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LETTERING TRIANGLE.

APPLICATION FILED MAR. 29, 1917.

**1,262,971.** **Patented Apr. 16, 1918.**

Fig 2

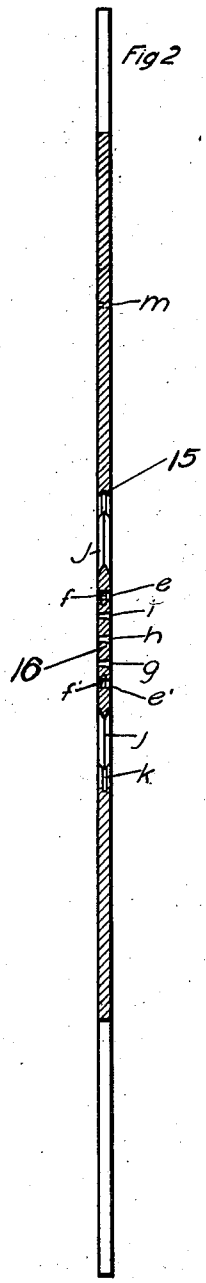
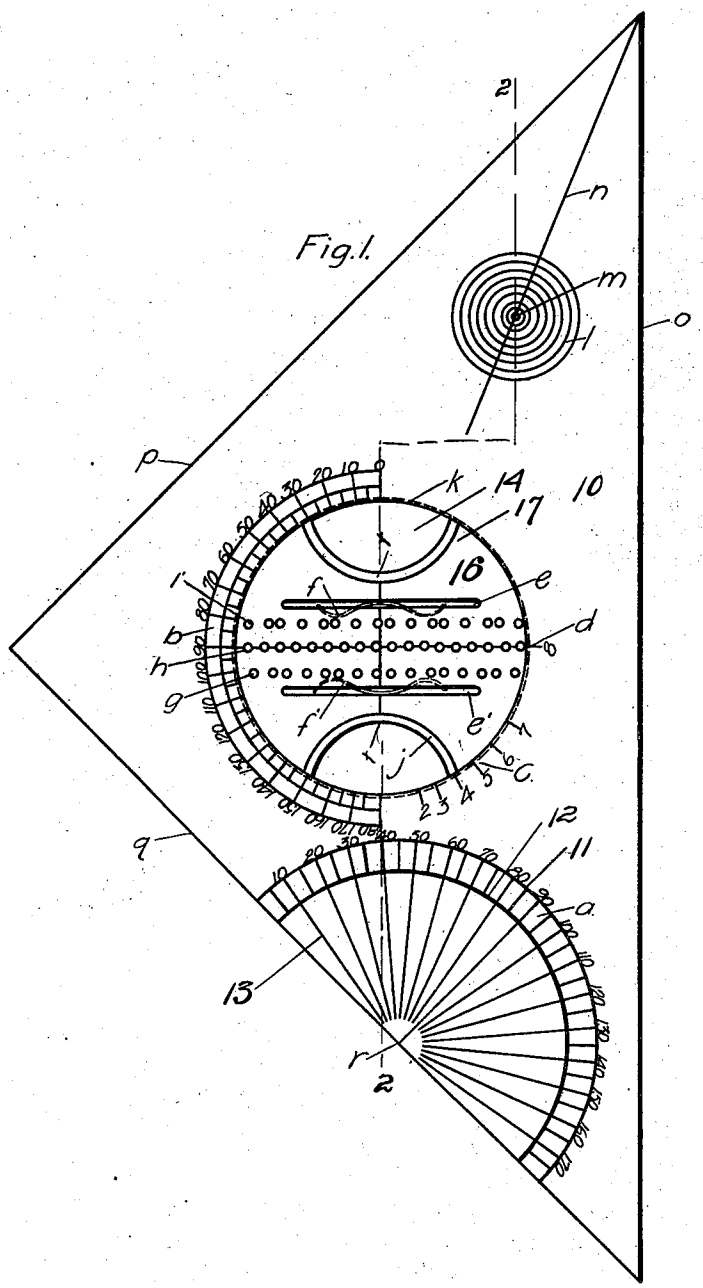



Fig. 1.




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## LETTERING-TRIANGLE.

1,262,971. Specification of Letters Patent. Patented Apr. 16, 1918.

Application filed March 29, 1917. Serial No. 158,444.

*To all whom it may concern:*

Be it known that I, OSCAR A. OLSON, a citizen of the United States, and resident of Ames, in the county of Story and State of Iowa, have invented a certain new and useful Lettering-Triangle, of which the following is a specification.

My invention relates to a triangle used by draftsmen in lettering drawings, tracings and the like.

The object of my invention is to provide a lettering triangle of the kind mentioned provided with a rotating member, provided with regularly spaced openings therein, the parts being so arranged that the rotating member is normally locked against movement, but when grasped for moving, it may be released from its locked engagement during its movement.

A further object is to provide such a triangle having a rotary member, the triangle and rotary member being made of such material and so arranged that the rotary member is normally locked by the resiliency of the parts against movement, the rotary member having portions adapted to be grasped by the fingers of the user, the parts being so arranged that when firmly gripped by the finger of the user, the locked engagement of the parts will be released.

Still a further object is to provide such a triangle having a rotatable member provided with regularly spaced openings for making lettering lines, said openings being arranged for making lines at different distances from each other.

Still a further object is to provide such a triangle as that mentioned in the last paragraph having adjacent to said rotary member certain indicating characters, which when the rotary member is moved to a certain position with relation thereto, indicate the relative spaces between the holes in the rotary member for thereby indicating the height of letter made in the use of lines formed by marking through said openings and sliding the triangle.

Still a further object is to provide such a triangle having a rotary member provided with regularly spaced openings, and to provide figures adjacent to said rotary member forming a protractor.

A still further object is to provide such a triangle having figures and letters forming a protractor arranged near one edge of the triangle for aiding in drawing slope lines for lettering.

Still a further object is to provide near one point of the triangle an opening with a plurality of circles arranged concentric therewith, and a line crossing said circle and said opening and bisecting said angle of the triangle for making fillets or the like.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 shows a top or plan view of a lettering triangle embodying my invention, and

Fig. 2 shows a vertical, sectional view through the same taken on the line 2—2 of Fig. 1.

In the accompanying drawings, I have used the character 10 to indicate generally a triangle preferably made of some transparent material such as celluloid or xylonite, and having three straight edges *o*, *p* and *q*.

Arranged adjacent to the straight edge *q* are parallel concentric curved lines 11 and 12 forming semi-circles centering at *r*. A plurality of lines 13 extend from the line 11 radially toward the center of the circles. At the outer ends of the lines 13 are suitable numbers. The lines 13 are regularly spaced, and together with the lines 12 and 11 and the members just mentioned form a protractor.

On the central portion of the triangle is a round opening 14. The wall of the triangle around the opening 14 is provided with a groove 15. Mounted in the opening 14 is a transparent rotary member 16 having at its periphery an annular, central flange *k* received in the groove 15, and having on opposite sides recesses, the walls of which are indicated by the letter *j*.

Between the two recesses in the opposite side of the rotary member 16 are parallel slots *e* and $e^1$. The rotary member is made of resilient, transparent material and is so arranged that the portions 17, forming points at the ends of the recesses in the rotary member, frictionally engage the wall

of the opening 14 for locking the rotary member against movement.

When originally made the points 17 extend outside of a true circle and they are pressed inwardly in mounting the rotary member in the opening 14, after which they form a friction lock for normally preventing rotation of the rotary member.

When the fingers are inserted in the recesses in the rotary member and pressed toward each other, it will be seen that the body of the rotary member, between the slots $e$ and $e^1$ and the recesses in said rotary member will yieldingly slide, so that the portions 17 will be drawn inwardly for thereby reducing their frictional engagement with the body of the triangle and thereby permitting the easy rotation of the rotary member 16.

I preferably provide springs $f$ and $f^1$ in the slots $e$ and $e^1$ for bearing against the walls of said slots adjacent to the recesses in the member 16 for assisting in locking the rotary member in the triangle.

Arranged adjacent to the opening 14 are lines and figures forming a protractor $b$.

Extending across the rotary member 16, preferably between the slots $e$ and $e^1$, are three rows of holes $i^1$, $h$ and $g$, respectively. The holes in each row may be arranged at regular intervals at any desired distance apart.

The holes in the different rows are arranged at different distances apart. Take for instance the holes in the rows $i^1$. These holes are arranged to make lines for making letters, the lower portions of which are two-thirds the entire height of the letters, and the upper portions of which are one-third the entire height of the letters. Thus the holes in the row $i^1$ are arranged in the order of one hole, then two holes closer together, then another single hole, then two holes closer together and so on.

Assume that the letter to be made is one-fourth inch in height, then the two close holes are arranged one-twelfth of an inch apart and each close hole is arranged two-twelfths of an inch from the next adjacent single hole. Thus if the triangle is placed on a piece of paper and the base is placed against some fixed guide object with a straight edge, then if the pencil is inserted in the second circle from the top and the triangle is slid laterally, for making a line, and the pencil is placed in the third hole from the top and the triangle is slid laterally for making a second line, and the pencil is then placed in the fourth hole from the top and the triangle is slid laterally for making a third line, the first and third lines will be one-fourth of an inch apart, and the first and second lines will be one-twelfth of an inch apart, and the second and third lines will be two-twelfths of an inch apart. Thus the three lines will be properly spaced for making letters of the kind mentioned.

The making of lines may be continued in the manner mentioned until all of the holes in the row $i^1$ are used, whereupon the triangle may be moved lower on the paper and the process repeated. The holes are so arranged that the triangle may be reset for making a new set of lines by dropping the guide object and triangle till the upper hole (extra hole) at the top of the row $i^1$ is directly above the lower line already made.

The holes in the rows $h$ and $g$ are arranged at different distances for making letters on other scales.

Assume that the holes in the row $i^1$ are arranged as mentioned, the distance from each hole to the second hole therefrom will be eight thirty-seconds of an inch. If it is desired to make letters on the same scale of one-third and two-thirds, but to make them of a different height above and below the middle guide line of each set of three of such lines, I have provided adjacent to the opening 14 a plurality of characters and lines $c$. The characters are the numbers 2, 3, 4, 5, 6, and 7. These represent the numerator, the unshown but understood denominator for each number being 32 and the number referring to fractions of inches.

When the middle row of holes $h$ is in vertical position they will be in line with the line $d$, and the numeral 8 arranged below the center of the rotary member 16. The characters 2, 3, 4, 5, 6 and 7 and the lines adjacent thereto are so arranged that when the row of holes $h$ is turned to be in line with the numeral 7, then when the row of holes $i^1$ is used for making lines, the lines will be properly spaced for making letters seven thirty-seconds of an inch in height, and so on.

It will be seen from the illustration given that spaced lines for making letters of a great variety of heights may be made with the rotary member shown herein, provided with the different rows of holes. Arranged near the lower corner of the triangle is an opening $m$ around which are concentric circles $l$. The opening $m$ is in the line bisecting the angle of the triangle in which the hole $m$ is located. The circle $i$ and opening $m$ are used for locating the centers for drawing fillets.

Assume that it is desirable to show in the drawing a fillet extending from one to another of two lines arranged at right-angles to each other, the triangle is placed on the drawing until opposite sides of the same circle touch the two lines. A pencil can then be inserted through the hole $m$ for marking on the drawing the center from which to draw the fillet.

It will be seen that a triangle of this kind can be put to a great variety of uses, and it is especially designed for use by students in the study of lettering.

Some changes may be made in the construction, and it is my intention to cover by the claims of my patent any modified forms of structure or use of mechanical equivalents, which may be reasonably included within the scope of my claims.

I claim as my invention:

1. An instrument having straight edges, and having a circular opening, a member mounted for rotation in said opening, said member being provided with a row of regularly spaced holes, said instrument having indicating marks adjacent to said opening for indicating the distances between the paths of travel of the various holes, and in different positions of the rotary member when the instrument is moved with a straight edge along a given straight line.

2. A measuring instrument having a straight edge, and a circular opening, a rotary member substantially circular in form mounted in said opening, said instrument and rotary member being provided with coacting guide portions, said rotary member being provided with opposite recesses in its periphery, and being made of resilient material, and being provided with slots spaced from said recesses, the parts being so arranged that the portions of the body of said rotary member, adjacent to said recesses, normally, yieldingly, frictionally engage said instrument, and so that when the fingers are inserted through said recesses and pressed toward each other, said portions of the body will be drawn inwardly for reducing such frictional engagement.

3. A measuring instrument having straight edges, and a circular opening, a rotary member substantially circular in form mounted in said opening, said instrument and rotary member being provided with coacting guide portions, said rotary member being provided with opposite recesses in its periphery, and being made of resilient material, and being provided with slots spaced from said recesses, the parts being so arranged that the portions of the body of said rotary member, adjacent to said recesses, normally, yieldingly, frictionally engage said instrument, and so that when the fingers are inserted through said recesses and pressed toward each other, said portions of the body will be drawn inwardly for reducing such frictional engagement, and additional means for yieldingly pressing said portions outwardly against the wall of said instrument around the opening therein.

4. An instrument having straight edges and having a circular opening, a member mounted for rotation in said opening, said member being provided with portions for yieldingly engaging the body of the instrument, and with portions adapted to be grasped for drawing said first portions away from such engagement.

Des Moines, Iowa, March 9, 1917.

OSCAR A. OLSON.