

No. 686,192.

Patented Nov. 5, 1901.

G. T. BAILEY.
SCREW DRIVER.

(Application filed July 8, 1901.)

(No Model.)

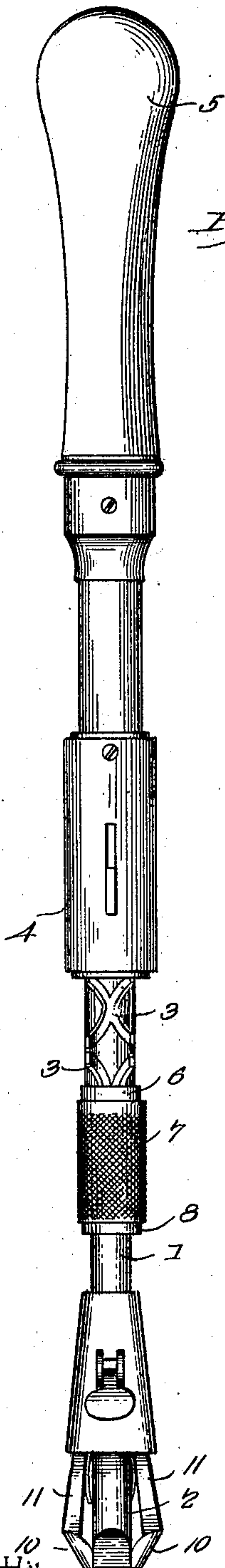


Fig. 1

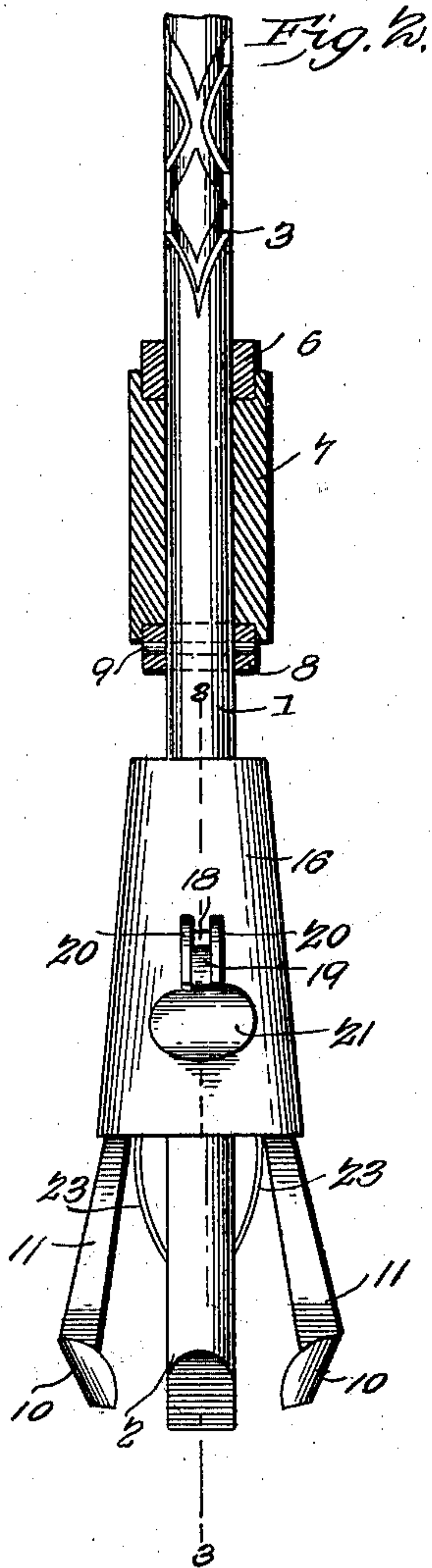


Fig. 2

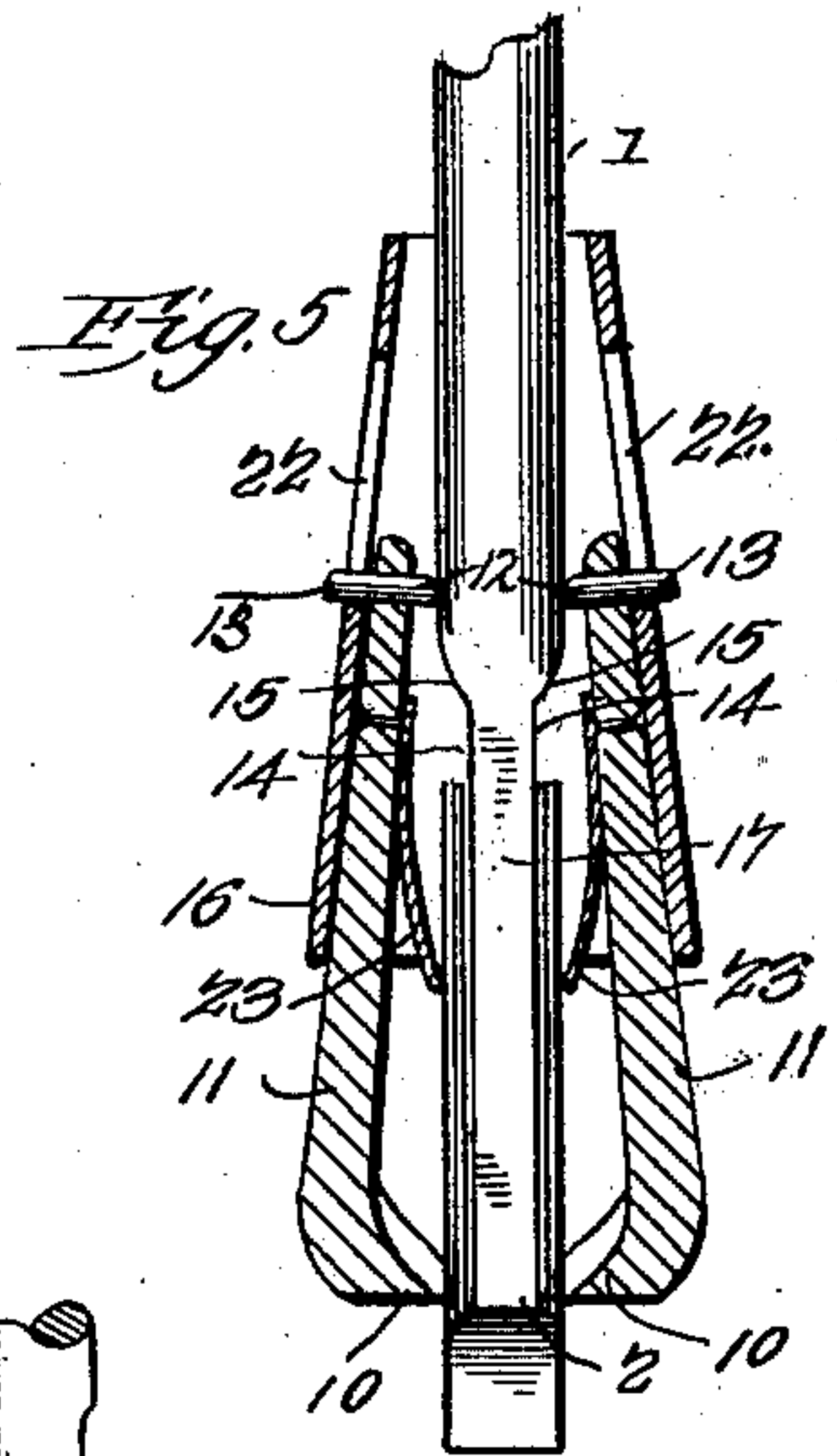


Fig. 5

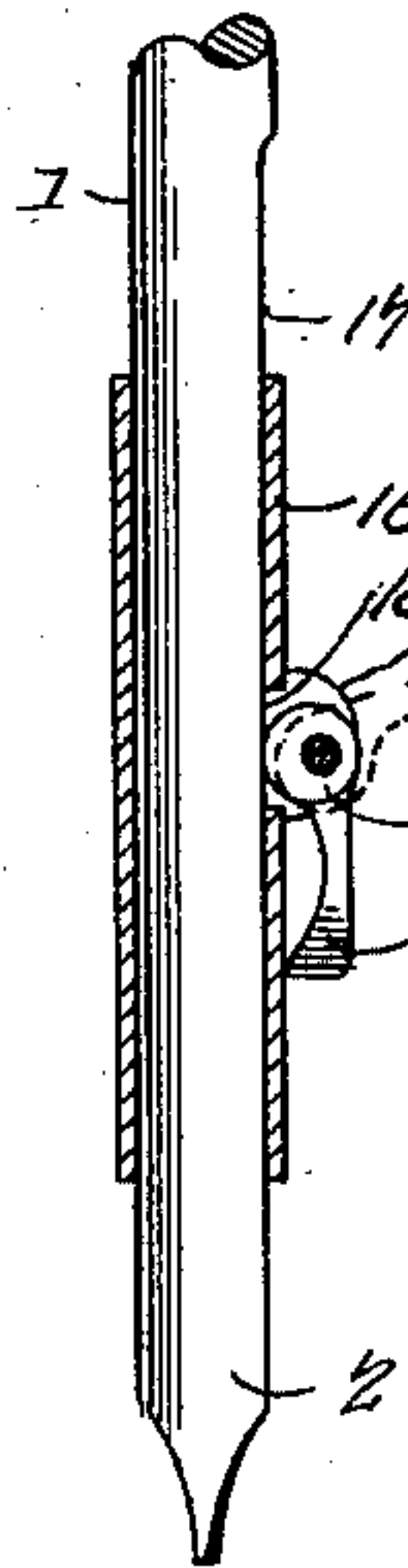


Fig. 3

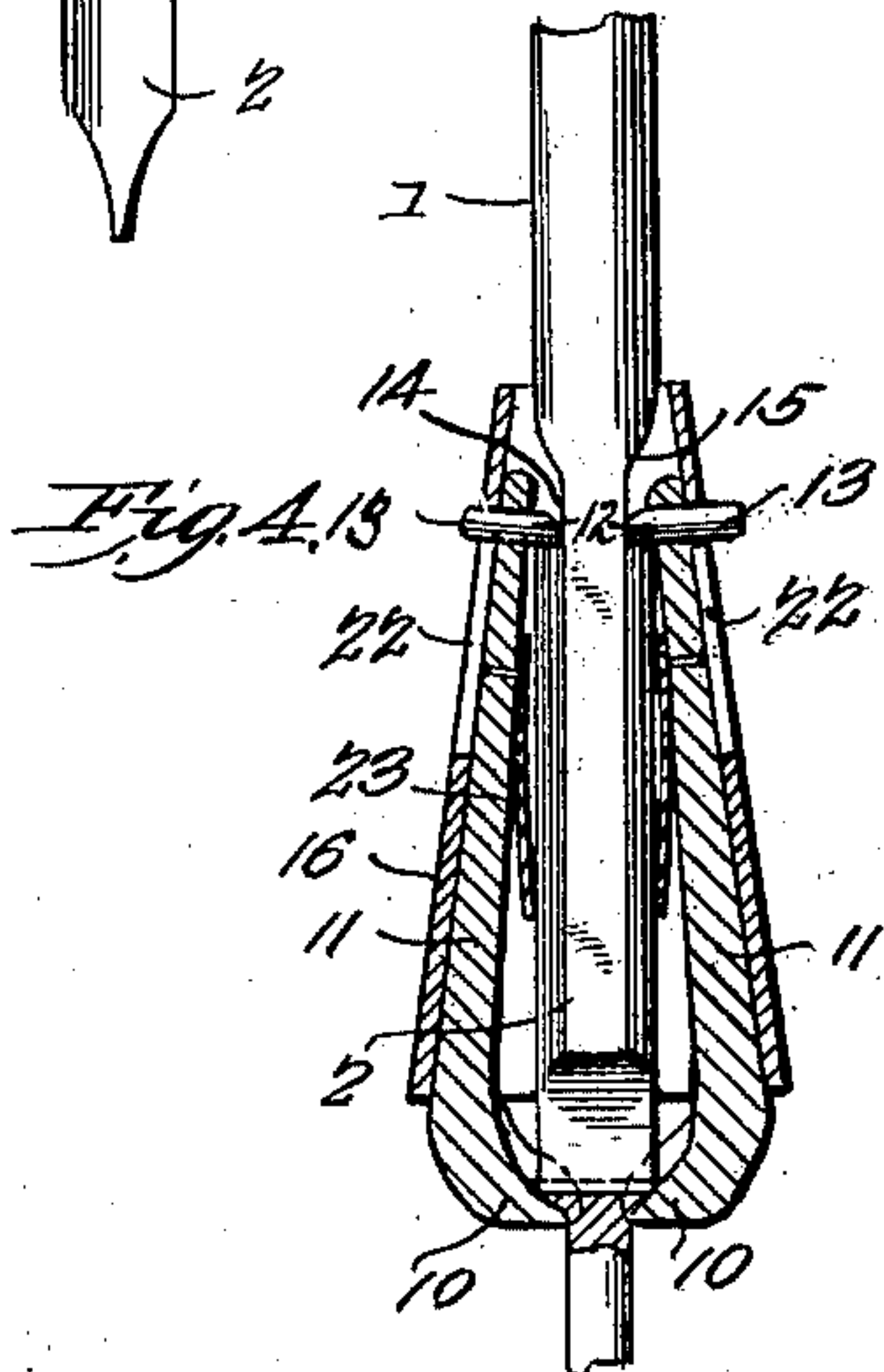


Fig. 4

Witnesses
E. J. Stewart
H. J. Shepard

G. T. Bailey Inventor
by *C. A. Snow* Attorneys

UNITED STATES PATENT OFFICE.

GEORGE THOMAS BAILEY, OF PLEASANTHILL, MISSOURI.

SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 686,192, dated November 5, 1901.

Application filed July 8, 1901. Serial No. 67,468. (No model.)

To all whom it may concern:

Be it known that I, GEORGE THOMAS BAILEY, a citizen of the United States, residing at Pleasanthill, in the county of Cass and State of Missouri, have invented a new and useful Screw-Driver, of which the following is a specification.

This invention relates to ratchet screw-drivers, and has for its object to provide certain improvements to render the device strong, durable, and easily manipulated, and also to arrange for guiding the point or bit of the device without interfering with or retarding the rotation of the stem. It is furthermore designed to provide improvements in means for holding the bit against accidental displacement from a screw, and particularly to arrange for holding such means positively out of coöperation with the point of the bit when not required for use—as, for instance, when countersinking a screw.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a side elevation of a screw-driver constructed and arranged in accordance with the present invention. Fig. 2 is an enlarged detail sectional view taken through the guiding-grip portion. Fig. 3 is a detail sectional view on the line 3 of Fig. 2. Figs. 4 and 5 are detail sectional views at right angles to Fig. 3, showing the opposite limits of the means for holding the bit against accidental displacement from a screw.

Like characters of reference designate corresponding parts in all of the figures of the drawings.

Referring to the drawings, 1 designates the cylindrical stem or shank of the device, which has one end formed into a bit portion 2 and its opposite end portion being provided with a double spiral groove, as indicated at 3, which is designed for coöperation with a ratchet de-

vice, (not shown,) but which is housed within a casing 4, carried by the hollow or tubular handle 5. The ratchet mechanism being old and well known, it has not been deemed necessary to illustrate the same in detail beyond the general relation thereof to the other parts of the device.

At the inner terminal of the grooved portion of the stem the latter is smooth and is provided with a marginal shoulder 6, which forms an end bearing for a tubular grip 7, that is slipped upon the stem from the bit end thereof and is rotatable thereon, so that it may be held in one hand to guide the device when being operated by the other hand manipulating the handle 5. To prevent endwise movement of the grip, there is provided a marginal collar 8, fixed to the stem by means of a pin or key 9 or other suitable means and applied to the stem after the application of the grip.

At the bit end of the stem there is provided a pair of screw-embracing jaws 10, which are constructed to embrace the shank portion of a screw at the inner side of the head thereof, as shown in Fig. 4, so as to rotate thereon with the screw-driver, and thereby prevent lateral displacement of the bit therefrom. Each jaw has a shank portion 11, which lies longitudinally with the stem and has its inner end provided with the oppositely-directed lateral projections 12 and 13, of which the outer end of the projection 12 is beveled toward the rear end of the shank. In each side of the stem, or, rather, the bit portion thereof, there is provided a notch or recess 14, the front end of which terminates in an abrupt wall, while the rear end is beveled or inclined outwardly and rearwardly, as at 15, said recess being for the reception of the projection 12, which slides therein and is designed to engage the front end wall as a stop to limit the forward movement of the jaw.

For the adjustment of the jaws there is provided a flat tapered sleeve 16, which increases in width from its rear end forwardly and slidably embraces the bit and the rear end portions of the shanks of the jaws. One side of the bit is made flat, as at 17, (shown in Fig. 3,) to obviate turning of the sleeve, and the latter is provided with an intermediate opening 18 for the reception of a cam 19,

mounted between opposite ears 20 and designed to engage the flattened portion of the bit to hold the sleeve against accidental end-wise movement. The finger-piece 21 of the
 5 cam is constructed to lie flat against the sleeve when clamped, so as to avoid projections. The opposite longitudinal sides of the sleeve are provided with the corresponding slots 22 for the reception of the respective
 10 outer projections 13 of the shanks. Bowed springs 23 have their rear ends connected to the inner sides of the respective shanks, with their free ends frictionally bearing against the adjacent sides of the bit.

15 From the foregoing description it is apparent that the jaws are engaged with a screw by sliding the sleeve forwardly, thereby drawing the shanks inwardly to grip the jaws about the screw, the outward or forward
 20 movement of the sleeve being limited by the engagement of the projections 12 with the forward ends of the recesses 14 and the engagement of the rear ends of the slots 22 with the outer projections 13 upon the shanks. During
 25 the forward movement of the sleeve the jaws are also moved forwardly the length of the recesses 14, so as to project the jaws outwardly beyond the end of the bit for gripping the screw.

30 When it is not desired to use the jaws—as, for instance, when countersinking a screw—the sleeve is drawn inwardly, whereby the jaws are loosened and the springs force the same laterally apart to clear the head of the
 35 screw, and a further inward movement of the sleeve draws the jaws inwardly or rearwardly by the engagement of the outer ends of the slots 22 with the outer projections 13 of the shanks, thereby leaving the point of the bit
 40 free and unobstructed. Upon a further rearward movement of the sleeve the beveled inner projections 12 will ride over the beveled

rear walls 15 of the recesses 14 and out against the outer side of the stem, thereby tilting
 45 or rocking the shanks and compressing the springs, whereby a strong frictional engagement is had between all of the parts to hold the sleeve and jaws against accidental movement upon the stem. Thus the jaws may be
 50 moved to a considerable distance from the point of the bit and it is not absolutely necessary to clamp the cam to hold the jaws in their inoperative position.

What is claimed is—

In a screw-driver, the combination with a
 55 bit having opposite corresponding recesses provided with rear beveled end walls, of opposite screw-embracing jaws having shanks, which are provided at their rear end portions
 60 with inner and outer laterally-directed projections, of which the inner projections are mounted in the respective recesses and have their ends beveled to correspond with the beveled walls of the recesses, springs carried by
 65 the shanks and frictionally bearing against adjacent sides of the bit, and a tapered jaw-adjusting sleeve slidably embracing the bit and the shanks of the jaws, there being opposite longitudinal slots formed therein for the
 70 slidable reception of the outer projections of the respective shanks, the latter being capable of a rearward movement beyond the recess in the bit to slide the inner projections out of the recesses and thereby compress the springs to
 75 hold the device against accidental movement upon the bit.

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

GEO. THOMAS BAILEY.

Witnesses:

OLIVER L. BEASLEY,
 J. S. UNDERWOOD.