

No. 692,302.

Patented Feb. 4, 1902.

J. M. KELLY.

MITER BOX.

(Application filed Sept. 11, 1901.)

(No Model.)

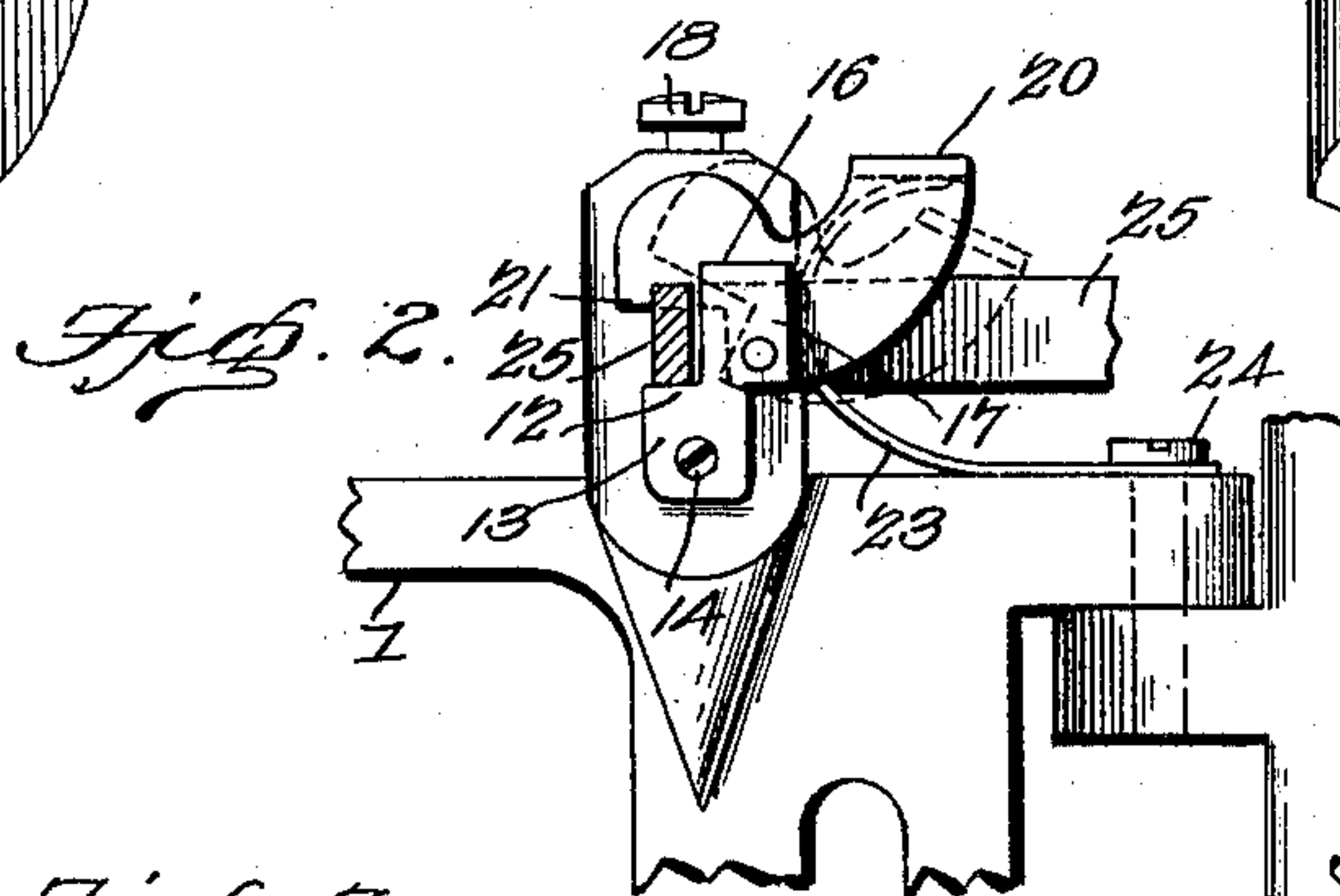
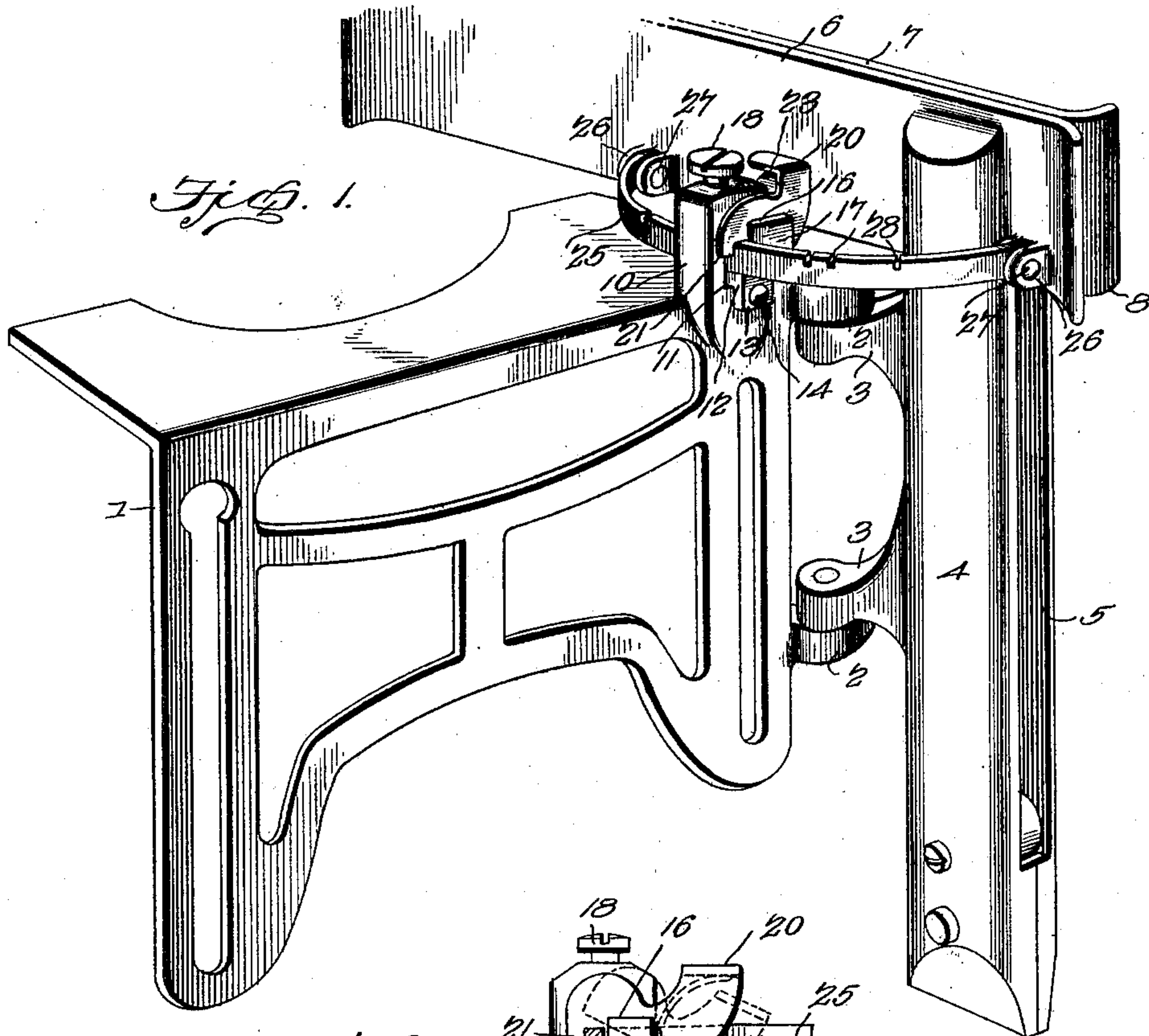
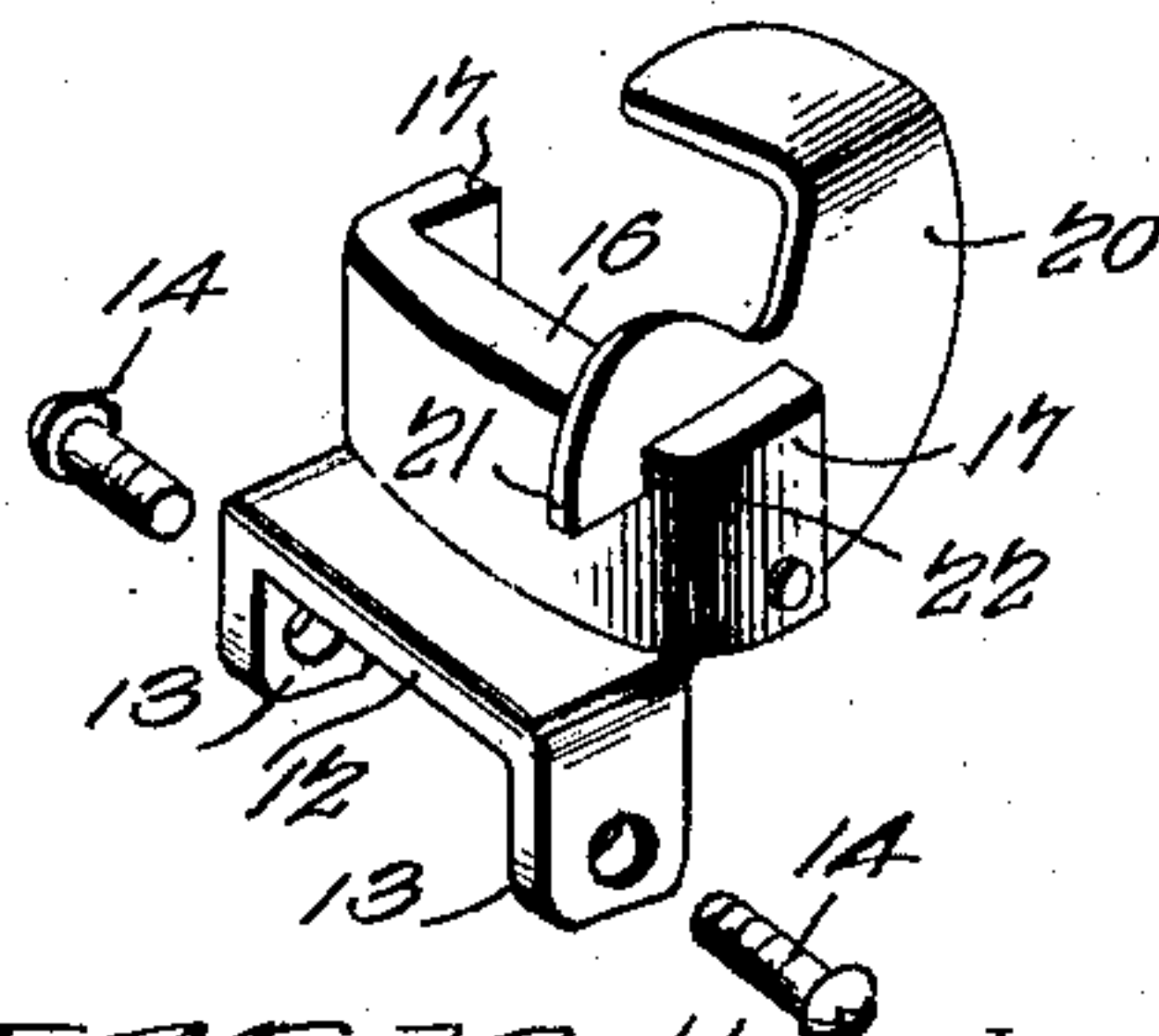
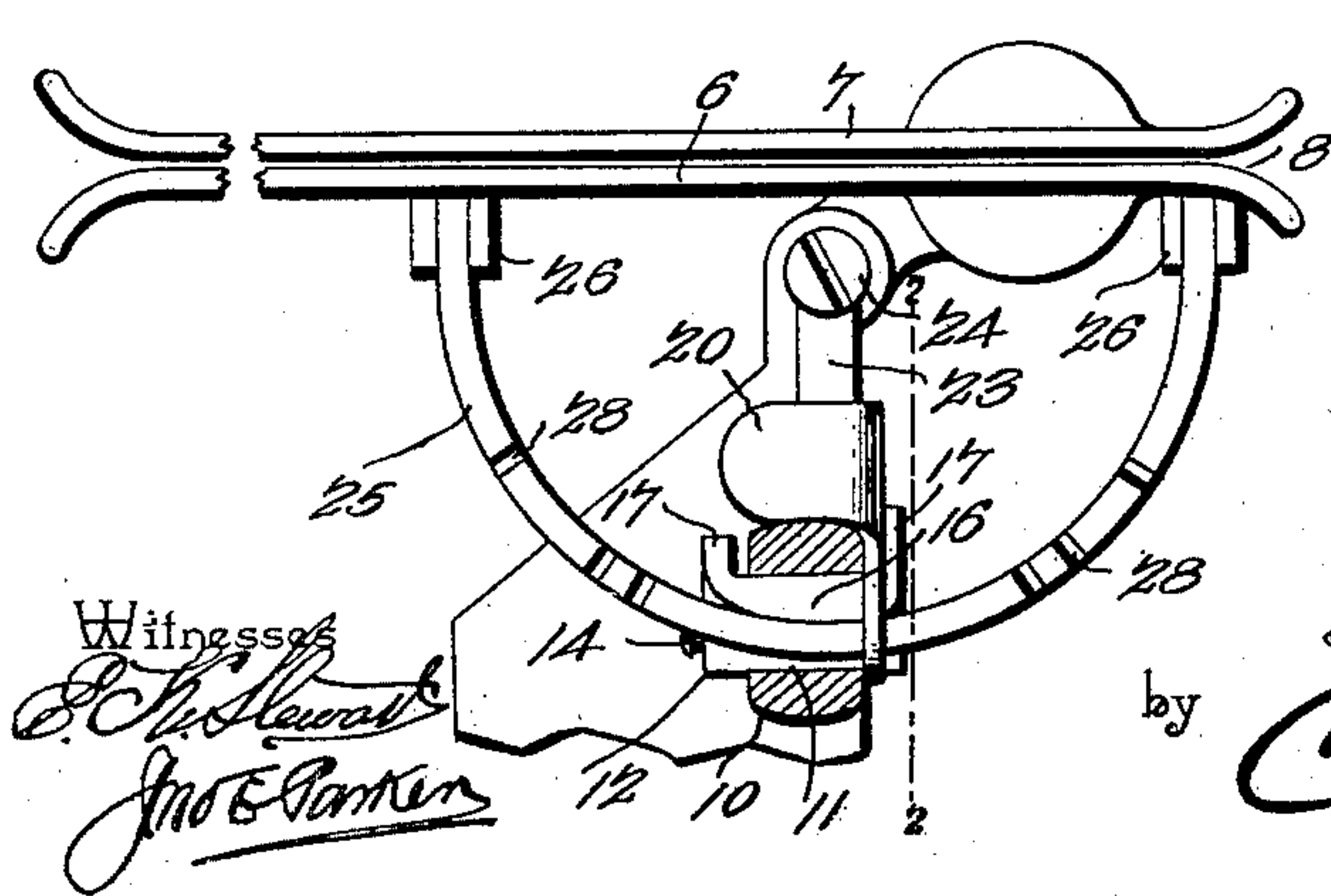


Fig. 3.

Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES M. KELLY, OF HOUGHTON, MICHIGAN.

MITER-BOX.

SPECIFICATION forming part of Letters Patent No. 692,302, dated February 4, 1902.

Application filed September 11, 1901. Serial No. 75,056. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. KELLY, a citizen of the United States, residing at Houghton, in the county of Houghton and State of Michigan, have invented a new and useful Miter-Box, of which the following is a specification.

My invention relates to certain improvements in devices employed for the cutting of material to form miter-joints, and has for its principal object to provide a device of this class with mechanism for readily and easily effecting the adjustment of the angular positions of the base and saw-guide, so that a cut may be made at any desired angle.

A further object of the invention is to provide for closer and more accurate adjustment of the parts if at any time it should become necessary to alter the angle of cutting to one or two degrees or any fractional part thereof.

A still further object of the invention is to so construct the saw-guide as to render it capable of use from either side.

With these and other objects in view the invention consists in the novel construction and combination of parts more particularly described hereinafter, shown in the accompanying drawings, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view of a miter-cutting device constructed and arranged in accordance with my invention. Fig. 2 is a sectional elevation of a portion of the device on the line 2-2, Fig. 3. Fig. 3 is a plan view of the device, partly in section. Fig. 4 is a detail perspective view of the adjusting and locking mechanism.

Similar numerals of reference indicate corresponding parts throughout the various figures of the drawings.

1 designates the base or bed of the device, constructed, preferably, of cast metal and having two portions extending at right angles to each other, so that it may be placed upon the edge of the stock to be cut, or it may be secured in position to a guiding-board forming part of a miter-box. On one end of the base are lugs 2, to which are pivoted similar lugs 3, which project from the vertical standard 4 of a saw-guide made in two sections and provided with a centrally-arranged

slot 5 to permit of the movement of the teeth of the saw. The upper end of the saw-guide consists of two parallel plates 6 and 7, spaced for a distance greater than the thickness of the saw-blade and serving as a guide therefor. The opposite ends of the plates 6 and 7 are outwardly and oppositely flared to form enlarged mouths for the guidance of the saw between the plates, and these flaring mouths are formed at both ends of the plates in order to permit of the entrance of the saw from either end.

Formed integral with the base 1 is a vertically-extended block or boss 10, provided with a transversely-extending slot 11, in which is fitted an adjustable block 12, provided at its opposite ends with depending ears 13, having perforations threaded for the reception of adjusting-screws 14, the inner ends of which bear against the sides of the block 10, and the arrangement being such that the block 12 may be adjusted lengthwise in the slot by loosening one of the screws and tightening up the opposite screw, the limit of adjustment being governed by the distance between the inner sides of the ears 13 and the outer walls of the block 10, and this distance being sufficient merely to effect an adjustment over a short angular distance, in practice not more than three or four degrees, and being for the purpose of obtaining a very accurate angular adjustment for only a fraction of a degree, any greater adjustment being effected by the mechanism described hereinafter.

To the block 12 is secured a vertical plate 16, having laterally-extended ears 17, or the whole may be formed of an integral piece of metal stamped into proper form. The top of the block 10 is provided with a threaded opening for the passage of a locking-screw 18, adapted to engage with the upper surface of the portion 16 and lock the same in any position to which it may be adjusted, and in some cases the block 16 may be separate from the block 12 and adjusted by hand to any desired position and locked in said adjusted position by the screw 18.

Pivoted to one of the ears 17 is a locking-finger 20, having a thin engaging edge 21, passing through a slot 22 in the block 16 and provided with a laterally-bent finger-piece,

against the under surface of which bears a plate-spring 23, one end of which is secured in position by a screw 24, forming one of the pintles for connecting the saw-guide to the
5 base portion of the device.

To the saw-guide 6 is secured a segment 25, the opposite ends of which extend between divided ears or lugs 26, formed on the saw-guide, and are connected thereto by pins 27.
10 The upper edge of the segment is provided with a series of notches 28, placed at varying distances from each other and adapted to be engaged by the edge 21 of the locking-finger 20. The center of the segment is coincident
15 with the pivot-pintles of the saw-guide and base, as shown more clearly in Fig. 3.

In using the device the base 1 is held against the stock to be cut, and the saw-guide is adjusted to any suitable angle by depressing
20 the finger-piece 20 against the action of the spring 23 and moving the saw-guide until the desired angle has been reached, the finger on being released engaging with the proper notch and firmly locking the saw-guide at the proper
25 angle. The adjustment may be changed without loss of time and will enable the operator to cut stock at any desired angle without the usual expense of time and trouble necessitated in the adjustment of devices of
30 similar class having locking-screws which must be loosened and tightened at each adjustment.

In order not to unduly increase the number of locking-notches on the segment and so
35 interfere with ready adjustment at the angles of cutting more commonly in use, the number of notches is reduced as much as possible; but delicate adjustments may be had by the movement of the locking-finger and its
40 carrier 16, as hereinbefore described.

Various modifications of the structure herein described may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of
45 my invention.

Having thus described my invention, what I claim is—

1. In a device of the class specified, a base having a guiding-slot, a saw-guide pivoted to the base, a segment having its opposite ends
50 secured to the saw-guide and adapted to the guiding-slot, a block extending through said slot and adjustable lengthwise thereof, and a spring locking-finger carried by said block and adapted to engage the notches of the seg- 55
ment.

2. In a device of the class specified, a base having a guiding-slot, a block adapted to said slot and adjustable lengthwise thereof, a locking-screw for holding said block in adjusted
60 position, a spring-pressed locking-finger pivoted to said block and having its engaging edge passing through a slot in the same, a saw-guide pivoted to the base, and a segment secured to said saw-guide and adapted to the
65 guiding-slot of the base, said segment having in its upper surface notches for the engagement of the finger.

3. In a device of the class specified, the combination of the base, a slotted block 10 thereon, a block adapted to said slot and adjustable
70 lengthwise therein, depending ears forming part of said adjustable block, adjusting-screws 14 in said ears and having their inner ends bearing against the block 10, a locking- 75
finger pivoted to the block, a spring normally tending to depress said finger, a saw-guide pivoted to the base, a segment carried by said saw-guide and adapted to said guiding-slot, said segment having in its upper face a series
80 of notches for the engagement of the locking-finger.

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

JAMES M. KELLY.

Witnesses:

MICHAEL DRURY,
JOHN E. SPROUL.