

UNITED STATES PATENT OFFICE

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DRAFTSMAN'S INSTRUMENT

Raney R. Allen, Dayton, Ohio

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2 Claims. (Cl. 33—27)

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This invention relates to a draftsman's instrument and more particularly to an instrument for generating arcs, curves and circles having large diameters.

An object of this invention is to provide an instrument for use by a draftsman in drawing curves, arcs or circles that are too large to be drawn with a conventional extension compass.

Another object of this invention is to provide a pair of members adapted for use in drawing circles, arcs and the like, wherein the members may be attached to a strip of material cut to the desired length so as to generate a curve of the desired radius.

Another object of this invention is to provide means adapted to be attached to a strip of material of the proper length, which means are easily produced at a low cost from material easily formed.

Another object of this invention is to provide an attachment which can be stored in a small space when not in use and readily clamped on a strip of material when used.

Other objects and advantages reside in the construction of parts, the combination thereof and the mode of operation, as will become more apparent from the following description.

Referring to the drawings,

Figure 1 discloses a side elevational view of the drawing instrument.

Figure 2 is a top plan view of the device shown in Figure 1.

Figure 3 shows a side view of a stud used as a stop for the material.

Figure 4 is a side elevational view of a blank used in the instrument.

Figure 5 is a top plan view of the blank shown in Figure 4.

Figure 6 is an end elevational view of the blank as viewed from the right of Figure 4.

Figure 7 is a top plan view of a modification.

Figure 8 is a side elevational view of the modification disclosed in Figure 7.

Draftsmen, in drawing circles of large arcuate parts when the drawings are full size, experience difficulty in finding instruments that will satisfy the requirements. The embodiment includes a pair of clamping members, each provided with an aperture, one aperture for receiving a compass point used in holding the clamping member in the center, the other aperture for receiving the pencil or pen for drawing a circle, the two clamping members being clamped on the ends of a strip of material, such as paper, cardboard or the like. The strip of material may be cut to

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the desired length, so as to provide the proper distance between the compass point and the point of the pencil or pen used in drawing the circle. This will appear more fully from the description that follows.

In the drawings, the reference character 10 indicates the clamping jaw members which may be made from suitable material, as for example, a piece of molded synthetic plastic material.

Each member 10, as may be seen by referring to Figure 2, tapers, and is provided with an aperture 12 near the small end thereof. As may best be seen by referring to Figure 1, the apertures 12 are countersunk at 14. The underside of each

member 10 is provided with a transverse slot 16, which provides clearance overlying the pencil mark or the freshly drawn ink line. In the event the attachment is used with an inking pen, the aperture 12 is preferably oblong or elongated, so as to accommodate an inking pen. The larger

end of each member 10 is provided with a transverse saw-cut groove 20, so as to provide a pair of clamping jaws 10a and 10b, adapted to receive the end of a strip of material 22. The saw-cut groove extends parallel to the flat sides of member 10, so that the jaws 10a and 10b are narrow and flat. The jaws 10a and 10b have sufficient flexibility to permit the jaws to be pressed together to clamp the strip of material 22.

For the purpose of precision, a pair of studs 24, press-fitted into apertures in 10b, traverse the saw-cut groove 20 and provide abutments against which the end of the strip of material abuts.

A screw 26, provided with a suitable nut 28, passes through a suitable aperture in the jaws 10a and 10b, so that after the strip of material 22 has been inserted, the nut 28 is tightened upon the screw 26, so as to rigidly clamp the jaws against the end of the strip of material 22.

The inside of the jaws may be provided with serrations or transverse teeth 30, adapted to firmly grip the end of the strip 22, so as to prevent slippage. There is a clamping member 10 attached to each end of the strip of material 22.

One clamping member 10 may be used as a center member, adapted to be rotated about a suitable pivot, such as one point of the compass point 40. The other clamping member 10 may be rotated so that the pencil 42 may be used to draw a circle or arc.

By designating the distance from the end of the strip 22 to the pencil point as L, the length of the strip 22 for generating a curve or circle having a radius R will then be $R-2L$. If, for example, $L=1.75$ and it is desired to generate a

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radius equal to 51'', the length of the strip will be 51''—3.50 or 47.50'' in length.

For some purposes the attachment for the strip may be clamped on the side of the strip, especially if the strip is made of comparatively rigid material, the members 10 being adjusted to the proper position on the strip to generate the curvature having the desired radius of curvature.

In the modification disclosed in Figures 7 and 8, a clamping member 50 is provided with a saw-cut groove 52 similar to the saw-cut groove in the preferred embodiment. A pair of stops 54 are used in limiting the inward thrust of the strip of paper or cardboard. A suitable nut 56, threadedly engaging a screw, is used in clamping the parts together. A diagonally disposed slot 58 may receive a strip of paper 64, as shown in Figure 8, which strip of paper may be adjusted so as to obtain the desired radius. After the desired radius has been obtained, the nut 56 may be tightened. A hole 60 is provided to receive the pencil point. A slot 62 may receive a drawing pen point. Clearance slots 66 underlie the hole 60 and the slot 62, as clearly shown in Figure 8. The modification is adaptable for use either with a strip of material having a fixed length, or a narrow strip of material that may be passed through the slot 58. When it has passed through the slot 58 to the proper length, the end of the strip may be clamped by tightening the nut 56.

Although the preferred embodiment of the device has been described, it will be understood that within the purview of this invention various changes may be made in the form, details, proportion and arrangement of parts, the combination thereof and mode of operation, which generally stated consist in a device capable of carrying out the objects set forth, as disclosed and defined in the appended claims.

Having thus described my invention, I claim:

1. An instrument for use in drawing large circles and arcs of circles on drawing material, said instrument including a strip of material, a pair of members clamped to opposite ends of the strip of material, each of said members including a flat body portion adapted to rest on the drawing material, said body portion having a groove

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extending into one end thereof parallel to the surface of the drawing material into which groove the end of the strip of material projects, studs projecting through the body portion and intersecting the groove so as to provide stops or limits for the strip of material, a clamping screw extending through the body portion so that as the clamping screw is tightened the sides of the groove are clamped against the strip of material, one of said members having an aperture for receiving the point of a pencil, the other member having an aperture for receiving a retaining instrument that functions as a pivot when the pencil is used in drawing the arc.

2. An instrument for use in drawing large circles and arcs of circles, said instrument including a strip of material, a pair of members clamped to opposite ends of the strip of material, each of said members including a flat body portion, said body portion having a groove extending inwardly from the end thereof and merging into a diagonally disposed slot terminating in the side of the body of said member, through which groove and slot the strip of material may extend, means exerting a pressure on opposite sides of said body portion to clamp said member to the strip of material, one of said members having an aperture for receiving the point of a pencil, the other member having an aperture for receiving a retaining instrument that functions as a pivot when the pencil is used in drawing the arc.

RANEY R. ALLEN.

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