

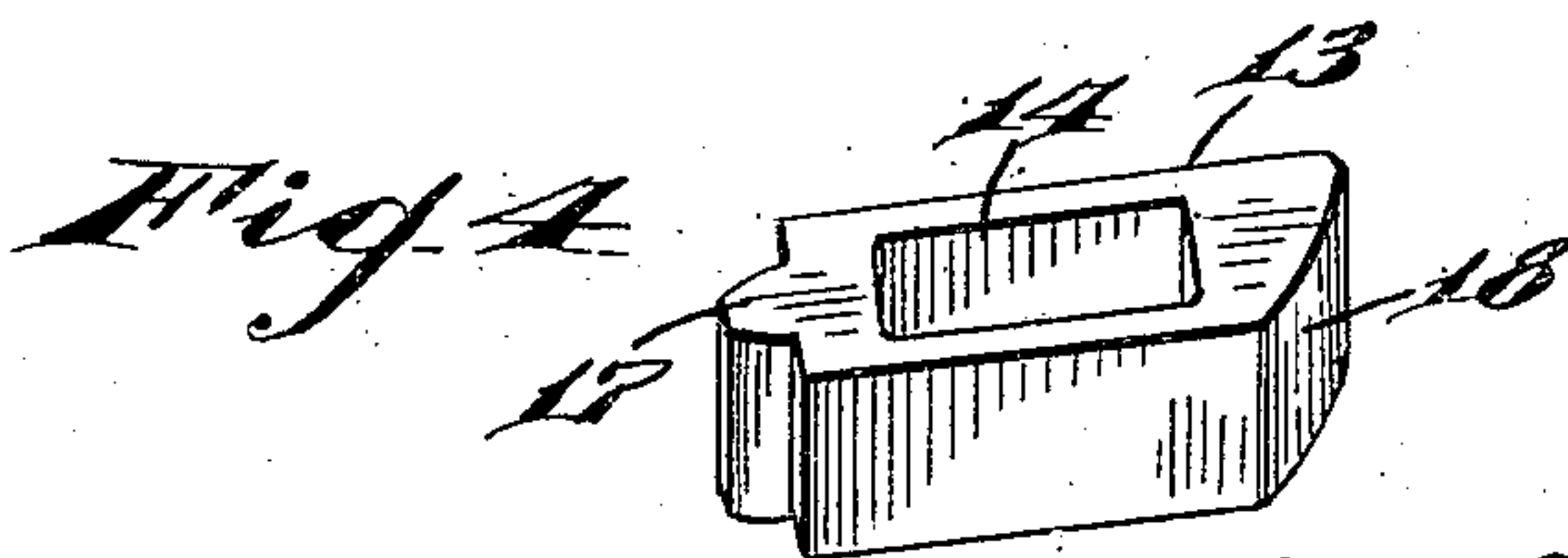
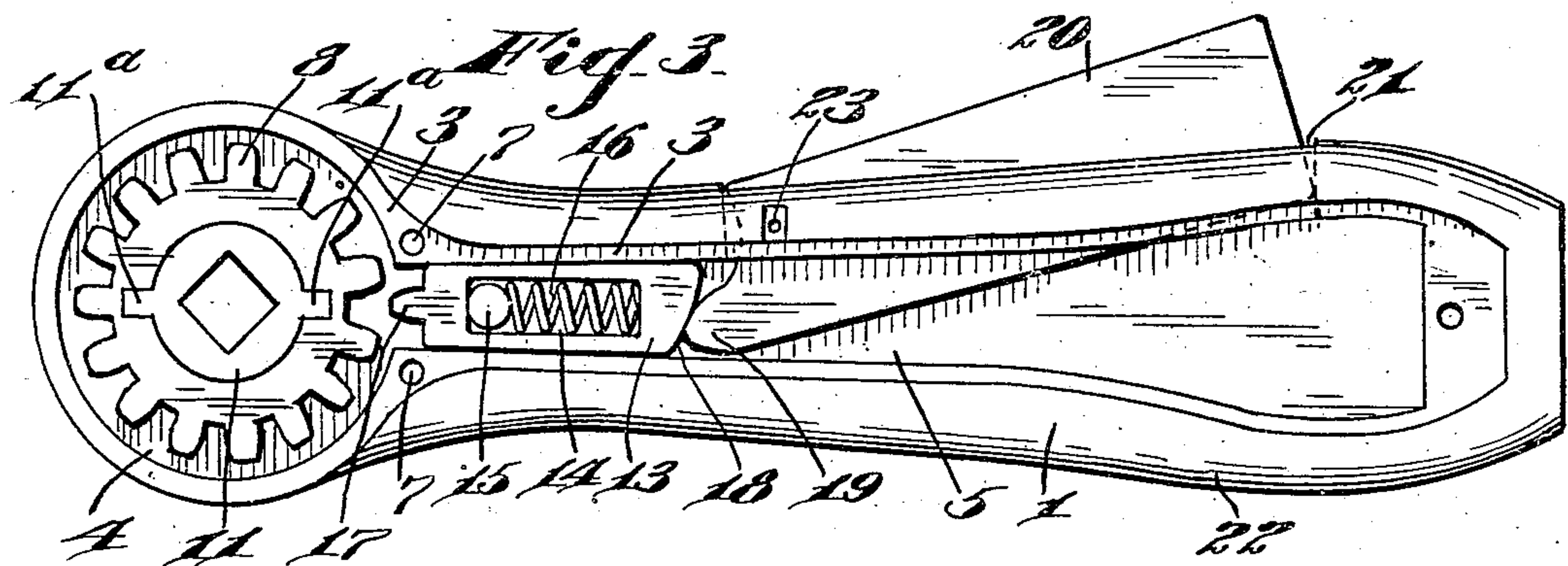
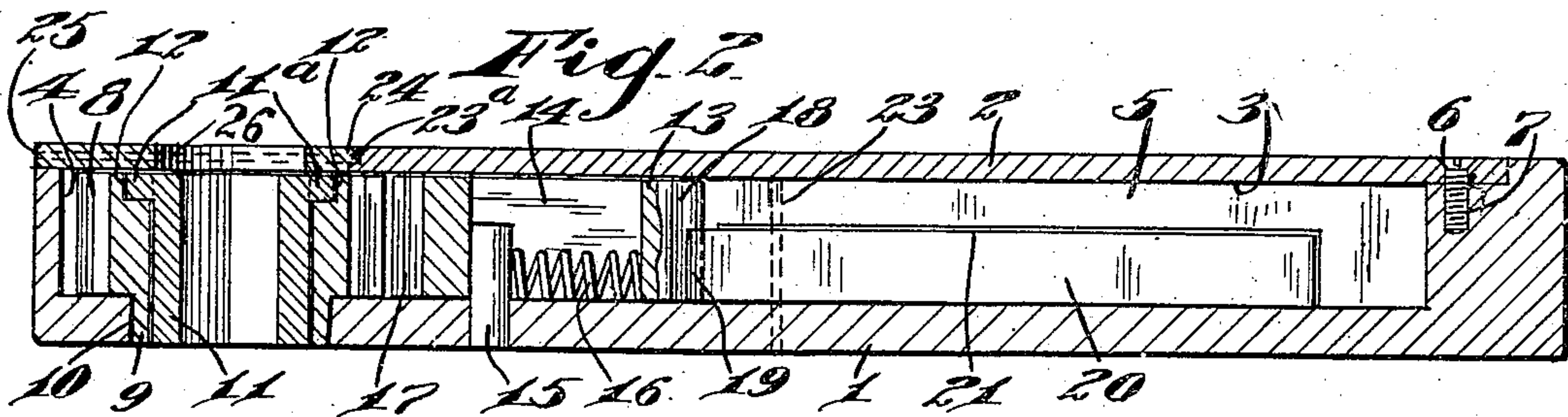
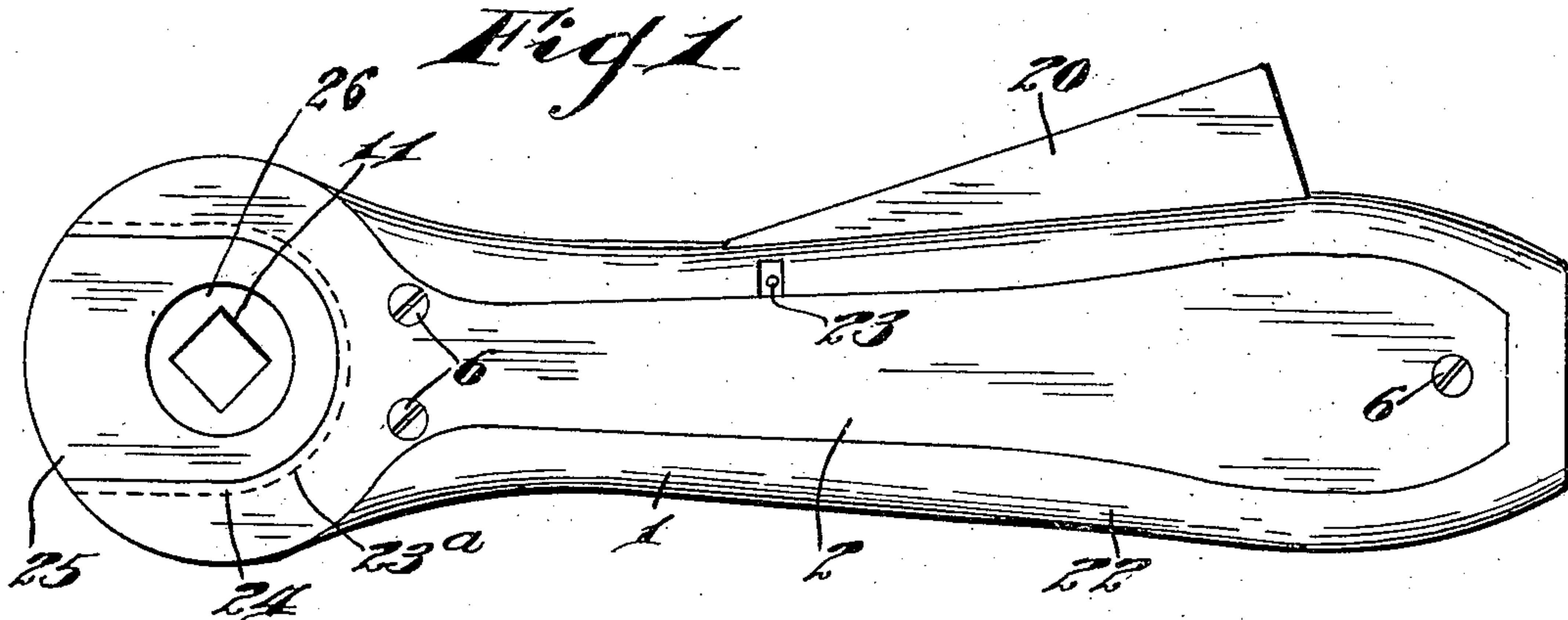
J. C. HEINRICH & W. KELLERMANN.

RATCHET WRENCH.

APPLICATION FILED SEPT. 8, 1909.

951,316.

Patented Mar. 8, 1910.



Witnesses

J. H. P. Remann.

J. A. S. Mulholland.

Inventor

Joseph C. Heinrich
William Kellermann,

By

Joshua R. V. Potts.
Attorney

UNITED STATES PATENT OFFICE.

JOSEPH C. HEINRICH AND WILLIAM KELLERMANN, OF PHILADELPHIA,
PENNSYLVANIA.

RATCHET-WRENCH.

951,316.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed September 8, 1909. Serial No. 516,773.

To all whom it may concern:

Be it known that we, JOSEPH C. HEINRICH and WILLIAM KELLERMANN, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Ratchet-Wrenches, of which the following is a specification.

Our invention relates to improvements in ratchet wrenches, the object of the invention being to provide an improved wrench of this character in which a lever forming a part of the grip of the wrench serves to lock the rotary nut or bolt engaging member against rotary movement, when pressure is applied upon the grip to compel the nut or bolt to turn with the wrench, and when moved in the opposite direction and pressure released on the grip, the rotary member will stand stationary, while the wrench moves back to take a new hold.

A further object is to provide an improved wrench of this character, which is adapted by the interchanging of parts to engage bolts and nuts of various sizes.

A further object is to provide improvements of this character, which are of extremely simple, inexpensive construction, which can be easily operated, and which will be strong and durable in use.

With these and other objects in view, the invention consists in certain novel features of construction, and combinations and arrangements of parts as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings, Figure 1, is a view in elevation illustrating our improvements. Fig. 2, is a view in longitudinal section. Fig. 3, is a view similar to Fig. 1, but showing the plate 2 and the part carried thereby removed, and Fig. 4, is a detail perspective view of the locking dog.

1 represents the body of the wrench, which is in the form of a hollow casting, having an elongated opening in one side, normally closed by a plate 2, the latter conforming in shape to the opening, and being supported upon a shoulder 3, extending throughout the entire length of the wall of the opening. The casting or body portion 1 at one end is made with a circular chamber 4, open at one side and normally closed by the plate 2, and the body portion has a longitudinal recess or chamber 5 communicating with this circular

chamber 4. The chamber 5 is also closed by plate 2, the latter having openings to receive screws 6, which are screwed into openings 7 in the body portion 1, to secure the parts together.

Mounted in the circular chamber 4 is a toothed wheel 8, having a hub extension 9 at one side, projecting through an opening 10 in the body portion 1, and mounted to revolve therein. This toothed wheel 8 is cored, and adapted to receive a bolt or nut engaging member 11, the latter made cylindrical externally to fit within the toothed wheel, and provided with laterally projecting lugs 11^a, adapted to enter recesses 12 in the toothed wheel, and lock the parts to turn together. This bolt or nut engaging member 11 is made with an angular opening or bore, to be positioned over a nut or bolt, and a number of these members may be provided having openings of various sizes, all of them having the same external diameter, so that any of them may be positioned within the toothed wheel in accordance with the size of the bolt or nut to be engaged.

Mounted in the longitudinal recess or chamber 5 is a dog 13, which is mounted to slide between the walls of the recess, and is provided with a longitudinal slot 14, into which a pin 15 fixed to the body portion projects, and a coiled spring 16 is located in this slot 14 and bears at one end against pin 15, and at its other end against the end wall of the slot 14, to normally press the dog 13 away from the toothed wheel 8. On the end of the dog 13 adjacent the toothed wheel 8, a tooth 17 is provided, so that when the dog is pressed toward the toothed wheel 8, this tooth 17 will enter between the teeth of wheel 8, and lock the wheel against rotary movement.

The inner end of the dog 13 is beveled forming a cam face 18, against which the inner end 19 of a lever 20 bears. This lever is projected through a slot 21 in the grip portion 22 of the wrench, and is pivoted by means of a pin 23, so that when this lever is forced inwardly by the hand of the operator, as he grips the tool, the dog 13 will be forced into locked engagement with the toothed wheel 8.

The plate 2 above referred to is made of general forked or bifurcated shape at its end, which rests above the circular chamber 4. In the wall of this forked or bifurcated

portion, a groove 23^a is provided to receive a tongue or flange 24 around the edge of a removable plate 25. This plate 25 is made with a circular opening 26 through which the bolt or nut may enter into the member 11. This plate 25 serves as a wearing plate to take up wear upon the tool, and when the member 11 is to be removed and replaced by a similar member having a larger or smaller opening therein, a new plate 25 will also be used having an opening to correspond.

It will be noted that in operation, when pressure is applied on the grip portion 22, pressure will also be applied upon the lever 20, so as to force the dog 13 into locked engagement with the toothed wheel 8, and when the wrench is turned, the bolt or nut will also be turned. When the wrench is swung back for a new hold, pressure is released upon the grip and the lever 20 will swing out, due to the action of spring 16, and when pressure is again applied upon the grip to swing the wrench in an operative direction, the lever 20 will again cause the dog 13 to lock the toothed wheel 8 against independent rotary movement.

Various slight changes might be made in the general form and arrangements of parts described without departing from our invention, and hence we do not restrict ourselves to the precise details set forth, but consider ourselves at liberty to make such changes and alterations as fairly fall within the spirit and scope of the claims.

Having thus described our invention what we claim as new and desire to secure by Letters Patent is:

1. A device of the character described, comprising a hollow body portion, a rotary toothed wheel in said body portion, a dog mounted to slide in said body portion, and having a longitudinal slot, a pin fixed in the body portion and projecting into the slot, a spring in the slot between the pin and one end wall of the slot, a tooth on one end of said dog to engage between the teeth of

the toothed wheel, and a lever pivoted to the slotted portion of the body portion and having one end in engagement with the end of said dog.

2. A device of the character described, comprising a hollow body portion, a rotary toothed wheel in said body portion, a nut or bolt engaging device removably secured in the toothed wheel, a plate removably secured to the hollow body portion and having a forked or bifurcated end, a wearing plate having tongue and groove engagement in said bifurcated end and provided with an opening exposing the nut or bolt engaging device, a dog mounted to slide in said body portion and having a longitudinal slot, a pin fixed in the body portion and projecting into the slot, a spring in the slot between the pin and one end wall of the slot, a tooth on one end of said dog to engage between the teeth of the toothed wheel, and a lever pivoted in the slotted portion of the body portion, and having one end in engagement with the end of said dog.

3. A device of the character described, comprising a hollow body portion, a rotary toothed wheel in said body portion, a dog mounted to slide in said body portion, and having a longitudinal slot, a pin fixed in the body portion, and projecting into the slot, a spring in the slot between the pin and one end wall of the slot, a tooth on one end of said dog to engage between the teeth of the toothed wheel, the other end of said dog being beveled or inclined, and a lever pivoted in a slotted portion of the body portion, and having one end in engagement with the beveled end of said dog.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOSEPH C. HEINRICH.
WILLIAM KELLERMANN.

Witnesses:

R. H. KRENKEL,
J. A. L. MULHALL.