

No. 694,848.

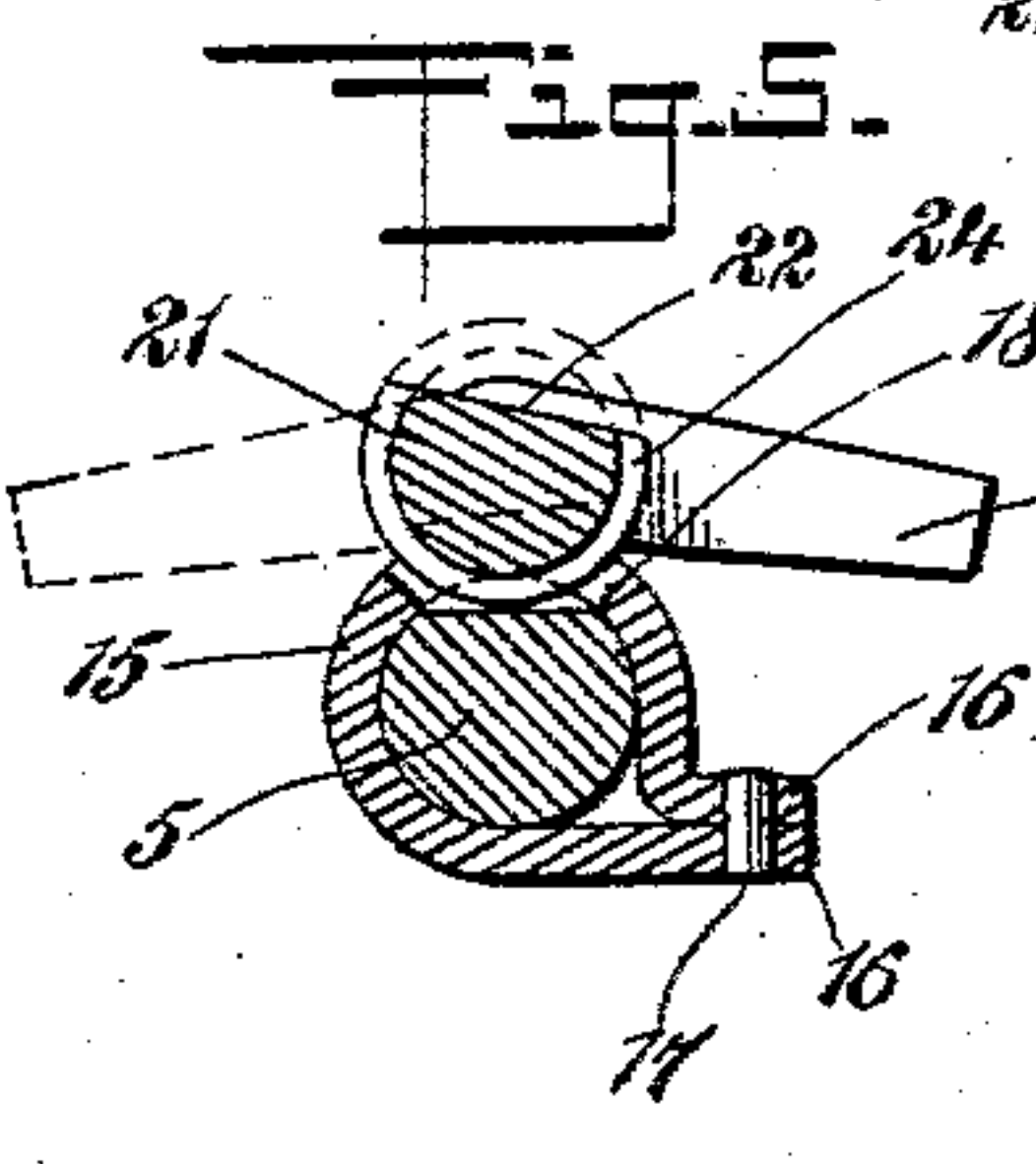
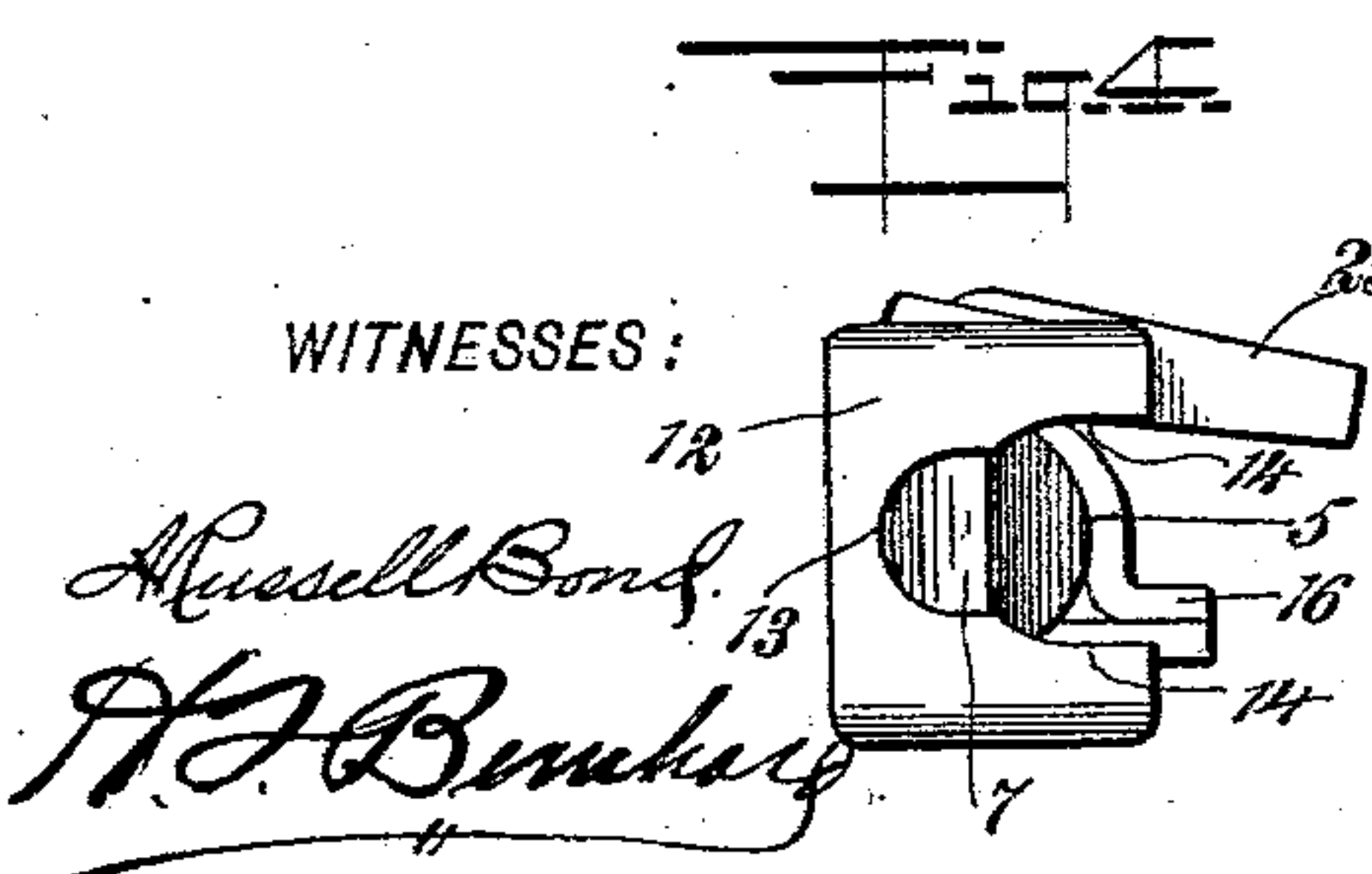
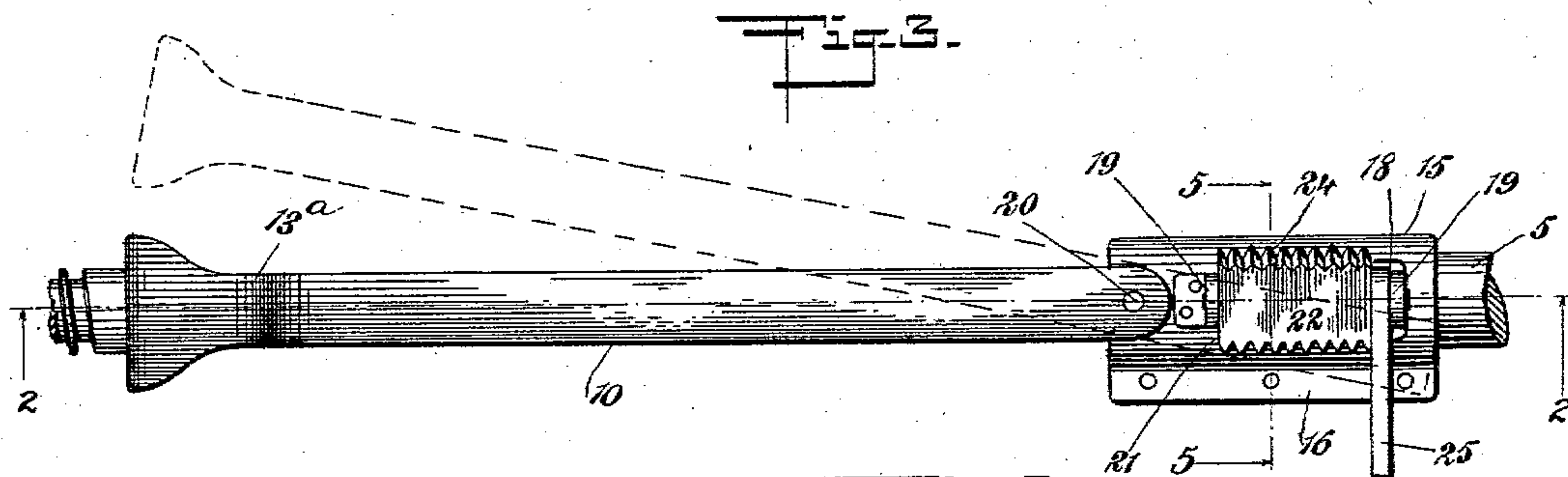
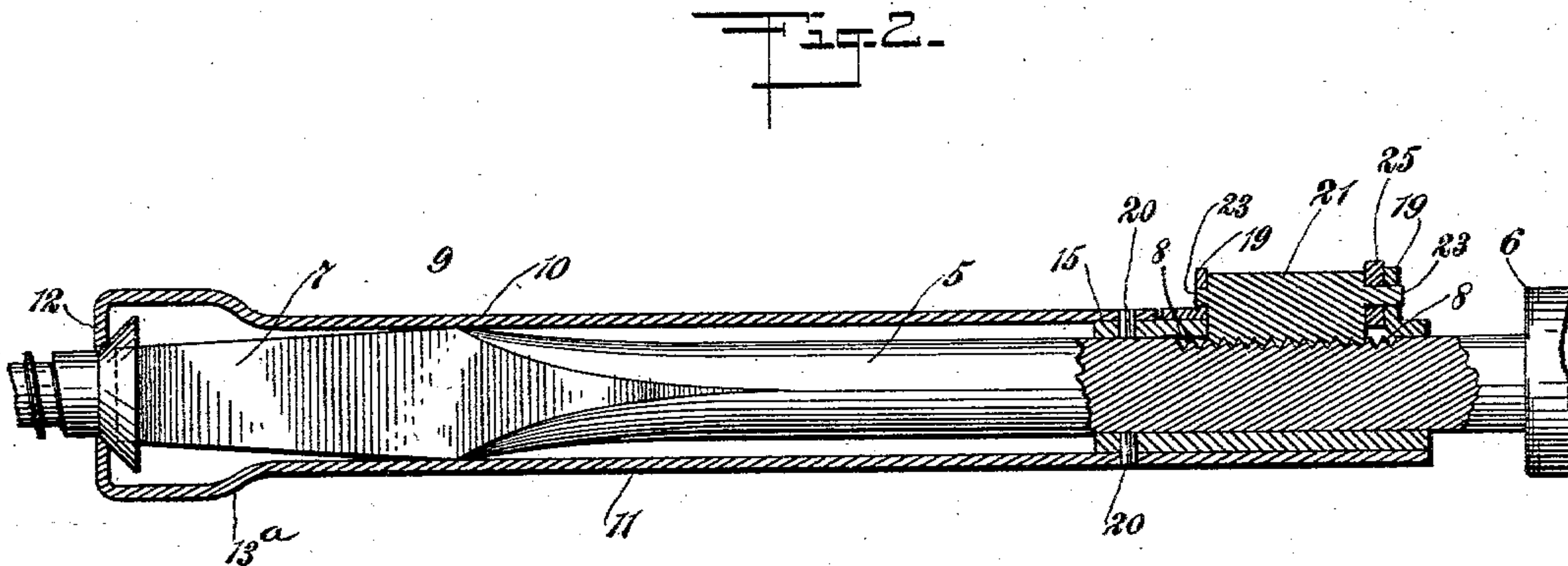
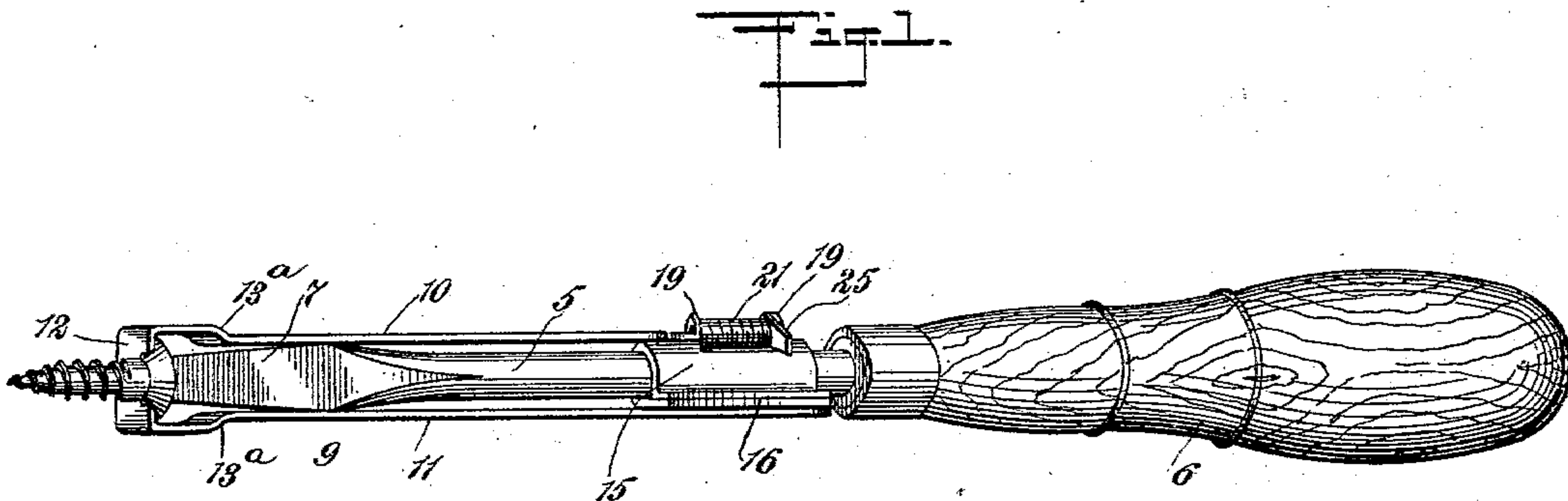
Patented Mar. 4, 1902.

T. A. FARRELL.

SCREW DRIVER.

(Application filed Nov. 25, 1901.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

THOMAS ARTHUR FARRELL, OF CHICAGO, ILLINOIS.

## SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 694,848, dated March 4, 1902.

Application filed November 25, 1901. Serial No. 83,547. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS ARTHUR FARRELL, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Screw-Drivers, of which the following is a full, clear, and exact description.

My invention relates to improvements in screw-drivers; and the primary object that I have in view is the provision of improved means for holding a screw firmly in engagement with a driver-spindle, to the end that such holding means may under certain conditions rotate with the driver during an early part of the operation of inserting the screw, such means being also capable of disengagement in order that the driver may force the screw home into the work.

A further object that I have in view is the provision of simple and effective means for locking the screw-holding element to the driver-spindle and for releasing said parts from such locking engagement in a moment's time.

With these ends in view the invention consists in the combination, construction, and arrangement of parts, which will be hereinafter further described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a screw-driver constructed in accordance with my invention. Fig. 2 is a longitudinal sectional elevation, on an enlarged scale and partly broken away, the plane of the section being indicated by the dotted line 2 2 in Fig. 3. Fig. 3 is a plan view of the improved screw-driver as shown by Fig. 2, the screw-holding frame being shown as in its disengaged position by dotted lines. Fig. 4 is an end elevation of the implement, and Fig. 5 is a transverse section in the plane of the dotted line 5 5 of Fig. 3.

5 designates the spindle of the screw-driver, said spindle being provided at one end with a handle 6 of any usual or preferred construction. The driver-spindle is flattened or pointed in order to form a blade 7, but between the handle 6 and the blade 7 said driver-

spindle is cylindrical in cross-section, as shown by Fig. 5. The cylindrical part of the driver-spindle is provided with a series of transverse teeth or lips 8, which are formed by cutting a series of parallel grooves in the cylindrical surface of the spindle. (See Figs. 2, 3, and 5.)

9 designates the screw-holding frame, the same consisting of side members 10 11 and a cross-bar 12. The side members and the cross-bar are shown by the drawings as being bent from a single piece of sheet metal having the requisite strength and thickness, but it is evident that the screw-holding frame may be constructed of cast metal. The side members 10 and 11 are arranged parallel nearly throughout their length, and these members are offset in opposite directions, as indicated at 13<sup>a</sup>, in order to expand the end portion of the frame, which is joined by the cross-bar 12. This cross-bar forms the head, which is peculiarly constructed for the reception of the heads of the screws. The head 12 lies at right angles to the expanded offset end of the screw-holding frame, and said head is formed with a curved notch 13 and with recesses 14, as shown more clearly by Fig. 4. The recesses 14 produce a wide throat in the head 12, which throat opens through one edge of the head and is in communication with the recess 13. The throat and the recess in the head of the screw-holding frame enable screws of different sizes to be easily adjusted in the frame and to lie in the path of the blade of the driver-spindle.

15 designates a bearing-sleeve which is represented by Figs. 1, 3, and 5 as bent from a single piece of metal into cylindrical form and so as to produce the overlapping flanges 16, said flanges being united together—as, for example, by the rivets 17—and extended beyond the cylindrical outline of the sleeve. The sleeve is provided in its upper side with a longitudinal slot 18, and on the upper side of this sleeve are the upstanding lugs 19, the latter being disposed at the opposite ends of the slot 18. The sleeve 15 and the frame 9 are connected together by any approved means, but, as shown by Fig. 2, I prefer to have the upper member 10 of the frame overlap the sleeve 15, so as to terminate short of the slot 18, whereas the lower member 11 of



said frame is extended for a suitable distance below the under side of the sleeve, preferably the full length of the latter, as indicated by Figs. 1 and 2. The two members 10 and 11 of the frame are pivoted by the pins 20 to the sleeve 15, thus making provision for the adjustment of the screw-holding frame to the inclined position indicated by Fig. 3, although said screw-holding frame normally occupies an aligned relation to the sleeve.

21 designates the locking-block, which is nearly circular in cross-section and is formed with a flat face 22. The end portions of this locking-block are provided with trunnions 23, that are loosely fitted in the upstanding lugs 19 of the sleeve, thus mounting the locking-block pivotally upon the sleeve and in a manner to turn on its axis. The locking-block is formed with a series of segmental teeth 24, which in one position are adapted to extend through the slot 18 of the sleeve and to have interlocking engagement with the teeth 8 of the driver-spindle. This pivoted locking-block is carried by the sleeve, to which is attached the screw-holding frame, and when the block is adjusted to have the desired interlocking engagement with the driver-spindle the sleeve and the frame are made fast with the spindle in order that all the parts may turn or rotate during the operation of placing a screw in position. The locking-block is provided at one end with a handle 25, the same being secured, preferably, to one of the trunnions 23. This handle provides a convenient means for turning said block into a position where its flat face 22 will be presented opposite to the toothed face of the driver-spindle, thus disengaging the teeth of the locking-block from the said driver-spindle and allowing the latter to be turned freely by the handle within the sleeve. At this time the frame which is pivoted to the sleeve may be withdrawn from engagement with a screw that is partly inserted in the work, thus making provision for the free rotation of the spindle in the screw-holding device, whereby the screw may be forced home when the holding-frame is disengaged therefrom.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A screw-driver comprising a non-expandible holding-frame having a cross-head provided with a screw-receiving opening, a sleeve attached to the frame and having non-slidable relation thereto, a spindle fitted loosely in the sleeve and adapted to slide and rotate with relation to the sleeve and the frame, and means for locking the sleeve and the spindle in fixed relation.

2. In a screw-driver, a holding-frame having the side members and the cross-head connecting said members, said cross-head provided with a screw-receiving opening which extends through one edge of the frame, combined with a spindle, and means for holding the spindle and the frame in fixed relation to each other.

3. In a screw-driver, the combination of a sleeve, a spindle fitted loosely in said sleeve, a non-expandible holding-frame having the side members and a notched cross-head, said side members being pivoted to the sleeve and the holding-frame thereby adapted to swing laterally to an inoperative position relative to the spindle, and means for locking the sleeve and the spindle in fast relation to each other.

4. In a screw-driver, the combination of a slotted sleeve, a non-expandible holding-frame connected thereto and provided with a notched cross-head, a spindle provided with a series of transverse teeth, and a toothed locking-block pivoted on the sleeve and adjustable into and from interlocking relation with the toothed portion of the spindle; said locking-block being movable on an axis which is disposed longitudinally of and parallel with the spindle.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS ARTHUR FARRELL.

Witnesses:

ANNA POTIER,  
THOS. DEVENISH.