April 3, 1951 M. S. CADE ET AL 2,547,745

DIVIDING AND SCALING INSTRUMENT

Filed Sept. 16, 1947

3 Sheets-Sheet 1

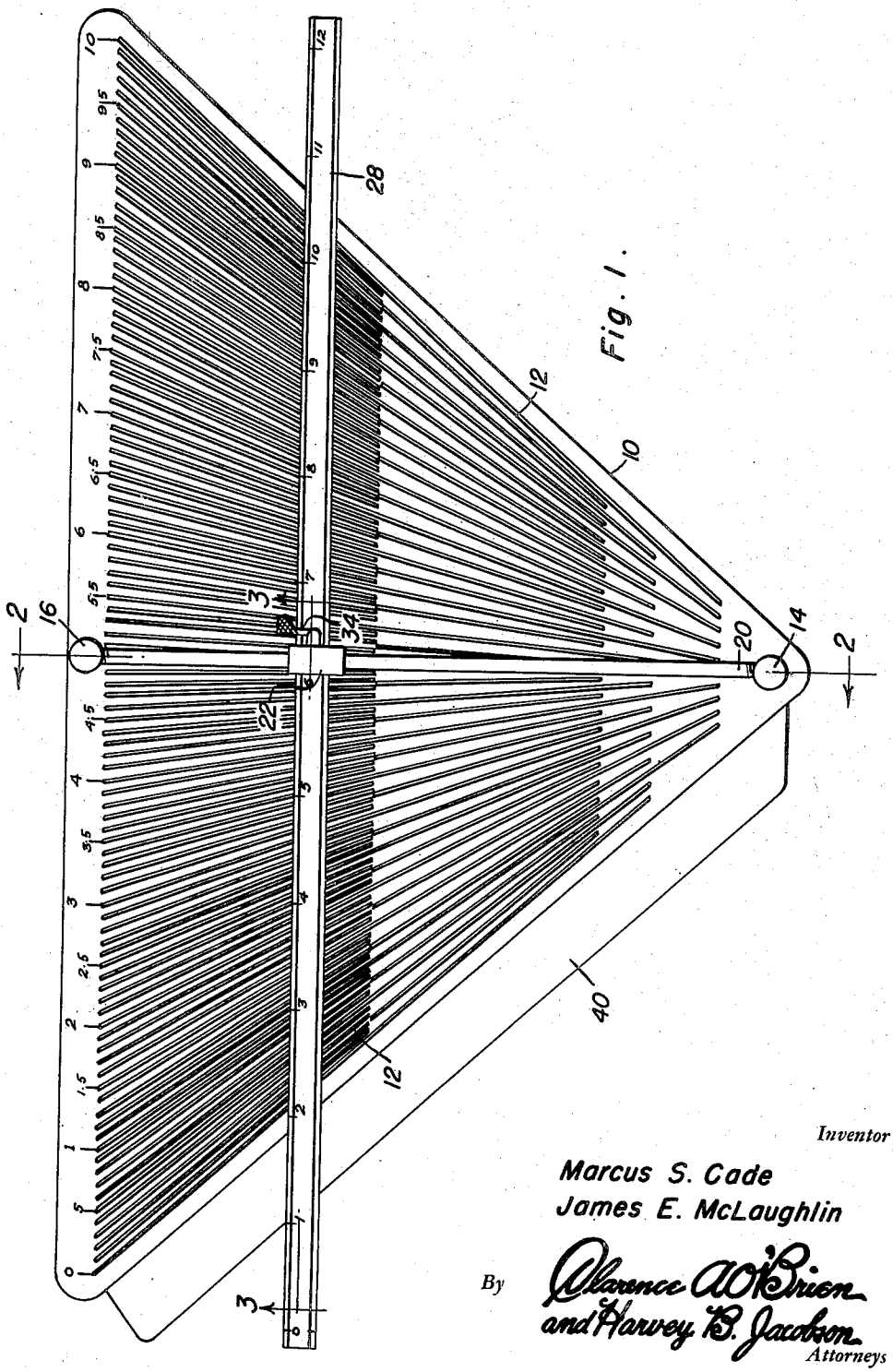


Fig. 1.

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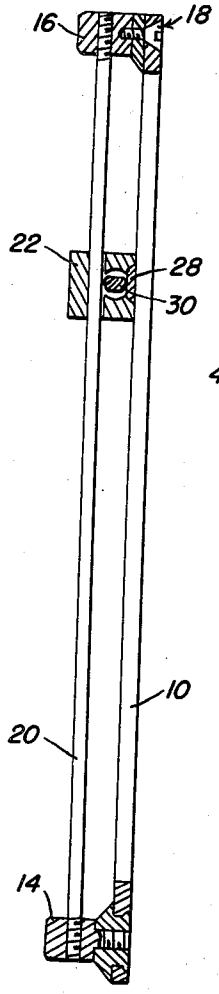
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3 Sheets-Sheet 2

Fig. 2.



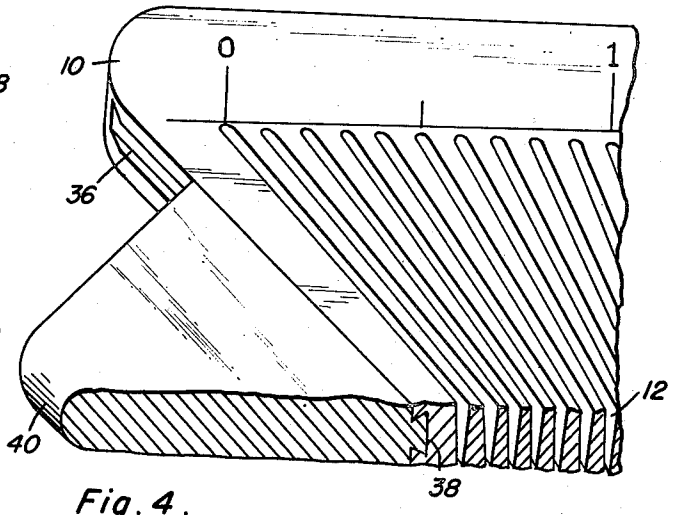


Fig. 4.

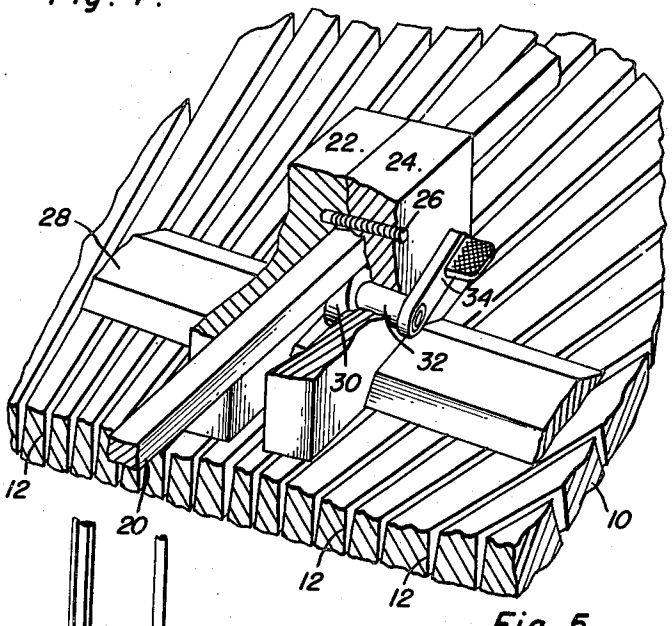


Fig. 5.

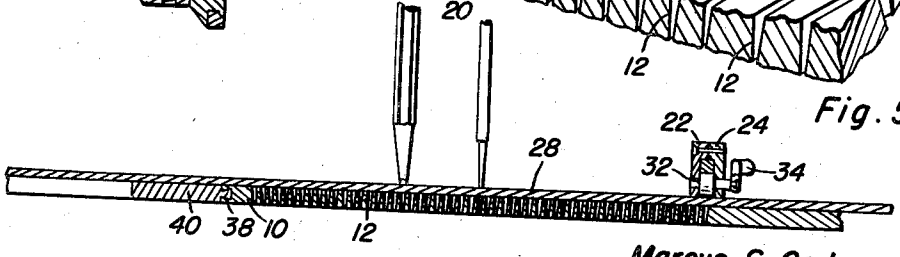


Fig. 3.

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3 Sheets-Sheet 3

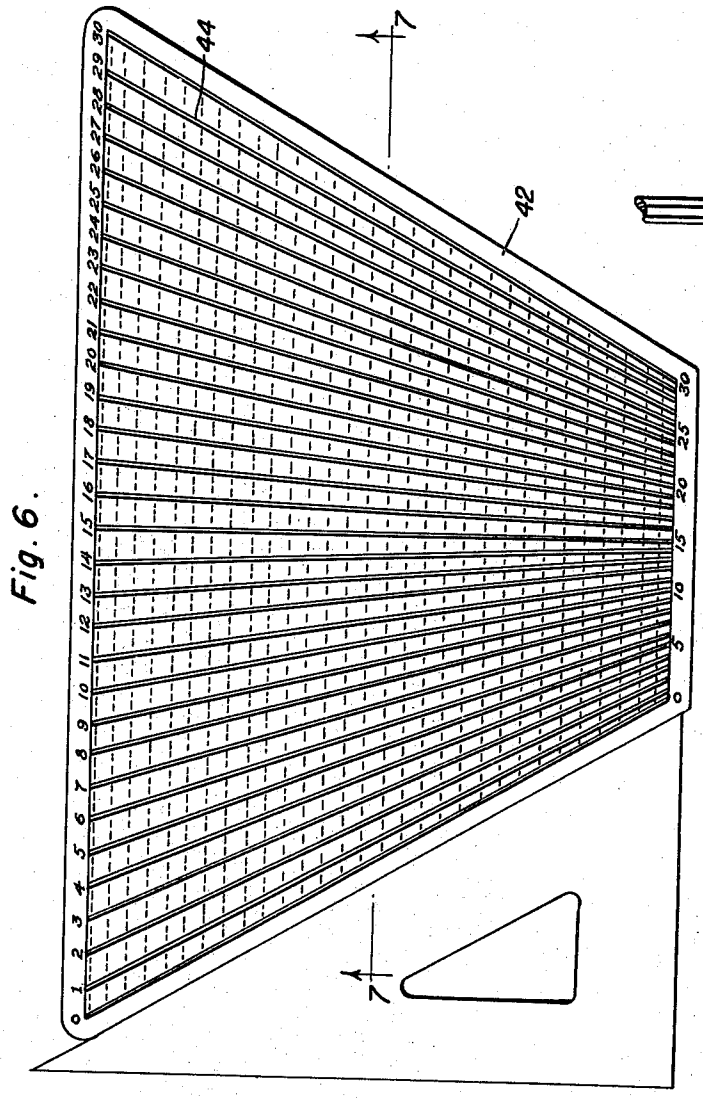


Fig. 6.

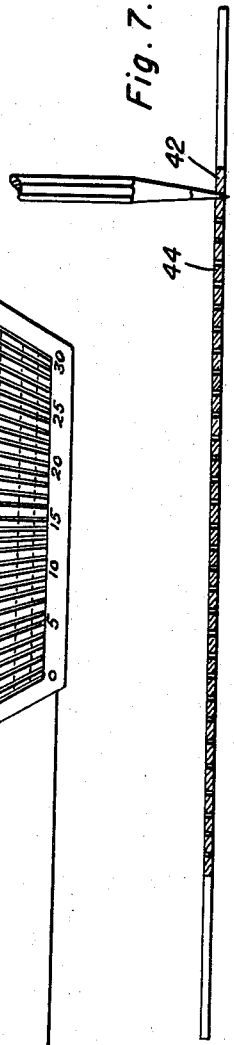


Fig. 7.

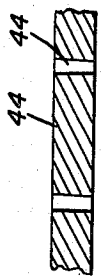


Fig. 8.

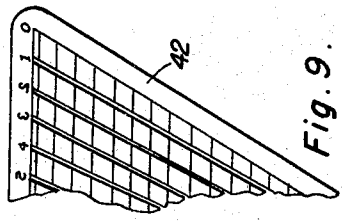


Fig. 9.

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UNITED STATES PATENT OFFICE

2,547,745

DIVIDING AND SCALING INSTRUMENT

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Chillicothe, Ohio

Application September 16, 1947, Serial No. 774,394

2 Claims. (Cl. 33—1)

1

This invention relates to novel and useful improvements in drafting devices and instruments, and has for its general purpose to establish parallel tangent lines and to divide any known distance into substantially any number of equal elements.

Another object of this invention is to provide means for carrying out the above mentioned function.

Another purpose of this invention is to provide means in a body member for convergingly receiving scribing means therein.

Another purpose of this invention is to provide means for locking and retaining a scale over said converging scriber receiving means.

Another purpose of this invention is to provide a simple device of the character described which is readily manufacturable and which will economize considerably in time, by utility thereof.

Ancillary objects and features of novelty will become apparent to those skilled in the art, in following the description of the embodiments of the present invention, illustrated in the accompanying drawings, wherein:

Figure 1 is a plan view of the first form of the invention;

Figure 2 is a longitudinal sectional view taken on the line 2—2 of Figure 1 and in the direction of the arrows;

Figure 3 is a sectional view illustrating details of construction and taken on the line 3—3 of Figure 1;

Figure 4 is a perspective view of a detail of construction;

Figure 5 is a fragmentary perspective view with portions broken away to illustrate details of construction and further exemplifying operative features of the invention;

Figure 6 is a plan view of a second embodiment of the invention;

Figure 7 is a transverse sectional view of the invention shown in Figure 6;

Figure 8 is an enlarged fragmentary sectional view showing the pencil or other scriber receiving means; and

Figure 9 is a fragmentary perspective view indicating the reversibility of this embodiment of the invention.

Referring now in detail to the illustrated preferred embodiments of the present invention, like reference characters are used throughout to indicate similar elements.

This invention has been developed to provide a device for dividing and scaling purposes. As is known, radii of a circle diverge a distance which

2

is proportional to the length of the said radii. Consequently, any tangent to the circle may be divided into equal parts by striking a plurality of equally spaced radii therethrough. Of course, if it is desired to portion the tangent to a greater or lesser number of parts, the number of radii employed need only be adjusted. It is on this principle that the instant invention has been developed.

The body member 10 composed of any suitable material, preferably transparent, is provided with a plurality of slots 12. These slots are arranged so that, if extended, they would intersect at a common point. Otherwise spoken, the said slots 12 may be considered radii of a circle. Any number of desired slots may be provided in the body member 10, in accordance with the prerogatives of the manufacturer.

A pair of posts 14 and 16, respectively, is provided, extending substantially centrally of the said body member 10. These posts may be conventionally secured to the said body member through the utility of any suitable means such as the screw threaded assembly 18 disclosed in Figure 2. A rail 20 extends across the said posts 14 and 16 respectively and is threadedly received therein.

Going now to Figure 5, it will be noted that a support is provided on the said rail 20 and is slidable thereon. This support is preferably composed of a pair of sections 22 and 24 respectively which are secured together by means of countersunk screws 26. The lower portion of each of the said sections 22 and 24 is recessed and preferably recessed in such a manner as to receive a conventional scale 28 therein. Obviously, the scale engages the support and also the upper surface of the body member 10.

Means for locking the scale 28 in a selected position along the longitudinal axis of the said rail 20 is provided. This means is preferably a simple cam 30 positioned on the end of a small shaft 32 which extends through the sections 24. An actuating lever 34 may be extended from the said shaft 32 for facility in operation. Due to the shape of the said cam, upon a selected position of the actuating handle 34, the scale 28 will be biased against the body member 10 and also the support will be locked to the said rail 20. It is noted at this point that the word "scale" is utilized for illustrative purposes only and that other members may be substituted in lieu thereof such as a conventional straight edge.

In utility of the invention, a straight edge may be placed against one of the walls of the body

member 10. If desired, a dovetail slot 36 may be provided in the edge member of the said body member for receiving a complemental tongue 38 therein. This tongue would be provided on a suitable datum element 40 for facility in operation.

Suitable indicia are fixed to the body member wherever found desirable and it is noted that it is within the purview of the present invention to utilize both sides of the body member as working surfaces. Also, if desired, the slots 12 may be tapered or straight in accordance with manufacturing prerogatives.

In use of the device the scale 28 is employed as an aid to divide distances into equal increments. For example, if a distance of one inch is to be divided into fifteen equal parts, the scale 28 is moved upwardly from the position shown in Figure 1 until the marking line adjacent the "2" on the scale is superposed on the groove extending from the zero at the top of the body member and the "3" on the scale 28 is superposed on the groove extending from the marking 1.5 on the body member. Then each groove between these provides a scriber receiving guide for a marking to provide the necessary separation points for the increments.

Going to the embodiment of the invention shown in Figure 6, there is another body member disclosed, indicated at 42, and having slots 44 therein similar to the said slots 12.

This particular embodiment of the present invention is extremely simple in construction, and consequently very inexpensive to manufacture. It is simply a flat body member having the slots 44 therein and suitable indicia at appropriate places on the said body member. For facility in operation, lines which are substantially transverse to the general arrangement of slots may be provided. Also, it is within the purview of this invention to place lines or scriber markings adjacent or even in lieu of the slots to further assist in facility of operation.

While there has been described and illustrated the preferred embodiment of the present invention, the operation of the invention is deemed quite obvious from the structure and functions set forth in both the objects and formal specification. It is apparent, however, that various departures may be made from the invention without departing from the spirit thereof. Accordingly, limitation is sought only in accordance with the scope of the following claims.

Having described the invention, what is claimed as new is:

1. A drafting instrument comprising a body member having converging grooves therein, a rail secured to said member in spaced relation therewith, a support slidably received on said rail, recesses in said support, a scale in said recesses, cam means in said support operably engaging said support and said scale for locking said scale against said body member.

2. A drafting instrument comprising a body member having a plurality of converging grooves for sectioning a line into a number of equal parts, and means for establishing one or more lines parallel to said line including a rail secured to said body member and spaced from the upper surface thereof, a support having a recess, said support being slidably disposed on said body member with said rail disposed in said recess, a scale disposed on said body member and extending through said recess being located transversely of said rail, a cam lock member rotatively mounted in said recess, a pivot pin mounted in said support for rotation having said cam lock member carried thereby, and said cam lock member engaging said rail and said scale pressing said scale firmly against said body member.

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