

No. 790,168.

PATENTED MAY 16, 1905.

T. J. BALDWIN.
WRENCH.

APPLICATION FILED MAR. 13, 1903.

2 SHEETS—SHEET 1.

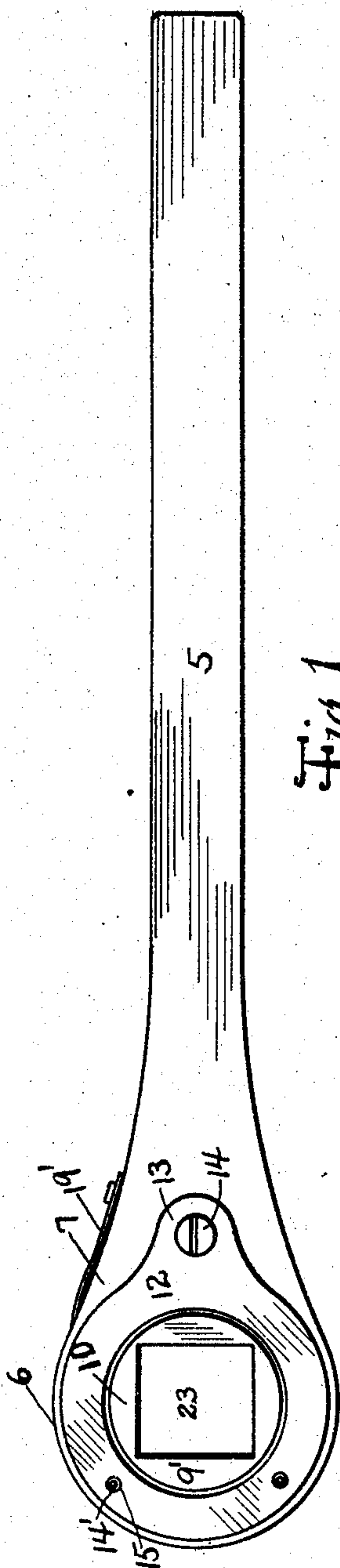


Fig. 1.

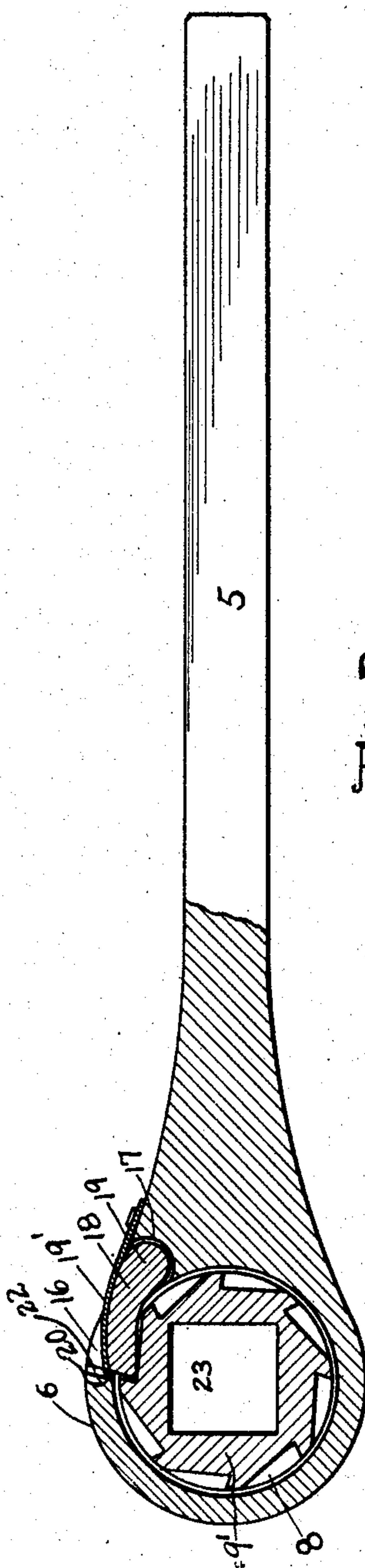


Fig. 2.

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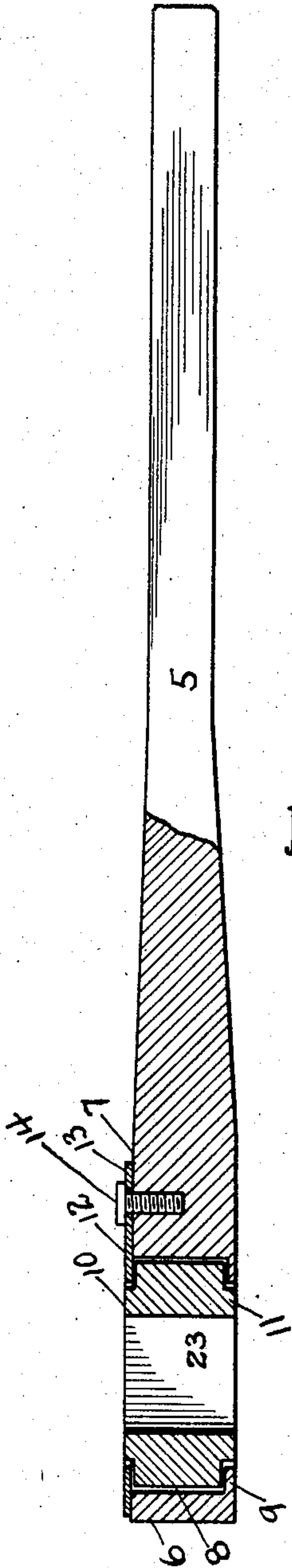


Fig. 3.

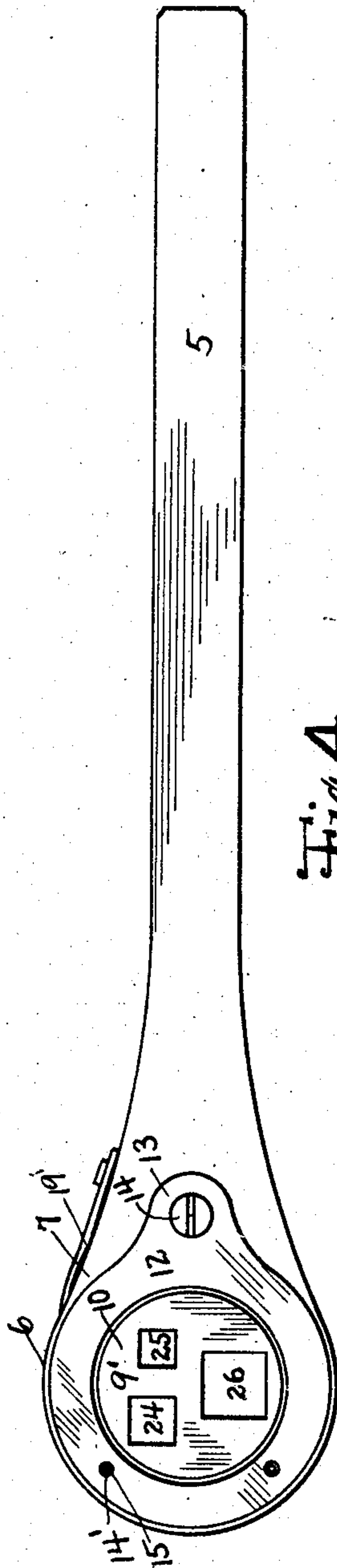


Fig. 4.

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UNITED STATES PATENT OFFICE.

THOMAS J. BALDWIN, OF BEAUMONT, TEXAS.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 790,168, dated May 16, 1905.

Application filed March 13, 1903. Serial No. 147,596.

To all whom it may concern:

Be it known that I, THOMAS J. BALDWIN, a citizen of the United States, residing at Beaumont, in the county of Jefferson, State of Texas, have invented certain new and useful Improvements in Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
 10 pertains to make and use the same.

This invention relates to ratchet-wrenches; and it has for its object to provide an article of manufacture which will consist of a minimum number of parts having such constructions and relative arrangements as will permit of manufacture of the wrench at a low price and will insure efficiency of operation at all times, a further object of the invention being to provide a construction from which
 15 the worn parts may be easily and quickly removed for substitution of new parts.

An additional object of the invention is to provide a simple style of wrench which may be used upon nuts or bolts of different diameters.
 25

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a top plan view of a wrench.
 30 Fig. 2 is a longitudinal section taken horizontally through the wrench. Fig. 3 is a longitudinal section taken vertically through the wrench. Fig. 4 is a view similar to Fig. 1, showing a second form of the invention.

Referring now to the drawings, the present wrench includes a handle portion 5, having an enlarged head 6 at one end, and through which head, at right angles to what may be termed the "upper flat face" 7 of the head
 40 is formed a cylindrical passage 8, at one end of which is formed the inwardly-directed flange 9.

In connection with the handle and head of the wrench above described there is employed
 45 a ratchet-wheel 9', having the reduced end portions 10 and 11, and this ratchet-wheel is disposed rotatably in the cylindrical passage or socket 8 of the head 6, one end of the ratchet-wheel resting against the flange 9,
 50 while the opposite end of the ratchet-wheel

lies slightly inwardly beyond the opposite face 7 of the head. The reduced end portion 11 of the ratchet-wheel fits snugly and rotatably within the inclosure of the flange 9, while the opposite reduced end portion, 10, 55 projects outwardly beyond the face 7 and is encircled by a flat ring 12, having a radiating lug 13, through which is passed a screw 14 into the head of the wrench, at the side of the socket 8 thereof. This ring is adapted to be 60 swung into and out of position when the screw is loosened, and to hold the ring against rotation upon the screw pins 14 are mounted in the head in position to enter perforations 15 through the ring when the ring is clamped 65 against the head by tightening up the screw.

In the side of the head 6 is a recess 16, which communicates at one end with the socket 8, the opposite end of the recess, which is in the direction of the handle of the wrench, being closed and rounded, as shown at 17, and in this recess is fitted loosely a pawl 18, having an enlarged rounded end 19, which lies in the rounded end of the recess 16 and is adapted to oscillate therein, so that the opposite end of the pawl may rise and fall as the ratchet-wheel is rotated in the socket 8 in one direction, it being understood that the pawl prevents reverse rotation of the ratchet-wheel.
 70

To hold the pawl yieldably in engaging position, a retaining spring-plate 19 is employed and is mounted pivotally at one end between the enlarged end of the pawl and the handle of the wrench, said spring-plate having a reduced finger 20, which projects at right angles 85 to the free end of the spring-plate and engages over the free end of the pawl, this finger serving to hold the pawl with its enlarged end in the corresponding end of the socket, so that the pawl will not move from its proper place 90 and there will be no lost motion. A notch 22 is formed in the end of the recess 16 to receive the finger of the spring-plate.

The ratchet-wheel is designed to engage with the nut, bolt, or screw that is to be operated upon, and for this purpose said ratchet-wheel is provided with a passage 23, which extends from end to end thereof and is angular in cross-section to fit the body, it being understood that in the operation of the wrench 100

it is disposed to receive the body to be rotated in the passage of the ratchet-wheel, after which the wrench is oscillated, the wrench handle and head moving with the ratchet-wheel in one direction, while the return movement of the handle and head is independent of the ratchet-wheel.

In Fig. 4 of the drawings there is shown a second form of the invention, which is designed for use in connection with bodies of different sizes, the ratchet-wheel in this construction having a number of longitudinal cross-sectionally angular passages 24, 25, and 26 therethrough, having different transverse dimensions. In the use of this second form of the invention the wrench is adjusted to receive the body to be rotated in the proper one of its angular passages, and the wrench is then oscillated as above described.

It will be understood that in practice other modifications of the invention may be made and that any suitable material and proportions may be used for the various parts without departing from the spirit of the invention.

What is claimed is—

As an article of manufacture, a wrench comprising a handle having an annular socket therein, said socket having an opening in its base passing through the handle, a ratchet-disk removably and rotatably disposed within

the socket and having a rectangular passage therethrough for the reception of a nut, said handle having a slot in its side communicating at one end with the socket and rounded at the remaining end, and a pawl having one of its ends rounded disposed with this end in the rounded end of the slot for pivotal movement therein, and lying with its remaining end in engagement with the teeth of the ratchet-disk to prevent rotation thereof in one direction, a spring-plate having a perforation therethrough disposed against the outer face of the pawl and extending beyond one end of the slot, said plate being removably attached to the handle by means of a screw engaged with its perforation and with the handle, said plate having a laterally-directed finger engaged over the free end of the pawl, and a plate removably secured to the face of the handle and having an opening therethrough communicating with the socket and smaller than and concentric with the socket, said opening being larger than the rectangular opening.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS J. BALDWIN.

Witnesses:

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WILL. BALDWIN.