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O. A. OLSON

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LETTERING INSTRUMENT

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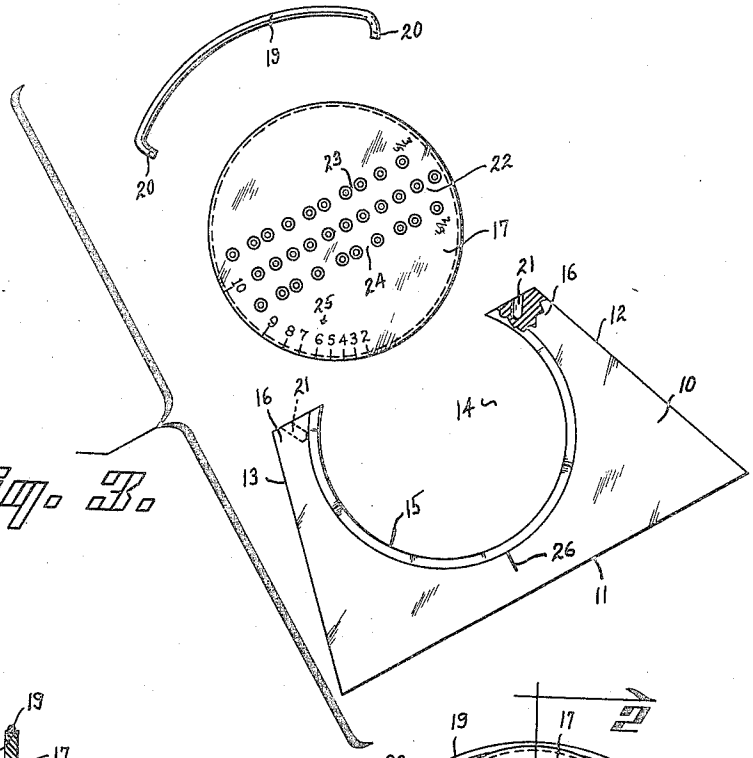


Fig. 3.

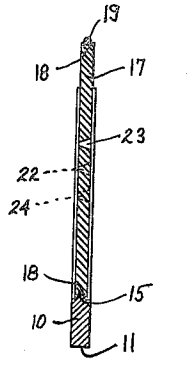


Fig. 2.

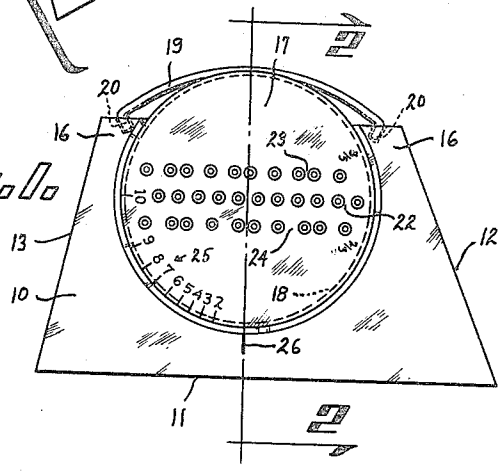


Fig. 1.

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LETTERING INSTRUMENT

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8 Claims. (Cl. 33—104)

1

My invention relates to an instrument designed for use by draftsmen when drawing parallel lines for lettering and is an improvement over my Patent No. 1,416,411 on a similar device.

It is an object of this invention to provide a device having a frame with at least three straight edges and a member containing a plurality of holes rotatably mounted in the frame whereby the holes in the rotatable member are designed for use in making parallel lines of different selected space relationships when drawing letters and at least two of the straight edges of the frame are designed for use in making vertical guide lines for the letters, with the vertical guide lines when made on the different edges being at a different angle to the base line.

A further object of this invention is to provide a lettering instrument of the above class wherein the rotatable member is mounted within an arcual U-shaped opening of the frame and is normaly held therein against accidental rotation by frictional engagement of the frame arms and having a spring rod designed to engage the frame arms so as to extend over the opening and frictionally engage a portion of the rotatable member whereby the frame is prevented from moving or expanding out of frictional engagement with the rotatable member.

A still further object of this invention is to provide a lettering instrument having the above described characteristics that is economical in manufacture, simple to use and durable in construction.

These and other objects will be apparent to those skilled in the art.

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:

Fig. 1 is a front elevational view of this instrument ready for use,

Fig. 2 is a cross-sectional view of this device taken on the line 2—2 of Fig. 1, and

Fig. 3 is an exploded perspective view of my device.

Referring to the drawings I have used the numeral 10 to designate a flat frame member preferably made from some transparent material such as plastic or the like. The frame 10 has a straight bottom edge 11 and two straight side edges 12 and 13 with each of the side edges extending from the bottom edge at an angle less

2

than a right angle and each at a different angle than the other as shown in Fig. 1. An arcual U-shaped opening 14 is provided in the frame 10 and the resulting arcuate frame edge has an inwardly extending tongue edge portion 15 as shown in Fig. 3. By virtue of the opening 14, two spaced apart horn-like arms 16 are formed at the top of the frame 10.

The numeral 17 designates a disc member that has an annular groove 18 about its peripheral edge. This disc is also preferably made from any transparent material such as plastic or the like. It is rotatably mounted within the frame 10 and the curvature of the tongued edge 15 is substantially the same as that of the disc so that the groove 18 about the disc will be in frictional engagement with the tongued edge 15 of the frame 10. Thus arranged, the disc will not normally rotate unless manual pressure is applied. While I have described and preferably make the opening 14 and the disc 17 arcuate or circular with the tongued edge 15 heaving substantially the same curvature as the disc, it is pointed out that either the tongued edge 15 or the disc 17 could be other than circular or arcuate in shape and still produce a rotatable member within a frame opening that would not depart from the principle embodied in my invention.

The frame 10 when made of plastic or the like will normally have sufficient resiliency so that the horn-like arms 16 can be manually moved away from each other slightly to mount or remove the disc 17. This resiliency of the frame is generally sufficient to frictionally hold the disc against accidental rotary movement but there may be times when this instrument is used in extremely warm weather that the frictional engagement will be lessened due to expansion of the frame. To guard against any such possibility I provide an arcuate spring rod 19 that has each end bent downwardly to form the hook portions 20 as shown in Fig. 3. Each hook end 20 is designed to be inserted and preferably secured in a hole 21 provided in the top of each of the horn-like arms 16. I have shown the holes 21 extending from the top edge of each arm 16 downwardly and inwardly towards the arcuate tongue edge 15 but they can be perpendicular to the top without changing their function. Since the resiliency of the frame will normally hold the disc in frictional engagement against rotary movement, the insertion of the hooks 20 in the holes 21 will maintain such frictional engagement by not permitting

the arms 16 to move away from each other. When this spring rod 19 is thus arranged (Fig. 1) it will extend over the opening 14 and frictionally engage a portion of the grooove 18 in the disc 17 as shown in Fig. 1.

To use this instrument for drawing horizontal lines that are an equal distance apart, I have provided a row of equally spaced apart openings 22 on a diametrical line through the disc 17.

To use this instrument, all openings 22 are made tapering, as shown in section in Fig. 2, so that as the disc 17 is held flat on the paper with the rows 22 perpendicular to the bottom edge 11 a lead pencil point may be inserted through any given opening in row 22 and when the bottom edge 11 is placed adjacent to a straight edge the pencil may be moved in a parallel relation with said straight edge, and a parallel line drawn parallel to said straight edge. When it is desired to draw another line parallel with the first line. the pencil point is placed in another one of the openings 22 above or below the first one used, and a like line may be drawn in the same manner and parallel thereto.

Thus it will be seen by successively placing the pencil point in different openings 22, lines may be drawn parallel with the straight edge, and an equal distance apart.

For lettering it is usually desirable to draw the lines in groups of three, the upper and lower lines of the group being spaced apart a distance equal to the total heights of the capital letters, and the intermediate line drawn closer to the top line than to the bottom line, so that the distance between the said intermediate line and the bottom line represents the height of the small letters. To accomplish this with this instrument, I preferably provide on each side respectively of the row of openings 22, and parallel therewith the rows of tapered openings 23 and 24. Each of these rows 23 and 24 is provided with groups of three openings spaced apart for making small and capital letters as above described with the spacing in each of these rows different from each other.

The instrument may then be used in the same manner as when drawing parallel lines. When the rows 23 and 24 are perpendicular to the bottom edge 11, lines of a maximum width may be drawn. When it is desired to draw lines closer together than the perpendicular spacing in either row 23 or 24, all that is necessary to do is rotate the disc within the arms 16 and draw the lines as before described. The change in the height of the letters caused by rotating the disc is accomplished as follows:

I provide a series of graduations 25, extending substantially a quarter of the way around the edge of the disc 17. A guide line 26 is provided on the disc 17, and is so arranged that when the disc is set with the numeral 10 of the graduations in line with the guide line 26, the total height of the capitals will represent $^{10}/_{32}$ of an inch or $\frac{5}{16}$ of an inch. When the disc is rotated until the numeral 9 of the graduations is even with the line 26, the height of the capital letters, or the space between the two extreme lines of each group of three will be $^{9}/_{32}$ of an inch, and when the disc is rotated until the numeral 8 of the graduation is opposite the line 26, the height of the capitals will be $^{8}/_{32}$ of an inch or $\frac{1}{4}$ of an inch, and so on with the other graduated numbers.

The character "$^{3}/_{5}$" is provided at the side of one end of the row 23, which indicates that the height of the space between the intermediate and the lower extreme line drawn by said openings is $^{3}/_{5}$ of the total distance between the upper and lower lines for any setting of the disc; and the character "$^{2}/_{3}$" at the side of one end of the row 24 indicates that the ratio between the intermediate and the lower extreme line drawn by said openings is $^{2}/_{3}$ of the total distance between the upper and lower lines for any setting of the disc.

By this arrangement it will be seen that a large range of spacings of lines may be easily and quickly provided by rotating the disc 17 which is always frictionally held in its position between the arms 16 of the frame 10.

In addition to the horizontal parallel lines made by use of the openings in the disc 17, vertical guide lines are required to complete the lettering.

For this purpose I have provided the inclined sides 12 and 13 on the frame 10.

Since each of the sides 12 and 13 extend at a different angle from the base 11, the drawn letters can be inclined on the different angles provided. The use of the sides 12 and 13 for making vertical guide lines with the bottom edge 11 adjacent a straight edge is, of course obvious to any draftsman as it is similar to the use of triangles.

Some changes may be made in the construction and arrangement of my lettering instrument without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim:

1. In a lettering instrument, a flat base frame member having an arcual U-shaped opening, a disc member rotatably mounted in said opening and having a plurality of holes, and a spring rod member detachably secured at its respective ends to said base frame member and extending across the top of said opening of said base frame member so as to frictionally engage a portion of the periphery of said disc member and to prevent the opposite sides of said frame opening from moving away from each other.

2. In a lettering instrument, a flat base frame member having a straight bottom edge and two straight side edges each extending from the bottom edge at an angle less than a right angle thereto and each at a different angle than the other; said base frame member provided with an opening creating two spaced apart hornlike arm members at the top portion of said frame member, a member rotatably mounted in said opening and having a plurality of holes, and a rod member secured at its respective ends to said horn like arm members so as to prevent them from moving away from each other.

3. In a lettering instrument, a flat base member having a straight bottom edge and two straight side edges each extending from the bottom edge at an angle less than a right angle thereto and each at a different angle than the others; said base frame member provided with an arcual U-shaped opening creating two spaced apart horn-like arm members at the top portion of said frame member, a member rotatably mounted in said opening and having a plurality of holes, and a spring rod member detachably secured at its respective ends to said base frame member to prevent the opposite sides of said frame opening from moving away from each other.

4. In a lettering instrument, a flat base frame member having a straight bottom edge and two straight side edges each extending from the bottom edge at an angle less than a right angle there-

to and each at a different angle than the other; said base frame member provided with an arcual U-shaped opening creating two spaced apart horn-like arm members at the top portion of said frame member, a disc member rotatably mounted in said opening and having a plurality of holes, and a spring rod member detachably secured at its respective ends to said arm members and extending across the top of said opening of said base frame member so as to frictionally engage a portion of the periphery of said disc member and also to prevent said arm members from moving away from each other.

5. In a lettering instrument, a base frame member having a circular opening with a tongued edge, a disc member having a peripheral groove rotatably mounted in said opening so that said groove frictionally engages said tongued edge; said disc provided with a plurality of holes, and a rod member secured at its respective ends to said frame member and extending across said opening so as to frictionally engage a portion of the groove on said disc member and to increase the friction between the said frame member and said disc member by holding the opposite sides of said frame opening towards each other whereby the disc member is held within said frame against accidental rotation.

6. In a lettering instrument, a flat base frame member having a straight bottom edge and two straight edges each extending from the bottom edge at an angle less than a right angle thereto and each at a different angle than the other; said base frame member provided with an arcual U-shaped opening creating two spaced apart horn-like arm members at the top portion of said frame member, the top edge of each of said arm members provided with a hole extending downwardly therein, a disc member rotatably mounted in said opening and having a plurality of holes, an arcuate spring rod member having each end bent downwardly to form a hook member; said hook members respectively capable of being inserted in one of the holes in said arm members to hold said arms towards each other and thereby increase the friction between said frame member and said disc member; said spring rod also capable of frictionally engaging a portion of the periphery of said disc whereby the disc member is held within said frame against accidental rotation.

7. In a lettering instrument, a flat base frame member having a straight bottom edge and two straight edges each extending from the bottom edge at an angle less than a right angle thereto and each at a different angle than the other; said base frame member provided with an arcual U-shaped opening creating two spaced apart horn like arm members at the top portion of said frame member, a tongued edge on said opening, the top edge of each of said arm members provided with a hole extending downwardly therein, a disc member having a peripheral groove rotatably mounted in said opening and having a plurality of holes, the groove on said disc frictionally engaging the tongued edge of said opening, an arcuate spring rod member having each end bent downwardly to form a hook member; said hook member respectively capable of being inserted in one of the holes in said arm members to hold said arms towards each other and thereby increase the friction between said frame member and said disc member; said spring rod also capable of frictionally engaging a portion of the periphery of said disc whereby the disc member is held within said frame against accidental rotation.

8. In a lettering instrument, a flat base frame member having a straight bottom edge and two straight edges each extending from the bottom edge at an angle less than a right angle thereto and each at a different angle than the other; said frame member made from a material subject to expansion and contraction due to temperature changes; said base frame member provided with an arcual U-shaped opening creating two spaced apart horn like arm members at the top portion of said frame member, the top edge of each of said arm members provided with a hole extending downwardly therein toward but not to the edge of said opening, a disc member rotatably mounted in said opening and having a plurality of holes, an arcuate spring rod member having each end bent downwardly to form a hook member; said hook member respectively capable of being inserted in one of the holes in said arm members to hold said arms towards each other and thereby increase the friction between said frame member and said disc member; said spring rod also capable of frictionally engaging a portion of the periphery of said disc and capable of preventing said arm members from moving away from each other whereby the disc member is held within said frame against accidental rotation irrespective of any temperature change that would otherwise cause said frame member to expand and said arm members to move away from each other.

OSCAR ANTON OLSON.

REFERENCES CITED

The following references are of record in the file of this patent:

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