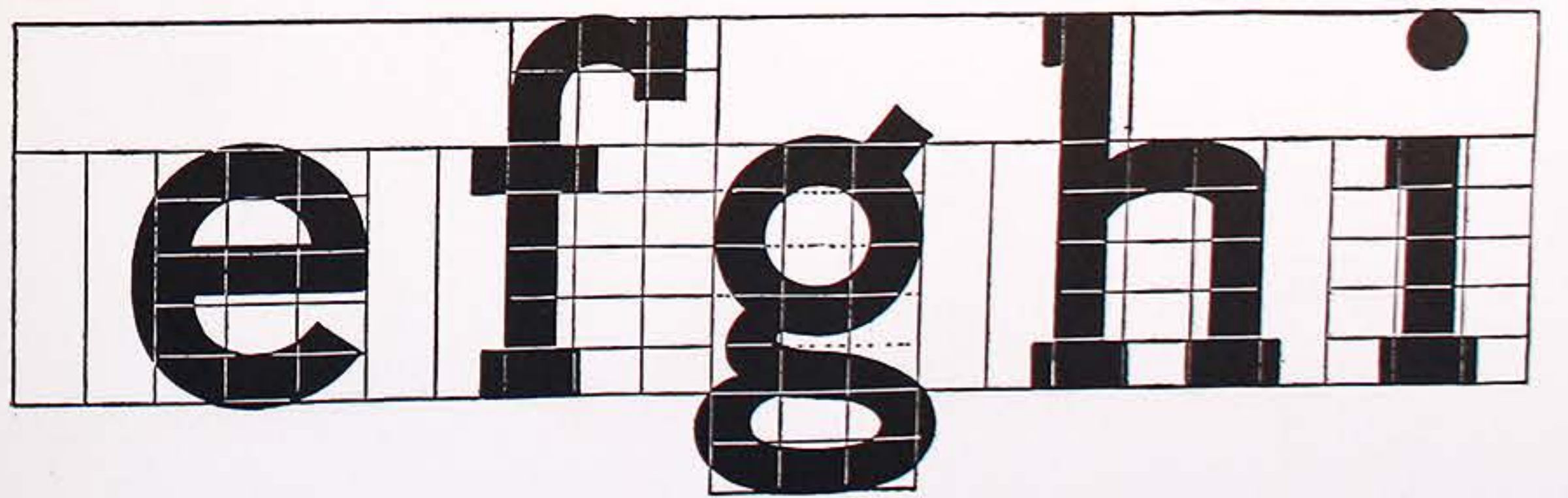
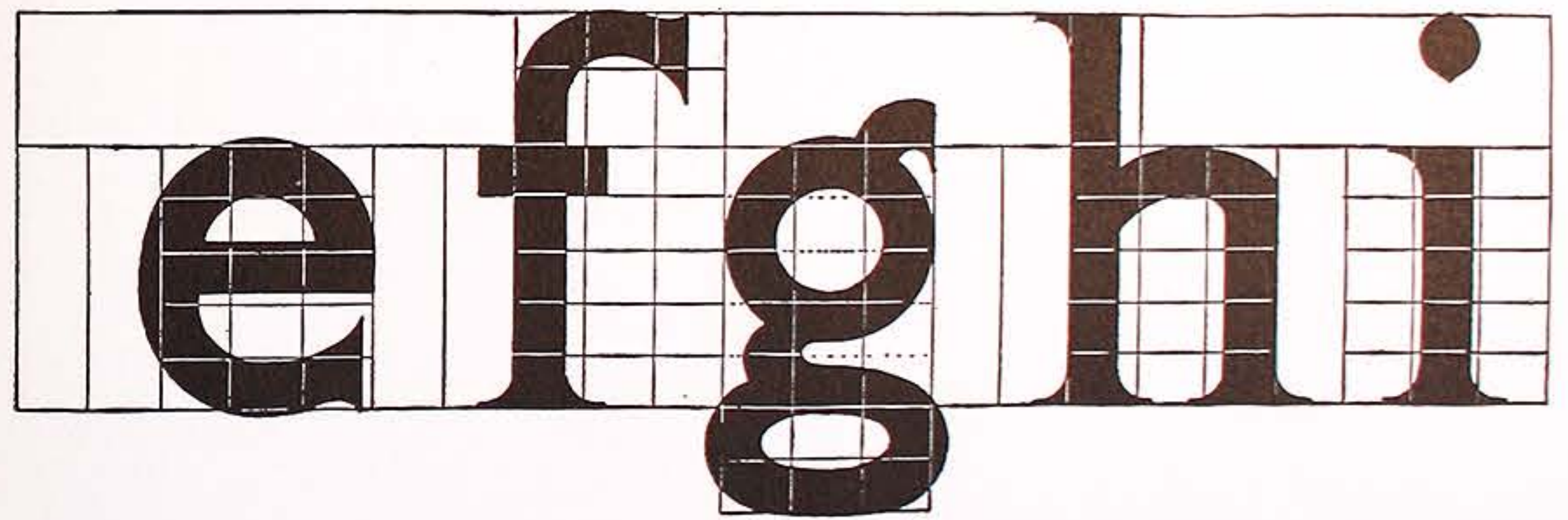
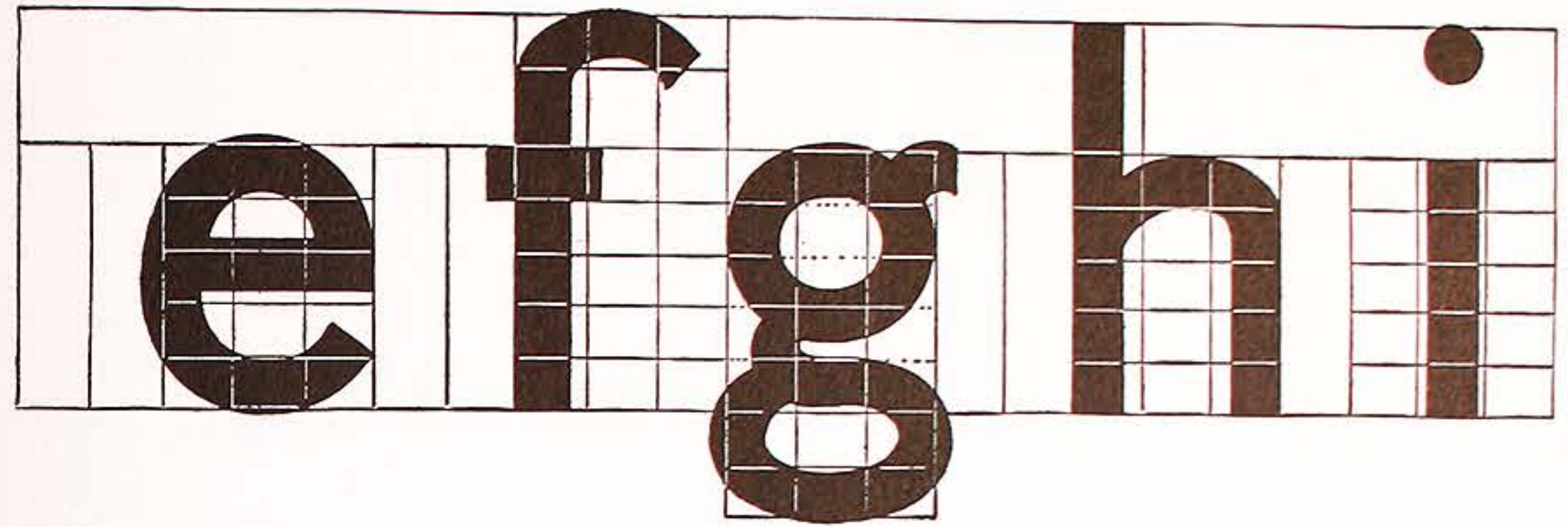
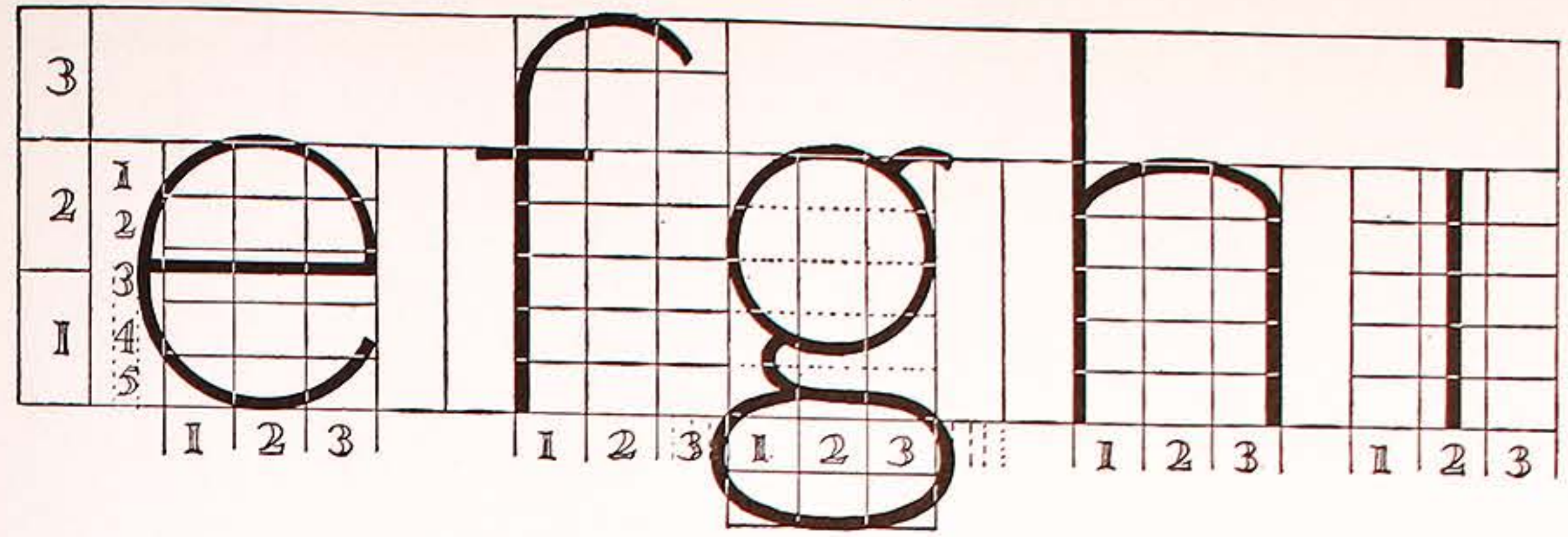
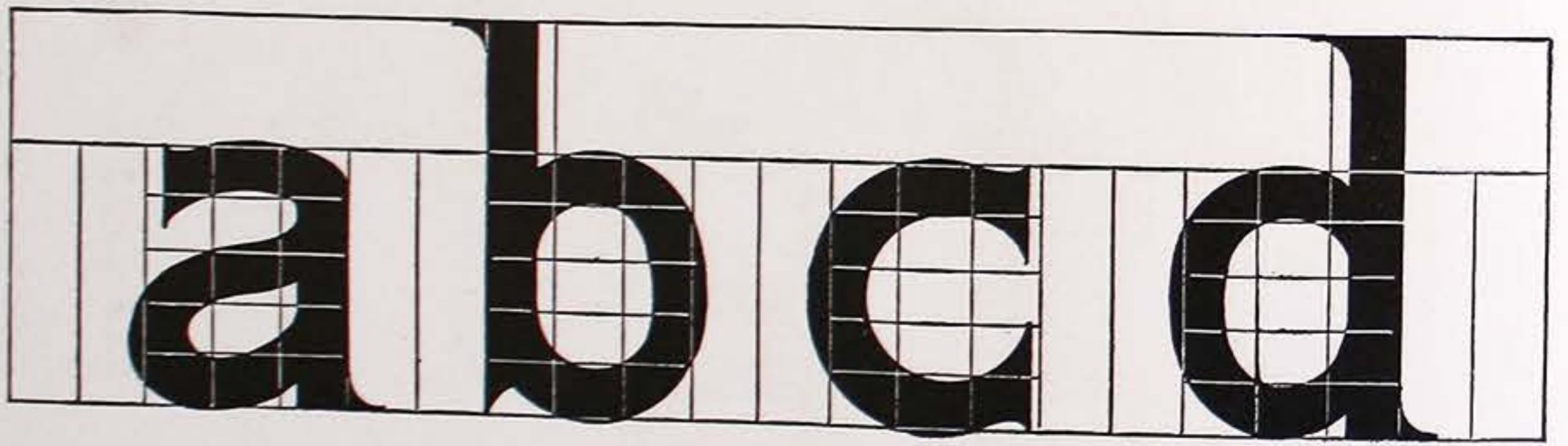
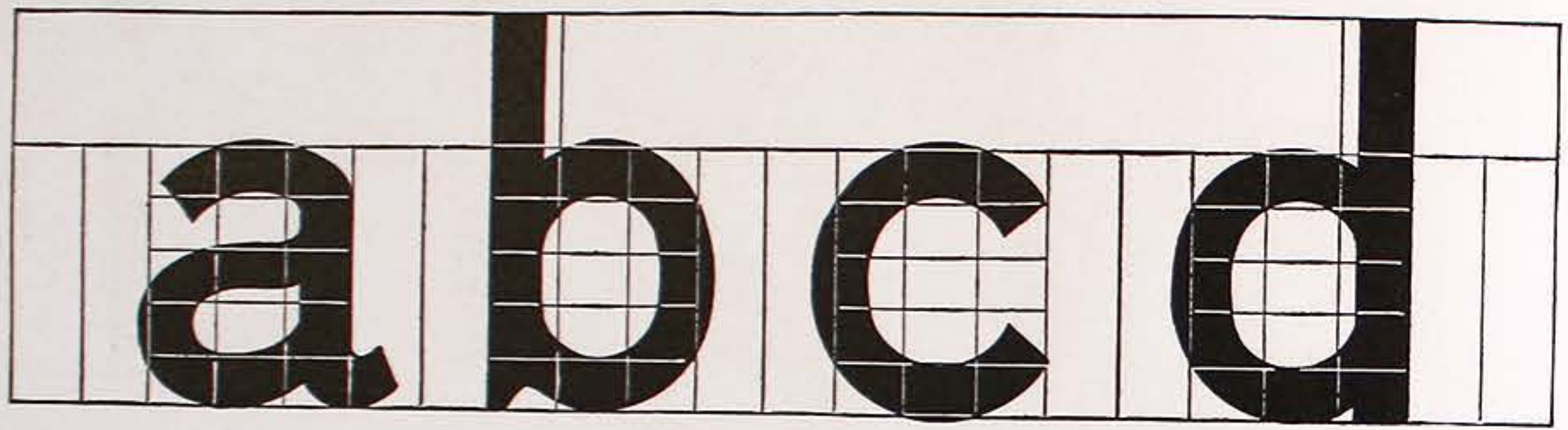
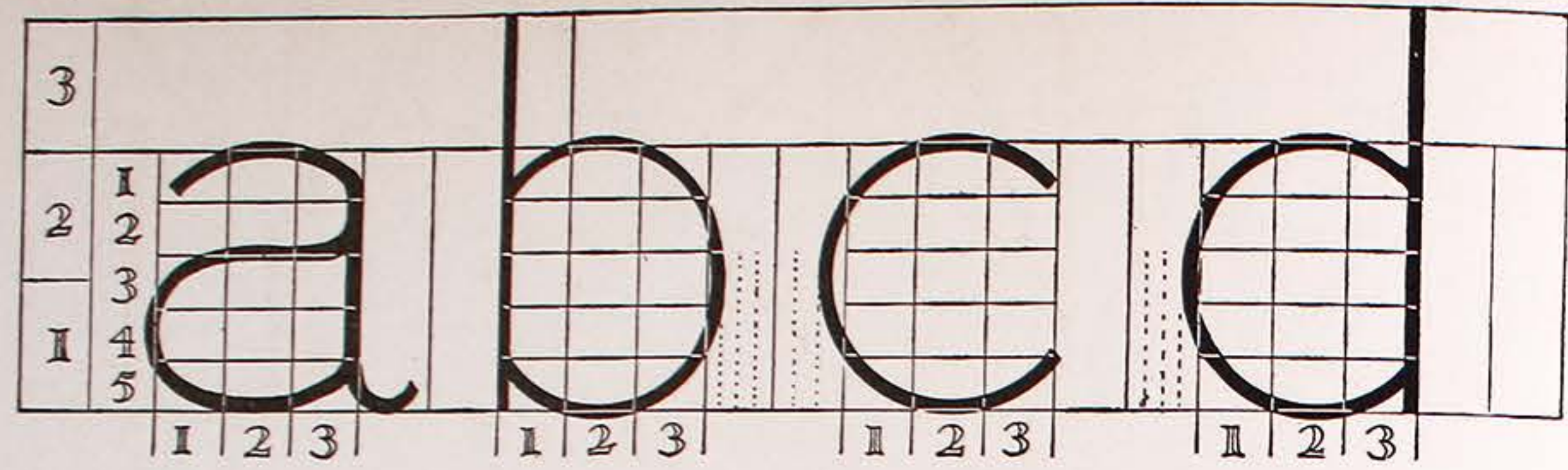
S S

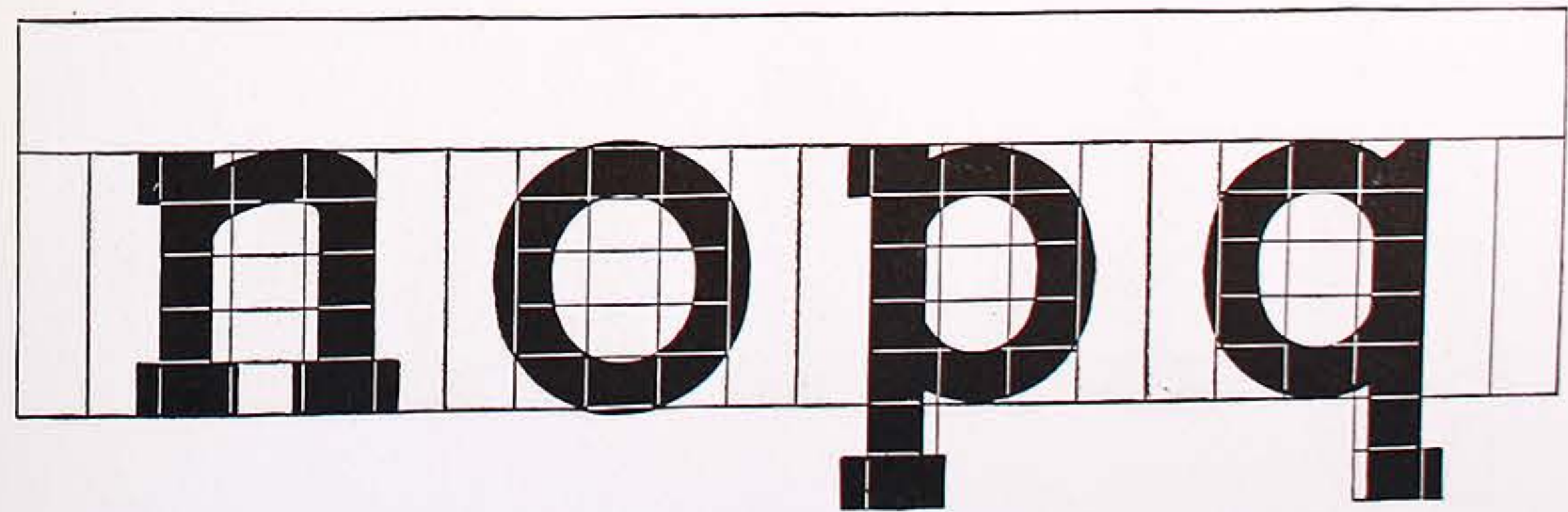
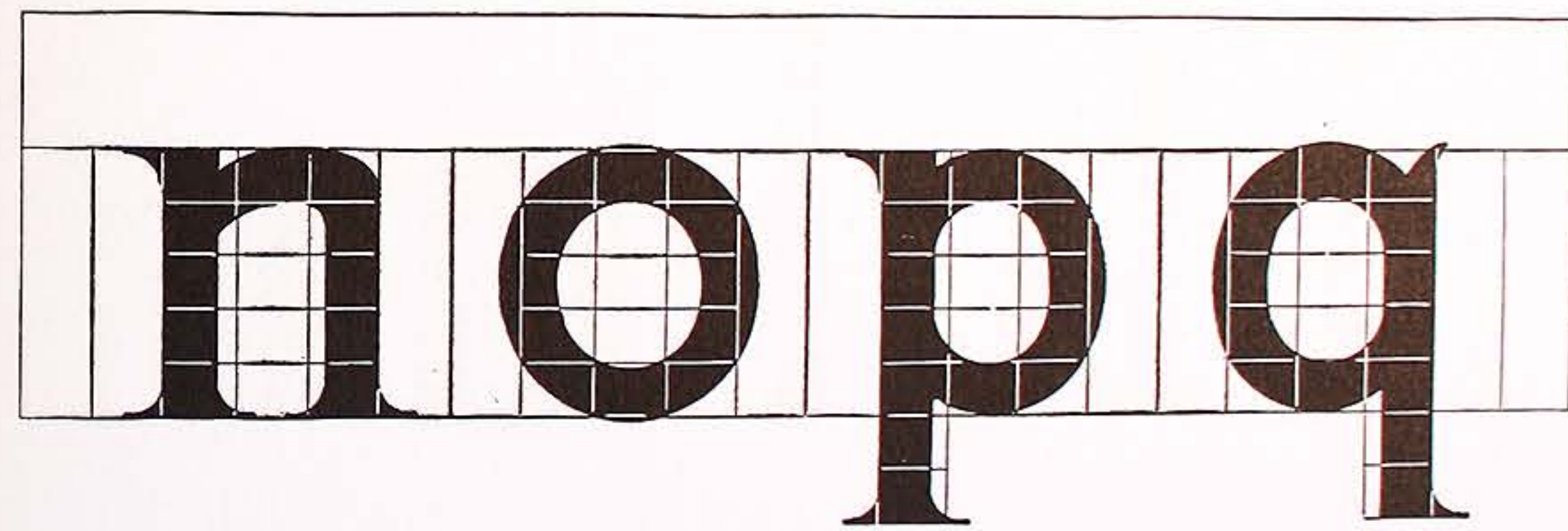
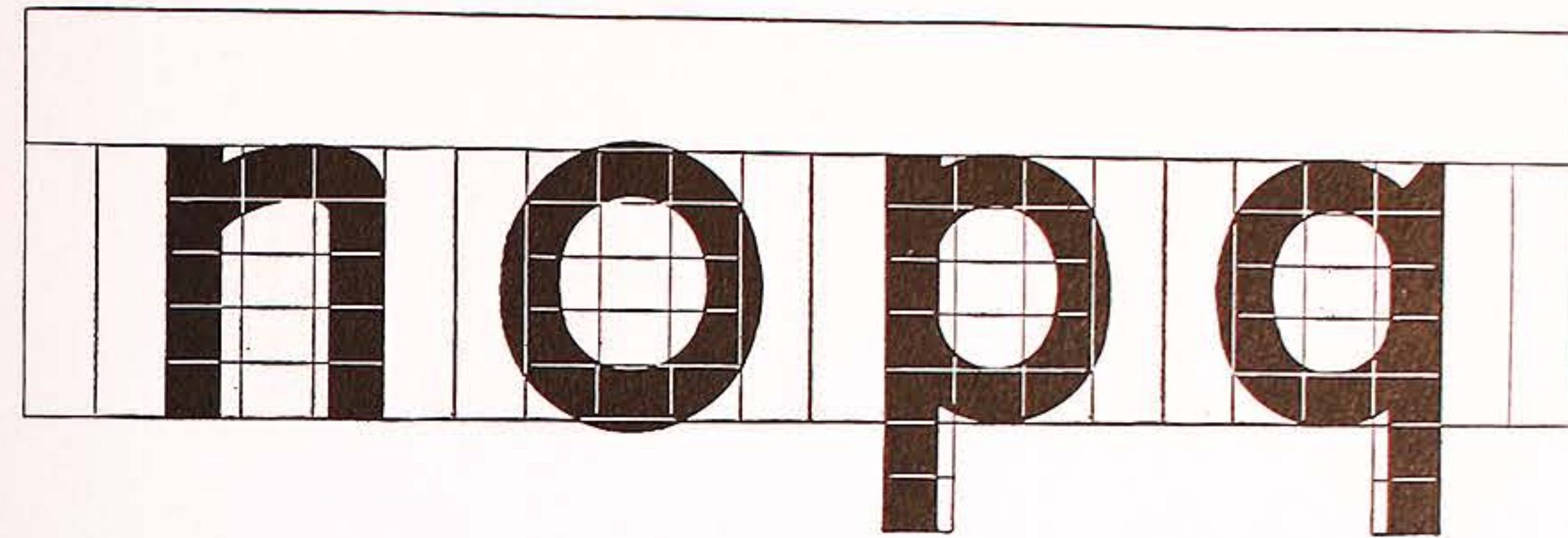
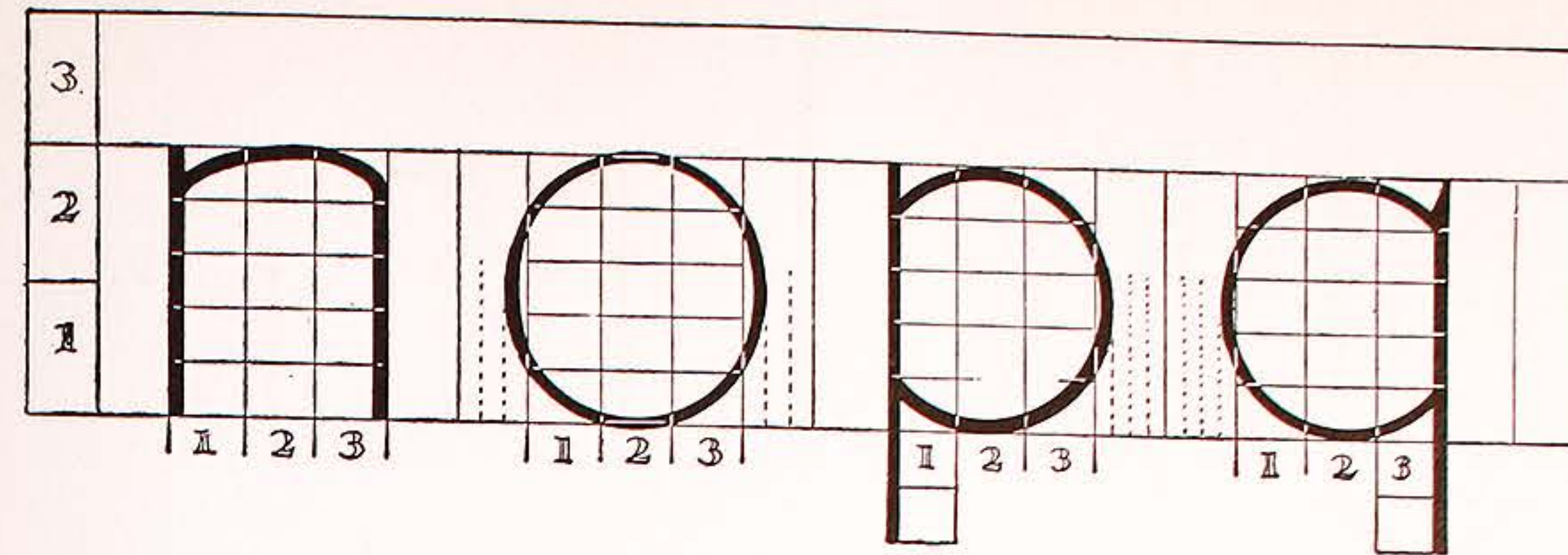
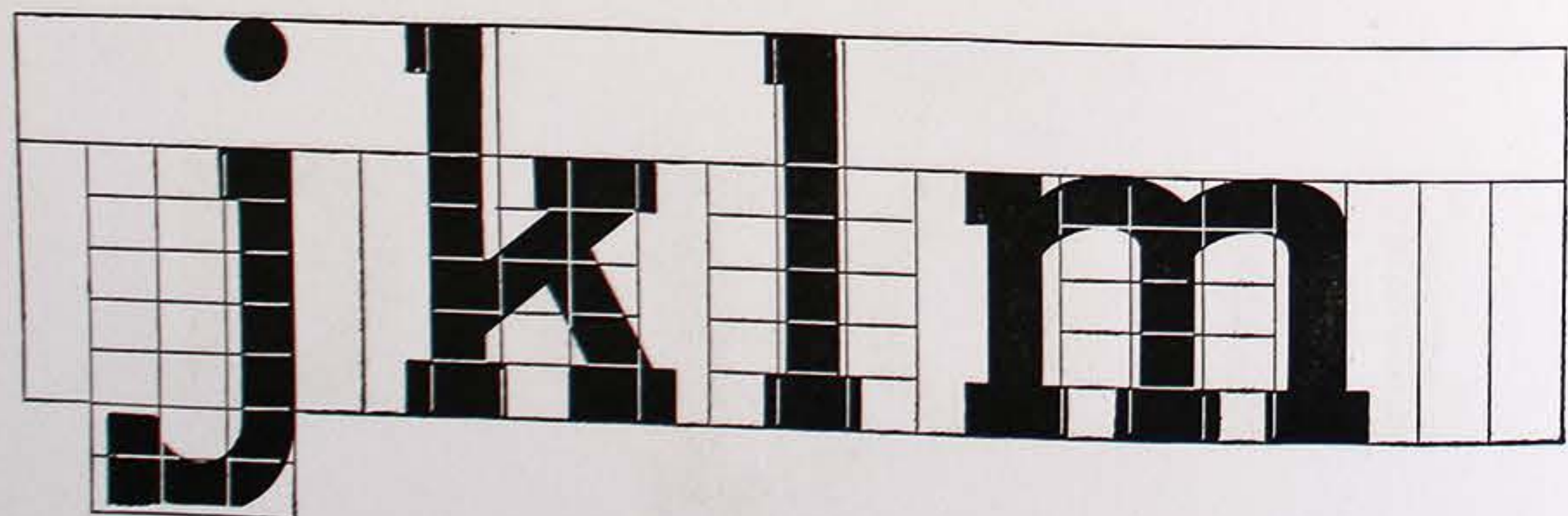
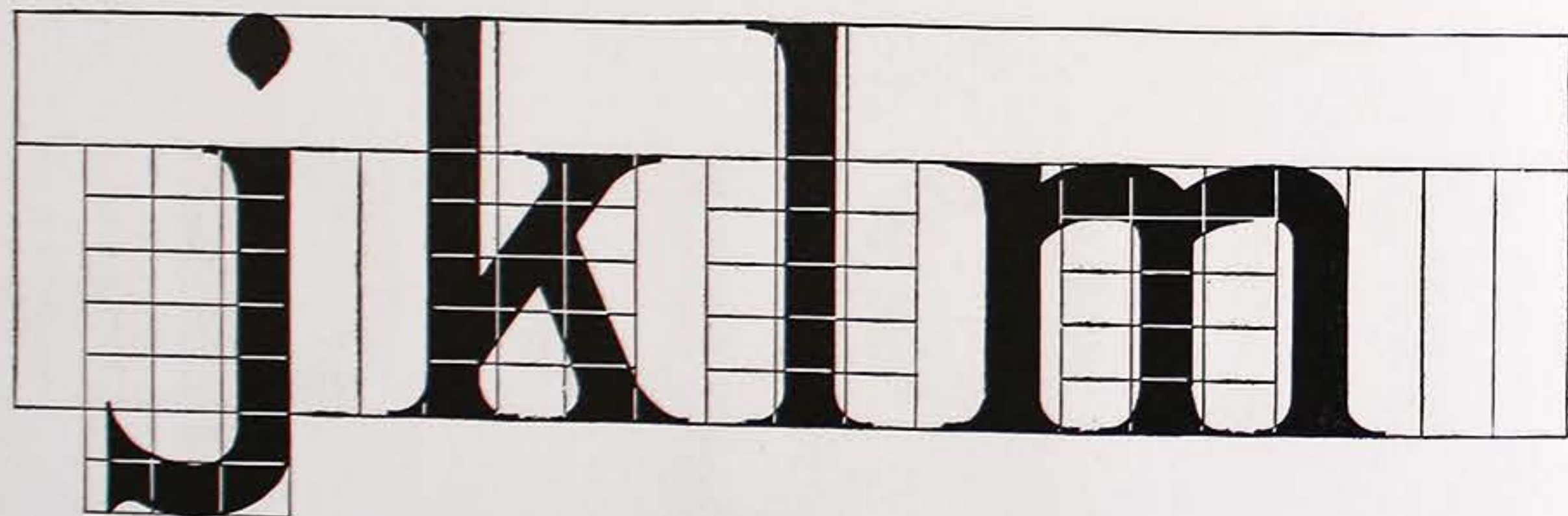
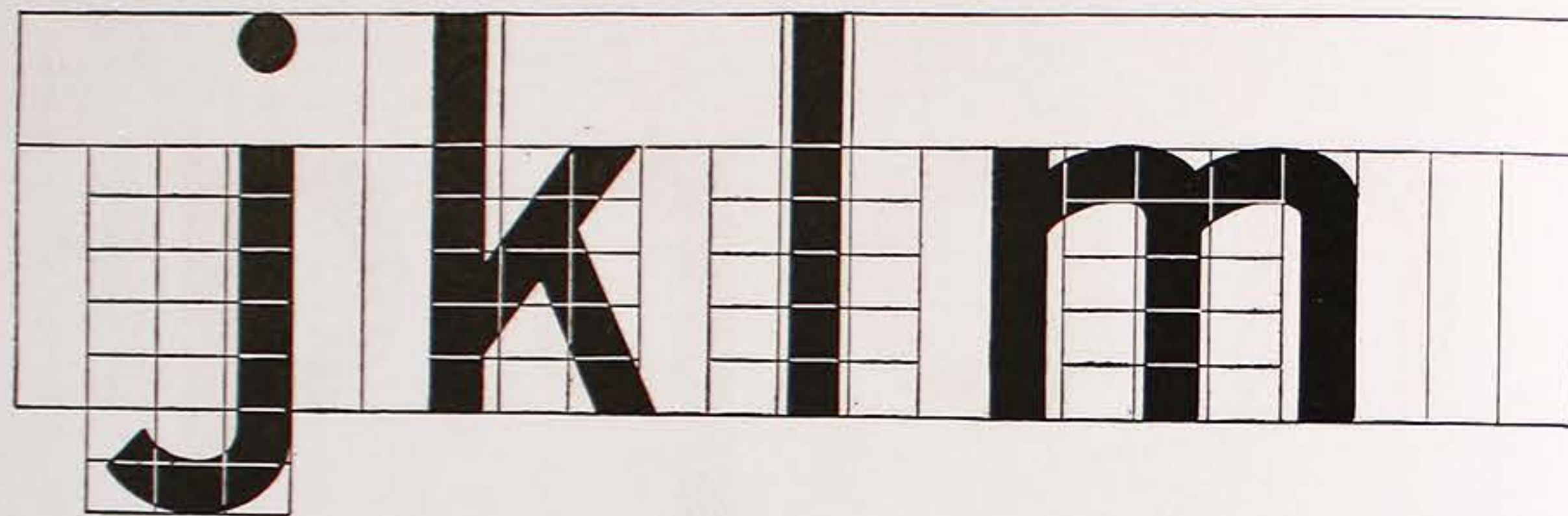
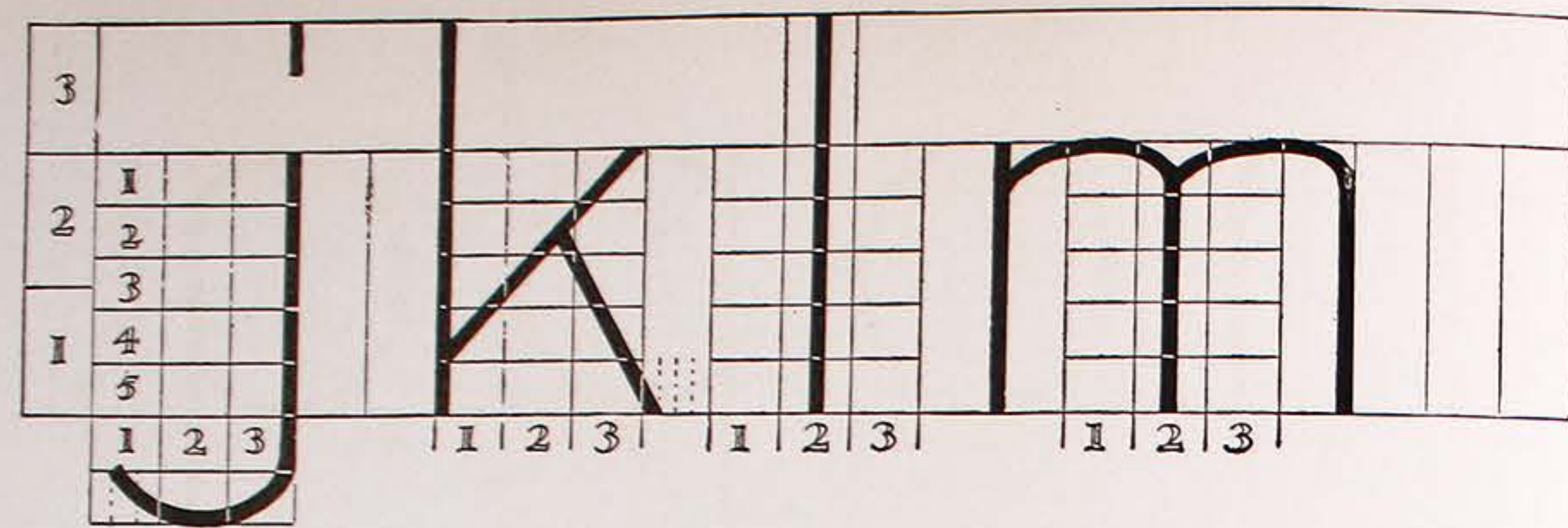
DON'T mix the slanted letters and italic on the same line.

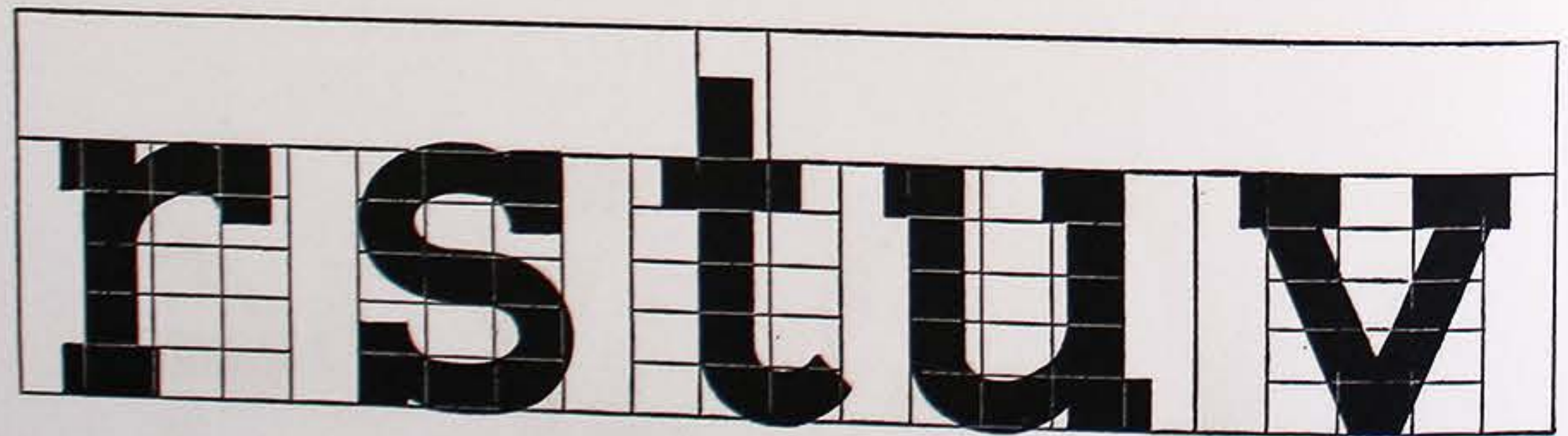
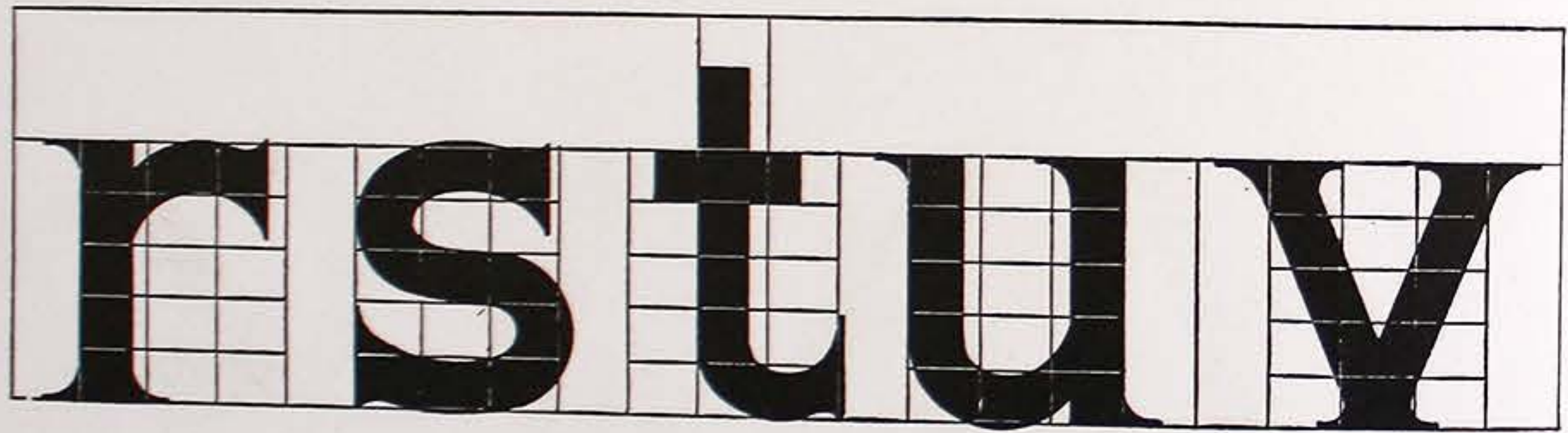
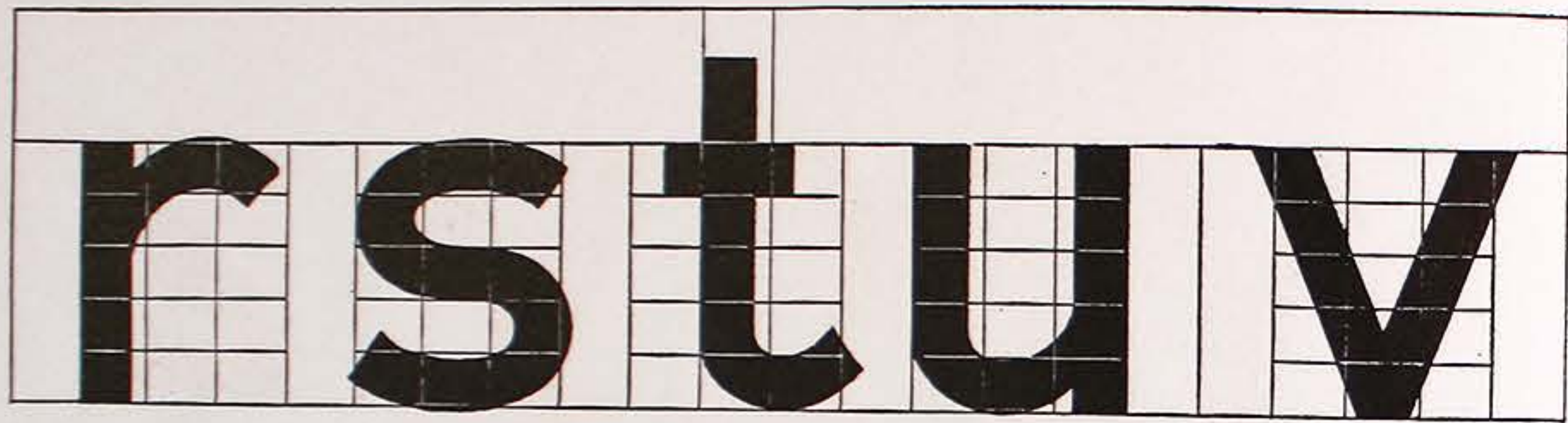
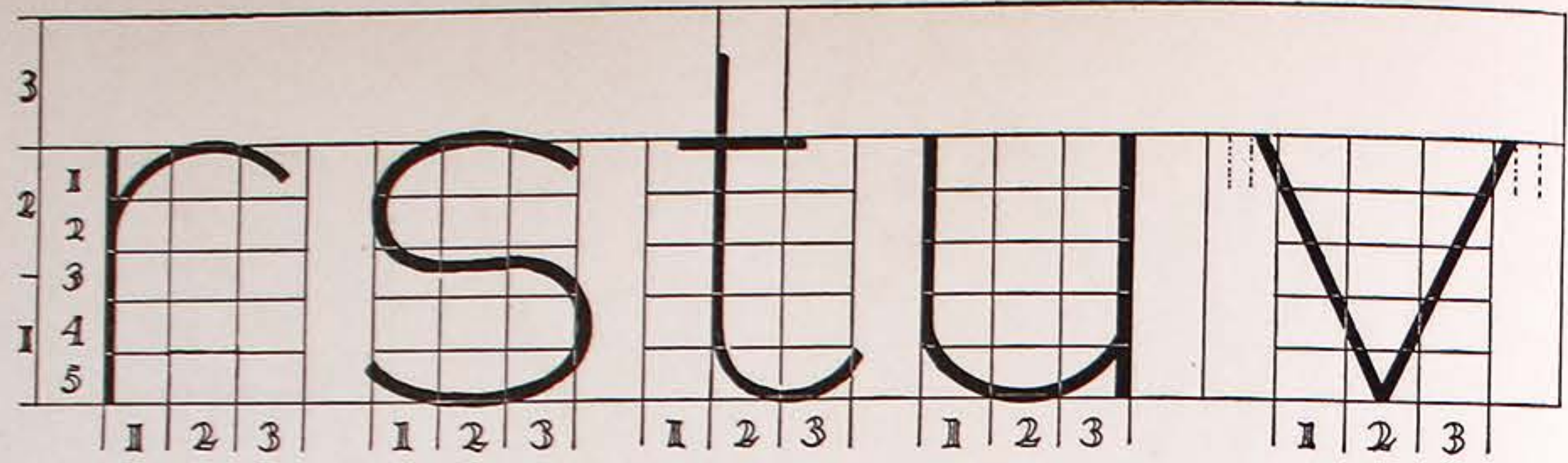
aegsvwy aegsvwy



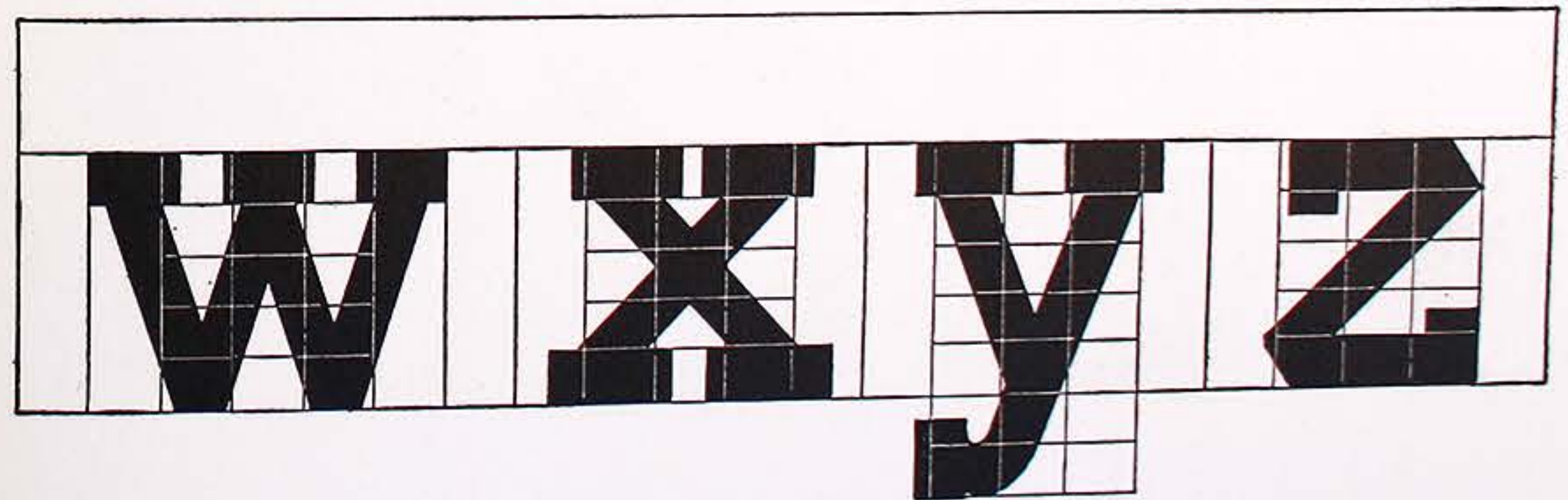
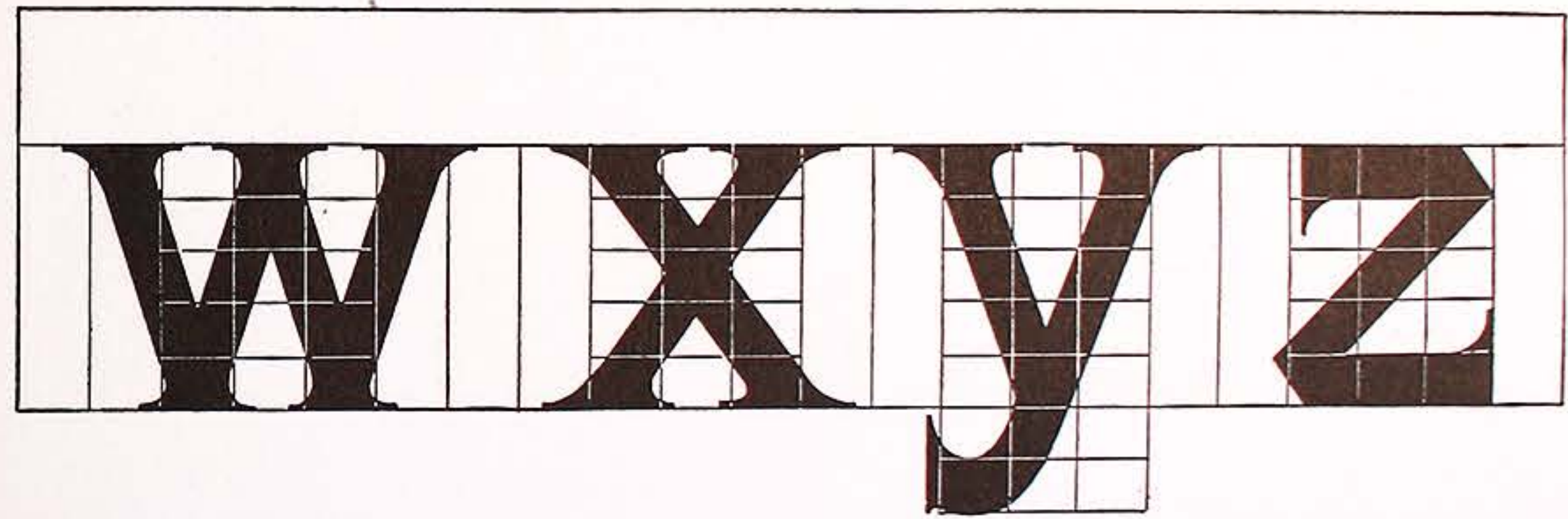
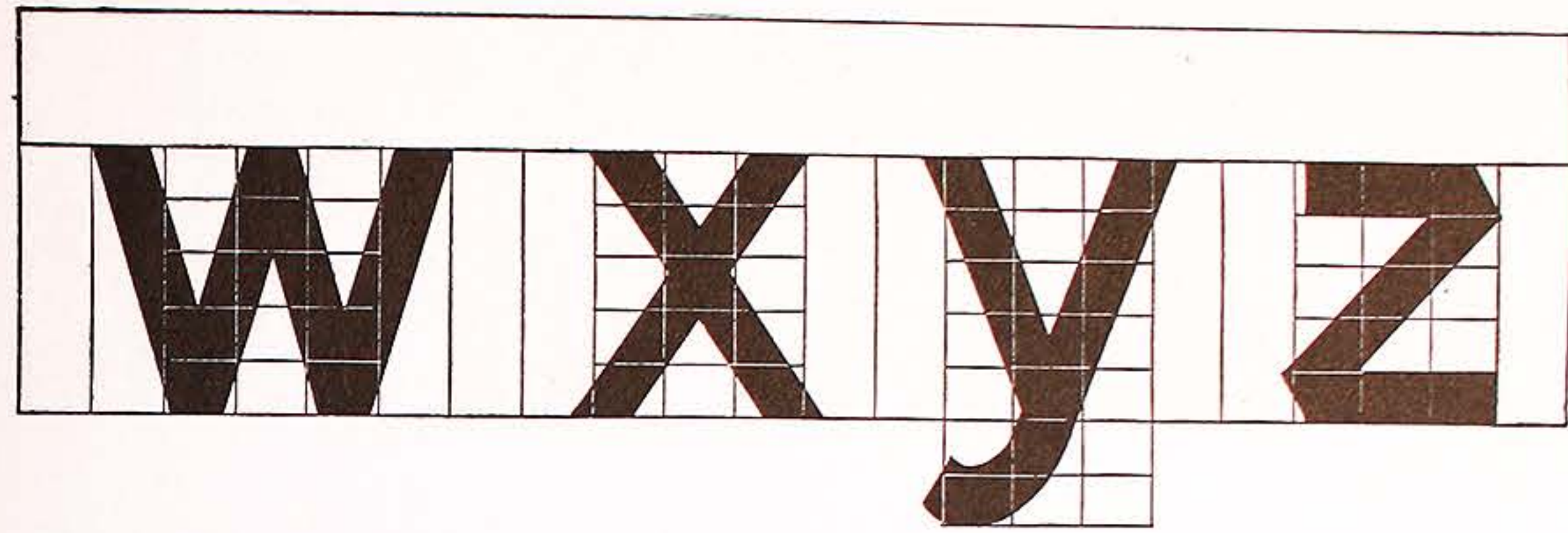
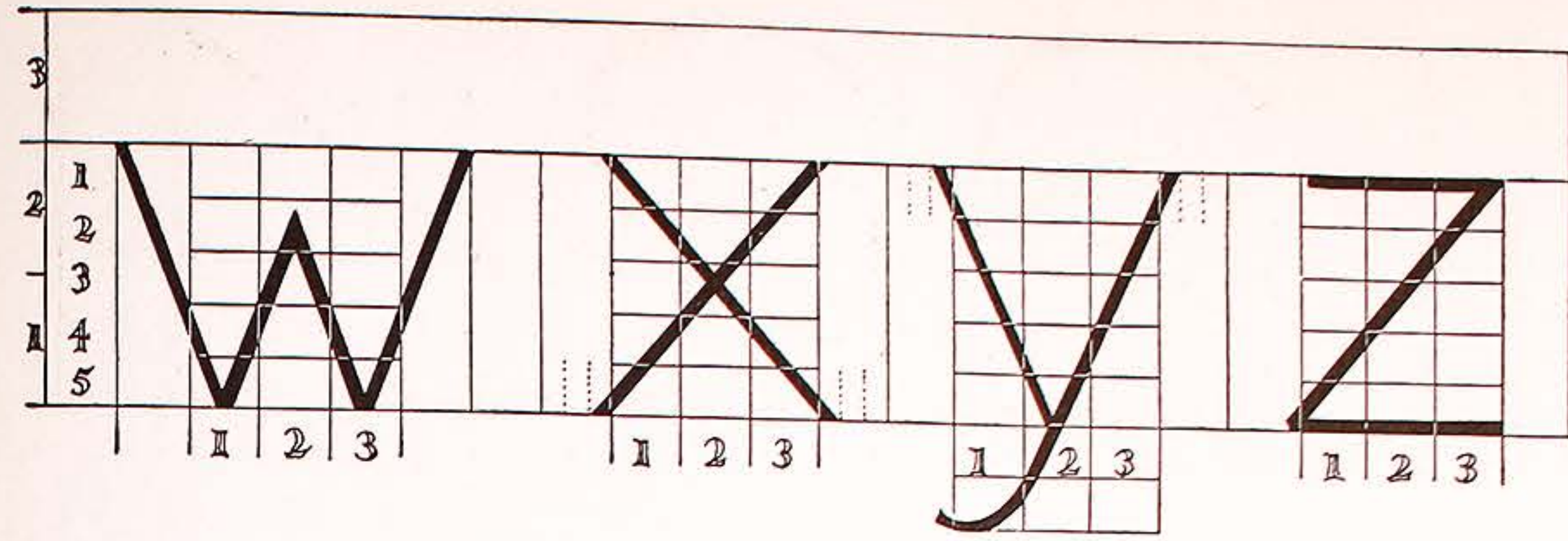




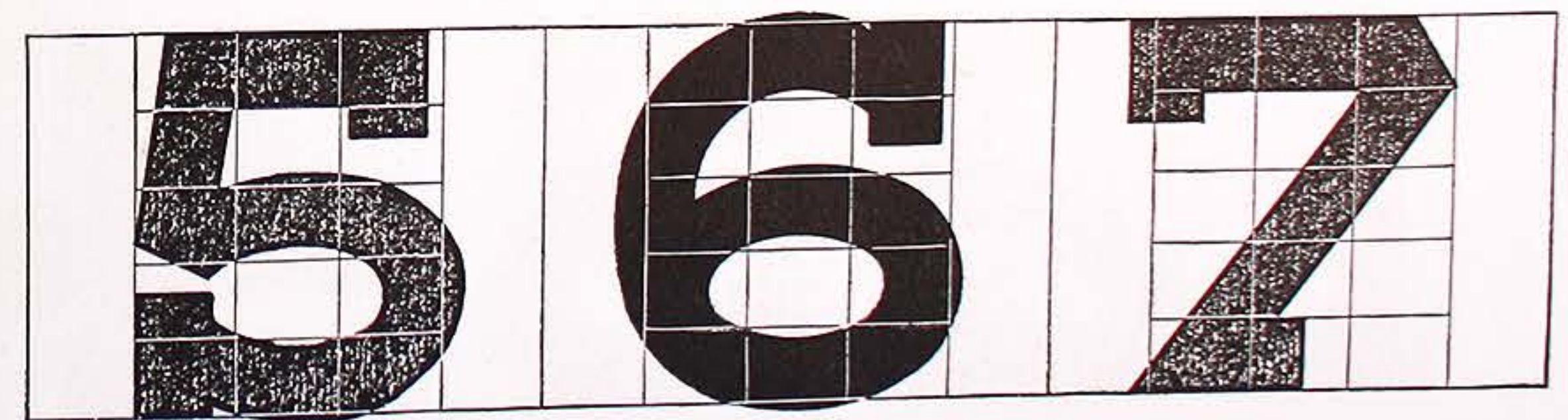
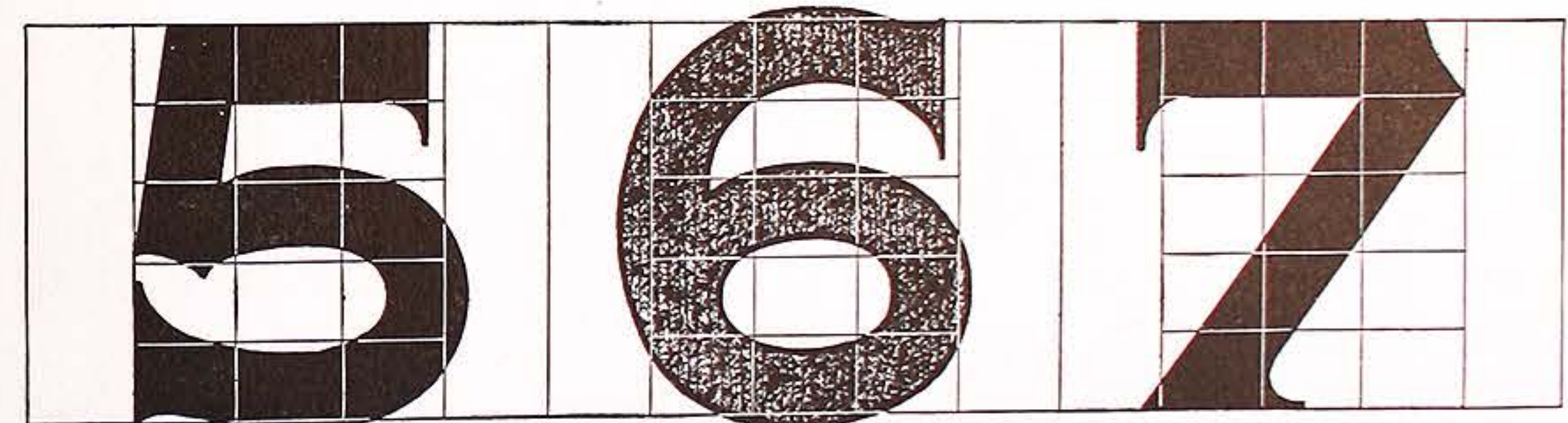
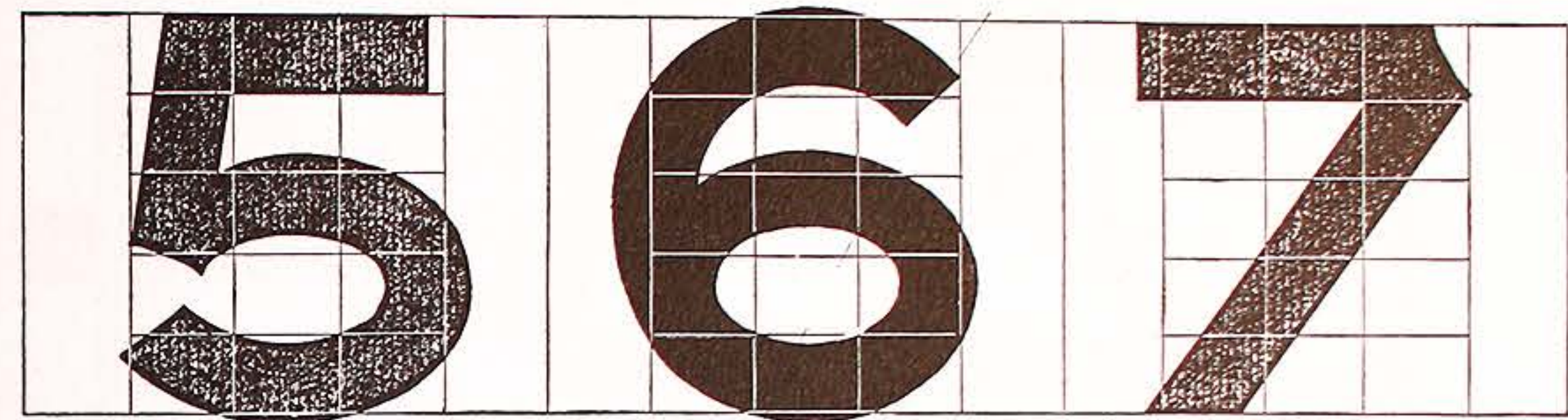
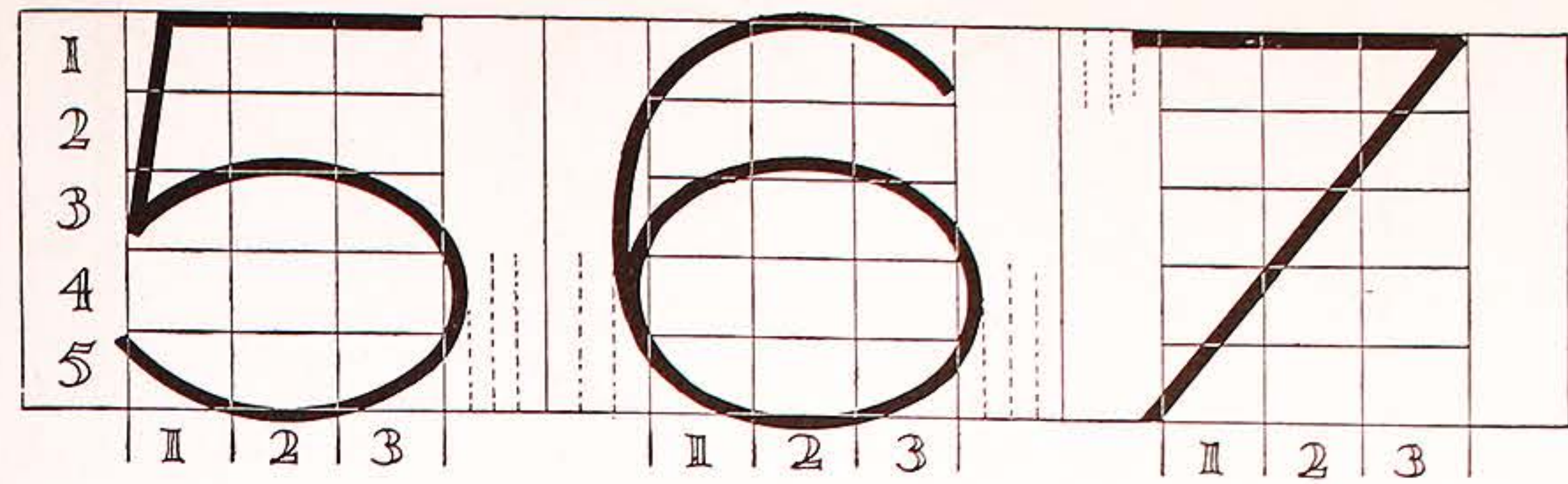
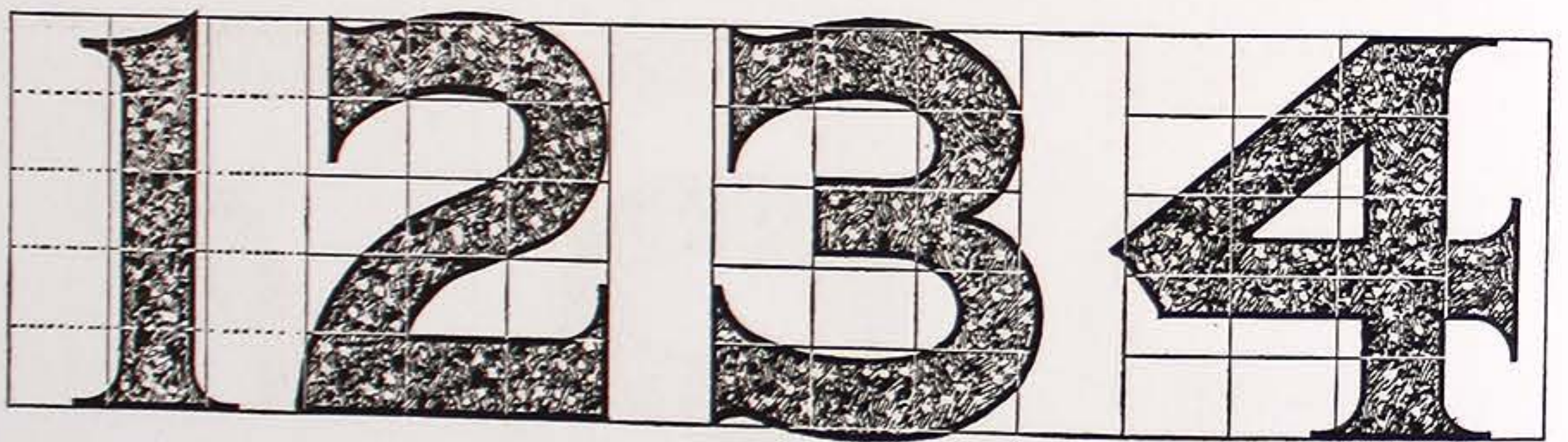
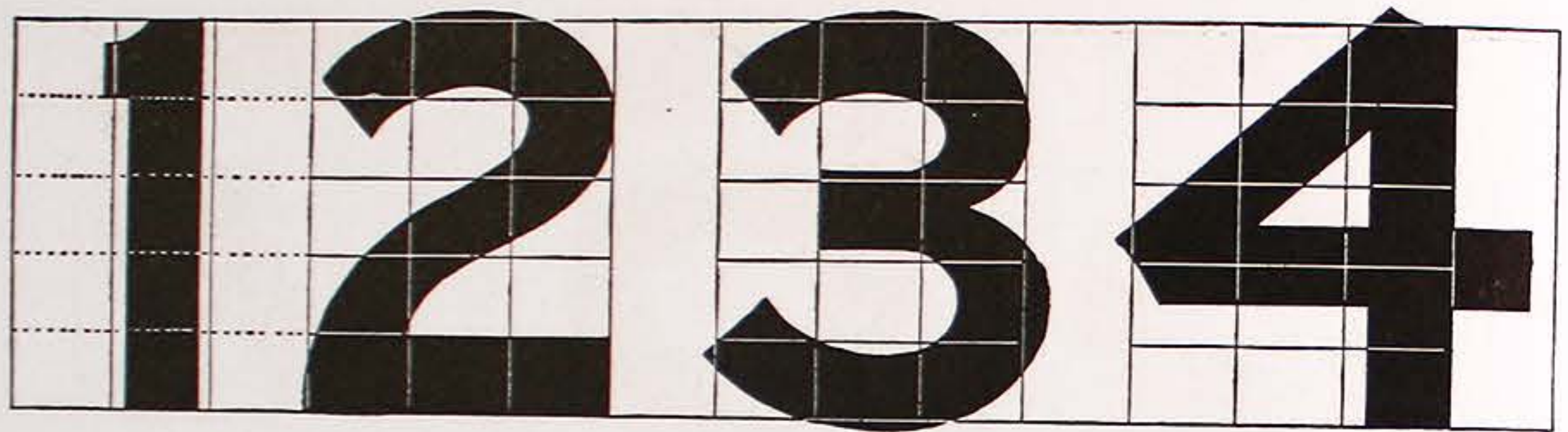
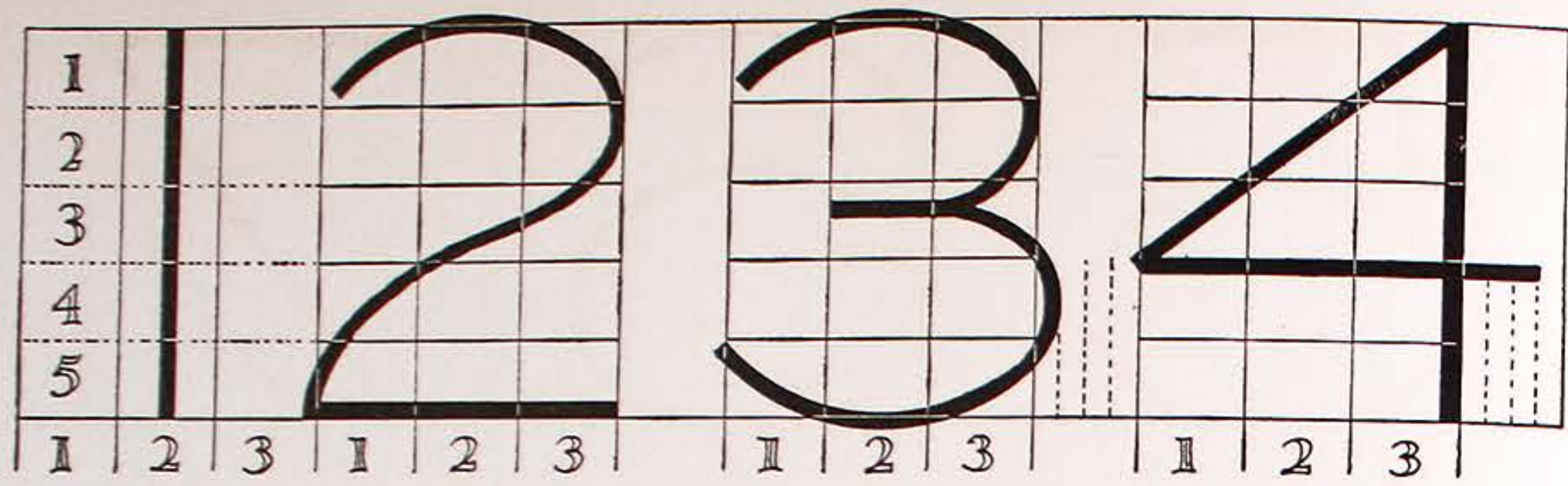


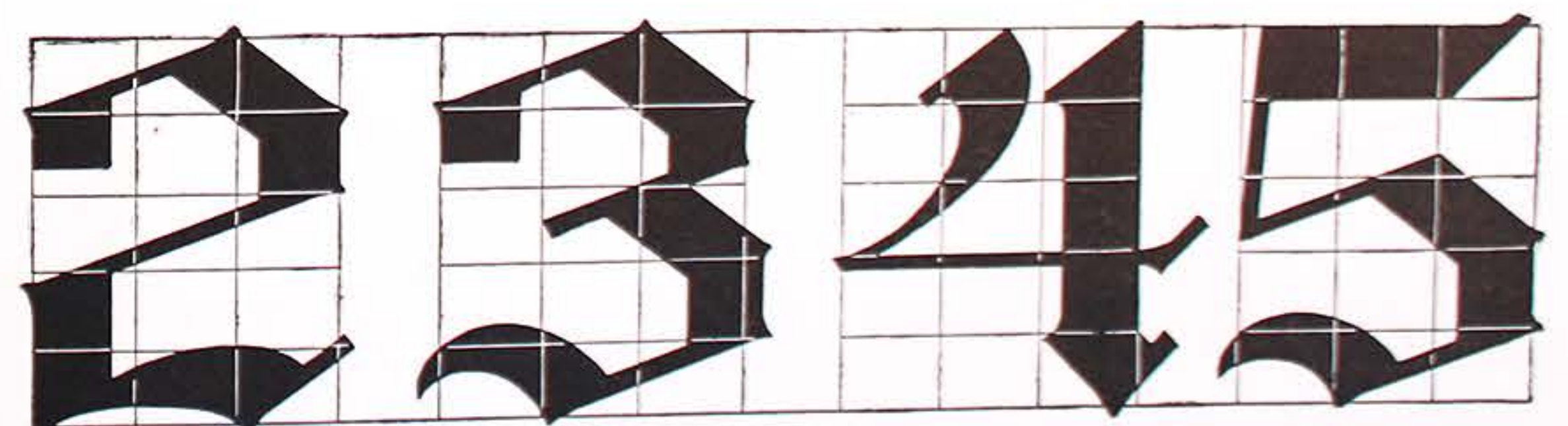
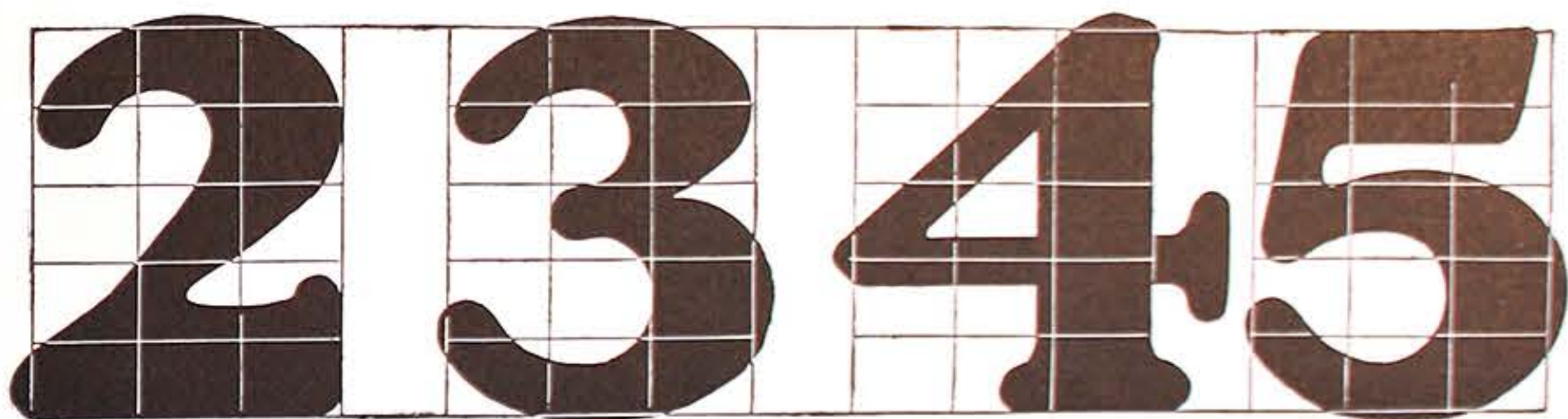
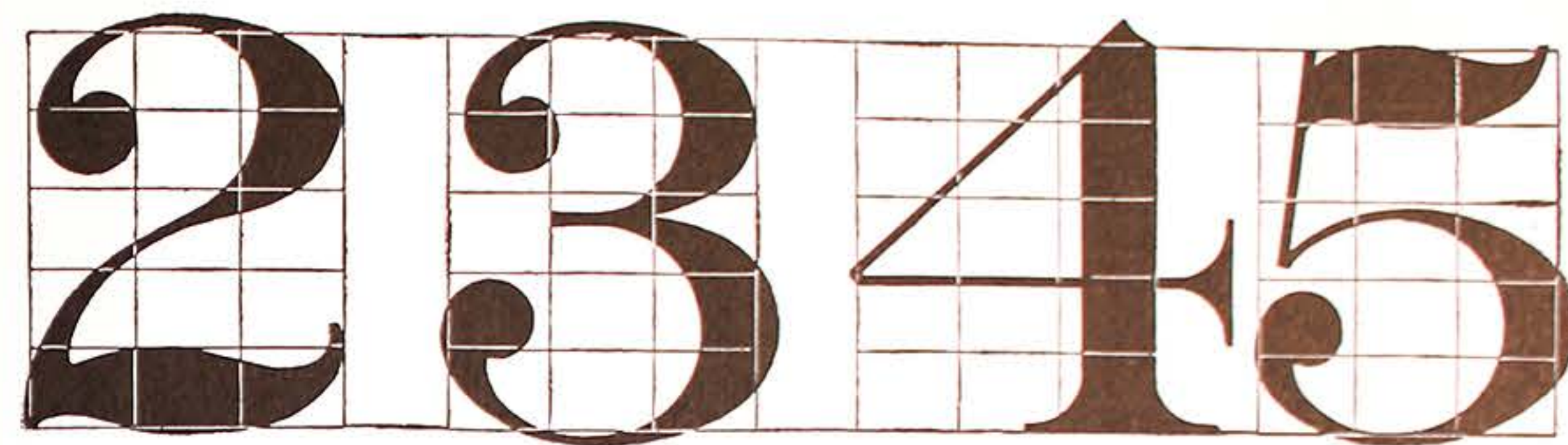
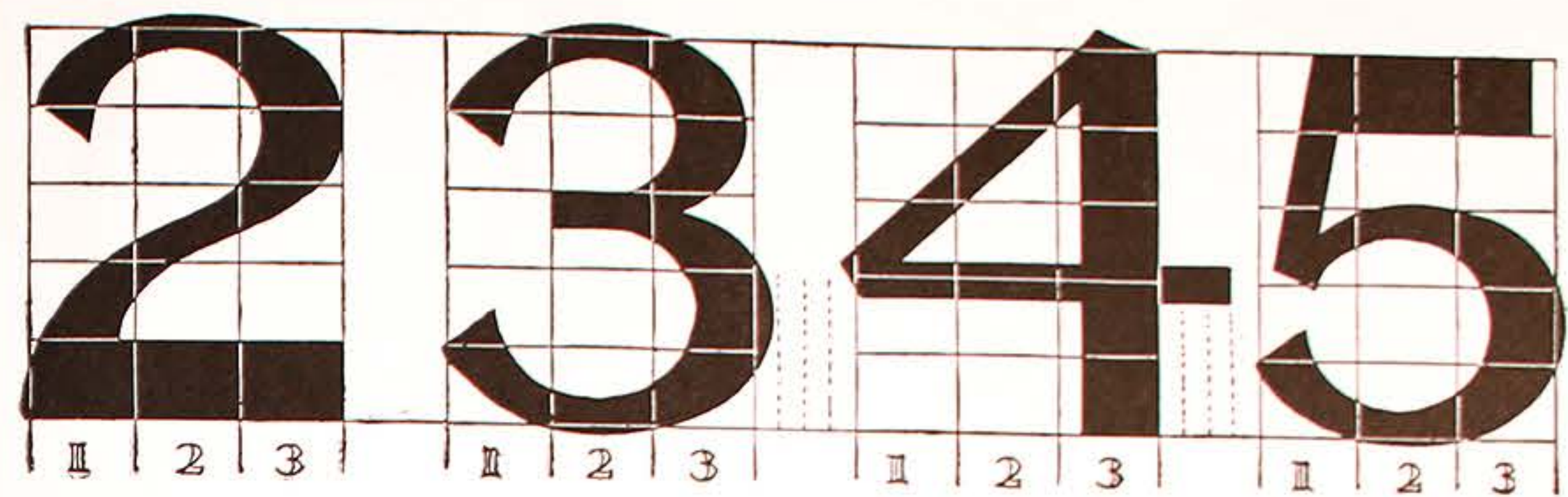
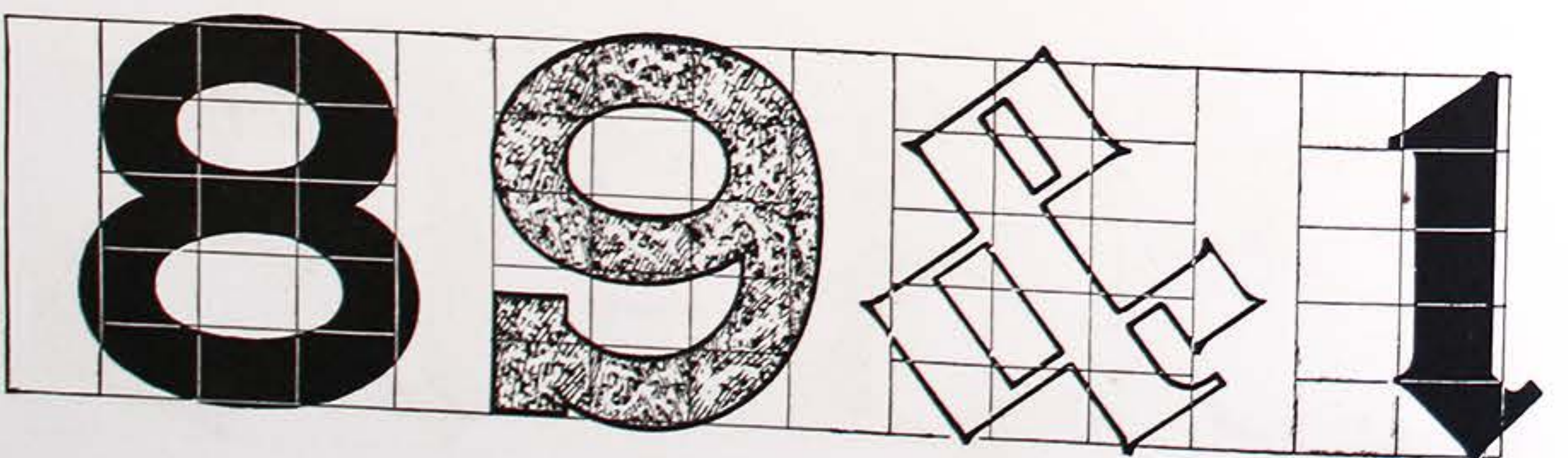
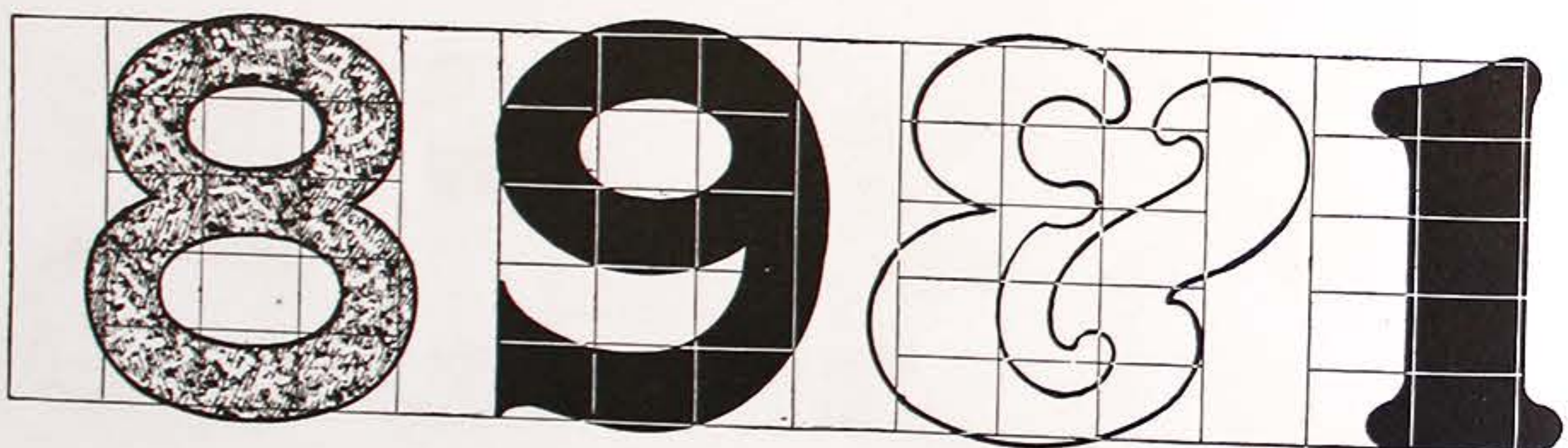
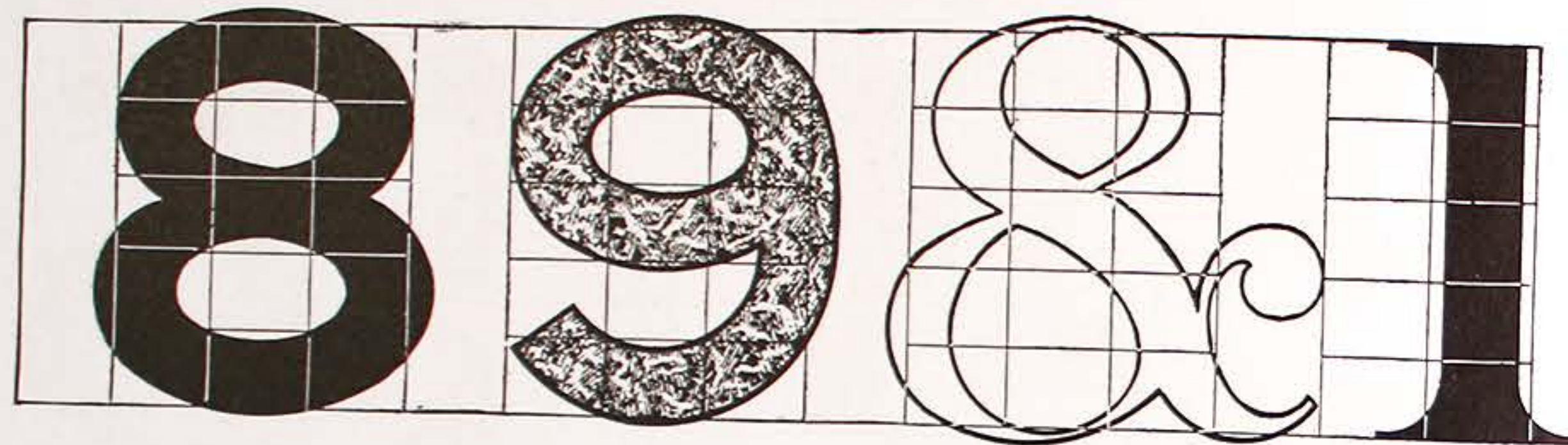
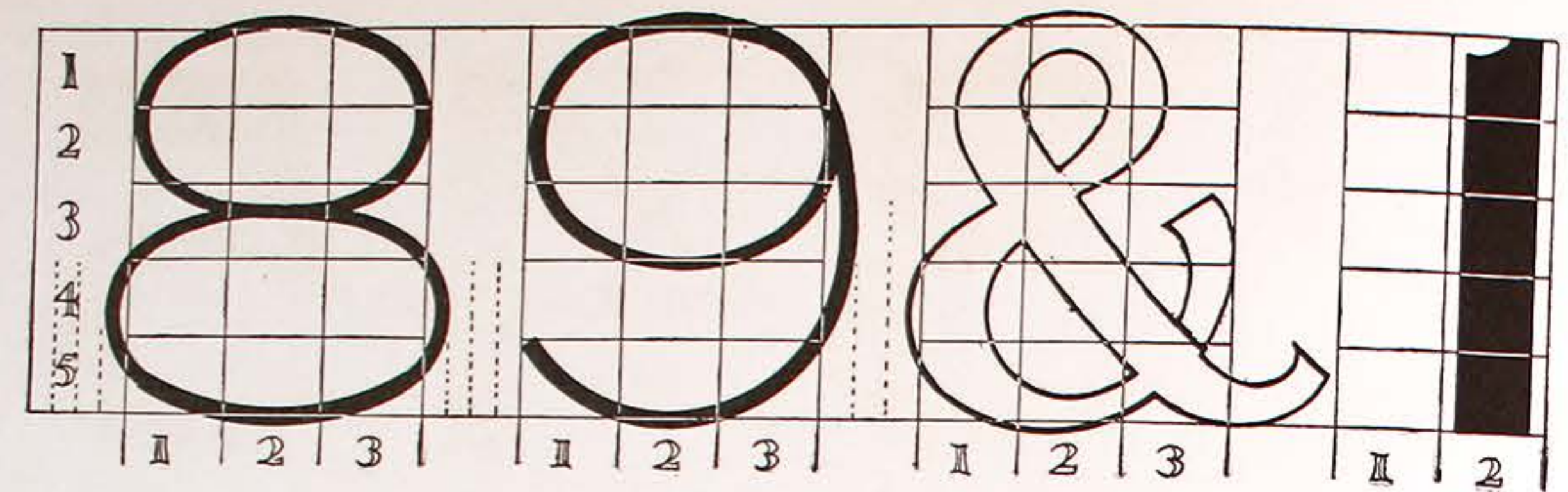


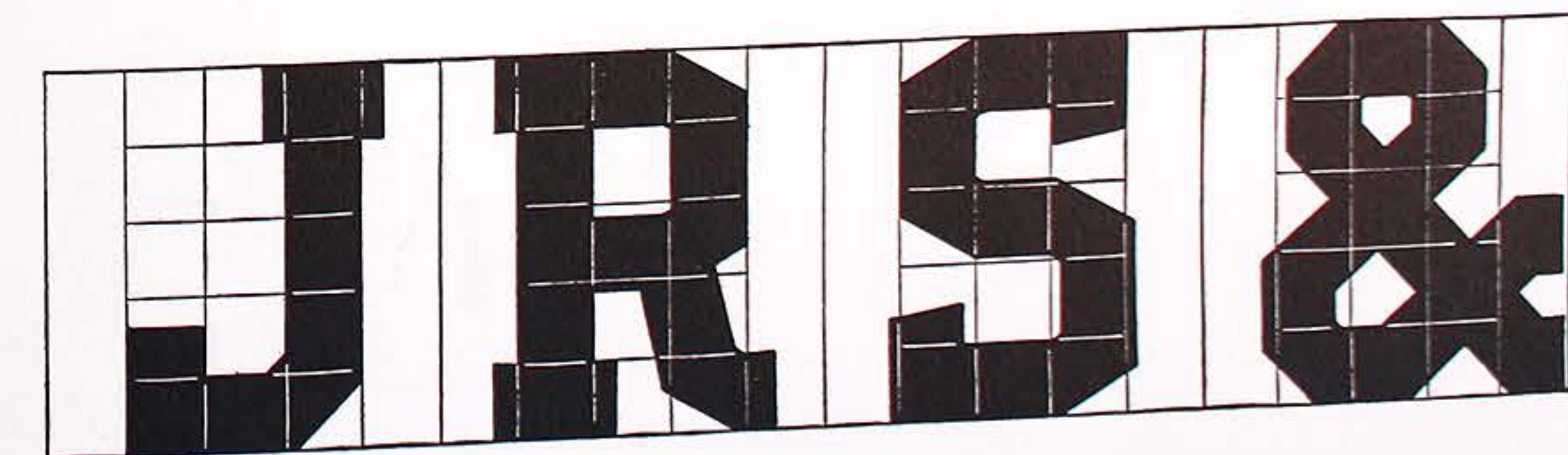
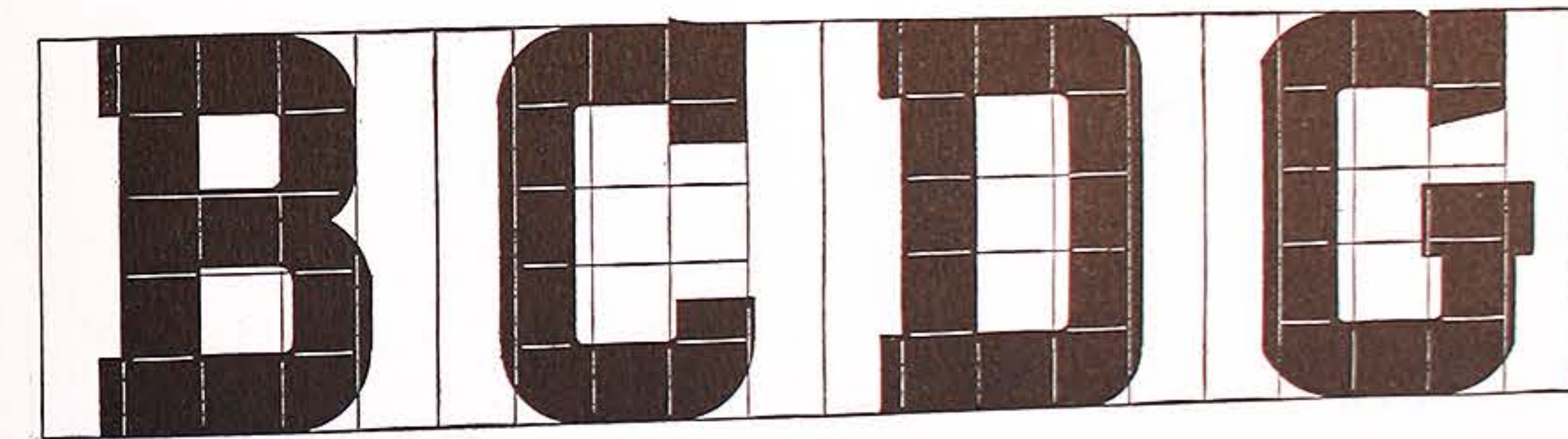
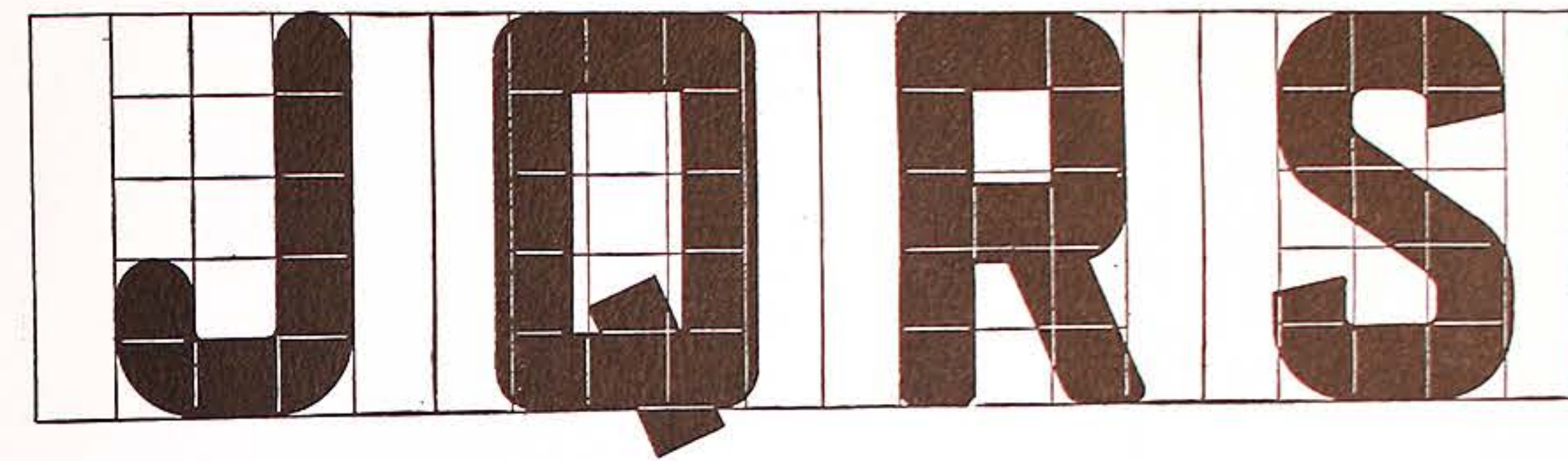
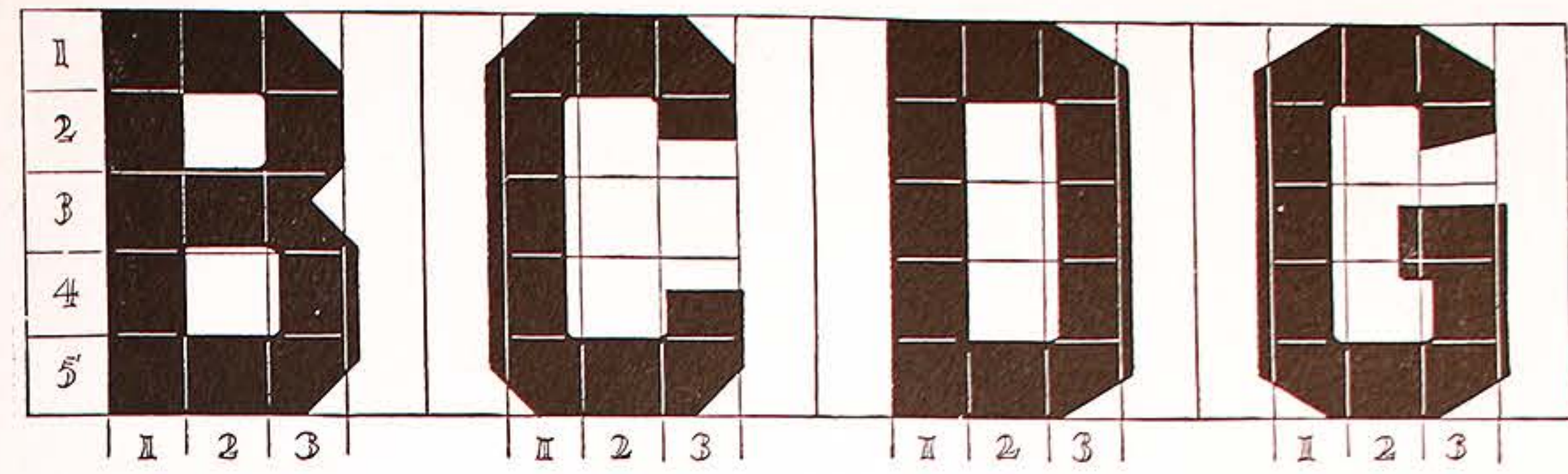
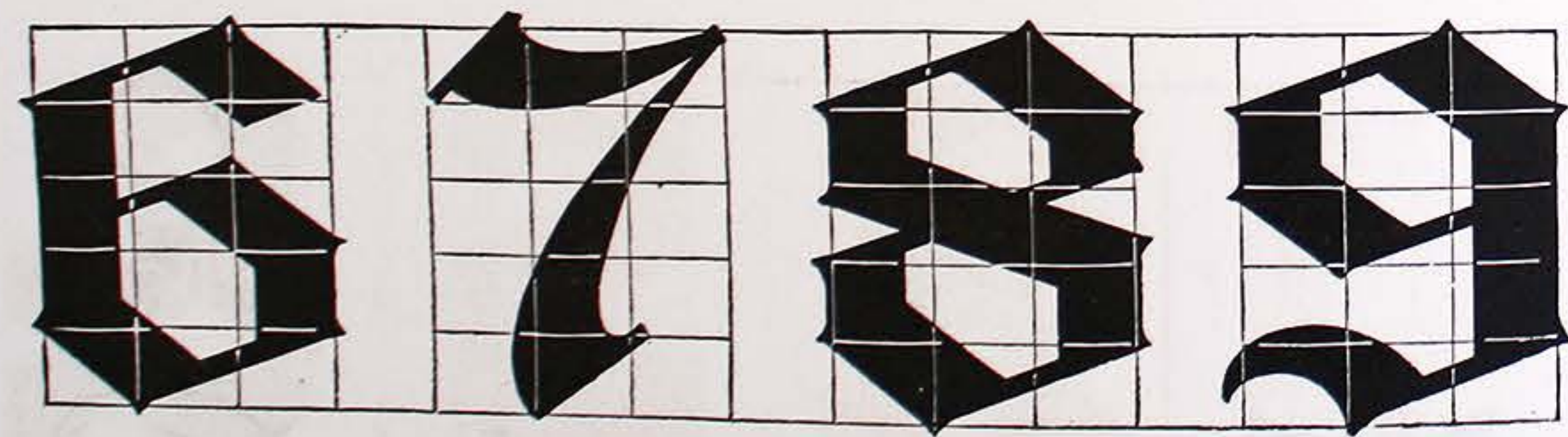
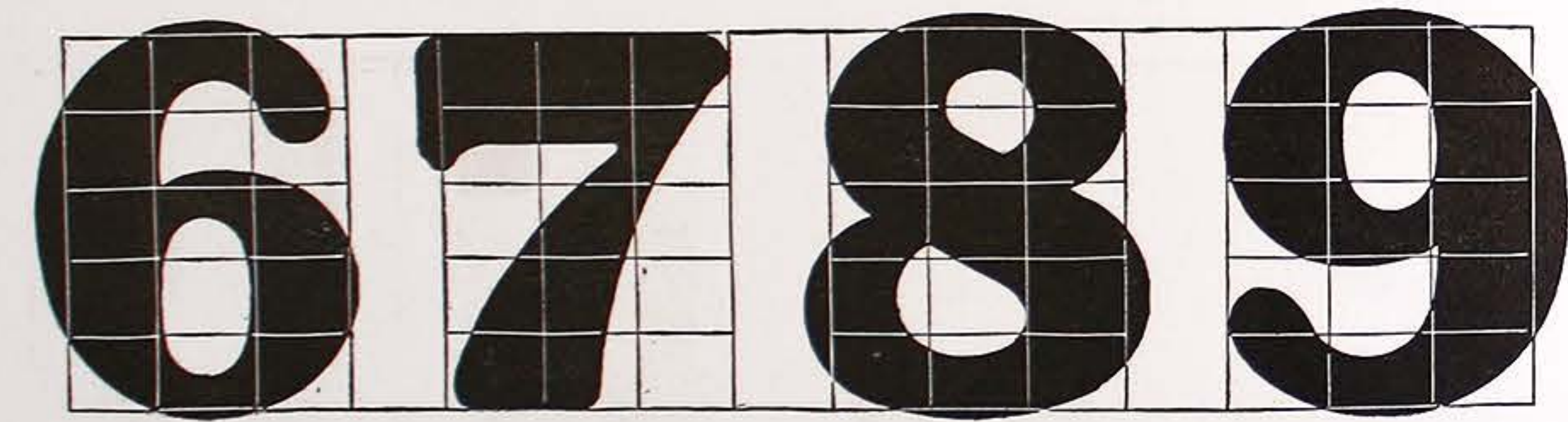
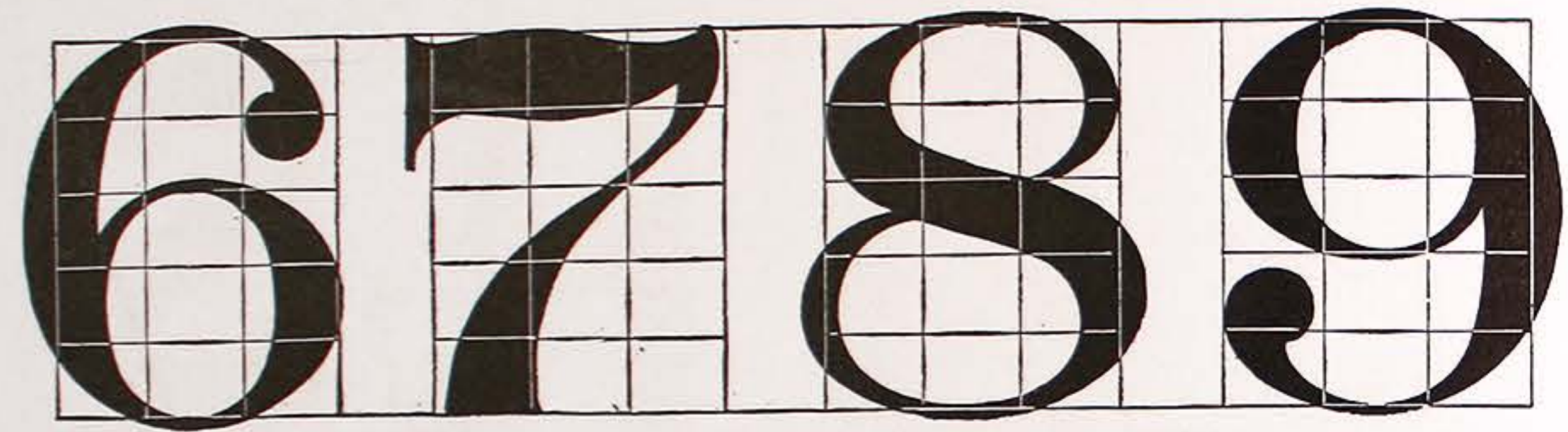
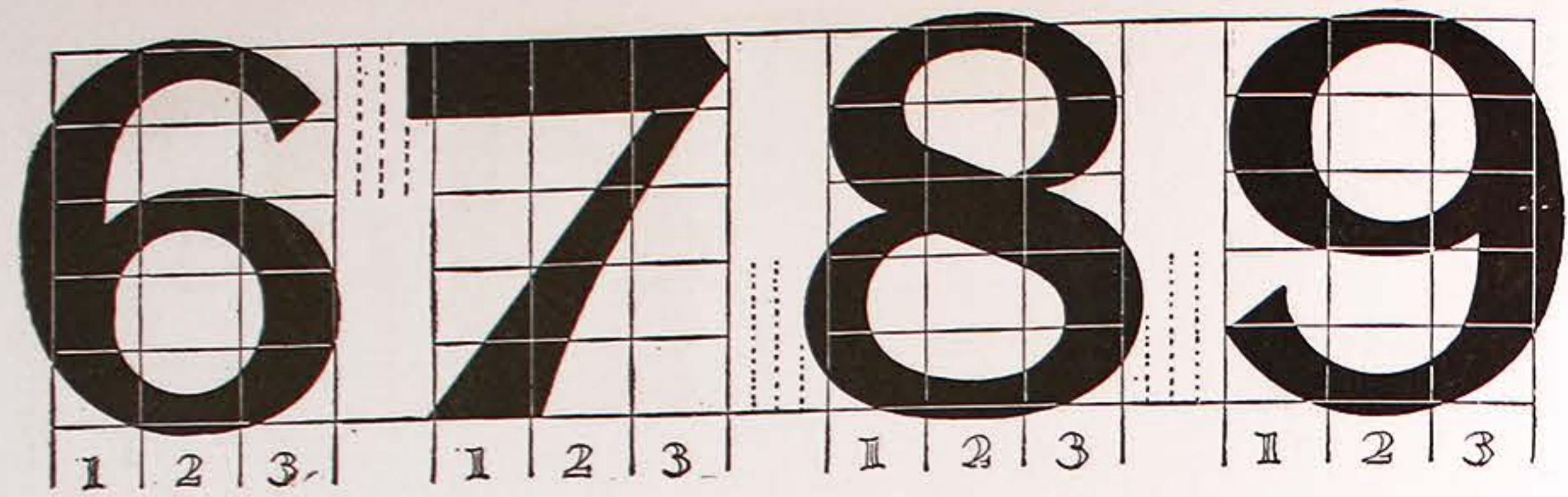
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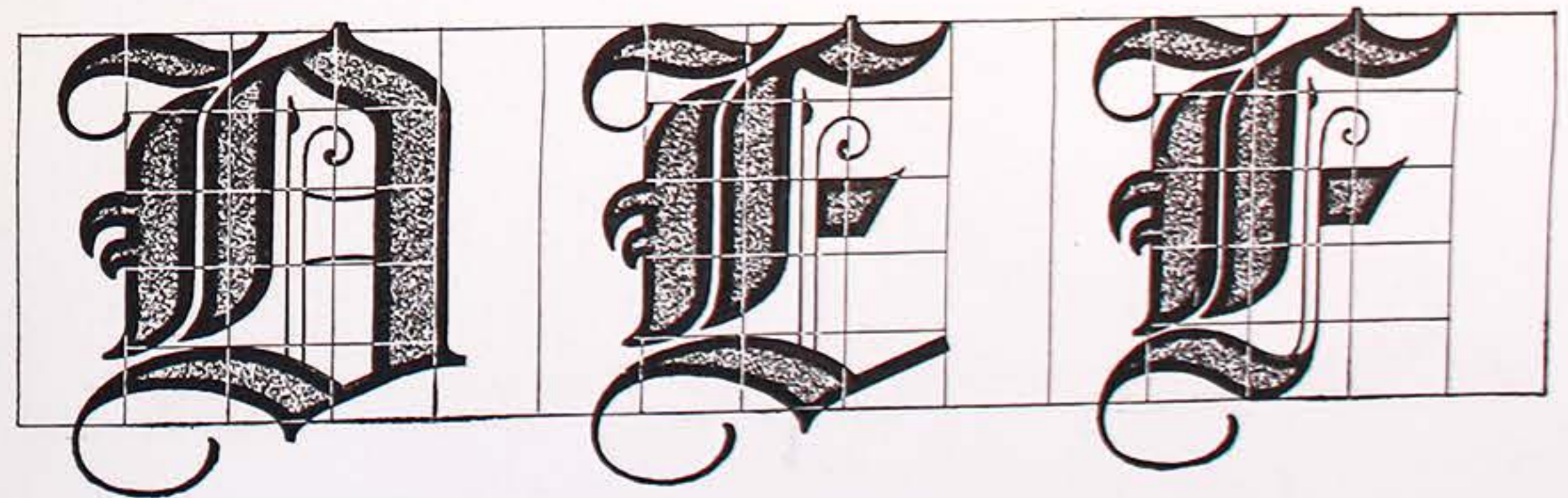
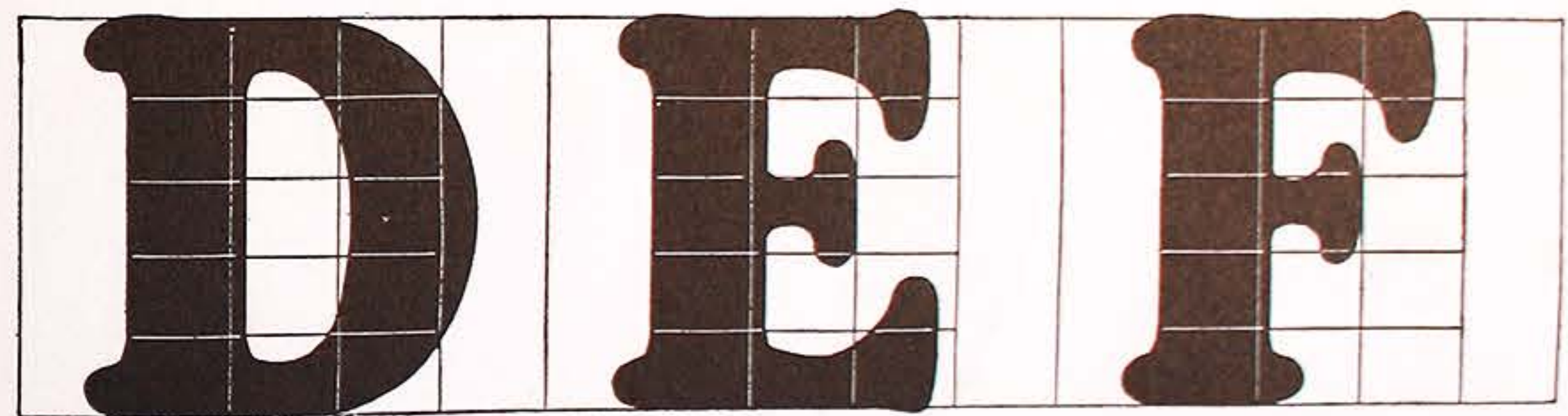
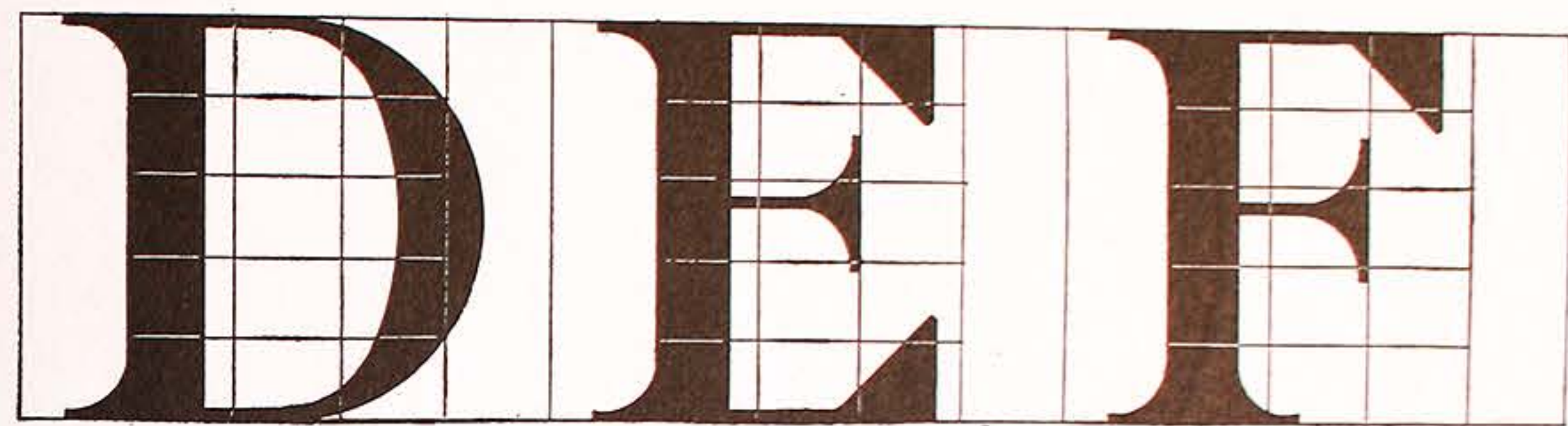
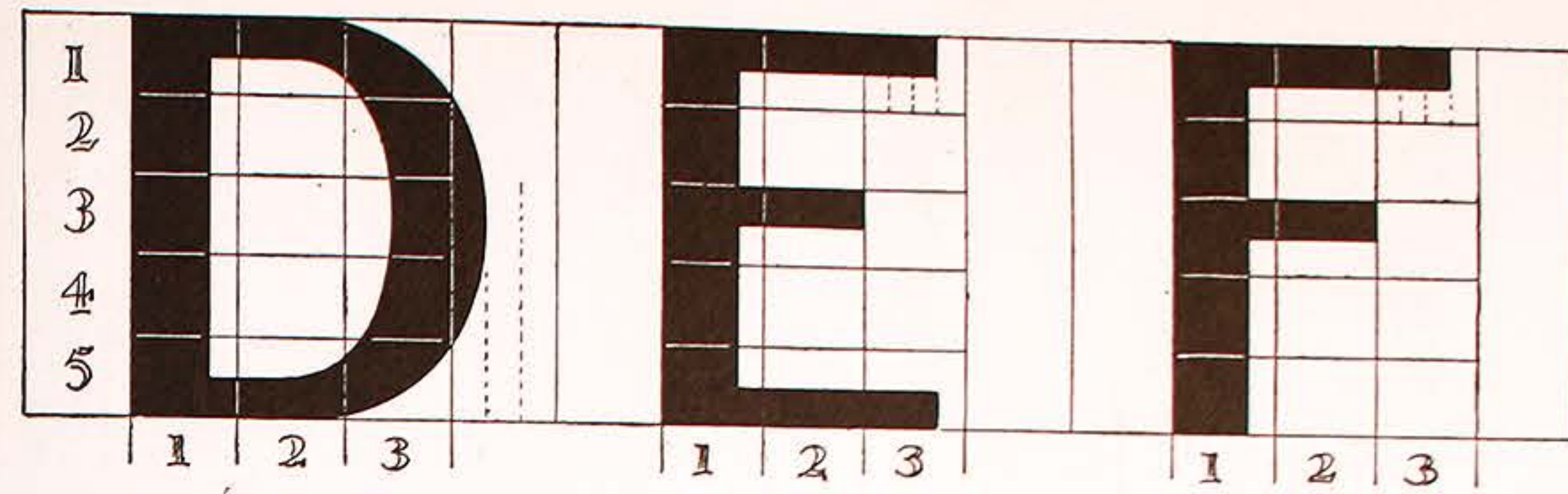
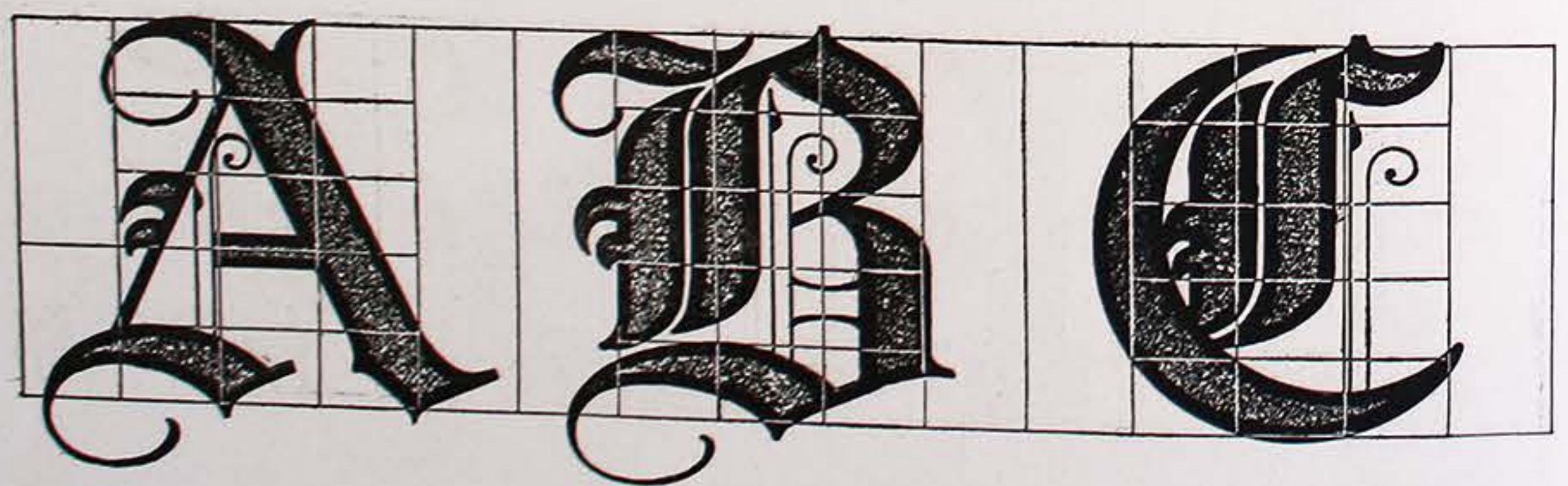
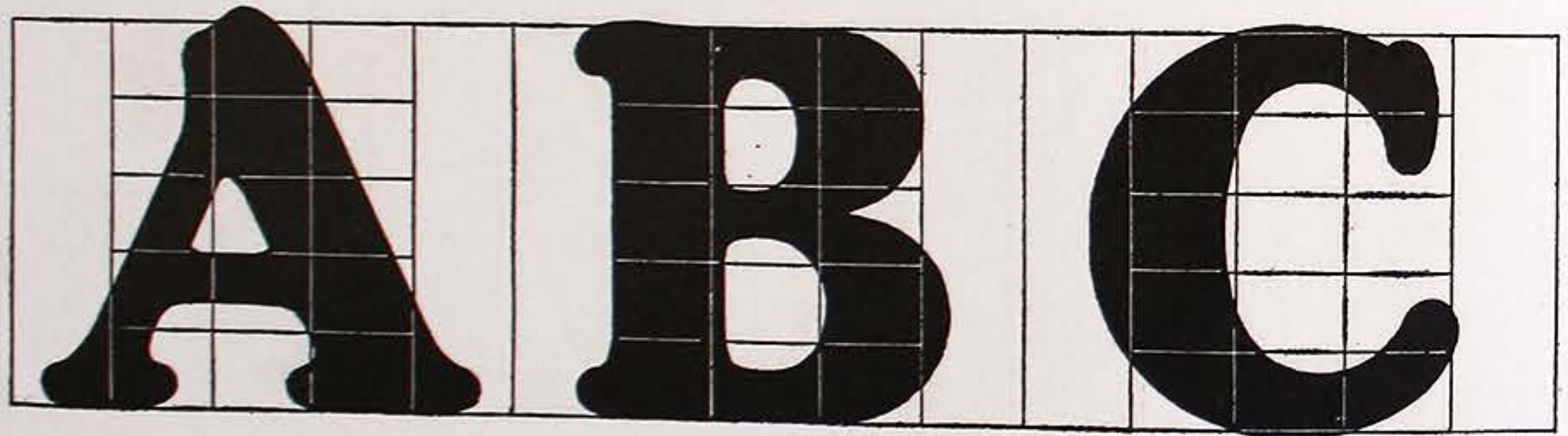
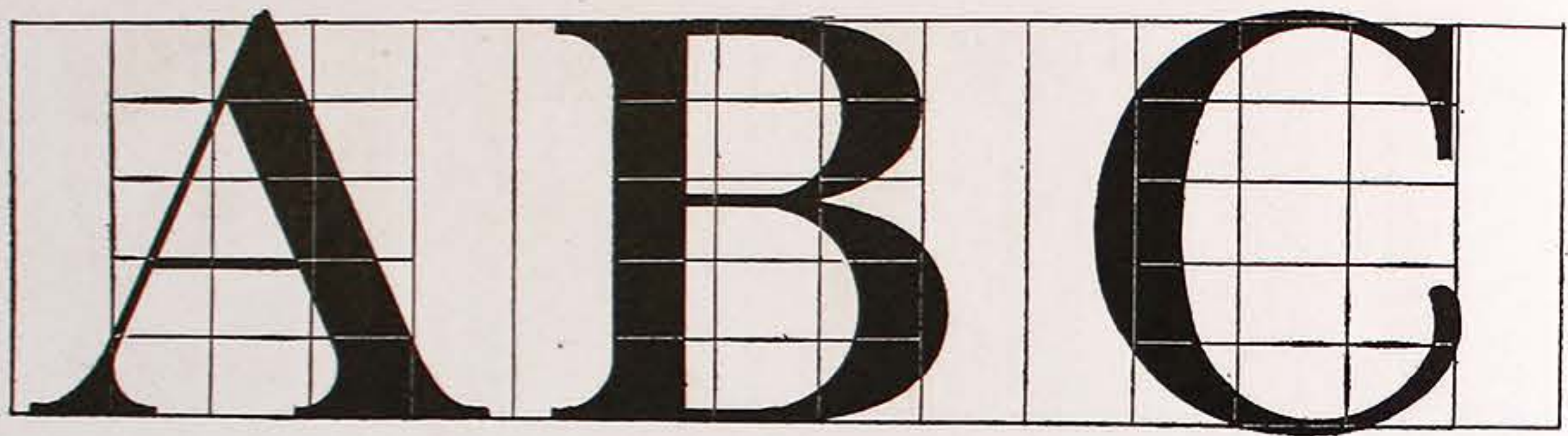
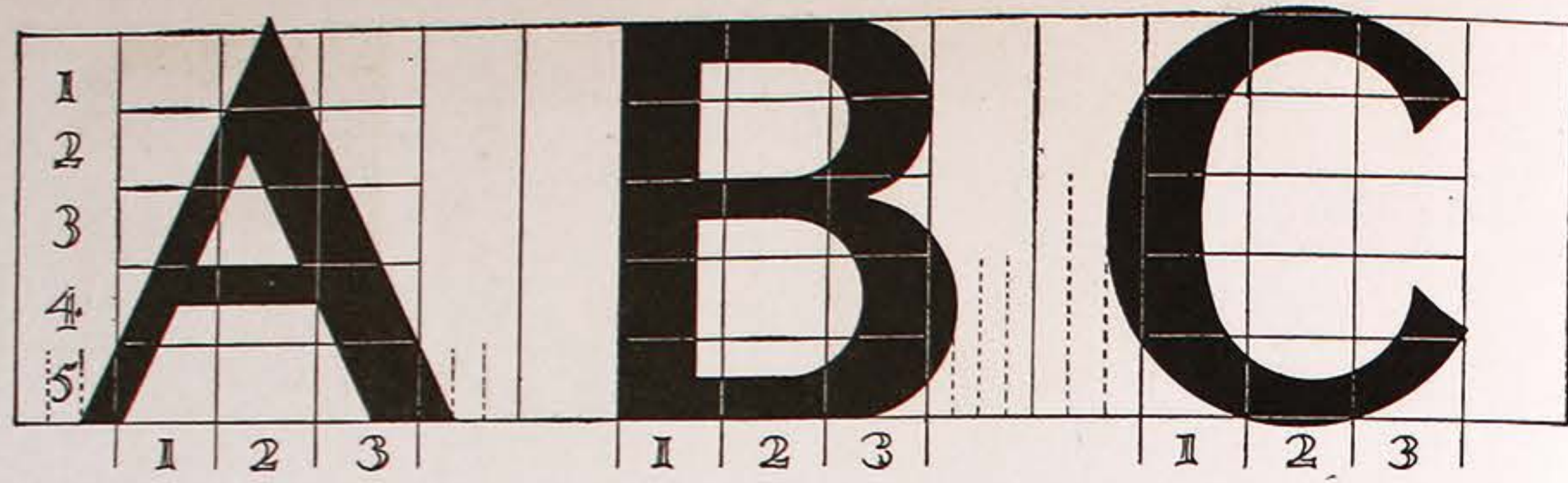


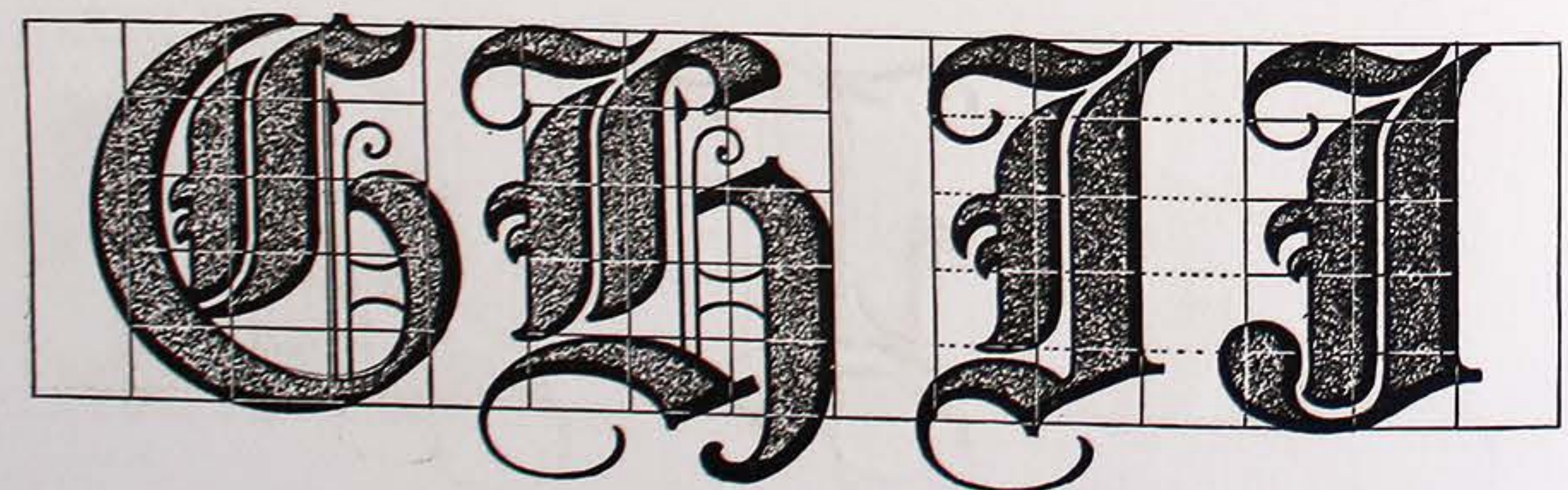
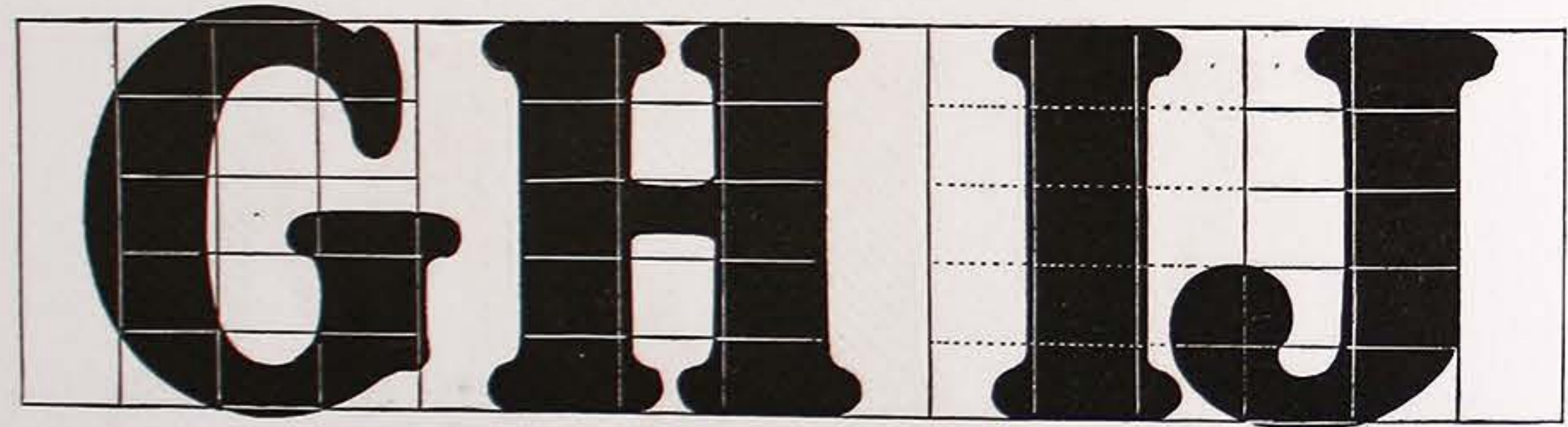
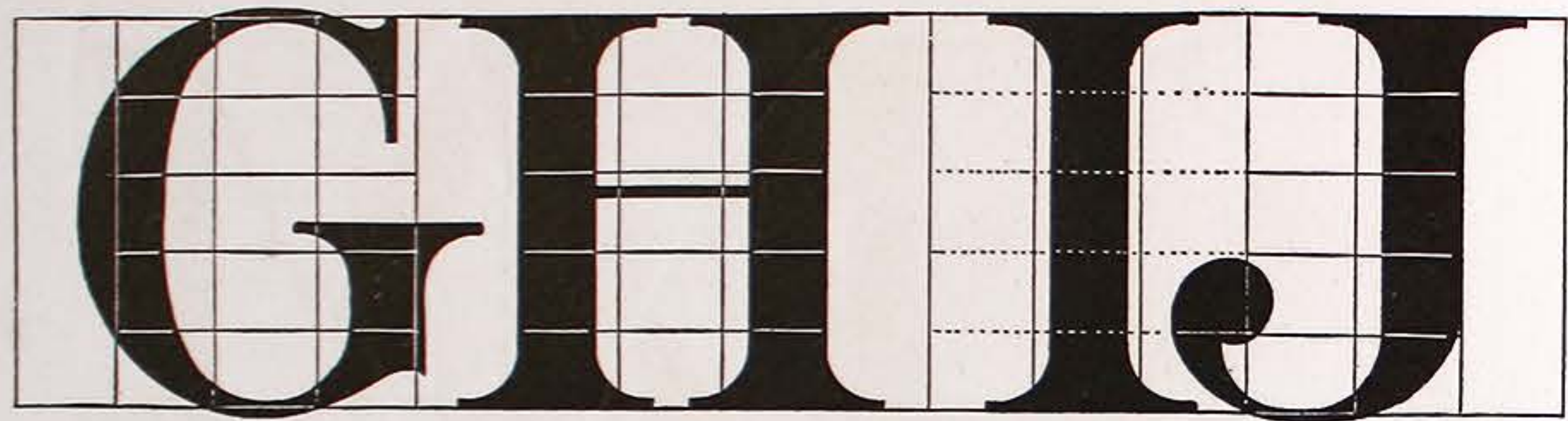
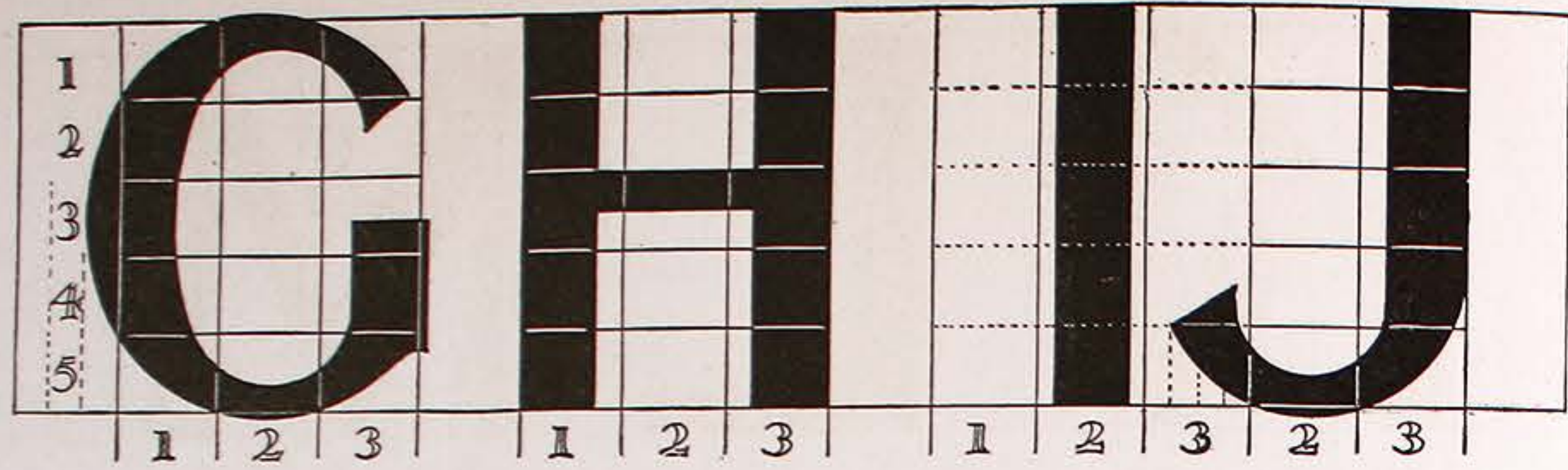
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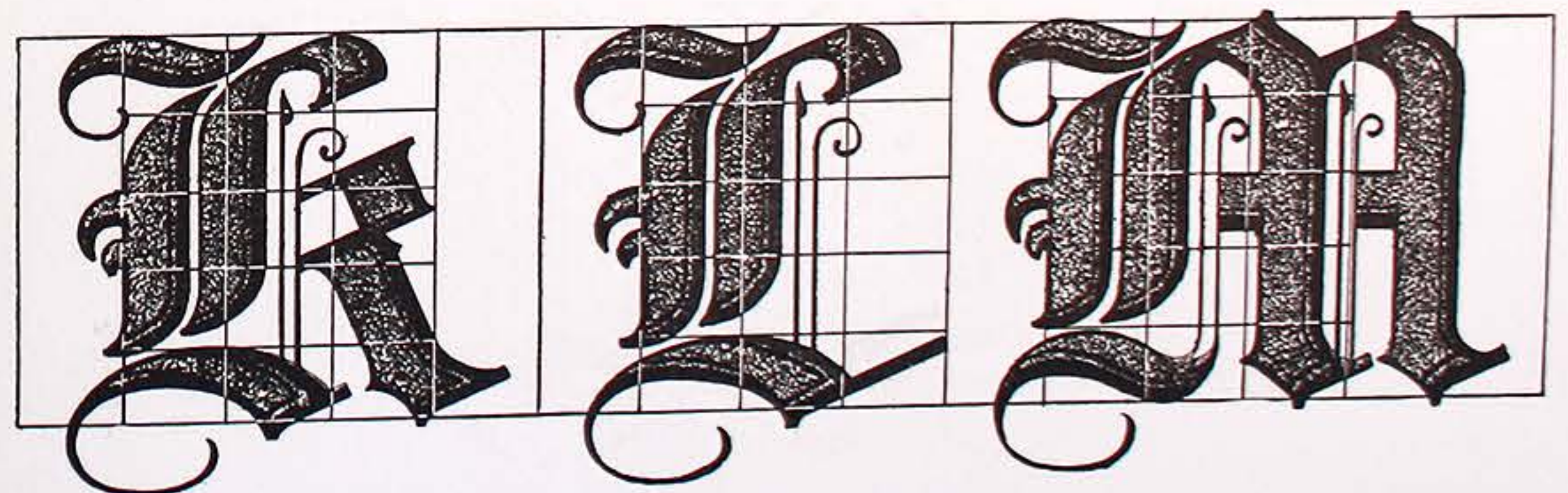
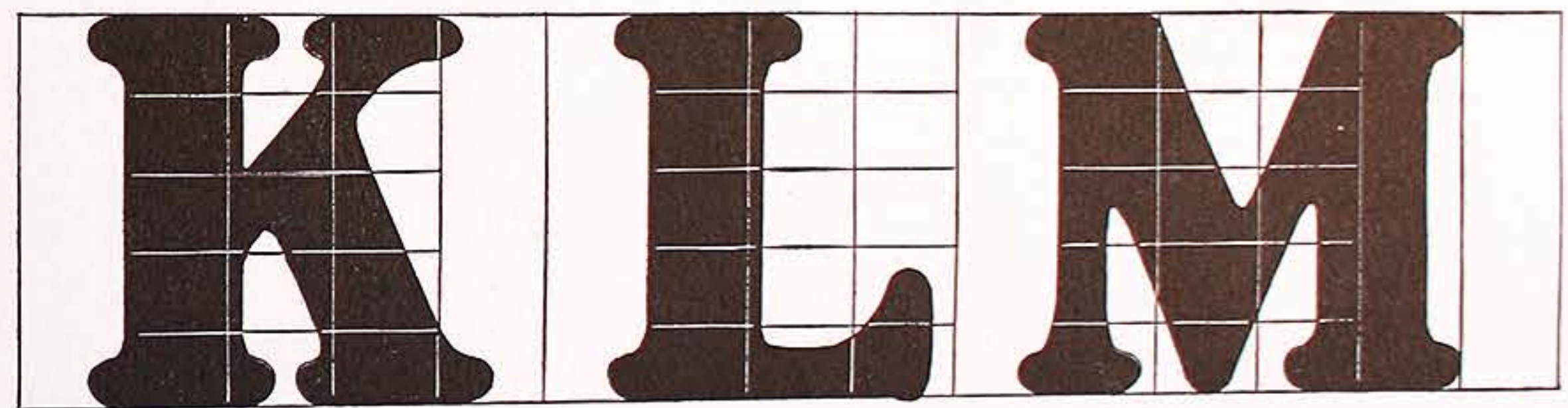
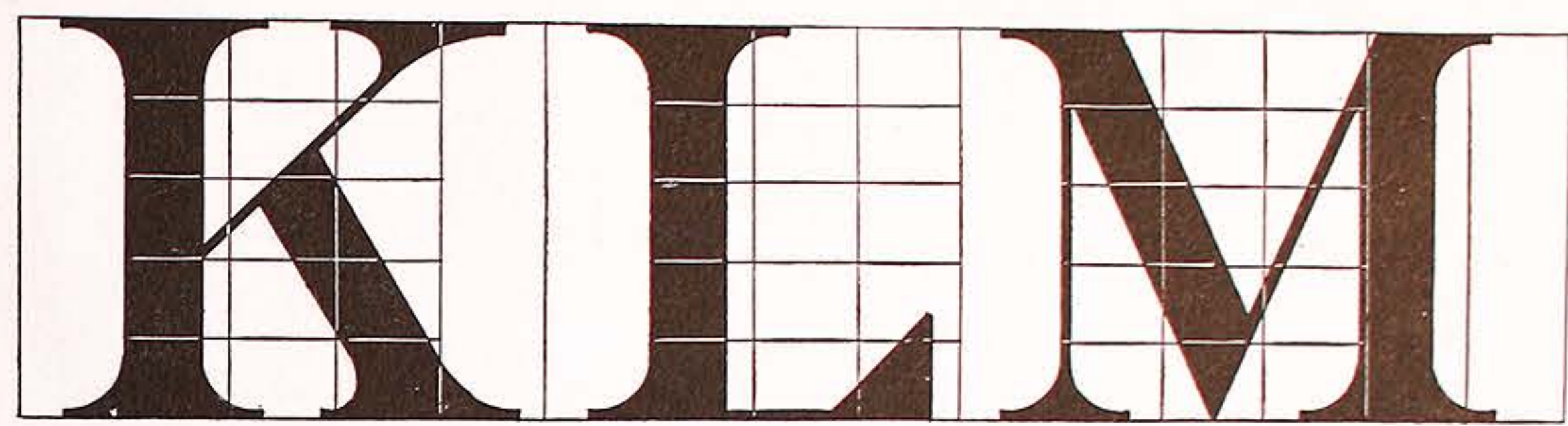
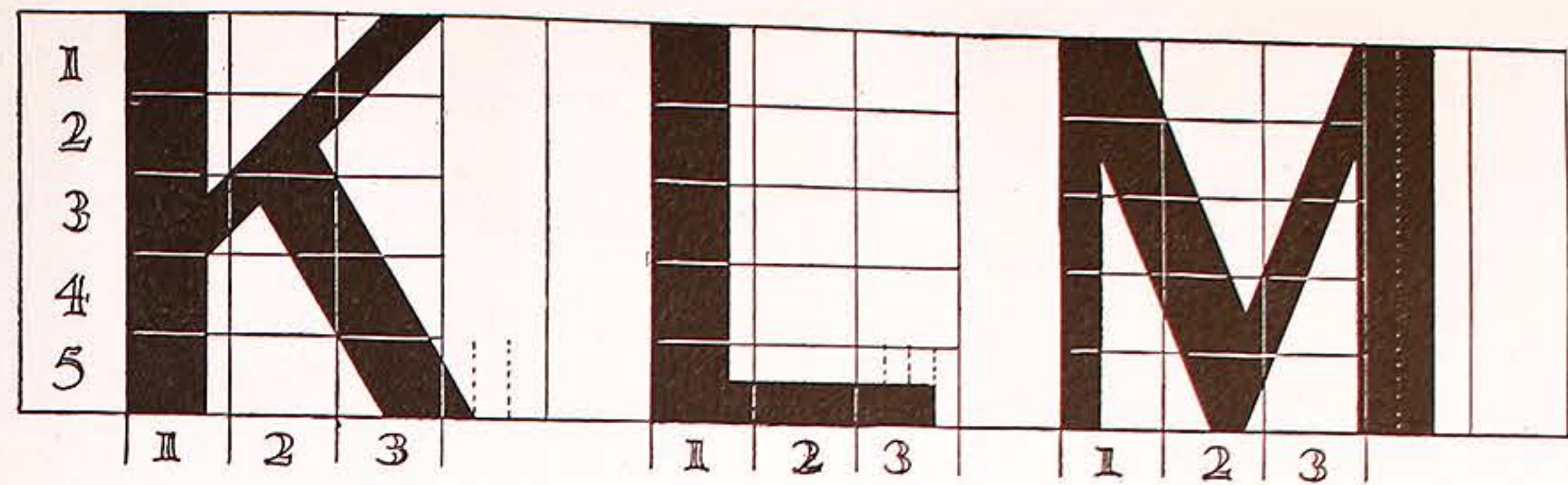






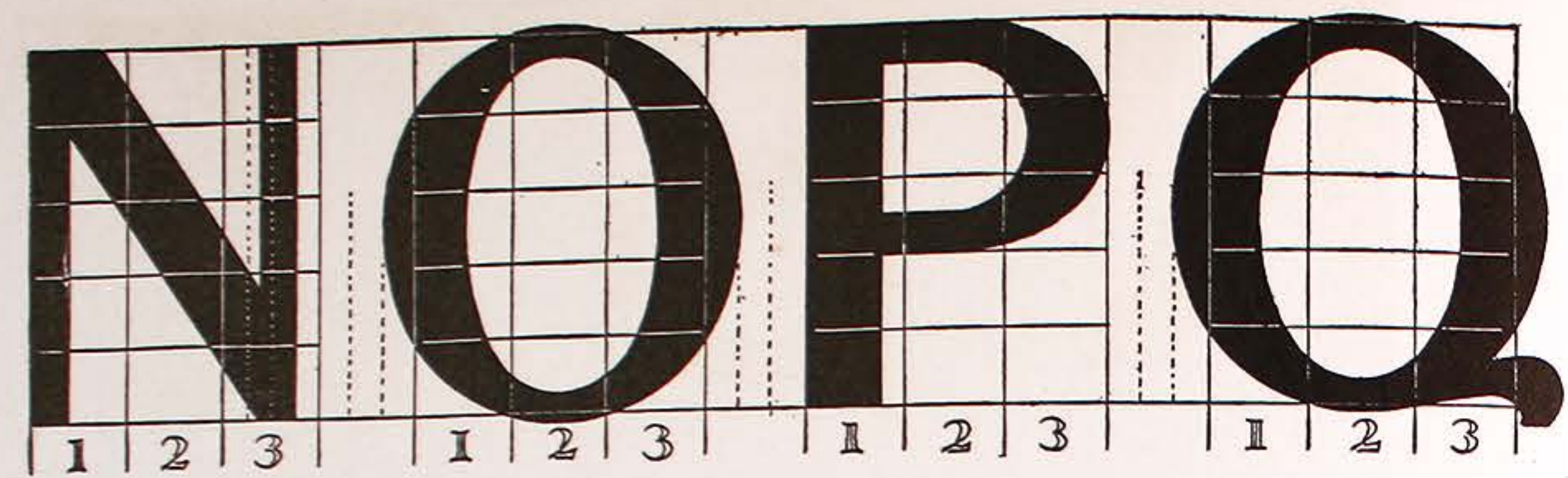


[90]

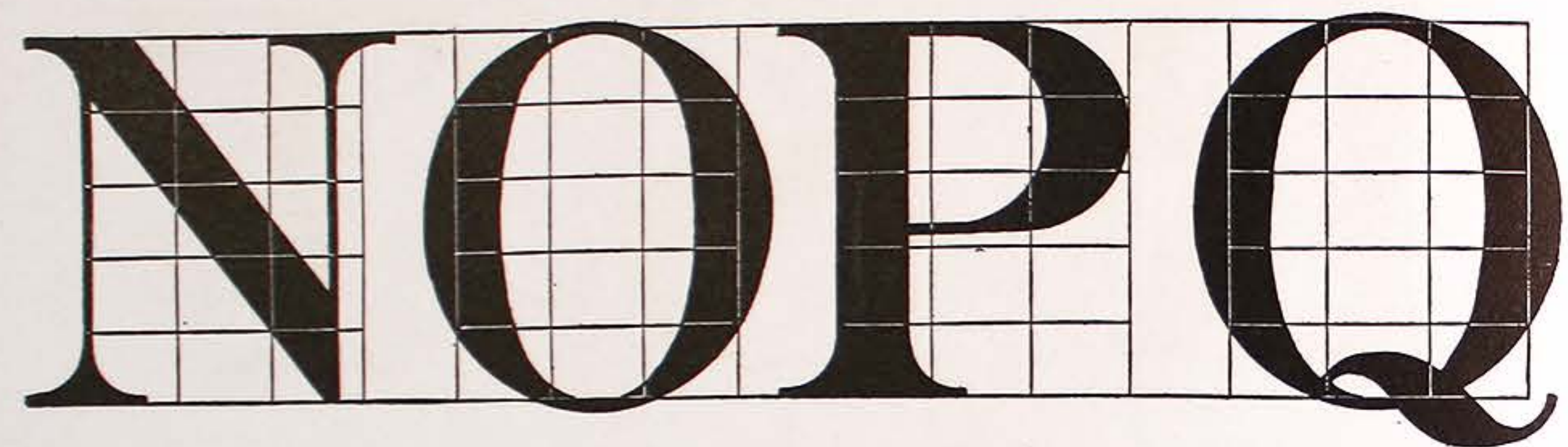


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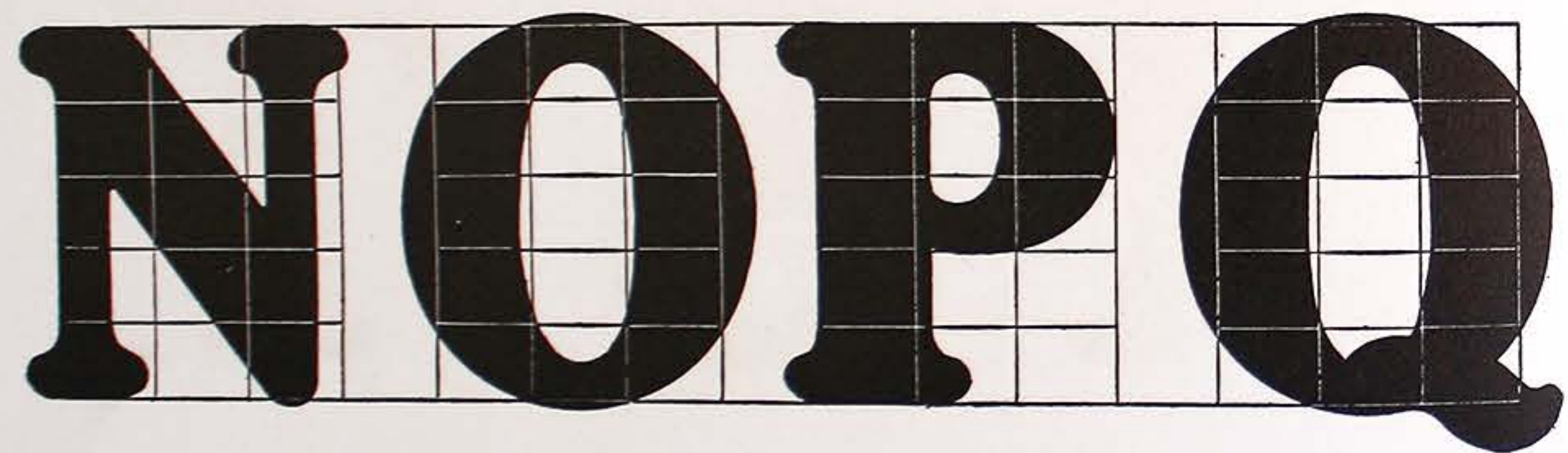
N O P Q



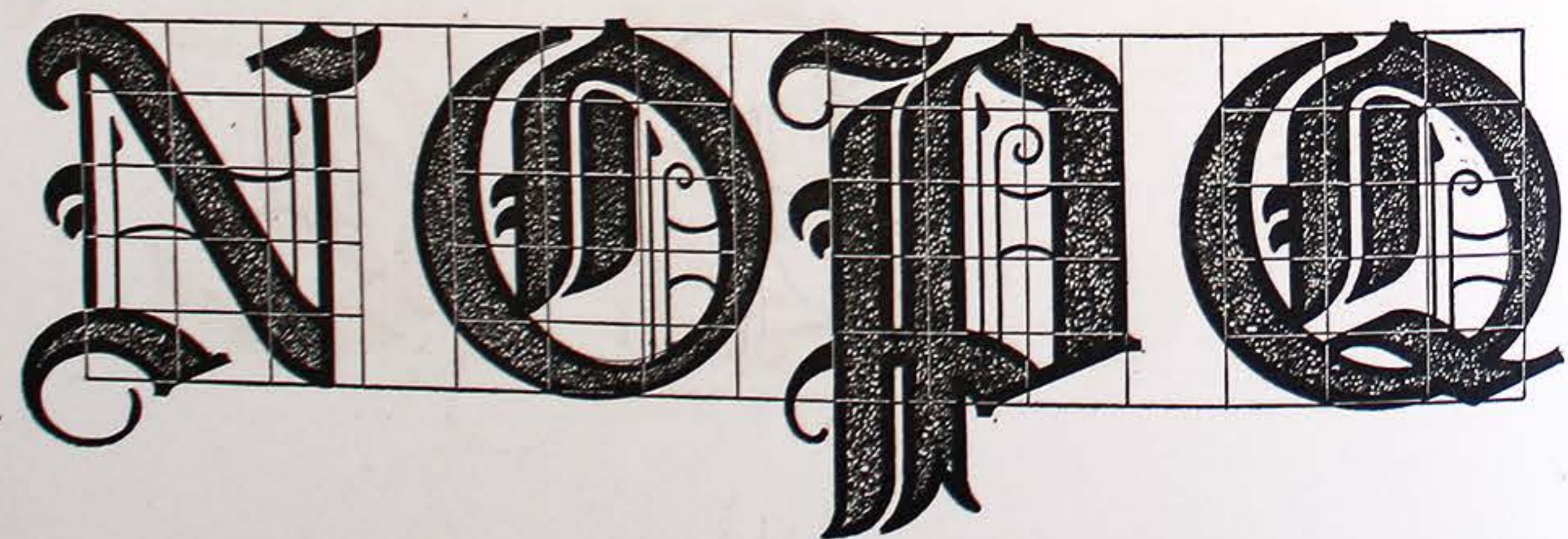
N O P Q



N O P Q

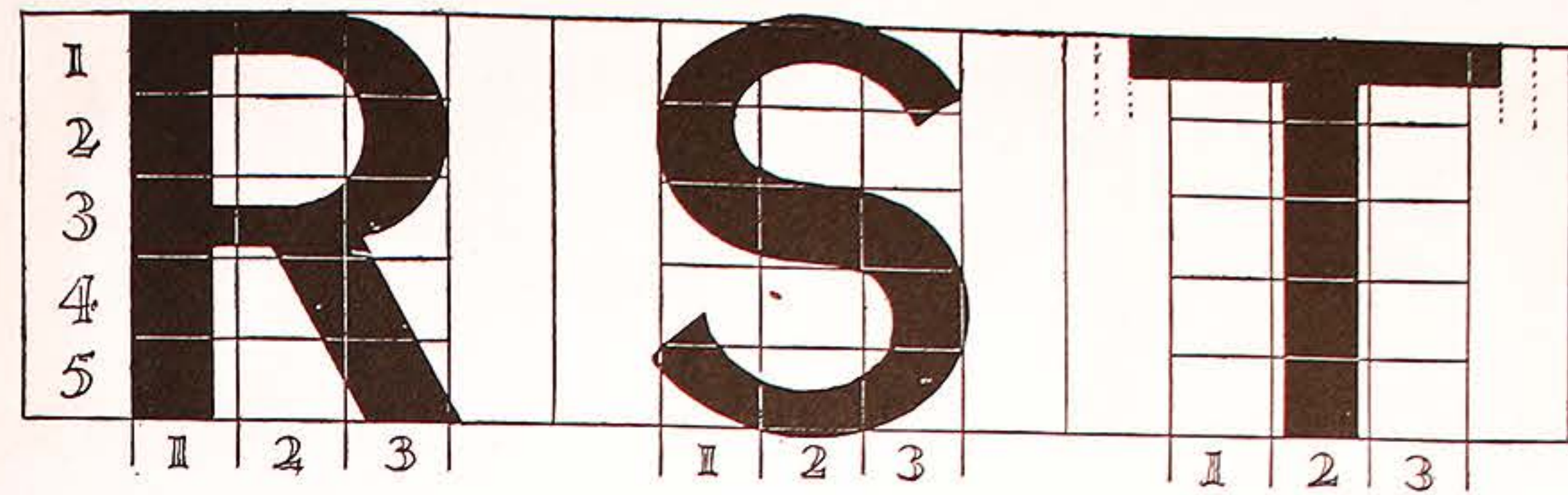


N O P Q

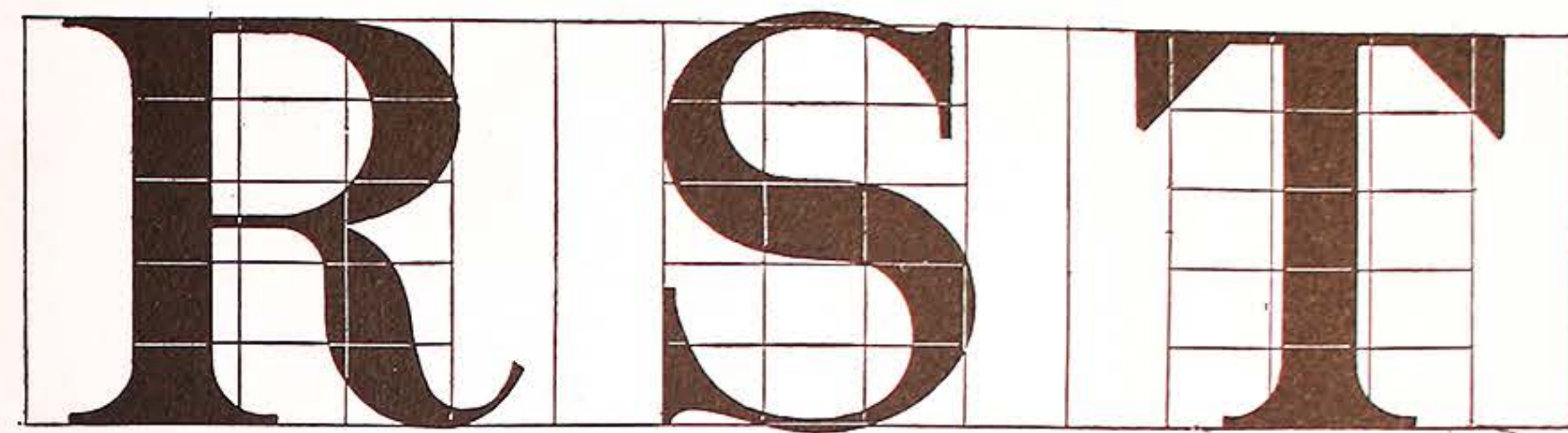


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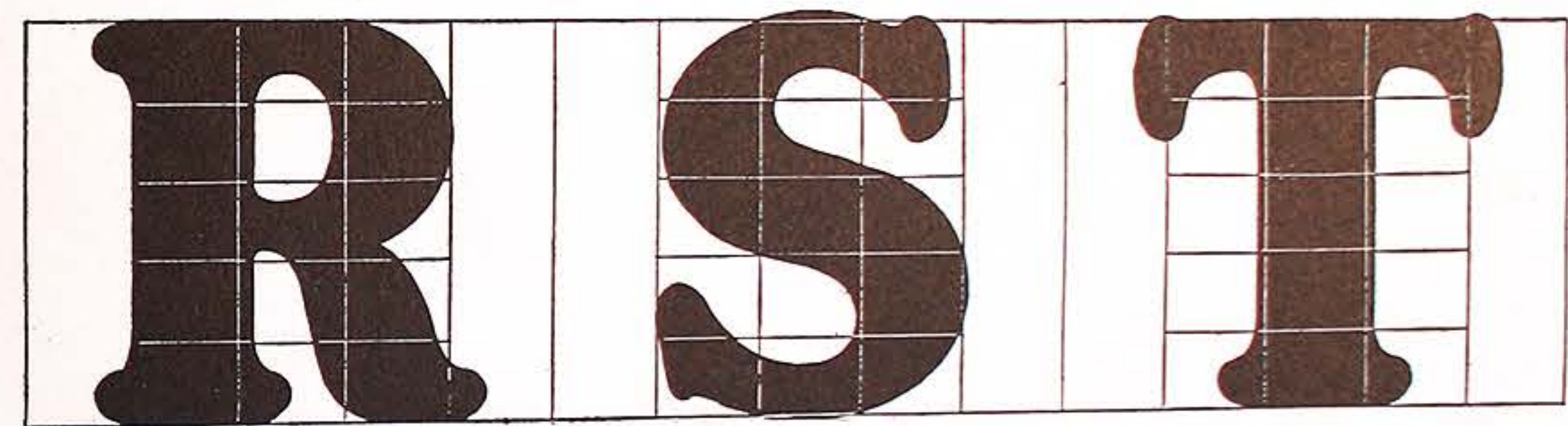
R S T



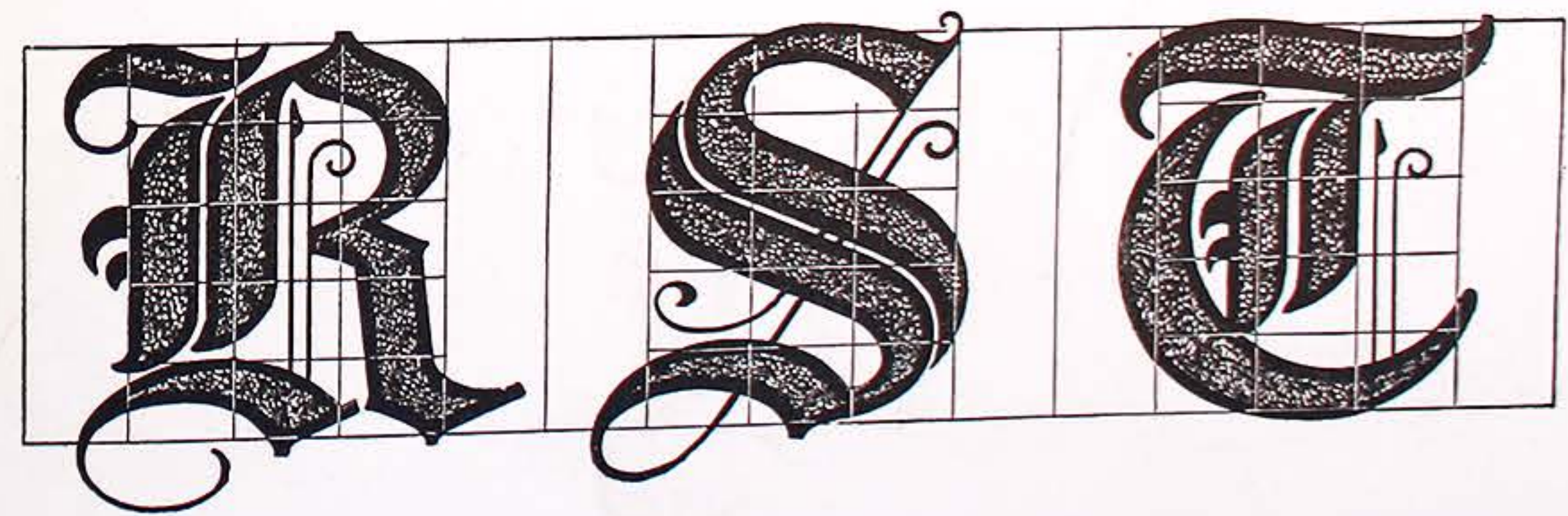
R S T



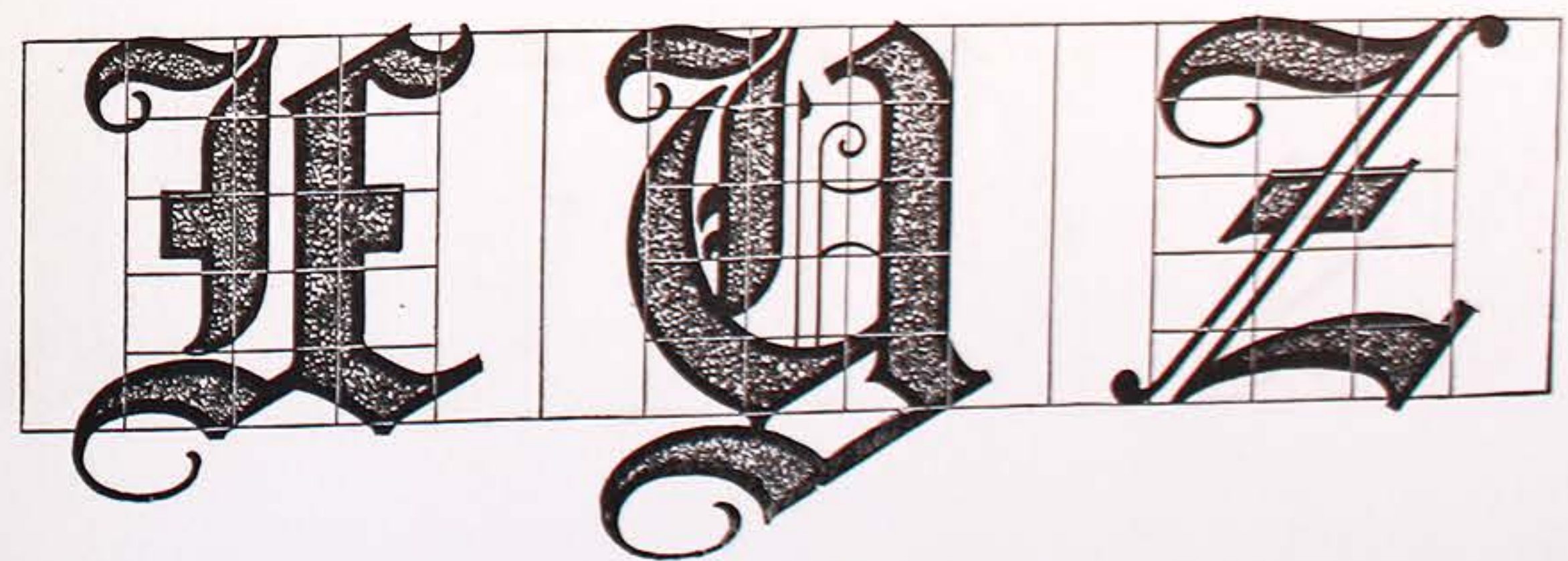
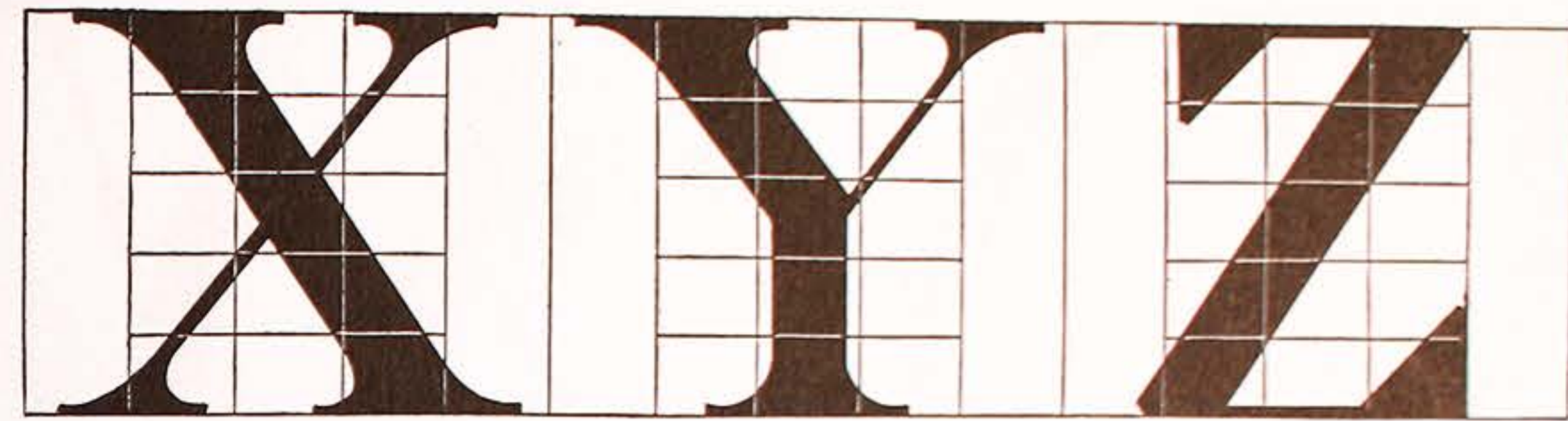
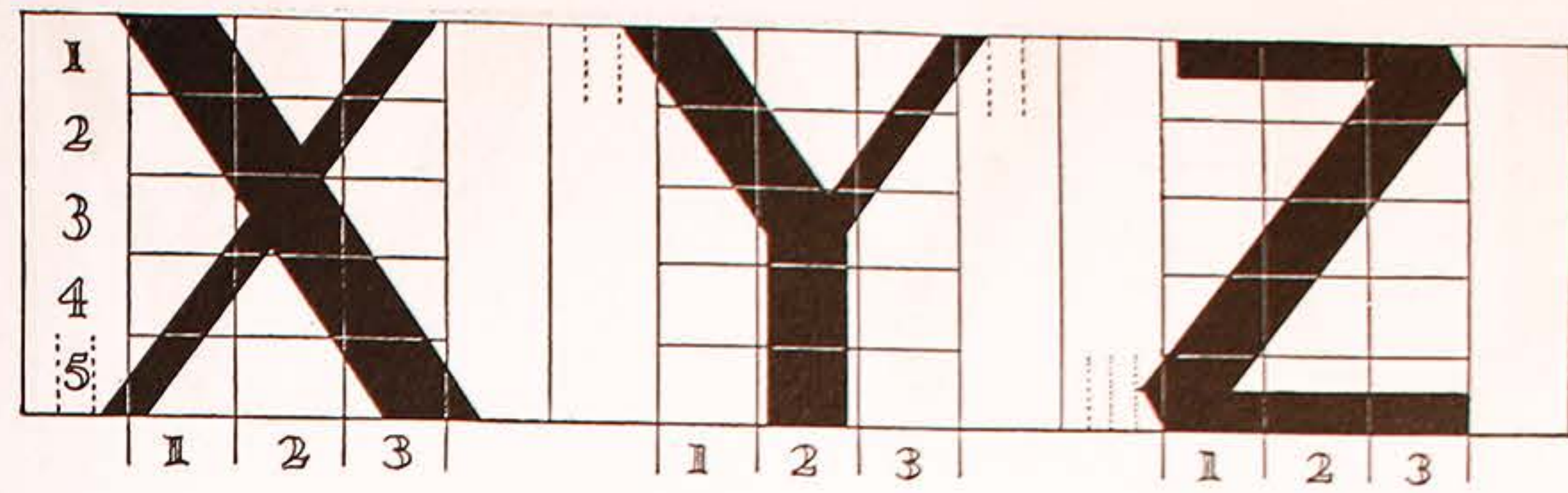
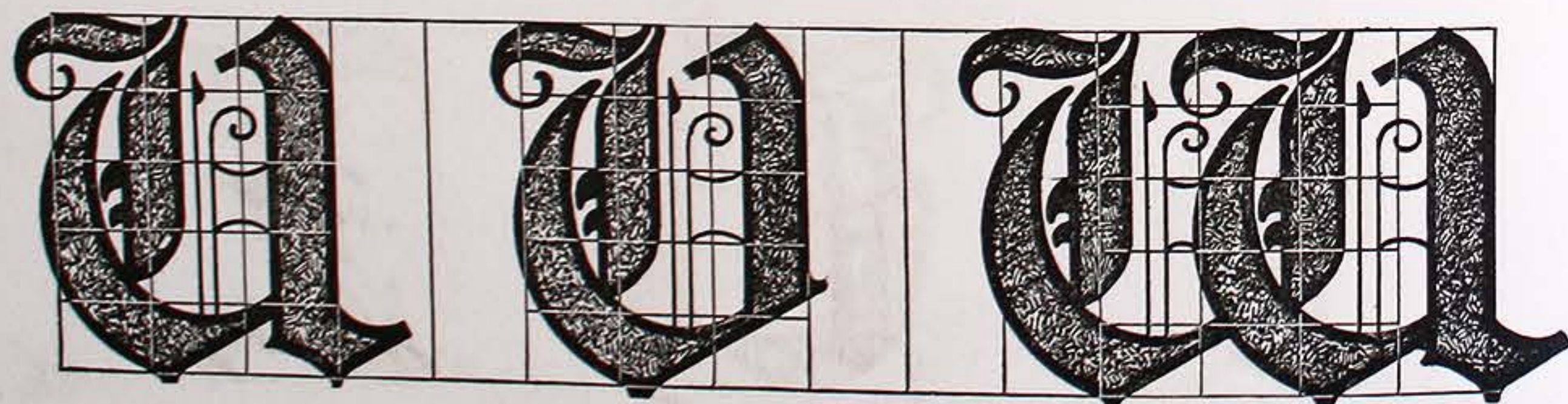
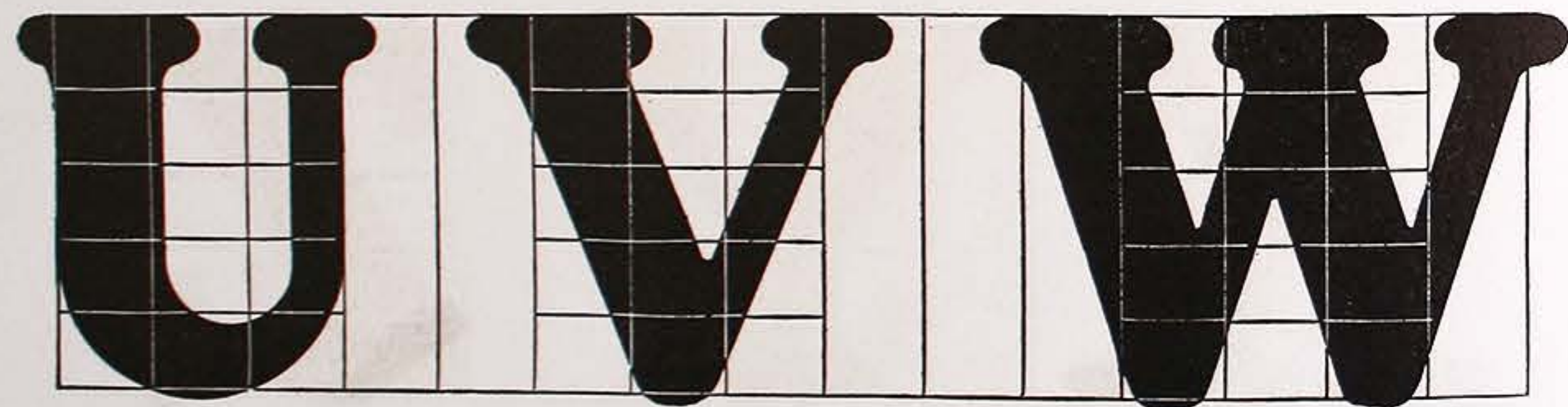
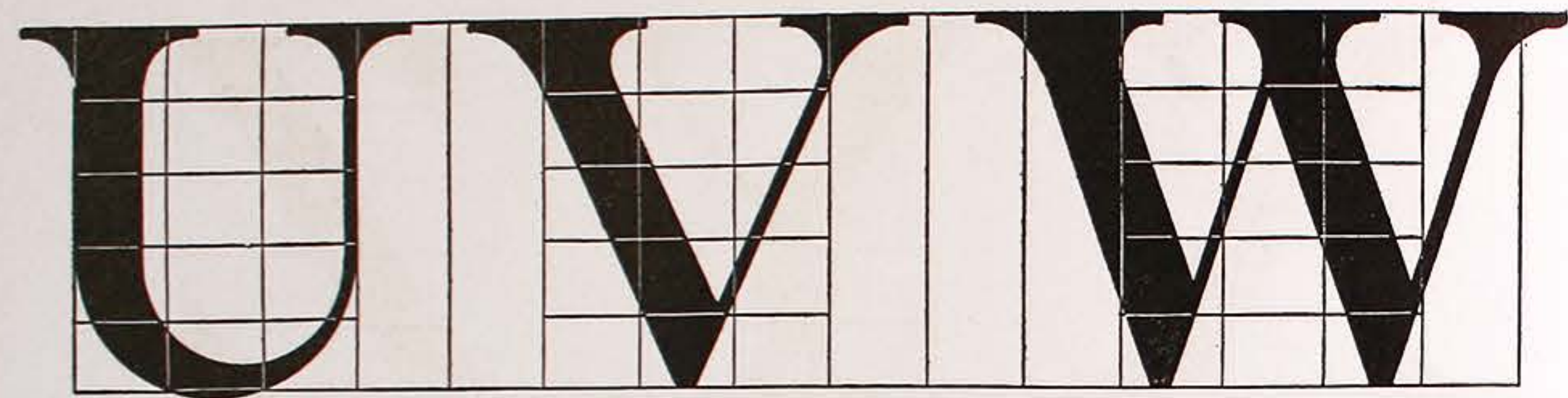
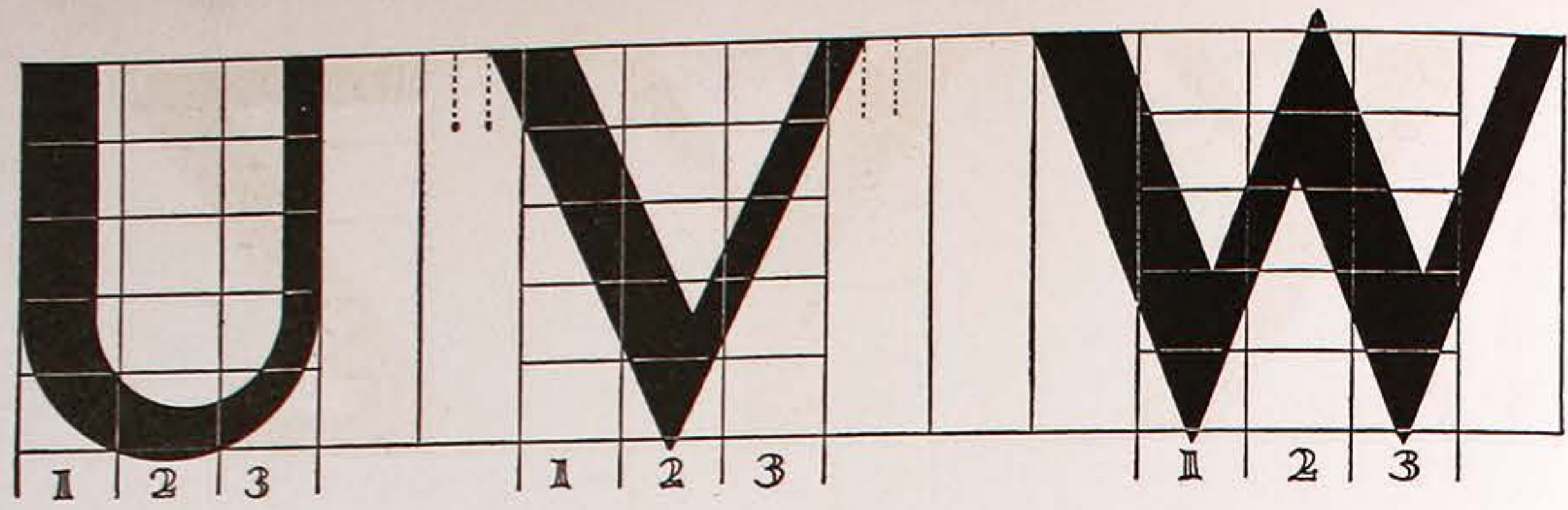
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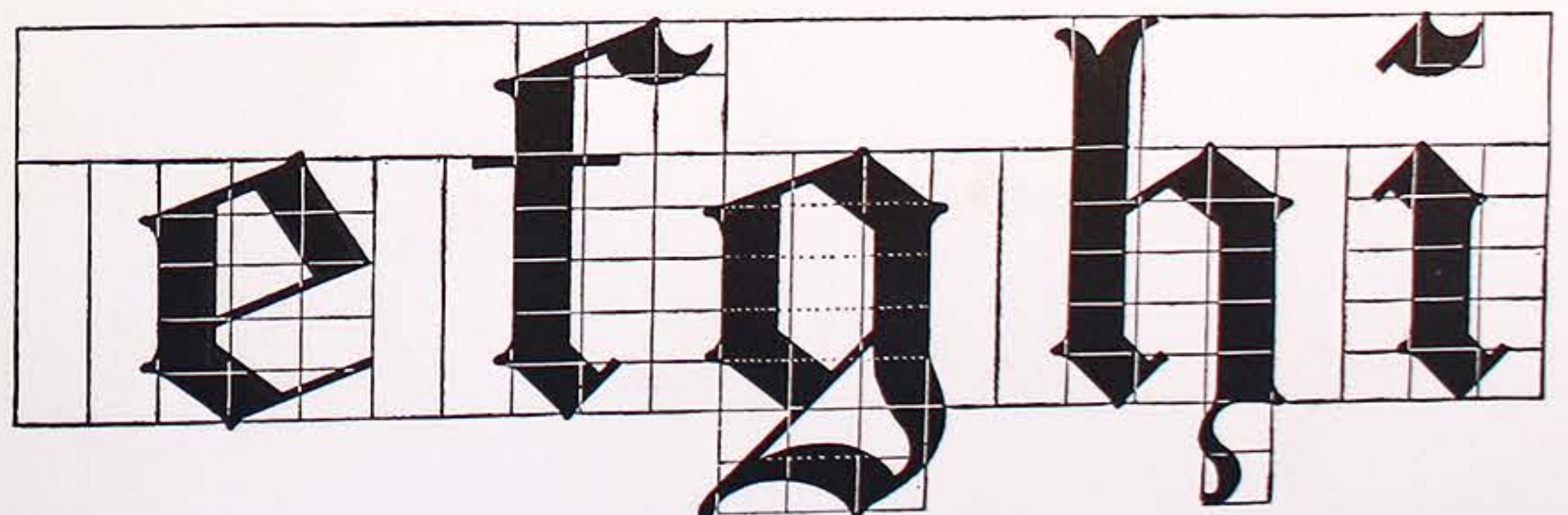
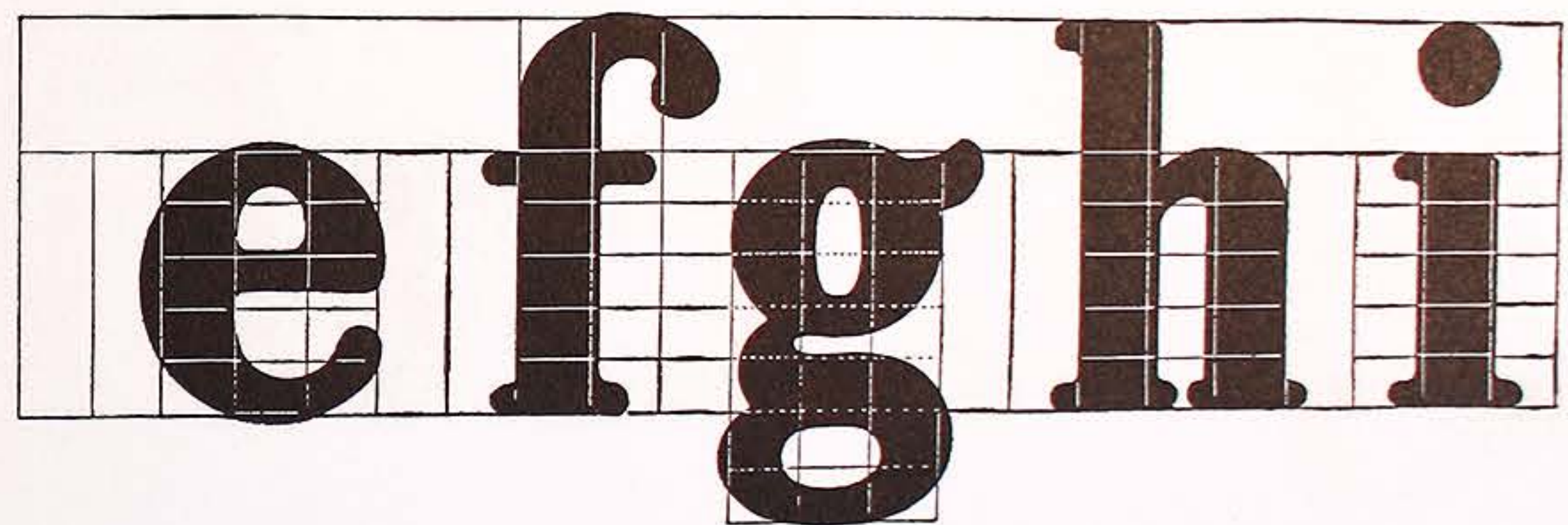
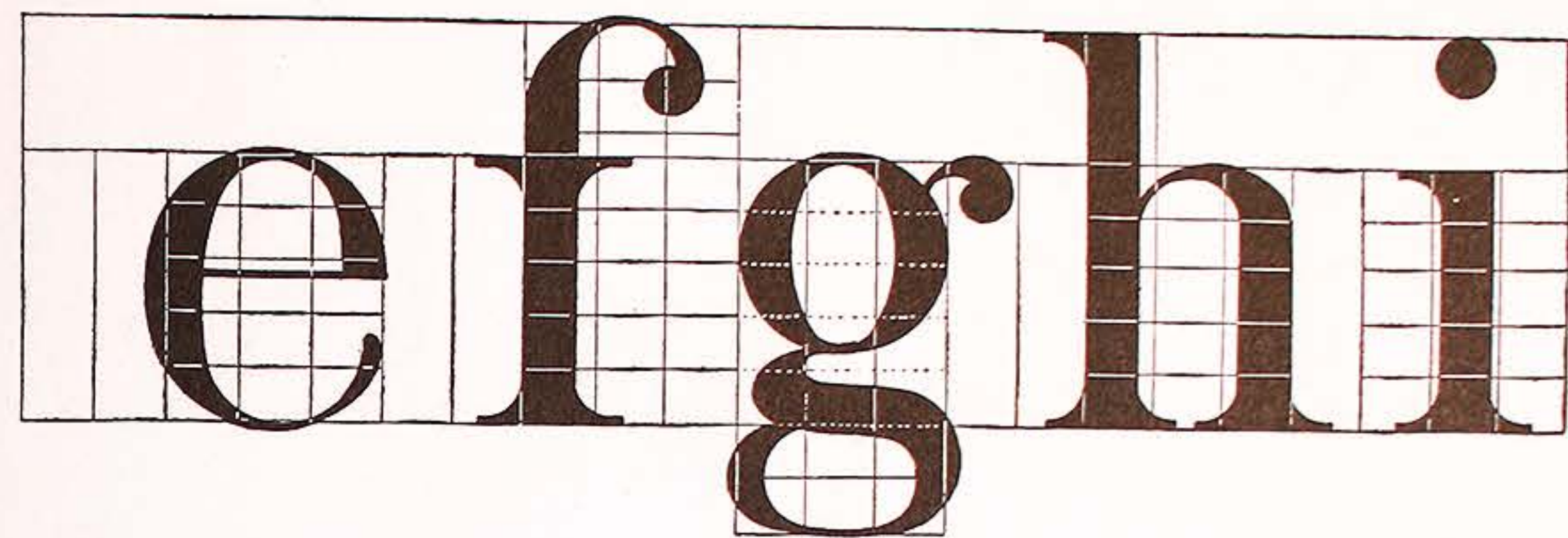
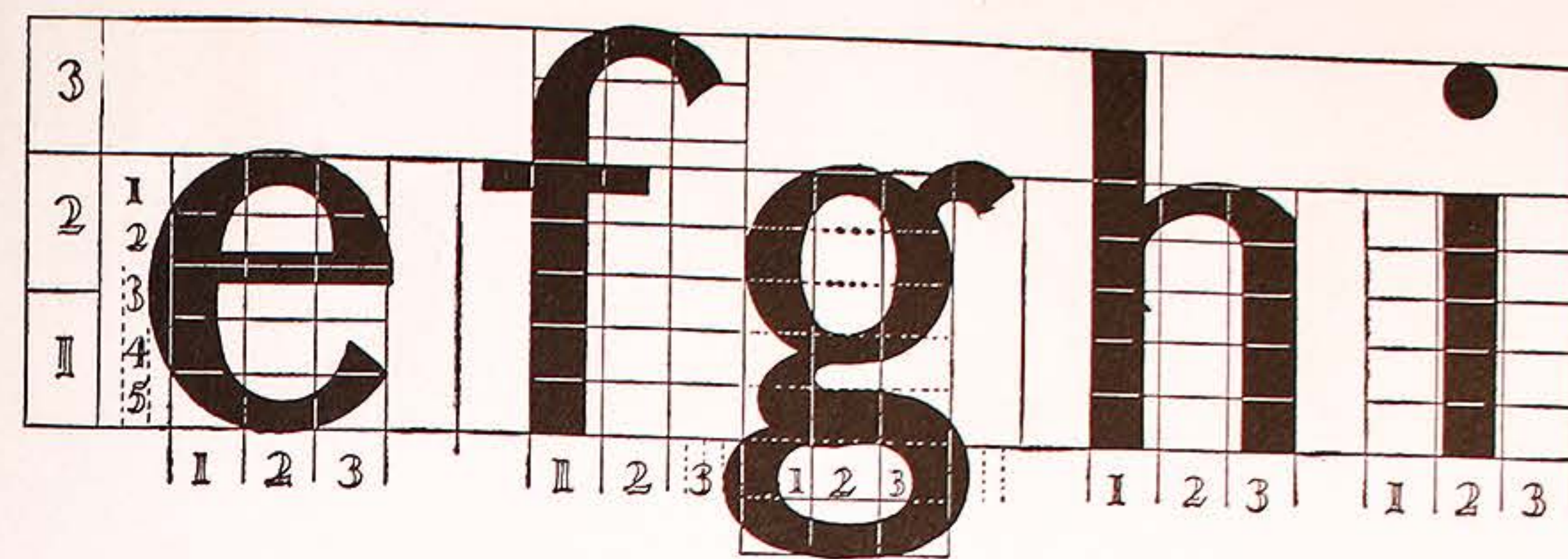
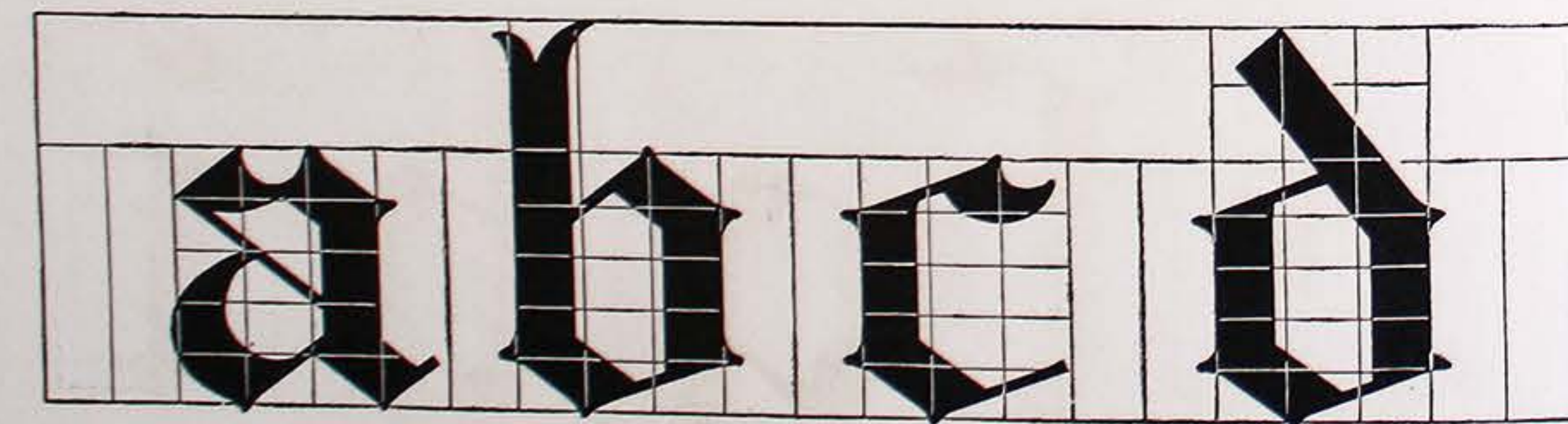
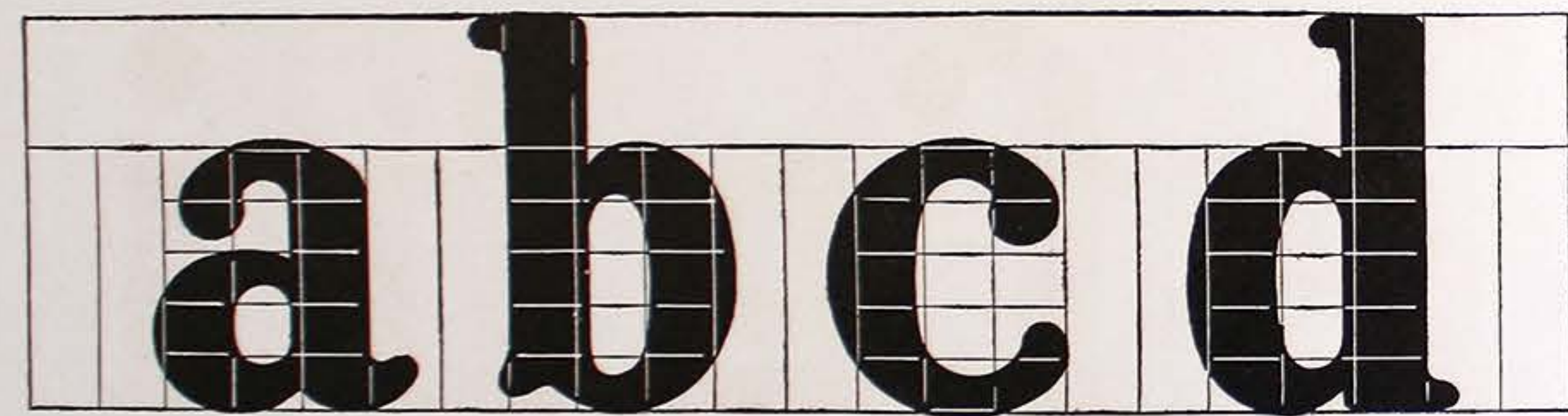
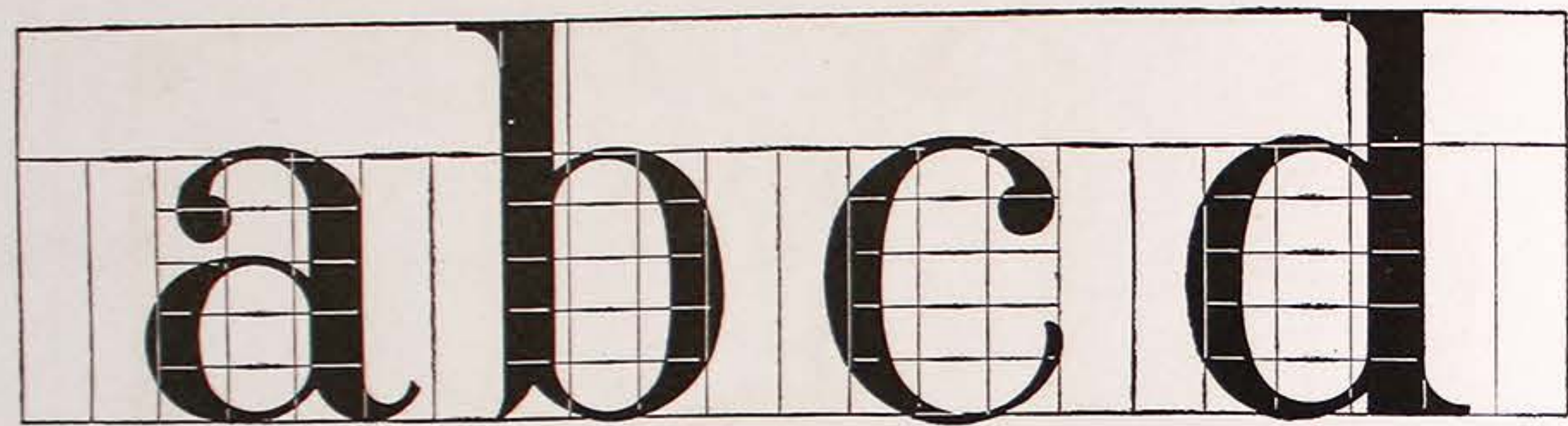
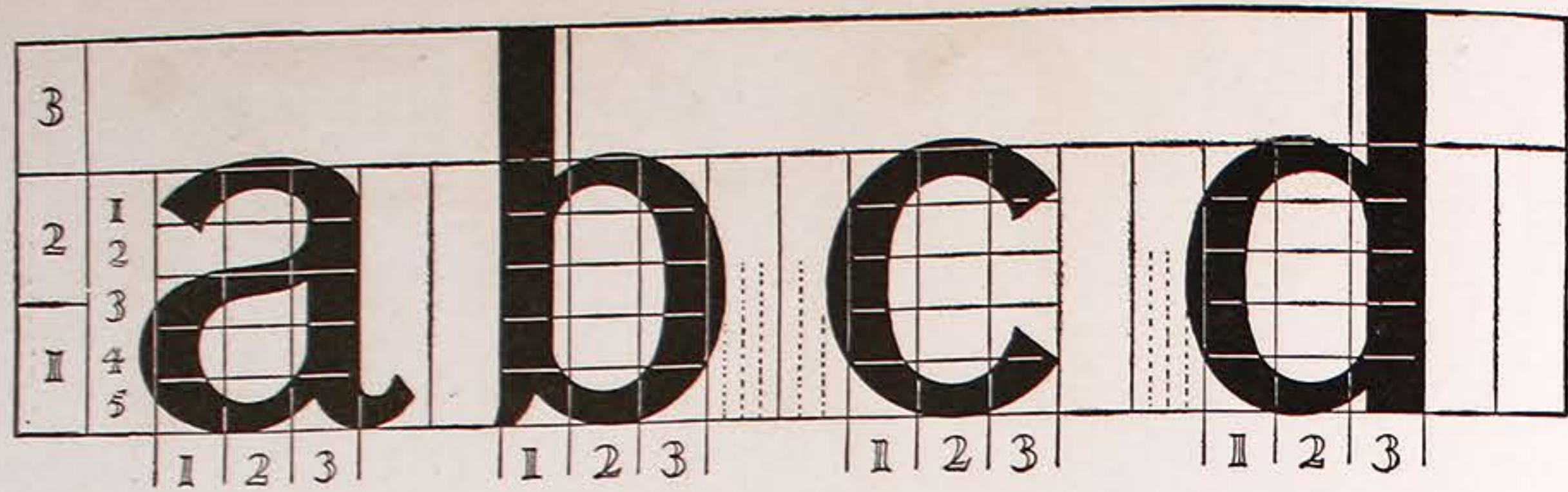


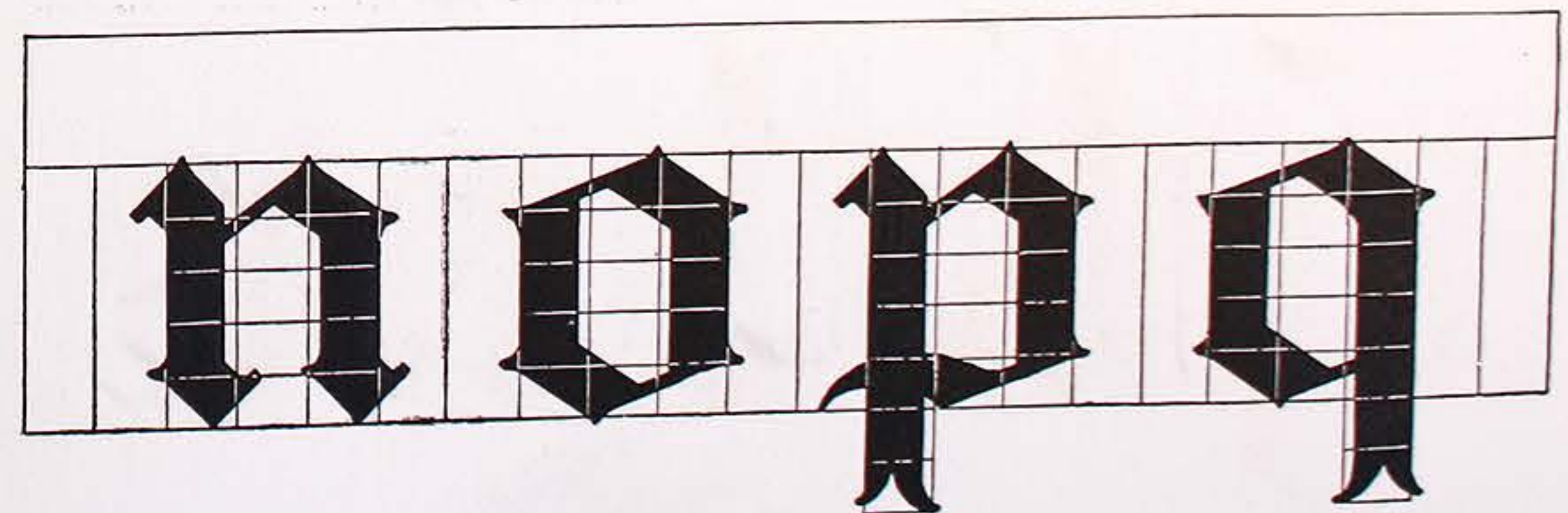
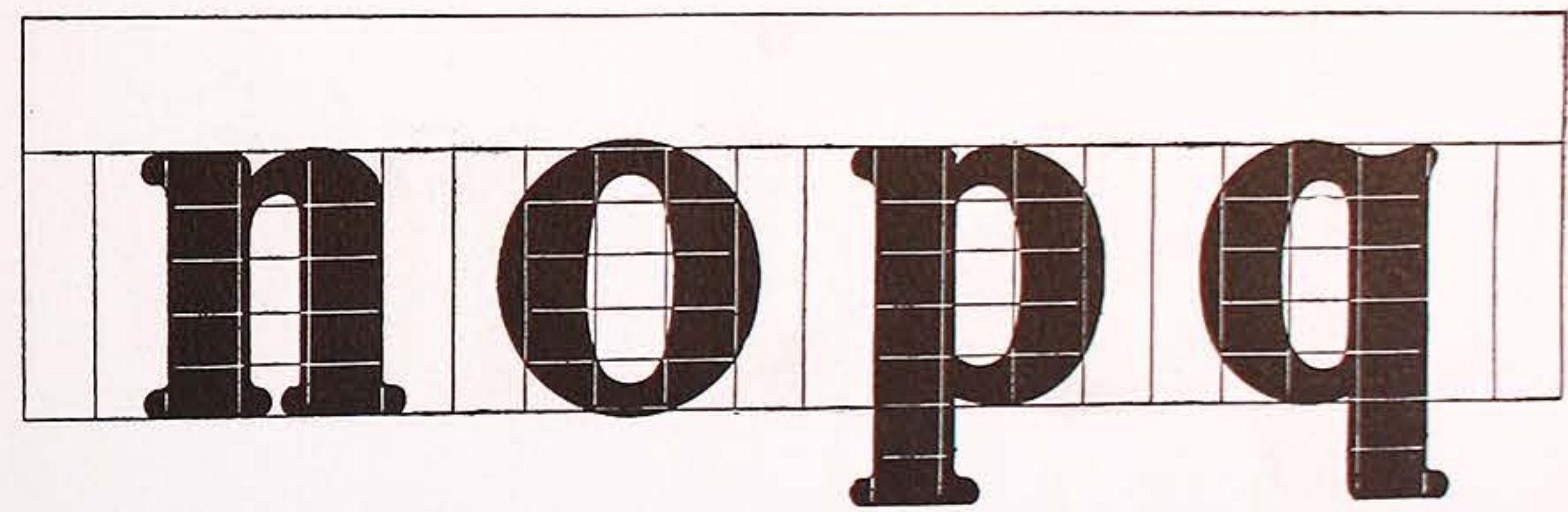
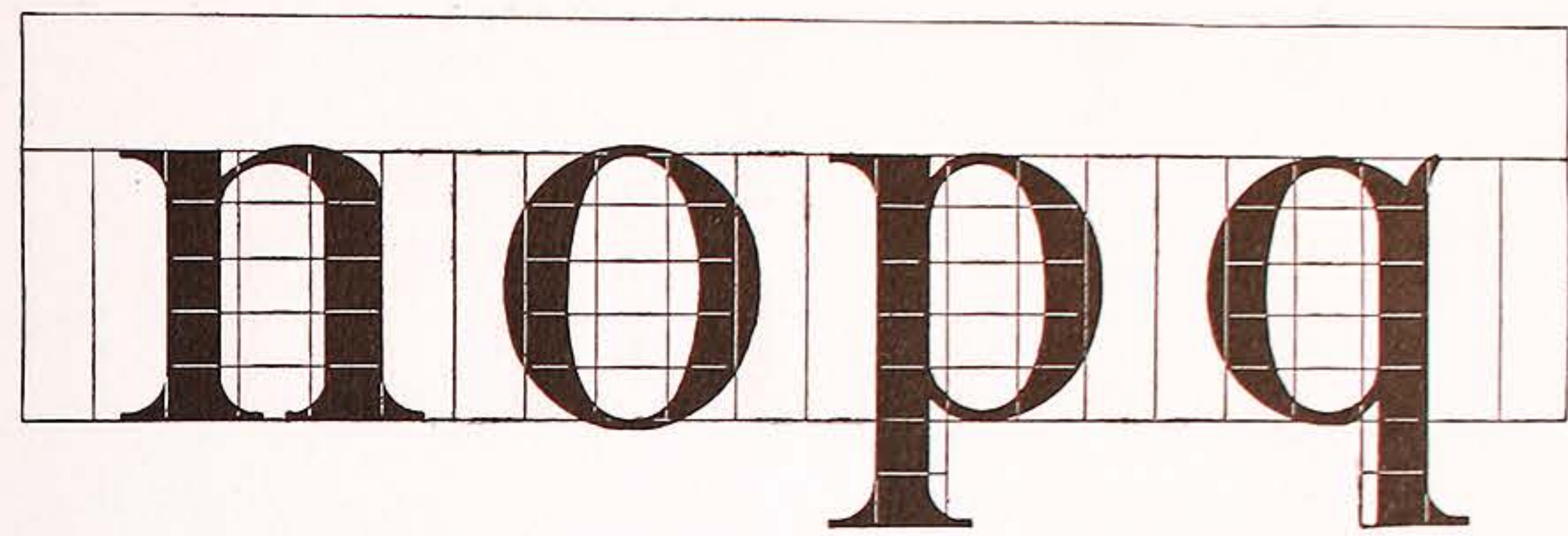
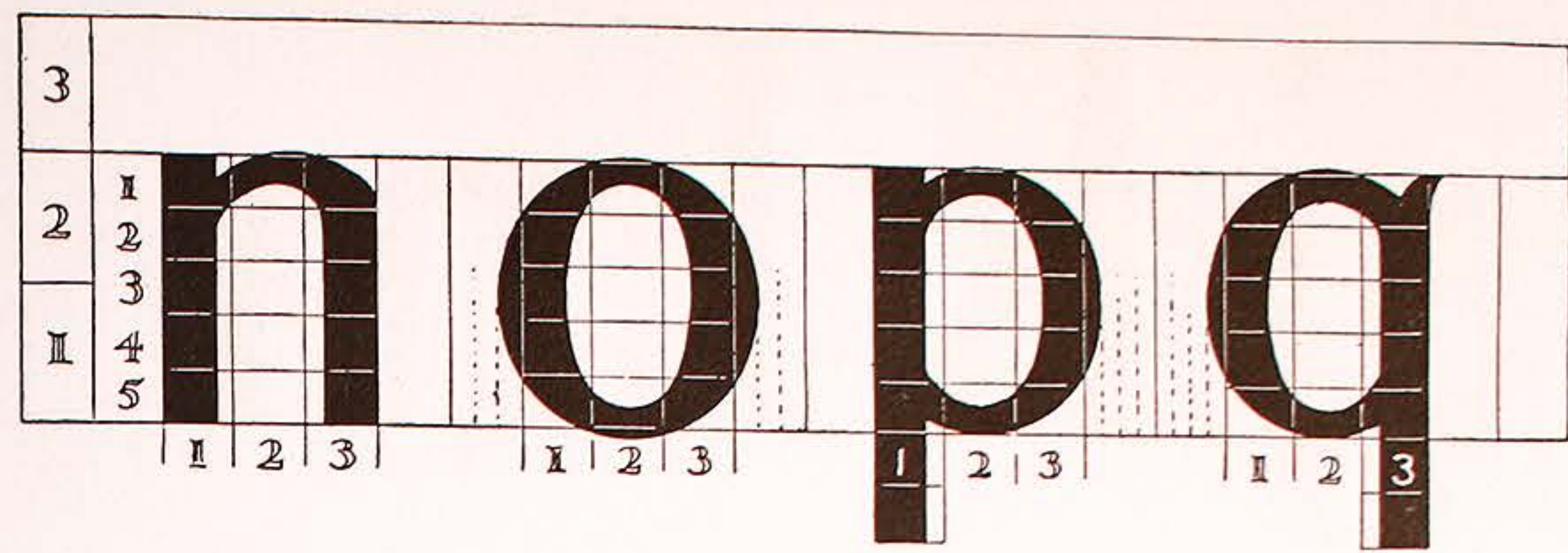
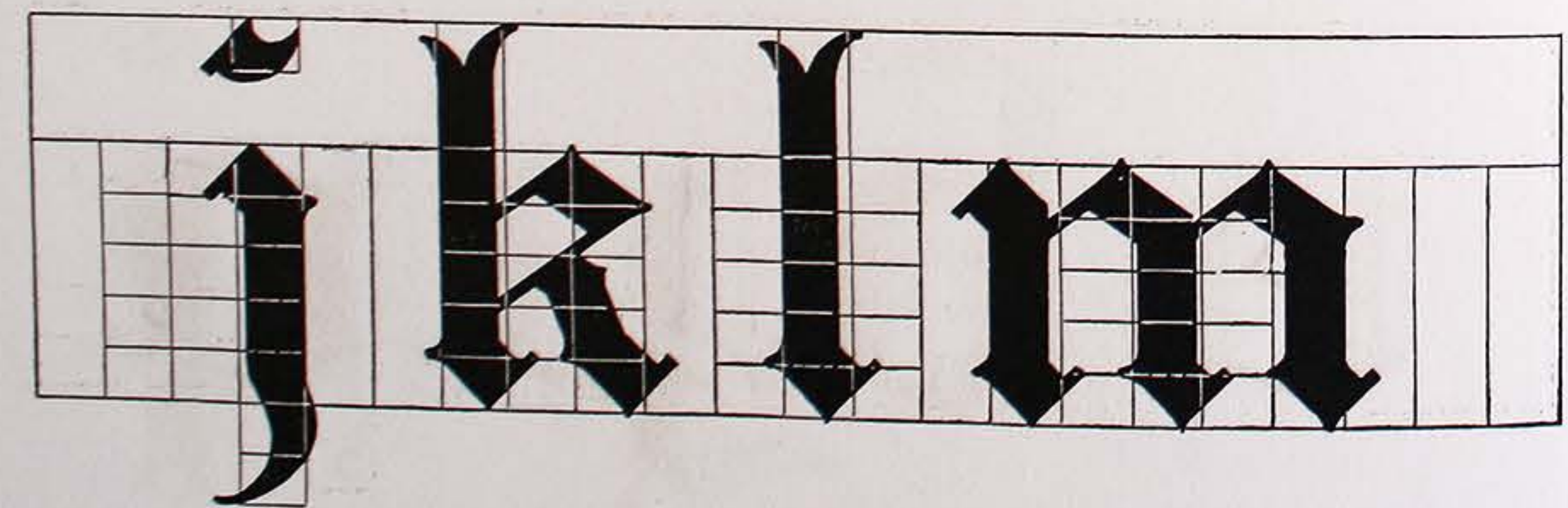
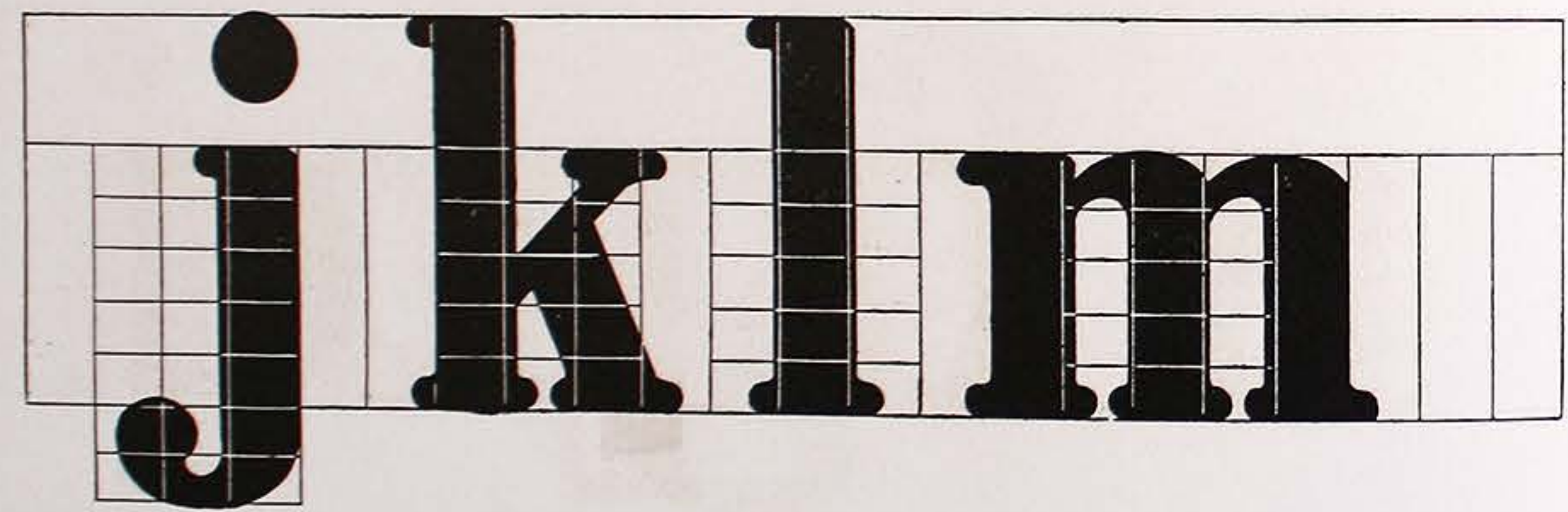
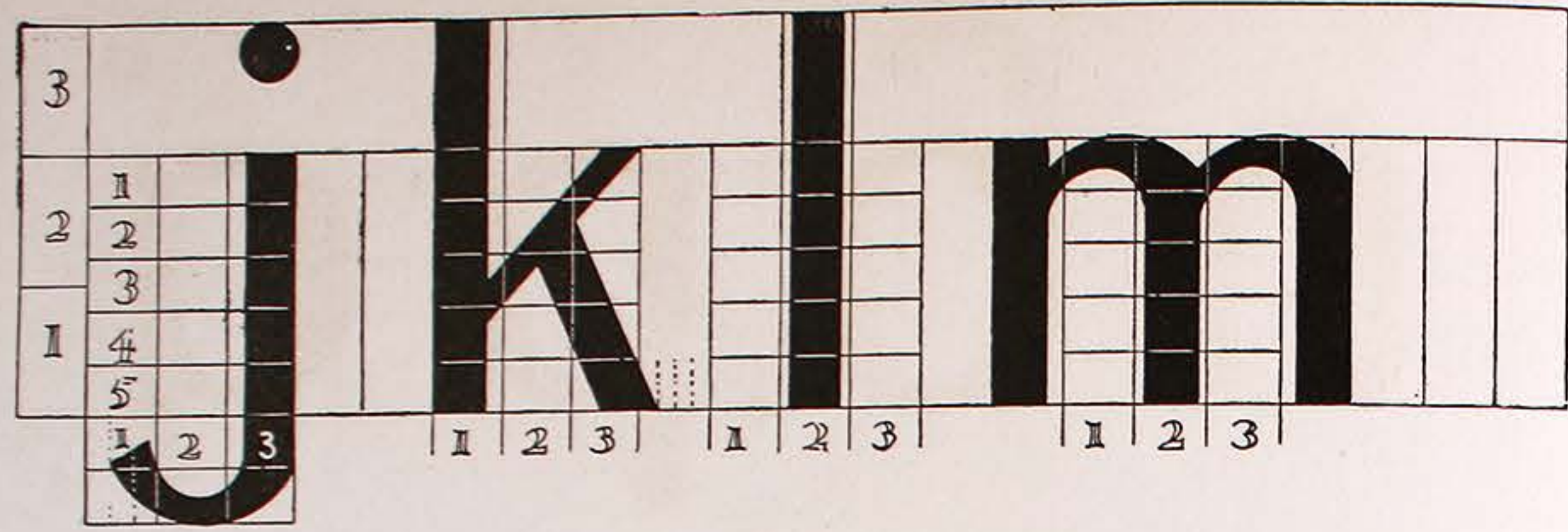
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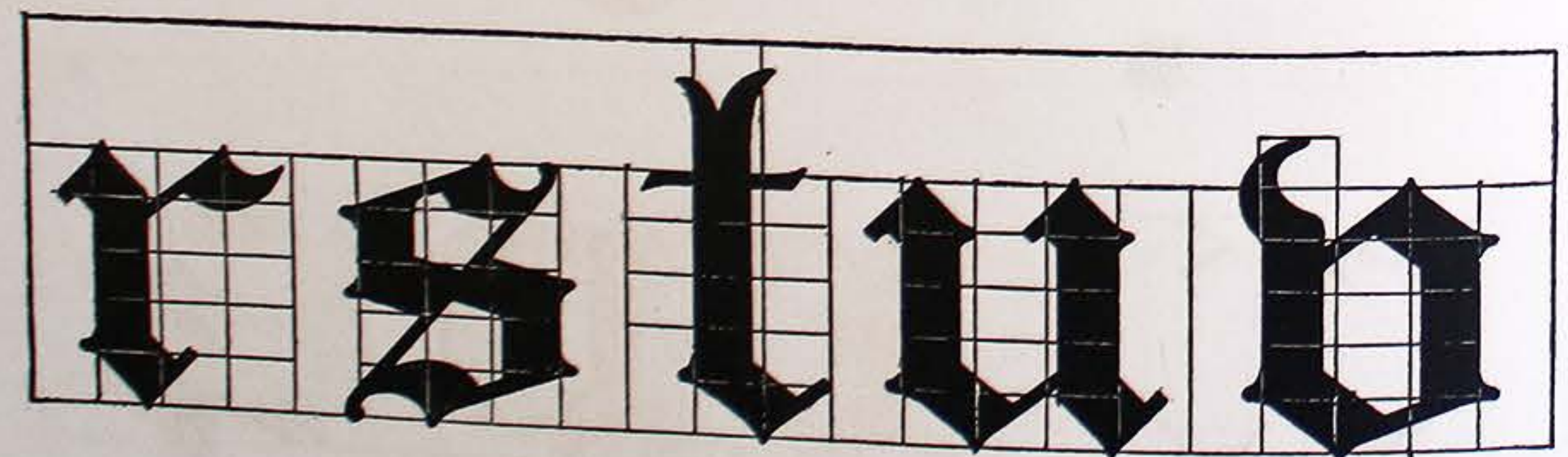
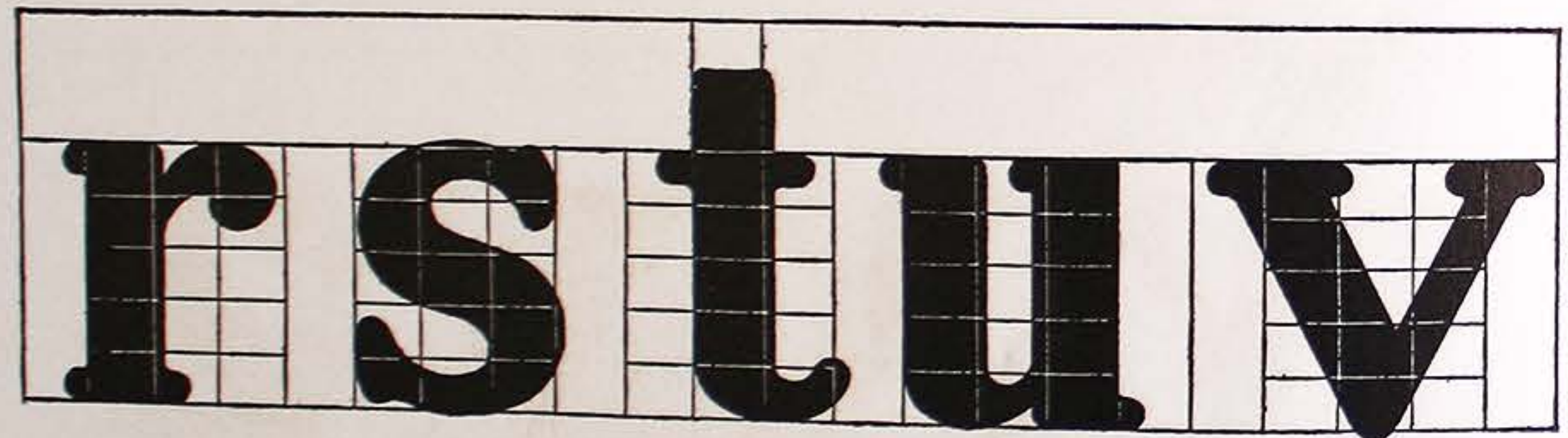
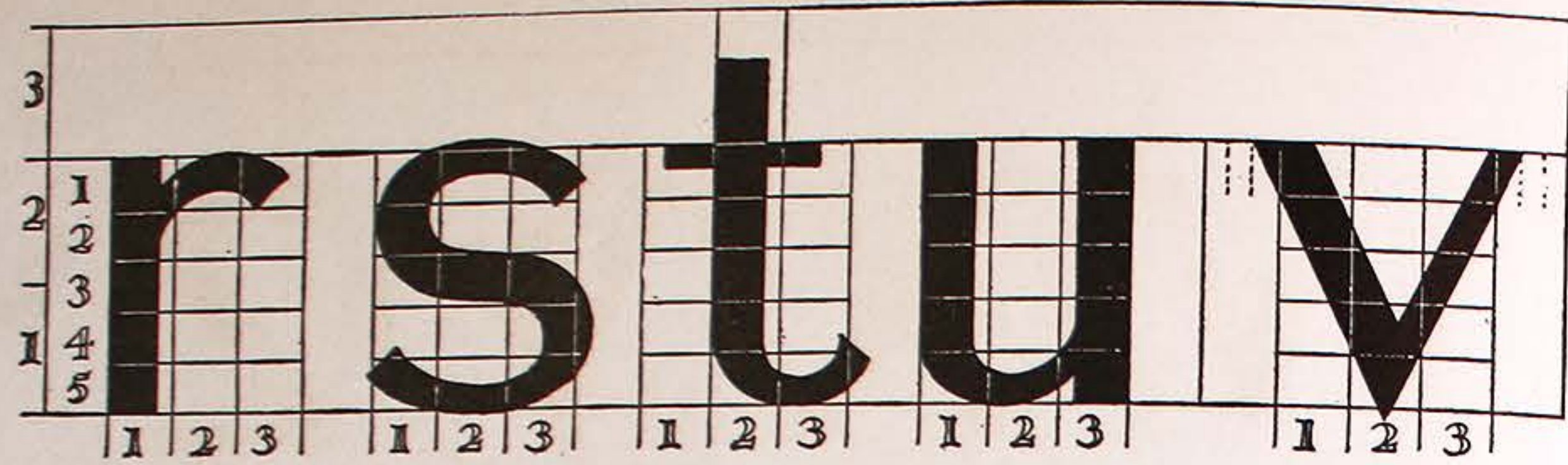


[93]

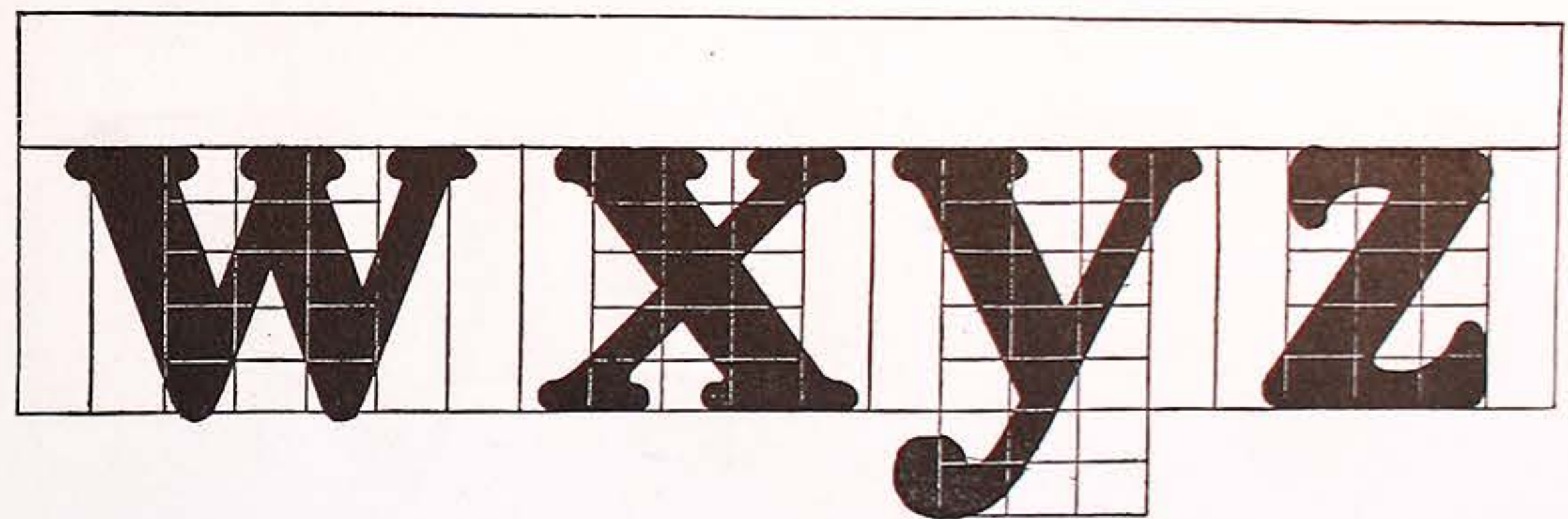
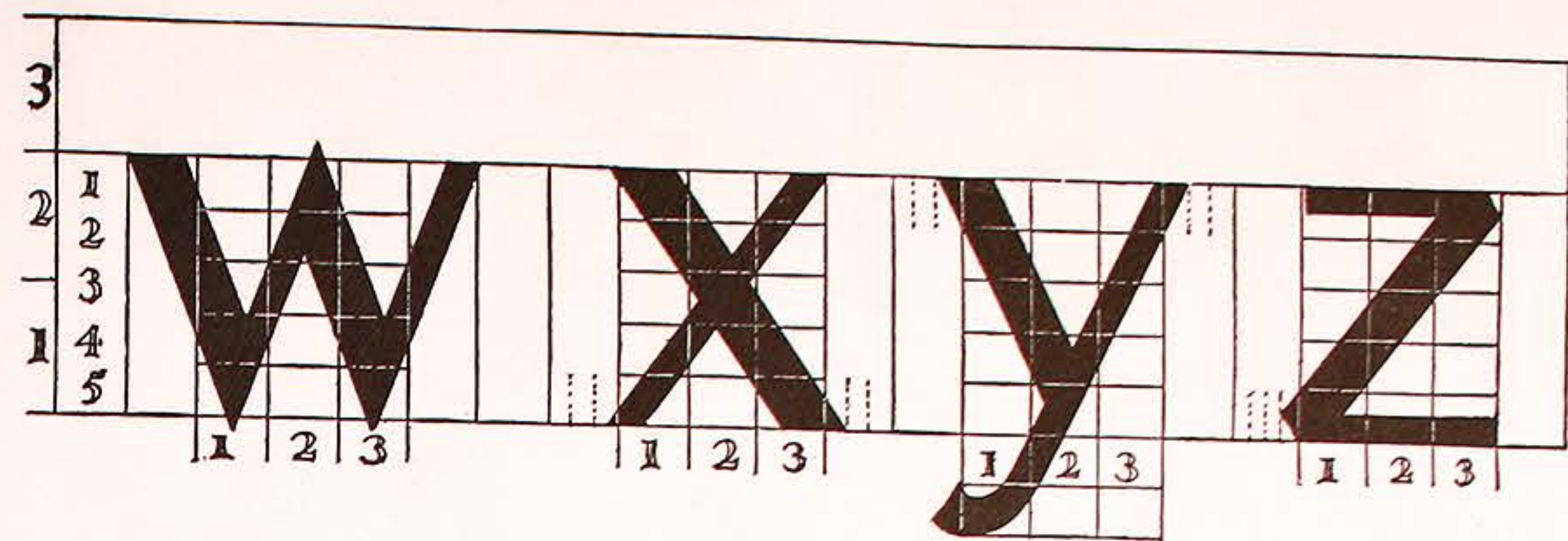








[100]



[101]

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S T U W

X Y Z &

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r s t u w x y

z 1 2 3 4

5 6 7 8 9

A B C D

E F G H I J K

M N O P Q R

S T U V W

X Y Z &

a b c d e f g

h i j k m o p q

r s t u v w x y

z 1 2 3 4

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A B C D

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h i j k m o p q

r s t u w x y

z 1 2 3 4

5 6 7 8 9

A B C D

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S T U W

X Y Z &

[108]

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h j k m o p q

r s t u w x y

z 3 4 5 7 9

1 2 6 8

[109]

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 &

a b c d e f g h

i j k m o p q r s

t u v w x y z 1

2 3 4 5 6 7 8 9

