

No. 675,229.

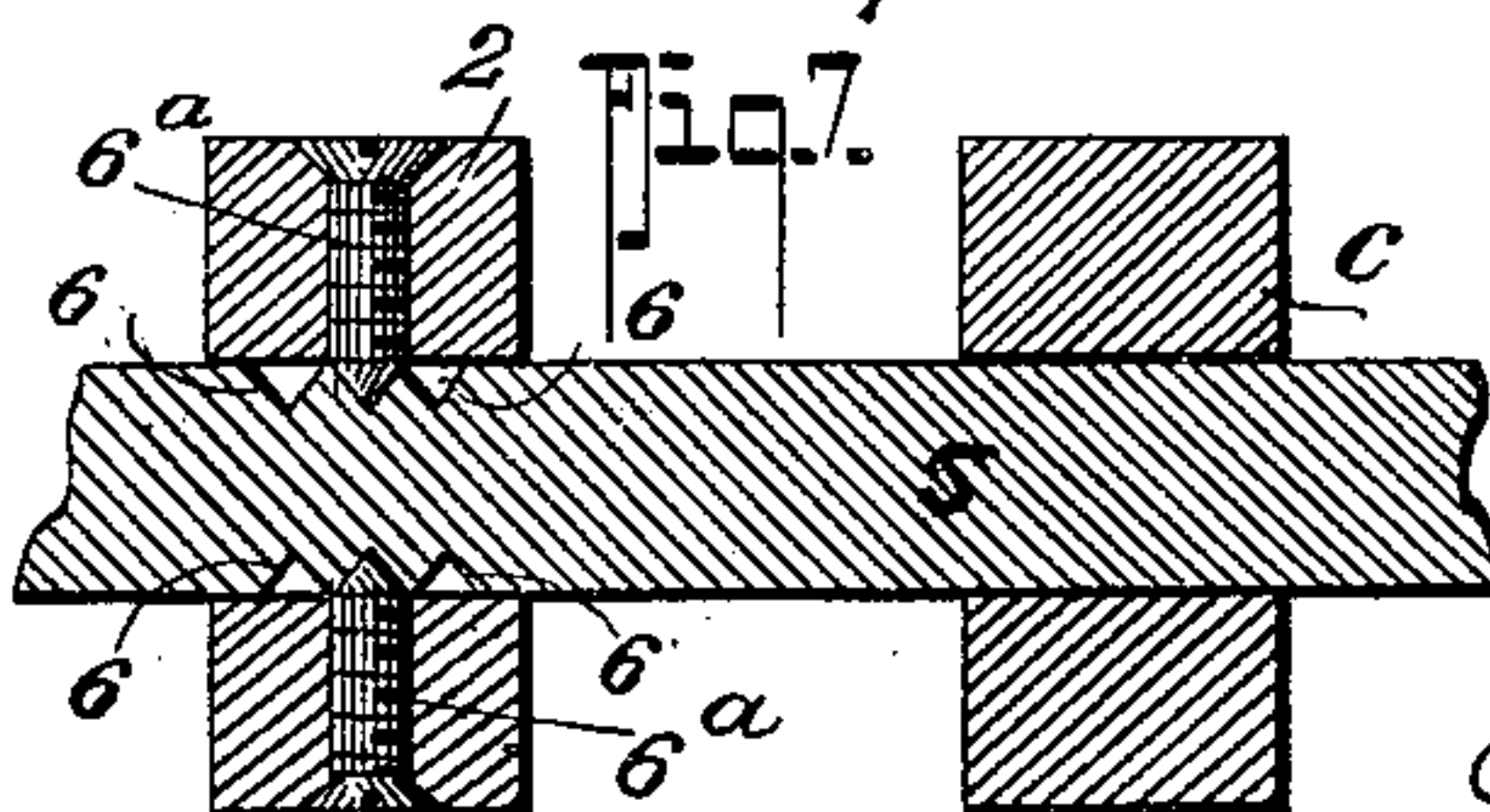
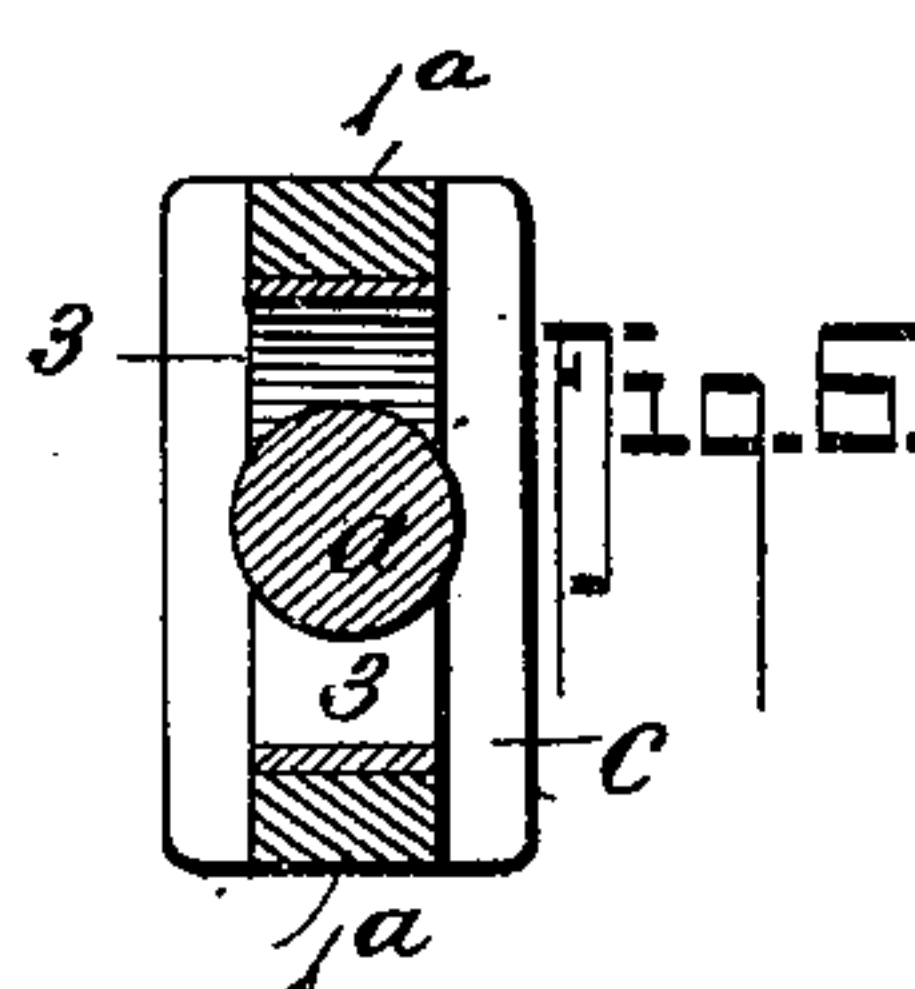
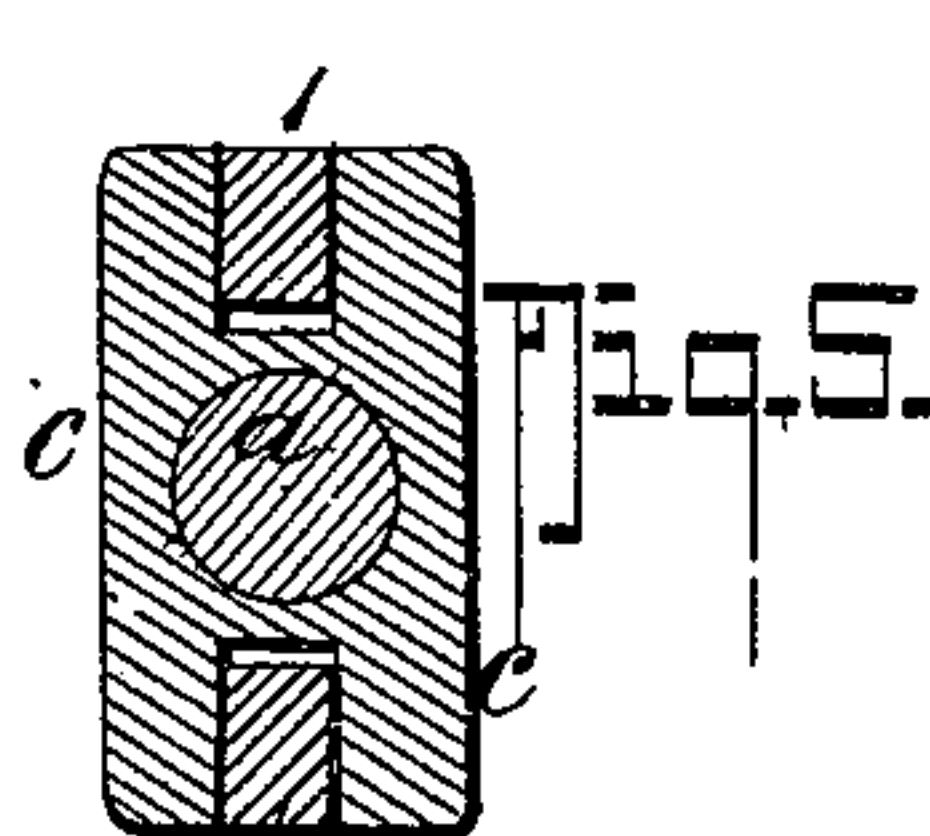
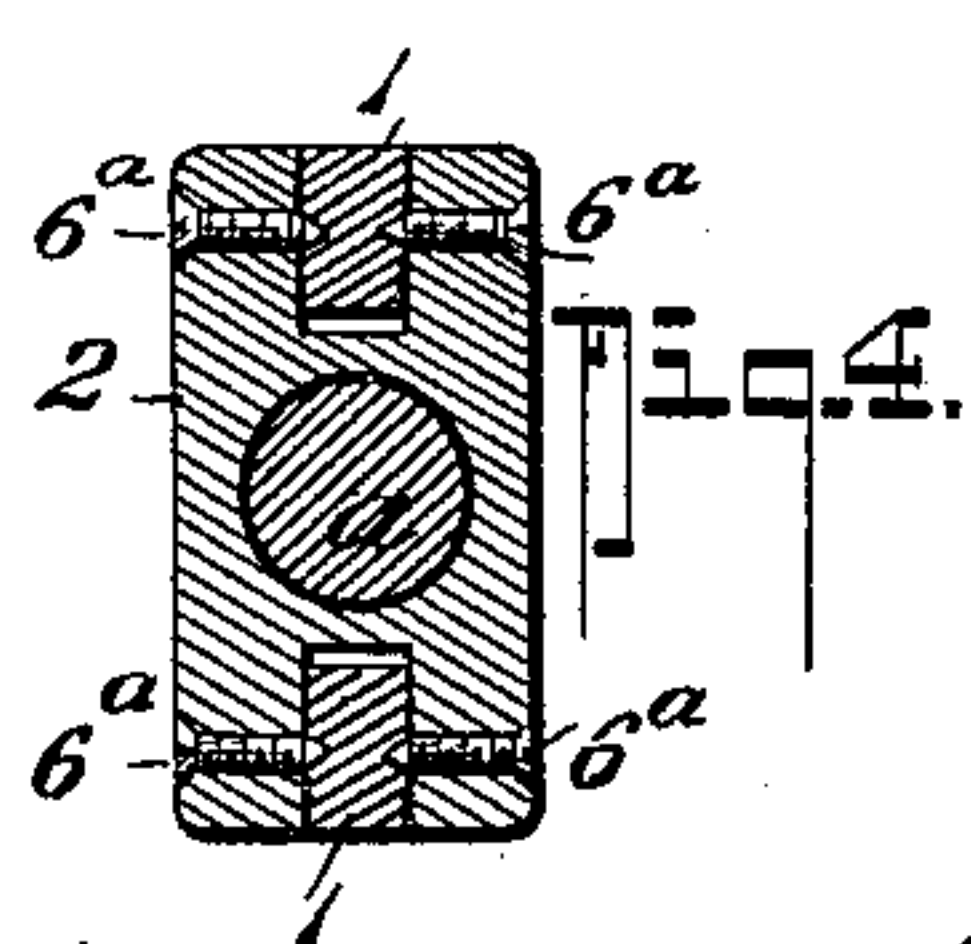
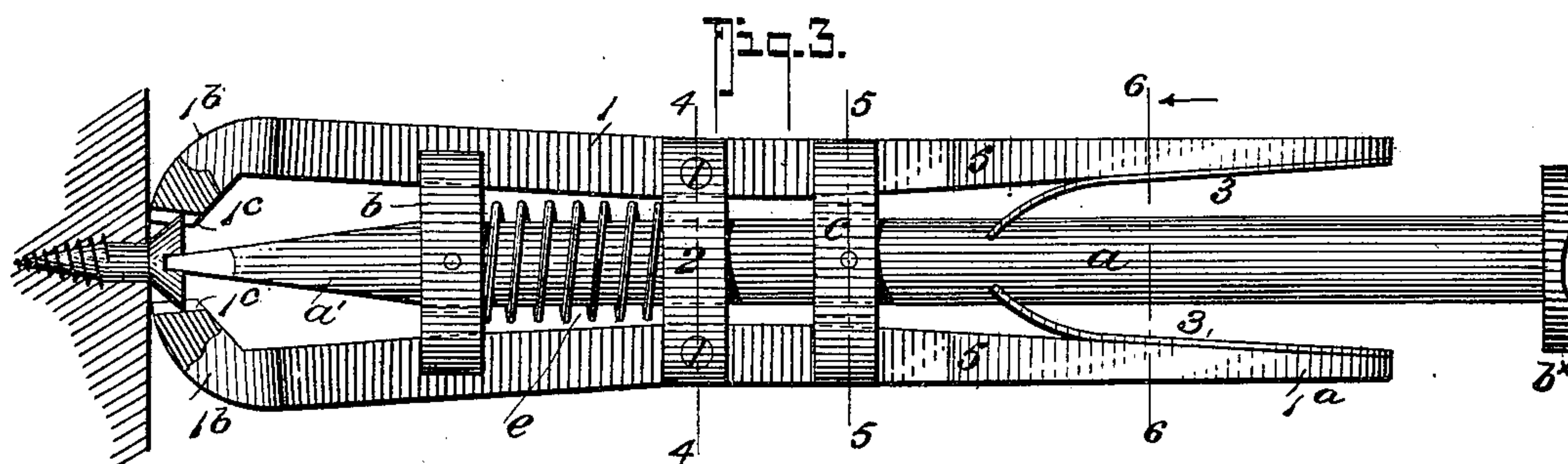
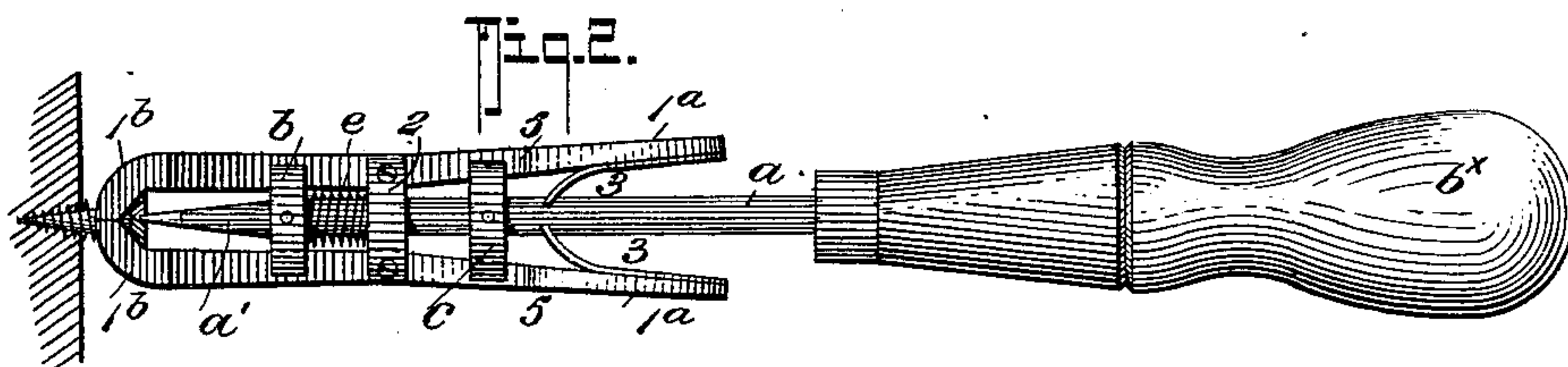
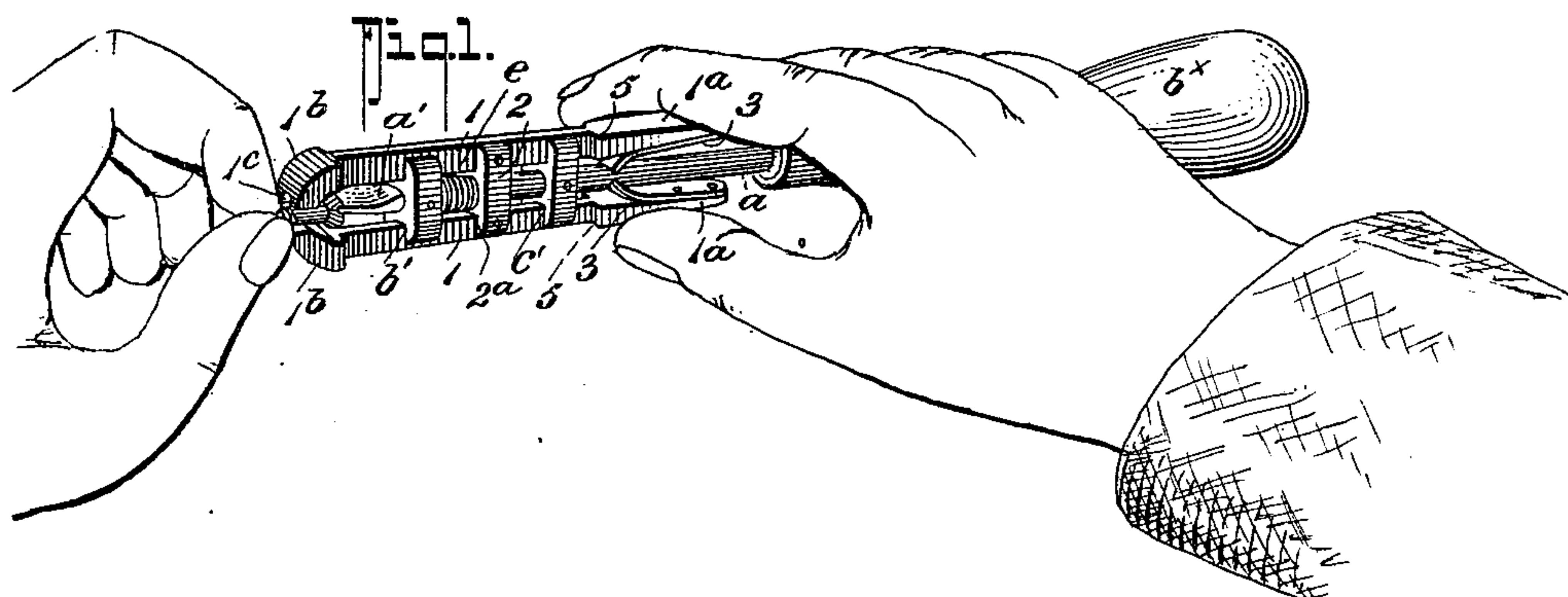
Patented May 28, 1901.

W. S. MALLARD.
SCREW DRIVER AND HOLDER.

(Application filed Jan. 14, 1901.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

Louis Dieterich
J. P. Hinkel

INVENTOR

William S. Mallard

BY

Fred G. Deterich & Co.
ATTORNEYS

No. 675,229.

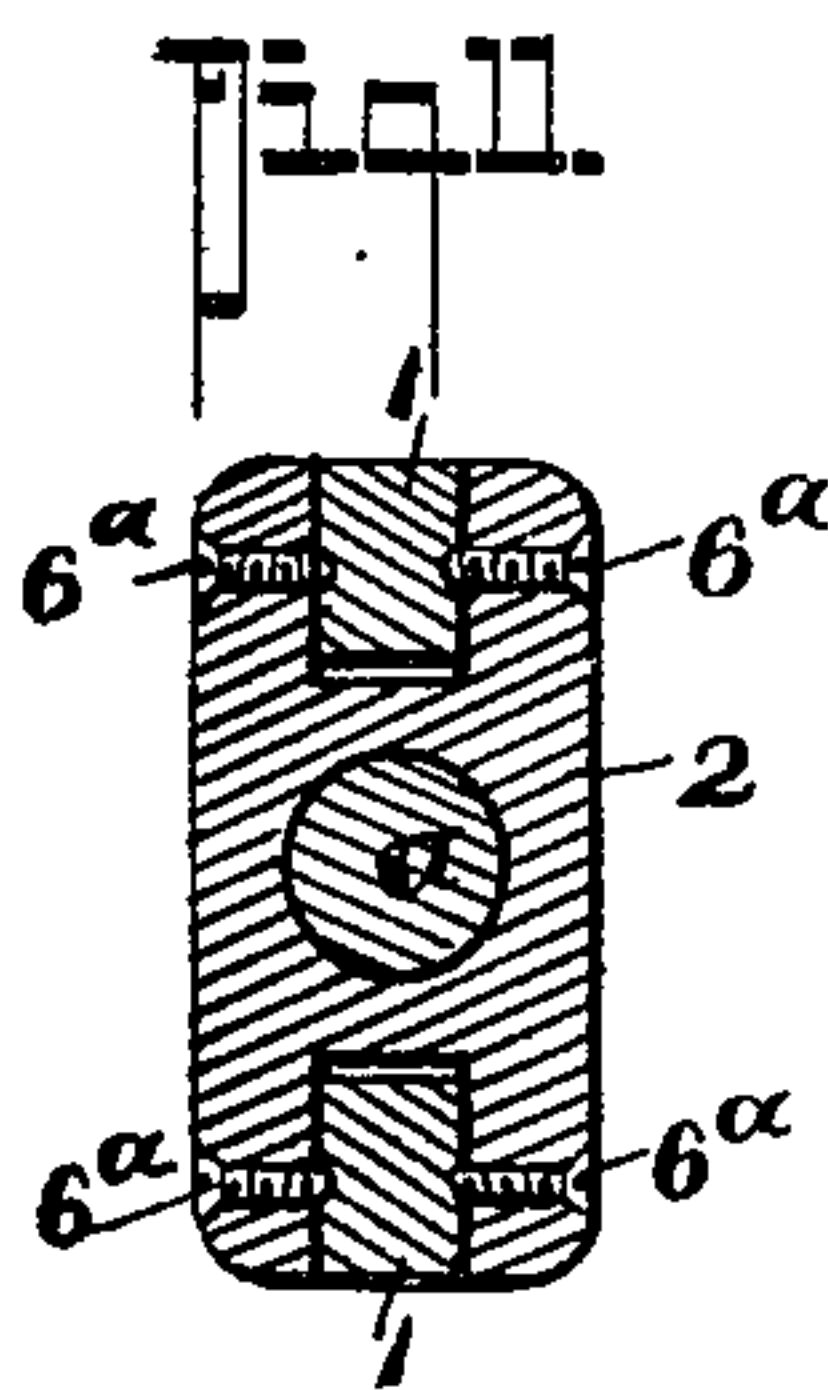
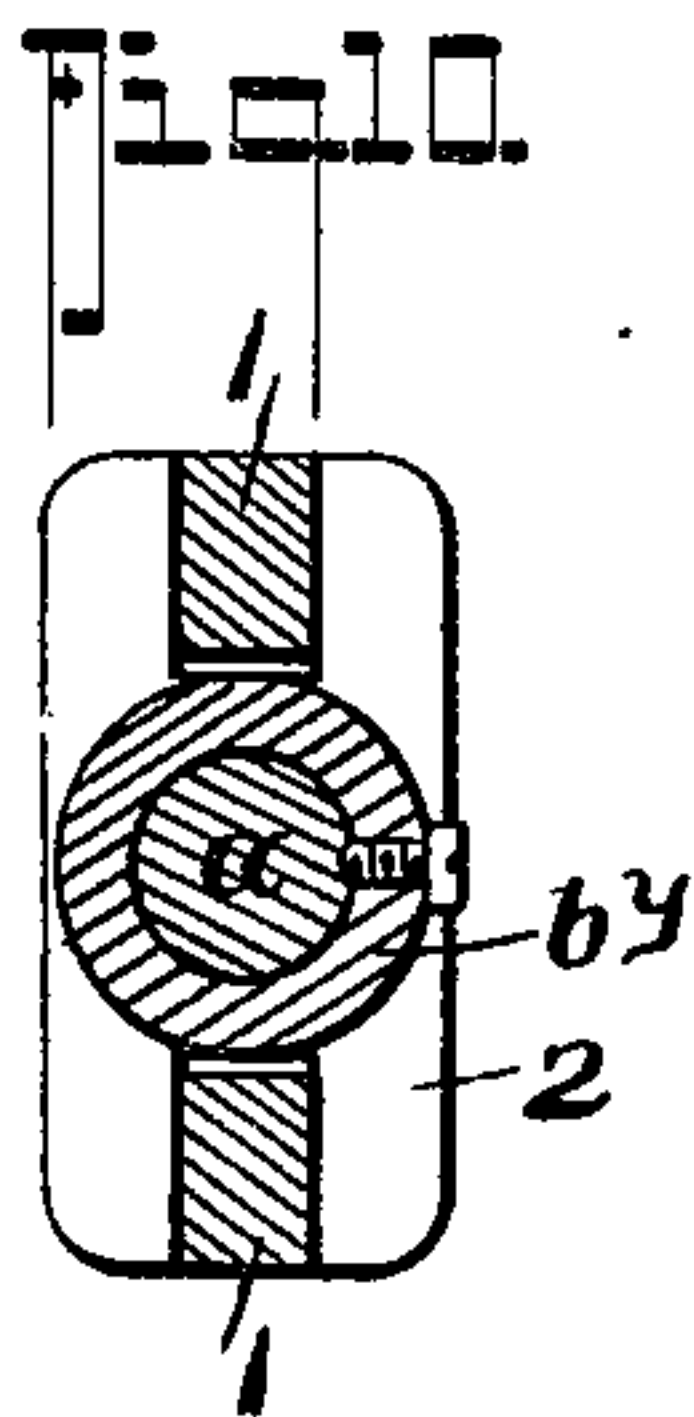
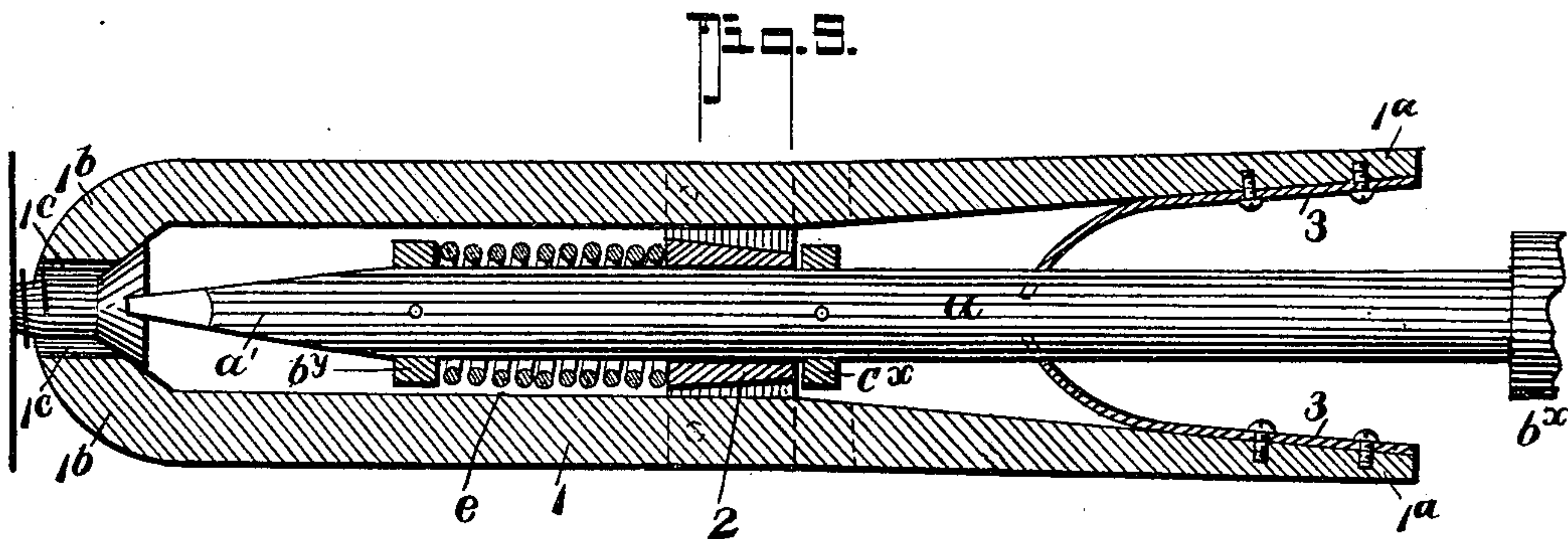
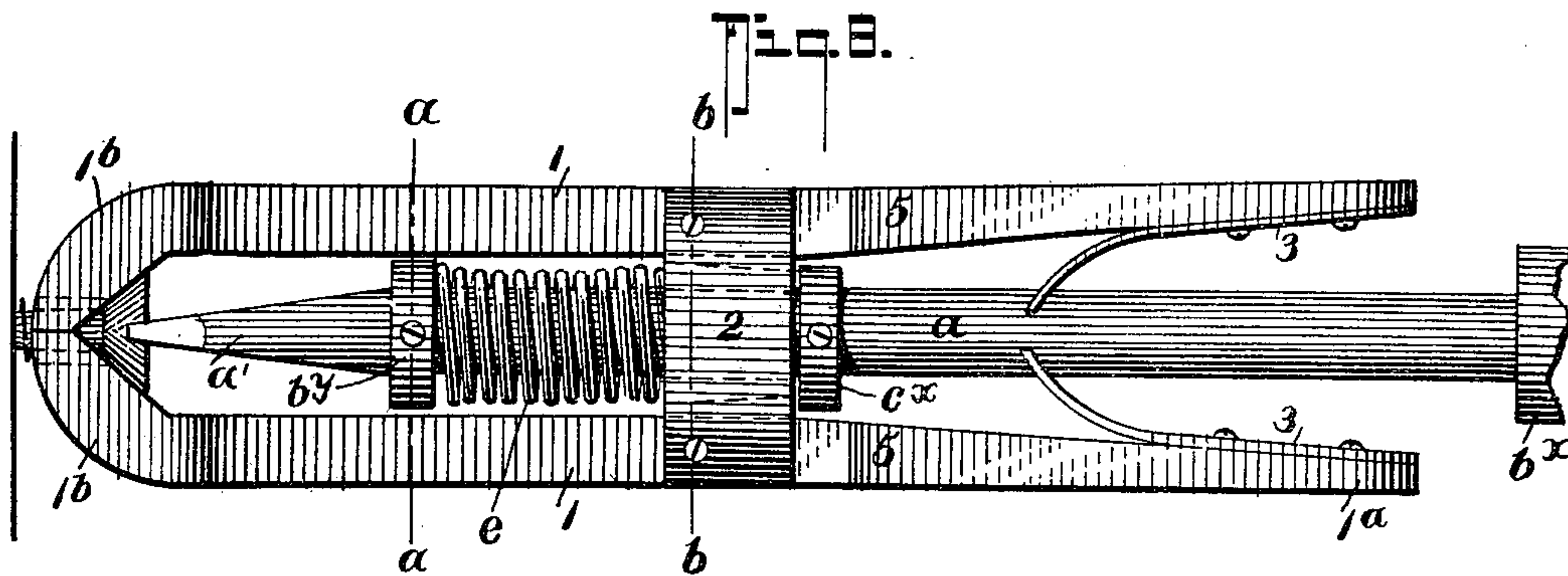
Patented May 28, 1901.

W. S. MALLARD.
SCREW DRIVER AND HOLDER.

(Application filed Jan. 14, 1901.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES:

Louis Dieterich
J. P. Stunkel

INVENTOR

William S. Mallard

BY

Fred G. Dieterich & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM S. MALLARD, OF DARIEN, GEORGIA.

SCREW DRIVER AND HOLDER.

SPECIFICATION forming part of Letters Patent No. 675,229, dated May 28, 1901.

Application filed January 14, 1901. Serial No. 43,272. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. MALLARD, residing at Darien, in the county of McIntosh and State of Georgia, have invented a new and Improved Screw Driver and Holder, of which the following is a specification.

This invention relates to improvements in that type of screw-drivers which have attachments for holding the screw during the operation of driving it, and primarily my invention seeks to provide an implement of this character of a very simple and economical construction capable of being easily manipulated and adapted to effectively serve for its intended purposes.

My invention comprehends as an essential feature a means for clamping or holding the screw and adapted to automatically adjust itself to release itself from the screw, move out of the way, and admit of the screw-head being driven fully home.

Again, my invention comprehends clamping members arranged to be manually shifted in position to grip the screw-shank to automatically open up and recede from the screw-point and capable of being adjustably mounted relatively to the driver, whereby the clamping-levers can be set back to compensate for the wearing off of the end of the screw-driver.

In its more subordinate features my invention consists in certain details of construction and peculiar combination of parts, all of which will hereinafter be fully explained, and particularly pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a view illustrating the manner in which the gripping or screw-holding devices are adjusted to engage the screw. Fig. 2 is a side elevation of the driver with screw partly driven. Fig. 3 is a similar view (enlarged) showing the position of the gripping-levers when the screw-head is almost driven home. Figs. 4, 5, and 6 are cross-sections on the lines 4 4, 5 5, and 6 6 on Fig. 3, respectively; and Fig. 7 is a longitudinal central section through the shank *a* and blocks *b* and *c* thereon. Fig. 8 is a side elevation of a slightly-modified form of my invention. Fig. 9 is a longitudinal section thereof; and Figs. 10 and 11 are cross-sections thereof, taken on the lines *a a* and *b b* of Fig. 8, respectively.

In its practical construction my improved screw driver and holder embodies a shank *a* of cylindrical shape, one end of which is joined to the handle *b* in the ordinary manner, its outer end being flattened and shaped to form the driver-blade *a'*, also of the usual shape. At a suitable point above the blade, preferably where the blade portion merges with the cylindrical part of the shank, a cross-block *b* is fixedly secured to the shank, and at some distance above the block *b* and lying in the same transverse plane with block *b* is a second cross member *c*, also fixedly secured to the shank. The opposite ends of the cross members *b* and *c* have notches *b'* *c'*, which form side braces and guides in which the gripping-levers are slidably held, and the upper cross member *c* also serves as a stop block for a purpose presently explained.

The levers 1 each consists of a body part, the upper end of which terminates in an outwardly-bent finger engaging handle *1^a*, while the lower or end adjacent the screw-driver end terminates in an inwardly-curved claw *1^b*, having a concavity *1^c* to conveniently grip the screw-shank in a manner clearly understood from Fig. 1 of the drawings.

The levers 1 1 are fulcrumed about midway their length in the notched ends *2^a 2^a* of a cross-block 2, slidably mounted on the driver-shank *a*, and the said block 2 is disposed to move up or down between the two cross-members *b c*, the upper one of which forms the stop to limit the upward movement of the levers 1 1, which are held pressed in such direction and to their upwardly-adjusted positions by a spiral spring *e*, interposed between the lower cross member *b* and the sliding member 2.

The two levers 1 1 are normally held with their claw ends closing toward each other, and for such purpose plate-springs 3 3, one for each lever 1, are provided; fixedly joined at their upper end to the diverging ends of the levers 1, their lower ends being formed to bind against the shank *a*, and the tension of the springs 3 is greater than that of the spring *e*, except, of course, when the latter is placed under compression, the reason for which will presently appear.

To limit the downward movement of the levers 1, their handle portions have shoulders

5 5 to engage the upper side of the stop-block *c*.

The operation of my implement is as follows: When it is desired to drive a screw, the user slides the levers 1 1 forward and compresses the diverging ends, as shown in Fig. 1. This permits the head of the screw being fitted on the end of the driver. Pressure being then removed from the handle end of the levers 1, the springs 3 will close the claw ends of said levers against the screw-shank. In shifting the levers 1 outward the spring *e* is compressed; but as the tension of the flat springs 3 is sufficient to cause said springs to act as grips they will hold the said levers 1 to their outward adjustment. The screw is now started and driven down in the usual manner until the lower ends of the lever-claws engage the surface into which the screw is being driven. Further down pressure on the driver and further penetration of the screw will cause the claws to open and travel up the beveled head of the screw. The levers 1 1 by the said pressure, together with the tension of spring *e*, now slides the members 1 up until the cross-block 2 engages stop-block *c*.

By constructing the gripping-levers in the manner described a very advantageous result is obtained in that the holder devices after once having been manually adjusted to clamp the screw will require no further attention during driving, as the said holding devices automatically become disconnected from the screw and resume their normal position. Thus the action of driving the screw can be a speedy one, as no time or attention is required to release the clamping members from the screw-shank, as is necessary in other drivers having means for holding the screw.

40 The parts are of a simple construction, capable of being very economically made, and have such correlation as to render their cooperative action positive and one of ease.

To take up for wear on the end of the driver, the fulcrum-points of the levers are preferably adjustably arranged, the levers having a number of longitudinally-extending countersinks 6 6 to receive the pointed bearing-screws 6^a 6^a, as clearly shown in Fig. 7.

50 In Figs. 8 to 11, inclusive, I have illustrated a slightly-modified form of my invention. In this form the guide portions on the members *b* and *c* are dispensed with and the central or fulcrum bar 2 is widened to give necessary supporting-surface to properly guide the levers 1 1 in their swinging movements. In this form the spring *e* is held between a collar *b*^y, adjustably mounted on the shank *a*, and the forward push movement of the shank *a* is limited by the collar *c*^x, adjustably mounted on the shank *a*. This construction of my invention has several advantages over the preferred form shown in Fig. 1 in that it provides for a greater range of work, as the shank of the driver in this latter form is adapted to turn independently and permits the driving of a screw in very close places or at such

points where the form shown in Fig. 1 could not be expeditiously used.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is--

1. An implement of the class described, including a shank having a driver, a slide-block on the shank, two levers fulcrumed on said block, having claws, a rigid block on the shank forward of the other block having notches to receive said levers, and a coiled spring surrounding the shank and bearing, respectively, against said blocks.

2. An implement of the class described, including a shank, a slide-block on the shank, levers fulcrumed on said block, having claws, two rigid blocks on the shank at opposite sides of the loose block notched to receive said levers, a coiled spring surrounding the shank and acting, respectively, against the slide-block and the foremost rigid block, and means to force the claw ends of the levers toward each other.

3. An implement of the class described, including a shank having a driver end, a series of three blocks on the shank the outer ones being rigid, and the intermediate one slidable a pair of levers having claw ends, fulcrumed on the slide-block, means to force the claw ends toward each other, shoulders on the levers to engage one of the rigid blocks, and a coiled spring surrounding the shank and acting against the slide-block and one of the rigid blocks.

4. The combination with the driver-shank, and a transversely-disposed guide-block fixedly secured to the said shank; of a transversely-held member slidable on the driver-shank, a clamping-lever for each end of said sliding member, each lever having a longitudinally-adjustable fulcrum means, the outer ends of the levers terminating in opposing clamping-claws, their inner ends forming handle portions, spring devices for normally forcing the handle ends apart, and the claw ends together, all being arranged substantially as shown and for the purposes described.

5. An improved screw driver and holder, comprising in combination with the driver-shank, and the cross members *b* and *c*, having guide-notches in their ends, fixedly connected thereto, the cross member 2, slidably mounted on the shank, the levers 1, having opposing claw members, said levers having each a pivotal connection with the block 2, and engaging the guide ends of the members *b* and *c*, the spiral spring disposed between the members *b* and 2, and the springs 3, all being arranged substantially as shown and for the purposes described.

6. An implement of the class described, including a shank having a driver-blade, a fixed stop on the shank adjacent the blade, a slide-block on the shank, a coiled spring surrounding the shank and acting respectively against the stop and slide-block, two levers supported intermediate their ends by said slide-block,

the forward portions of the levers having claws coacting to engage a screw, and the rear portions of the levers constituting handles to be passed toward each other to force the claws 5 away from each other, and leaf-springs connected to the rear portions of the lever, and acting against the same to force said claws toward each other.

10 7. An implement of the class described, including a shank having a driver-blade, a pair of fixed members on the shank, one of them being adjacent the blade, a slide-block intermediate said fixed members on the shank, a

coiled spring surrounding the shank and acting respectively against the forward fixed 15 member, and the slide-block, a pair of longitudinal levers, having claws at their forward ends, pivotally supported by said slide-block, and leaf-springs connected to the rear arms of the levers to force the claws toward each 20 other.

WILLIAM S. MALLARD.

Witnesses:

J. A. BRITT,

WM. MCW. YOUNG.