Nov. 20, 1956 J. F. ECKERT ET AL 2,770,884

MEASURING INSTRUMENT

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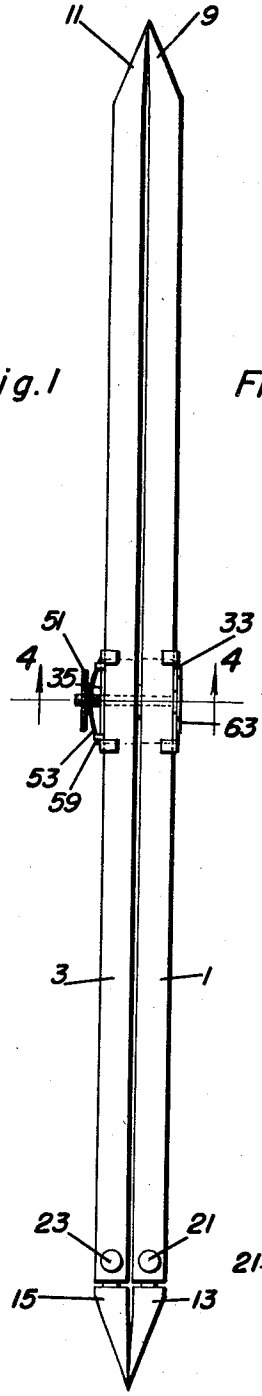


Fig. 1

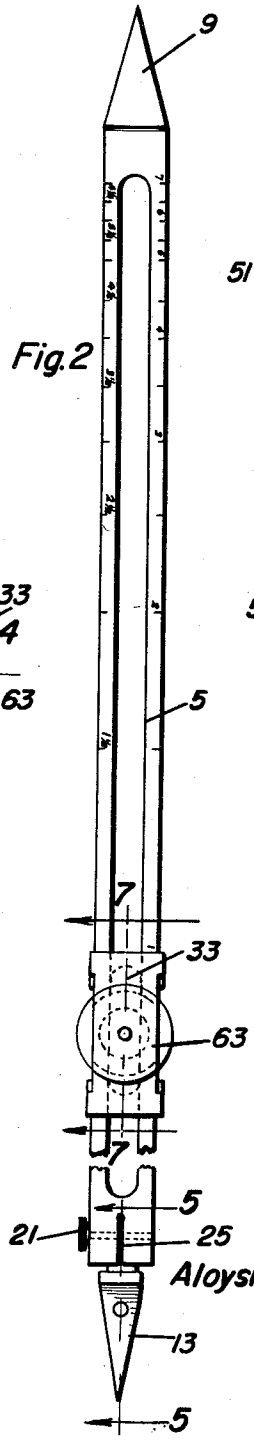


Fig. 2

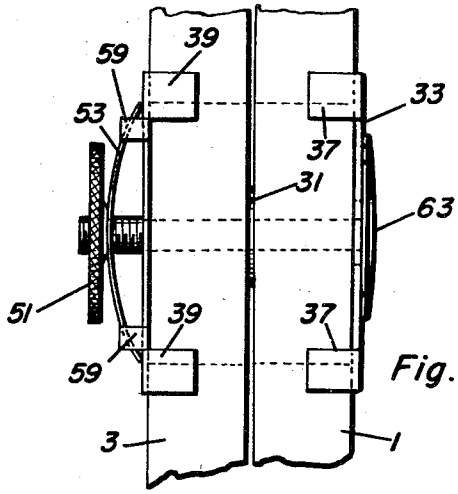


Fig. 3

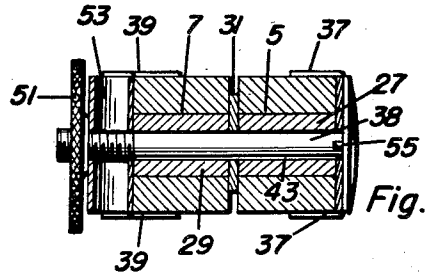


Fig. 4

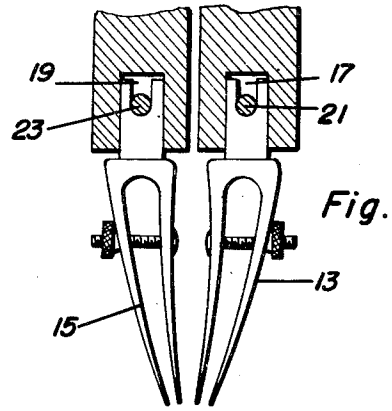


Fig. 5

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MEASURING INSTRUMENT

Filed Aug. 3, 1953 2 Sheets-Sheet 2

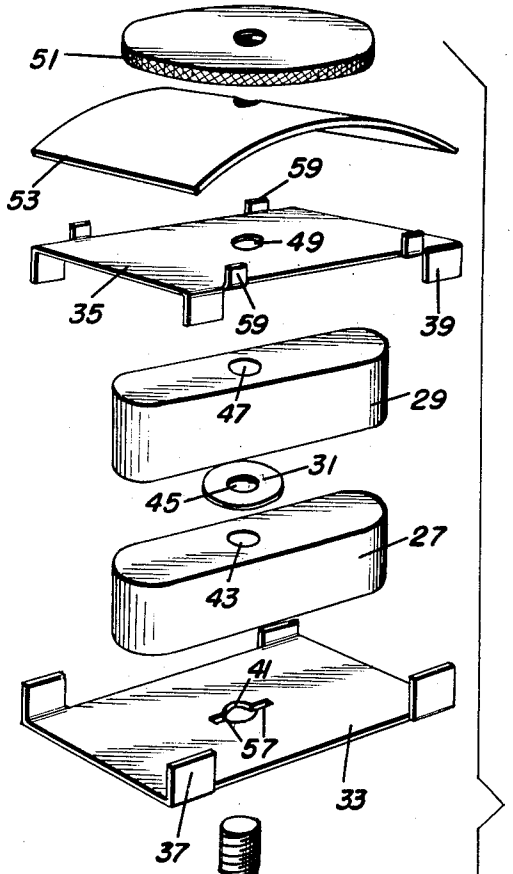


Fig. 6

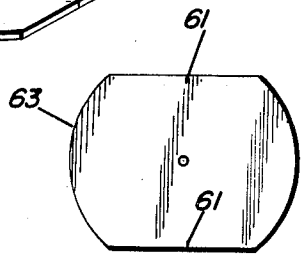


Fig. 9

Fig. 8

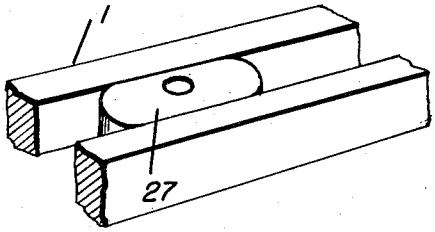
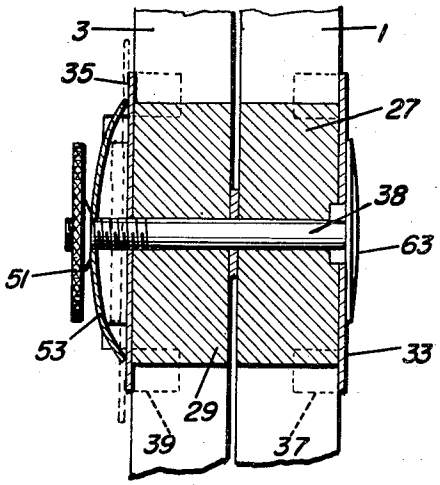


Fig. 7



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United States Patent Office 2,770,884 Patented Nov. 20, 1956

2,770,884

MEASURING INSTRUMENT

Joseph F. Eckert, North Charleston, and Aloysius L. Szymanski, Charleston, S. C.

Application August 3, 1953, Serial No. 371,963

1 Claim. (Cl. 33—150)

Our invention relates to improvements in measuring instruments for drafting and like purposes.

The primary object of our invention is to provide an accurate instrument for enlarging or reducing and which is equipped for marking off measurements in ink and will not slip when once set.

Other and subordinate objects together with the purpose of our improvements and the advantages thereof will become readily apparent when the succeeding description and claim are read with reference to the drawings accompanying and forming part of this specification.

In said drawings:

Figure 1 is a view in side elevation of a preferred embodiment of our improved instrument;

Figure 2 is a view in plan;

Figure 3 is a fragmentary enlarged view in side elevation;

Figure 4 is an enlarged view in transverse section taken on the line 4—4 of Figure 1;

Figure 5 is an enlarged fragmentary view in longitudinal section taken on the line 5—5 of Figure 2;

Figure 6 is an enlarged exploded view in perspective;

Figure 7 is an enlarged longitudinal sectional view taken on the line 7—7 of Figure 2;

Figure 8 is an enlarged fragmentary view in perspective of one of the slide blocks; and

Figure 9 is an enlarged view in plan of the clamping spindle.

Referring to the drawings by numerals, the instrument of our invention comprises a pair of side-by-side flattened arms 1, 3 having through slots, 5, 7 for substantially the greater portion of their length. Corresponding ends of the arms 1, 3 are provided with coengaging measuring points 9, 11. At their opposite ends the arms 1, 3 are provided with a pair of conventional ruling pens 13, 15 clamped in sockets 17, 19 by set screws 21, 23 and held therein in proper position by keys, as at 25.

The arms 1, 3 are pivotally secured together for adjustment into and from crossed relation by a slide assembly comprising the following. A pair of slide blocks 27, 29 are fitted in the slots 5, 7 with a washer 31 interposed between the same and spacing said arms 1, 3 slightly

apart. A pair of rectangular slide plates 33, 35 with right angled corner lugs 37, 39 straddling the arms 1, 3 are opposed to the outer sides of the arms 1, 3. A clamping spindle 38 is extended through center apertures 41, 43, 45, 47, 49 in the plate 33, block 27, washer 31, block 29 and plate 35 with a nut 51 theron backed by a bowed rectangular leaf spring 53 through which said spindle is extended. Spindle 38 is provided with key lugs 55 fitting in keyways 57 in plate 33 to prevent said spindle from turning. Right angled keeper lugs 59 on plate 35 at opposite sides of said spring 53 prevent the spring 53 from turning.

Both arms 1, 3 are graduated on their outer sides on one side of the slot 5, 7 with whole numbers and on the other side with whole numbers and fractions both starting from the numeral 1 at the approximate center.

In using the instrument either end of the plates 33, 35 may be used as a graduation finder, or pointer, and the ruling pen equipped end of the instrument may be used to mark points betwen which a line is to be drawn.

In using fractions other than those on the instrument the correct setting of the instrument can be ascertained by equations and then measuring from the pointed tip to a graduation 61 provided on the head 63 of the spindle.

The foregoing will it is believed suffice to impart a clear understanding of our invention.

Manifestly the invention is susceptible of modification and right is herein reserved to such modifications as fall within the scope of the invention as herein disclosed.

What is claimed as new is as follows:

In a measuring instrument, a pair of side-by-side arms having measuring means on corresponding ends thereof and ruling pens on the other ends, said arms having longitudinal slots therein, and means pivotally connecting said arms together intermediate their ends comprising a pair of rectangular slide plates opposed to said arms and having corner legs theron extending at right angles therefrom and straddling said arms, a pair of slide blocks in said slots with which said slide plates are engaged, a pivot spindle extending through said plates and slide blocks and connecting said plates and blocks, a nut on one end of the spindle, a rectangular bowed leaf spring opposed to one side plate between said nut and plate, and keeper lugs extending from said one plate at a right angle thereto and at opposite sides of said spring to prevent said spring from turning on said one plate.

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