Oct. 2, 1934. K. POULSEN 1,975,648

DRAFTING INSTRUMENT

Filed Sept. 22, 1930 2 Sheets-Sheet 1

Fig. 1.

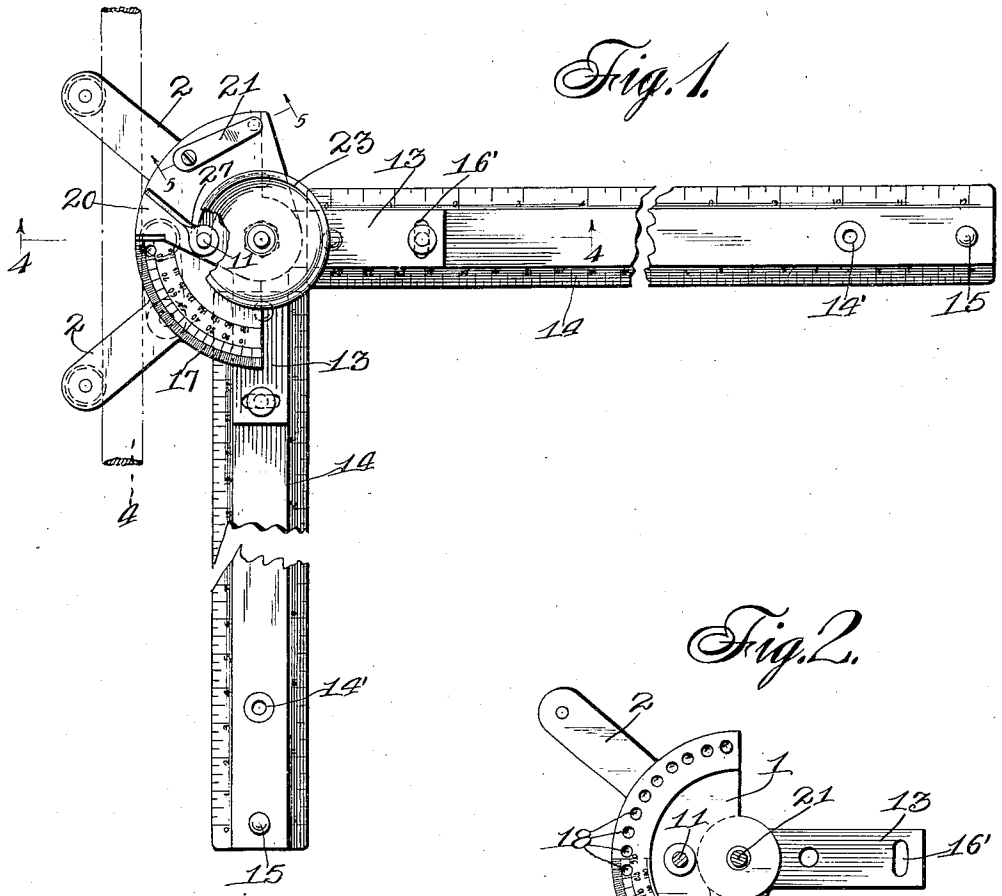


Fig. 2.

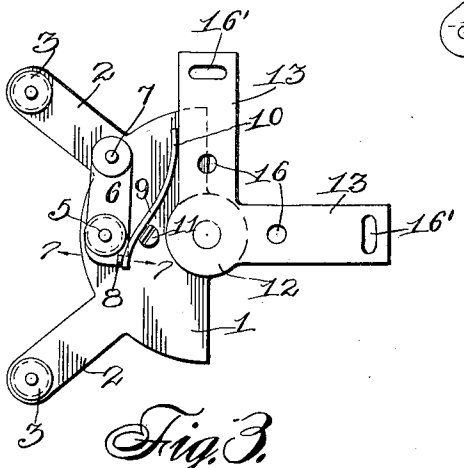


Fig. 3.

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Filed Sept. 22, 1930 2 Sheets-Sheet 2

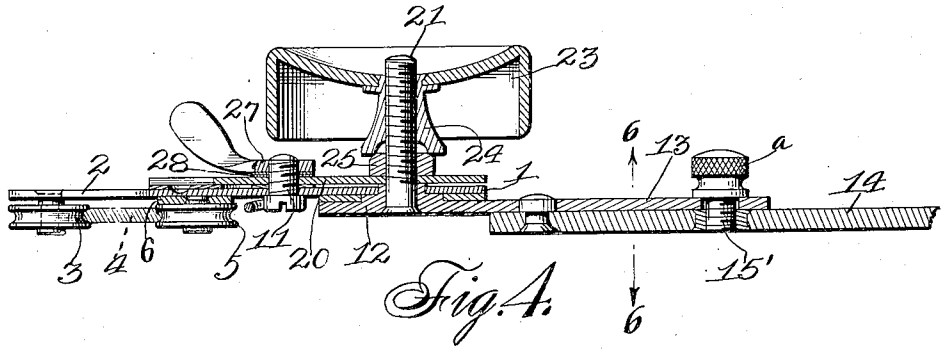


Fig. 4.

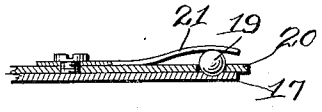


Fig. 5.

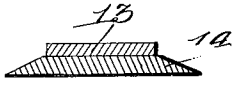


Fig. 6.

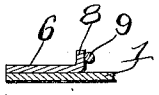


Fig. 7.

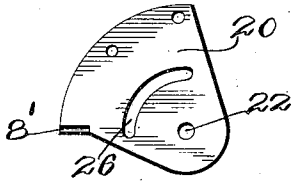


Fig. 8.

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UNITED STATES PATENT OFFICE

1,975,648

DRAFTING INSTRUMENT

Knud Poulsen, Racine, Wis., assignor to Sterling Tool Company, Racine, Wis.

Application September 22, 1930, Serial No. 483,633

1 Claim. (Cl. 33—79)

This invention relates to improvements in drafting instruments.

One of the objects of the present invention is the provision of an improved drafting instrument wherein the parts are interchangeable and adjustable so as to simplify the construction of a drafting instrument of this character and provide an instrument which can be used for various purposes and including different types of scales which can be interchanged, as well as improved adjusting mechanism for the ruling members.

Another object of the present invention is the provision of a drafting instrument which is provided with means for adjustably mounting the instrument upon a drafting board so that the the device can be adjusted to various positions with respect to the table, and the ruling members are provided with measurements laid out in different scales, and are reversible so that the position of the same can be quickly and easily changed to use the scale on either edge of the rule.

A further object of the present invention is the provision of a drafting instrument which aims to reduce the cost of construction of such an instrument, as well as to simplify the construction of the same, and at the same time incorporate in an instrument of this character various types of scales so that the instrument can be used for various purposes, not only for squaring different angles, but for protracting purposes, whereby the instrument can be used in a great many ways.

With the above and other objects in view, the invention consists in the novel features of construction, the combination and arrangement of parts hereinafter more fully set forth, pointed out in the claim and shown in the accompanying drawings wherein:

Figure 1 is a plan view of an improved drafting instrument constructed in accordance with this invention;

Figure 2 is a top plan view of the body portion with parts removed;

Figure 3 is a bottom plan view of the body portion;

Figure 4 is a section on the line 4—4 of Figure 1;

Figure 5 is a detailed section on the line 5—5 of Figure 1;

Figure 6 is a detailed section on the line 6—6 of Figure 4;

Figure 7 is a detailed section on the line 7—7 of Figure 3; and,

Figure 8 is a plan view of the adjustable segment.

Referring more particularly to the drawings, it will be noted that I provide an arcuate body plate 1 which is formed at its arcuate edge with spaced divergent arms 2, the outer ends of which carry guide wheels 3 adapted to cooperate with the guide rail 4 positioned on a drafting board. The guide wheels 3 cooperate with a third wheel 5 positioned centrally of the two arms 2, and carried by a movable arm 6.

The arm 6 is pivotally mounted upon the body 1 at the inner end of one of the arms 2 by means of a pivot pin 7 and the outer end of arm 6 carries a lateral projecting lug 8 struck out from the body portion of the arm and against which the spring member 9 abuts. This spring member 9 is attached to the body of the plate 1, as shown at 10, and stop pin 11 limits the movement of spring member 9 in one direction when pressure is applied to wheel 5. The body plate 1 has attached thereto at the side opposite the arms 2, the base portion 12 of the divergent guide arms 13.

The ruling members 14 have attached to both ends thereof the headed studs 15 which are received in openings 16 in the arms 13 and threaded portions 14' are carried by ruling members in spaced relation with the headed studs 15 to receive the retaining screws 15' which are passed through transverse slots 16' in the arms 13, as shown at Figure 4 for retaining the ruling members 14 in various adjusted positions relative to the arms 13.

The retaining screws 15' are provided with knurled head pieces a whereby they may be readily engaged or disengaged from the sleeves 14' when attaching the ruling members to the arms 13. It will be noted that the ruling members 14 are provided along one edge with one type of scale, while the other edge has thereon another type of scale, and by means of the construction illustrated, the ruling members can be quickly reversed as to their position with respect to the body 1 so that either type of scale can be used whenever desired.

It will also be noted that by providing arms 13 with the slots 16', it permits lateral adjustment of the ruling members 14 with respect to the body 1 so as to compensate of any displacement of the guide rollers 3 and 5, whereby a true angle can be maintained at all times. In adjusting the ruling members 14 with respect to the arms 13, it will be noted that the headed studs 15 act as the pivot point for the ruling members.

Arranged upon one face of the body 1 and conforming to the arcuate shape of the outer edge is an arcuate plate 17 provided with a series of graduations adapted to be used in connection with the plate 20. This plate 17 is provided with spaced indentations 18 engaged by a ball 19 movable with plate 20, with the ball 19 urged into any one of the indentations 18 by means of a spring 21 carried by plate 20.

The base portion 12 of the divergent arms 13 carries a central shaft 21 which extends upwardly through plate 1, and through the opening 22 of plate 20, a hand wheel 23 being attached to the upper end of shaft 21 and provided with a central part 24 engaging a clamp nut 25 which frictionally engages the upper face of plate 20 to move the same over the arcuate plate 17.

The plate 20 is provided with an arcuate slot 26 which receives the upstanding threaded pin 11 carried by the body plate 1, and a wing nut 27 is attached to the upper threaded end of pin 11 and engages a clamping washer 28 for retaining plate 20 against movement. However, as soon as nut 27 is rotated a slight distance to release plate 20, the hand knob 23 can be rotated for moving the plate 20 over the main body plate 1 and the scales on plate 17 may be easily read. Thus, by using the lug 8' as an indicating pointer, the ruling members 14 can be set at the desired angle relative to the scale 17 and thus permit the device to be used for protracting purposes.

It will be apparent from the foregoing that I have provided a very simple and inexpensive type of drafting instrument which can be slidably mounted upon a guide rail of a drafting board and wherein the ruling members 14 may be quickly changed as to their position by turning them end for end and attaching them to the guide arms 13, so that the two different scales on the edges of the ruling members can be used at different times.

A drafting instrument constructed in accordance with the above description will be very inexpensive to manufacture and at the same time will provide an instrument which can be used for a great many purposes and can be adjusted for various angles to permit the same to be used for protracting purposes.

While I have shown and described the preferred embodiment of my invention, it will be apparent that slight changes may be made in the construction when putting the invention into practice without departing from the spirit of the same or the scope of the appended claim.

I claim:

In a drafting instrument, a semi-circular body plate having diverging arms thereon and an opening therein, means on the arms and plate for engaging a stationary guide, a pair of right angularly disposed supporting arms rigidly connected together and having an opening therein at the point of connection thereof, said arms being disposed at their point of connection on the body plate, straight edge members secured to the supporting arms, a scale plate secured to the body plate, a sector plate with an indicating edge movable over the scale plate, said sector plate having an opening therein registering with the opening in the body plate and the opening in the supporting arms, and releasable means extending through said openings for connecting the supporting arms and the sector plate together for movement relative to the scale plate.

KNUD POULSEN.