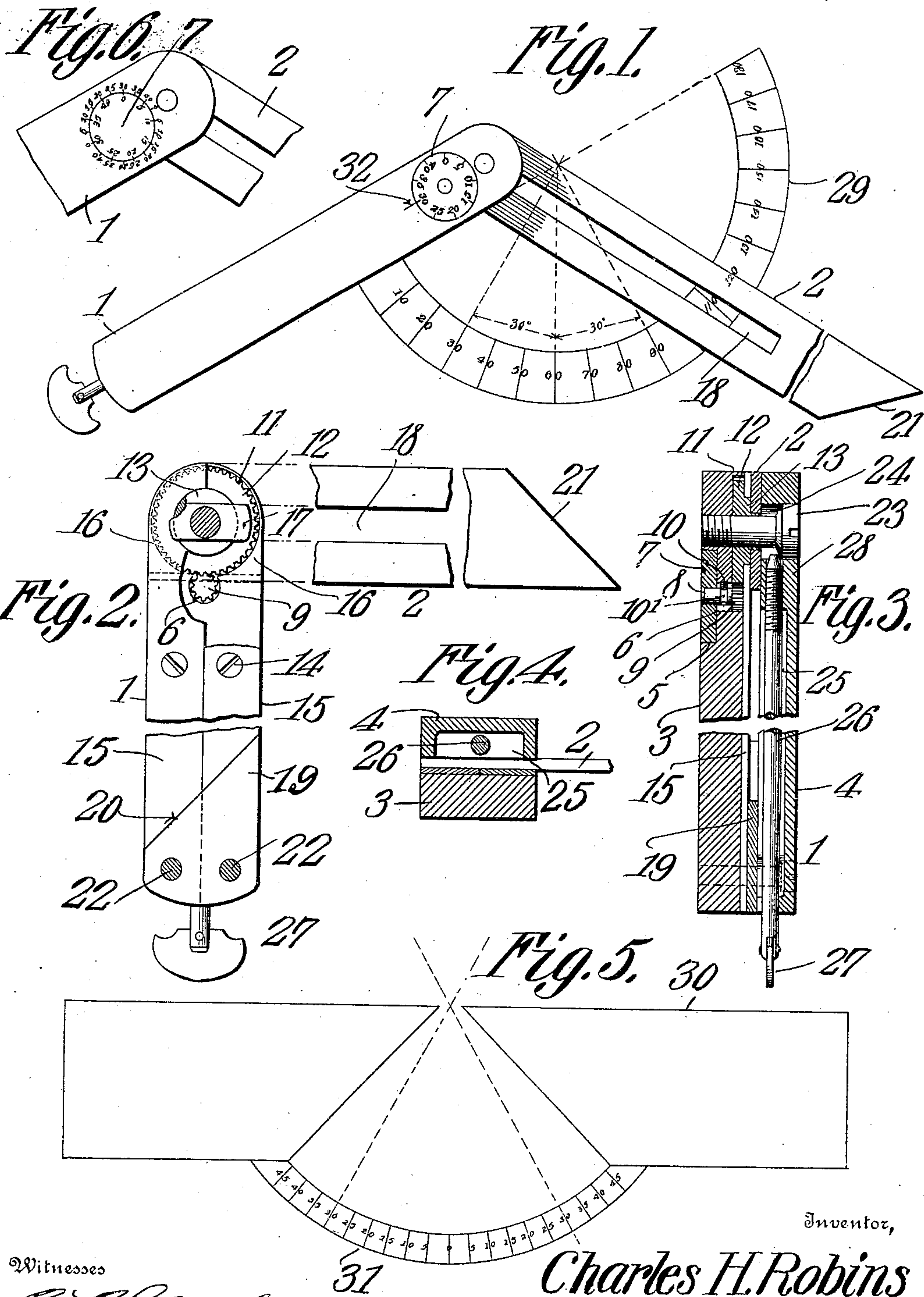


C. H. ROBINS.
DRAFTING TOOL.
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903,779.

Patented Nov. 10, 1908.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES H. ROBINS, OF COEUR D'ALENE, IDAHO.

DRAFTING-TOOL.

No. 903,779.

Specification of Letters Patent.

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REISSUED

To all whom it may concern:

Be it known that I, CHARLES H. ROBINS, a citizen of the United States, residing at Coeur d'Alene, in the county of Kootenai and State of Idaho, have invented a new and useful Drafting-Tool, of which the following is a specification.

This invention relates to instruments for measuring and determining angles.

The invention has especial reference to such instruments for use in connection with miter boxes for taking angles and indicating the degree of the bi-secting line of such angle, or the degree on which the miter saw would be set to cut the joint of such angle.

The invention consists in an improved instrument of this character constructed and arranged as herein set forth and claimed.

Referring to the accompanying drawings, in which like parts are designated by similar characters, Figure 1 represents an instrument constructed in accordance with this invention, shown as set for use in connection with an ordinary form of protractor. Fig. 2 is a view in elevation and partly broken away of the measuring instrument. Fig. 3 is a view in longitudinal section showing the interior construction of the instrument. Fig. 4 is a detail view in cross section of one end of the instrument. Fig. 5 is a diagrammatic view of a miter box base provided with a protractor to illustrate the use of the instrument. Fig. 6 is a detail view with parts broken away, showing a modification of the invention.

The measuring instrument is constructed with a handle 1 and a blade 2 hinged thereto. The handle is formed of two members 3 and 4, the member 3 being preferably solid but may be hollow for the sake of lightness, if desired. The member 3 is provided adjacent to one end with a circular recess 5 and a smaller circular recess 6 communicating with said circular recess 5, and in said circular recess 5 is located a dial 7 mounted on a shaft 8 having at its rear end a pinion 9, the parts being held in recesses by a pin 10 engaging the circular slot 10' in the pin 8. The member 3 is further provided with a circular recess 11 opening into the recess 6 and in the recess 11 is located a gear wheel 12 engaging and meshing with the pinion 9. The toothed wheel 12 is formed with a circular head 13. Secured on the member 3 by means of screws 14 are two plates 15 having at their outer ends semi-circular projections

16 which encircle the head 13 of the toothed wheel 12. The head 13 of the toothed wheel 12 is formed with an oblong angular lug 17 and the blade 2 is connected therewith by a slot 18 in said blade fitting over the lug 17 and adapting the blade 2 to be slid endwise thereon. Between the members 3 and 4 at the rear end of the handle is located a plate 19 having a diagonal edge 20, as shown in Fig. 2, against which is adapted to rest the diagonal edge 21 of the blade 2 when it is in closed position in the handle. The members 3 and 4 are secured together at their rear end by screws 22 passing through the members 3 and 4 and the plates 19 and 15. In the outer end of the handle is located a screw 23 having its head mounted in a circular recess 24 in the member 4 with the shank of said screw passing through the lug 17, the toothed wheel 12 and the member 3.

The member 4 is formed with a hollow or cored out recess 25 in which is located a rod 26 having a handle 27 at one end and having its forward end engaging a lug 28 in the member 4 by means of a screw thread. The blade may be locked in adjusted position by screwing the rod 26, its outer end impinging against the under side of the head of the screw 23 and thereby clamping together the several parts which are mounted on the screw thread 23.

In Fig. 1 is shown a diagrammatic protractor 29 to illustrate the use of the instrument, and in Fig. 5 a miter box 30 and a protractor 31 to also indicate the use of the instrument. By having the blade 2 slotted, as set forth, the blade may be adjusted and moved backwards and forwards on the lug 17 and may be swung to open or closed position, and when not in use may be closed into the handle with its diagonal end 21 resting against the diagonal edge 20 of the plate 19.

To indicate the use of the instrument as shown in Fig. 1, it is set at an angle of 120° which is bisected by the dotted line passing through 60°. As 60° is 30° from 90° at a right angle, the miter box would set on 30° to cut molding or other material to make the same number on this angle. This is shown by the dial 7 which in the position shown to which the blade 2 has been moved or set brings the figure 30 opposite the indicating line 32 on the handle. The dial in order to accurately obtain these measurements is provided on its surface adjacent to its periphery with numbers from zero to forty-five. It

will thus be seen that to indicate the degree of angle at which molding should be cut, the tool should be placed in position in the angle and the figure on the dial will indicate the degree on which to set the miter saw.

The illustration in Fig. 5 indicates the use of a miter box with a diagrammatic protractor numbered by degrees at square cut and marked in opposite directions. Using the instrument with this protractor and the miter box, the degree can be obtained as herein before set forth, on which to set the miter saw. By means of this invention the degree on which to set the miter box to cut material to fit any angle greater than 90° can be obtained.

In the modification shown in Fig. 6, two sets of figures from 0 to 45, one for each 90° are arranged on the handle in a circle about the figures on the dial and are for the purpose of indicating the bisecting line of an angle, when it is not practical to use a miter box, as in framing timbers, and so forth. The outside figures on the left of the dial are for use with angles greater than right angles, and those on the right for less than right angles.

The tool is shown as open to 120° , the blade being in the position on the diagrammatic protractor 29 as indicated in Fig. 1, the number indicated on the dial 7 opposite the figure 0 in the outside circle of figures, being 30° . To bisect the angle, close the blade till the figure 30° on the dial is moved around and is located opposite the 30° in the outside circle of figures on the left of the dial. To

bisect any angle move the blade towards the handle, till the figure indicated on the dial is moved opposite the corresponding figure in the outside circle of figures.

What is claimed is:—

1. A measuring instrument of the character described consisting of a handle formed of two longitudinal plates secured together; a gear mechanism located and inclosed within one of said plates and having a rotary dial located in the face of said plate; a pair of longitudinal plates secured to the other side of said plate and covering said mechanism; and a slotted blade hinged to the handle and gear mechanism and slidably connected with the latter.

2. In a measuring instrument of the class described, a handle member provided with a recess at one end, a gear mounted within the recess and having on one face a projecting boss, a headed screw extending through the handle and on which the gear is free to rotate, an endwise movable locking member for engaging the head of the screw and clamping the gear, an indicating disk operatively connected to the gear, and a blade having a longitudinally disposed slot for the reception of said boss.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CHARLES H. ROBINS.

Witnesses:

ISAAC THOMPSON,
LOUIS OPPER.