

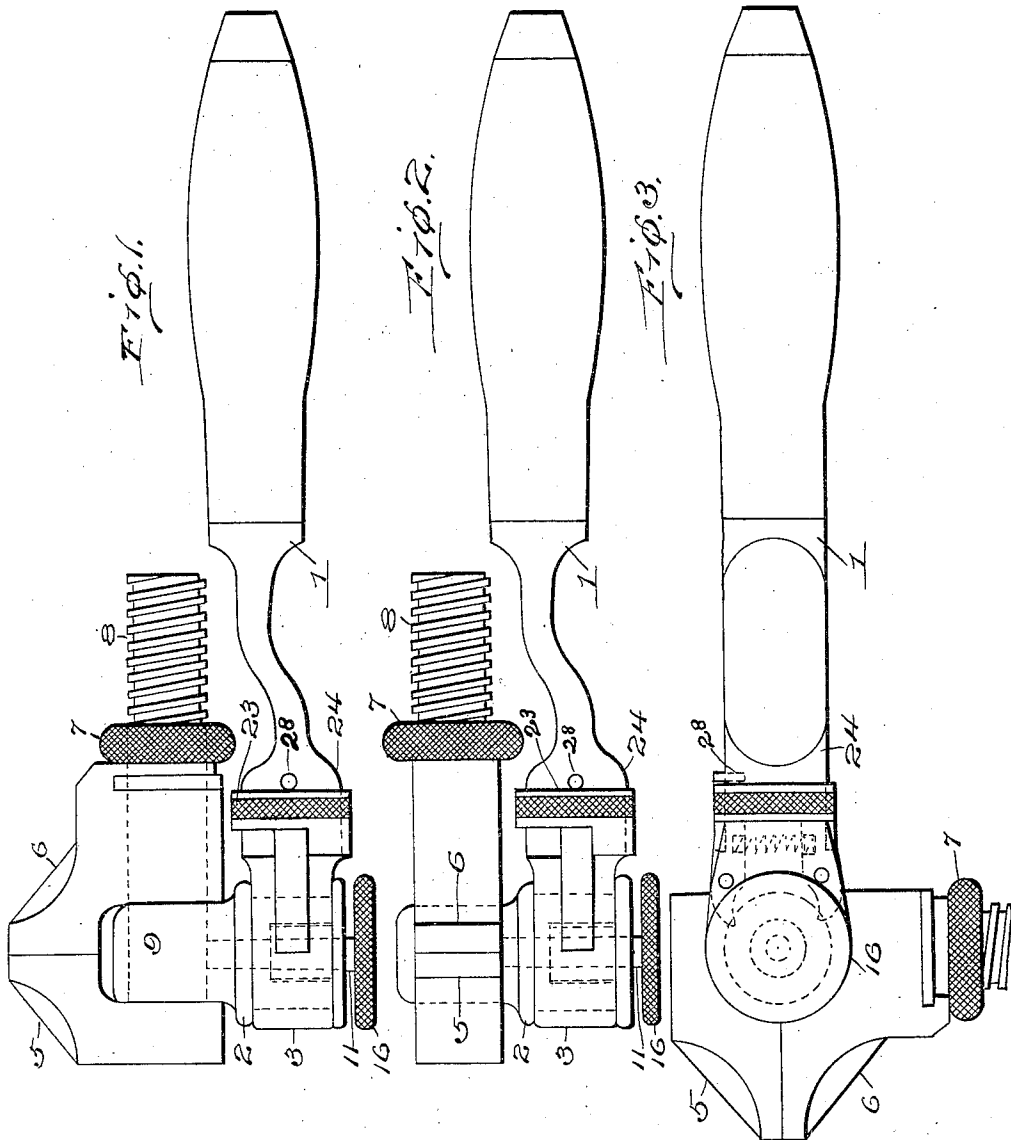
J. C. HAWES.
WRENCH.

APPLICATION FILED OCT. 21, 1910. RENEWED OCT. 15, 1912.

1,050,131.

Patented Jan. 14, 1913.

2 SHEETS—SHEET 1.



Witnesses

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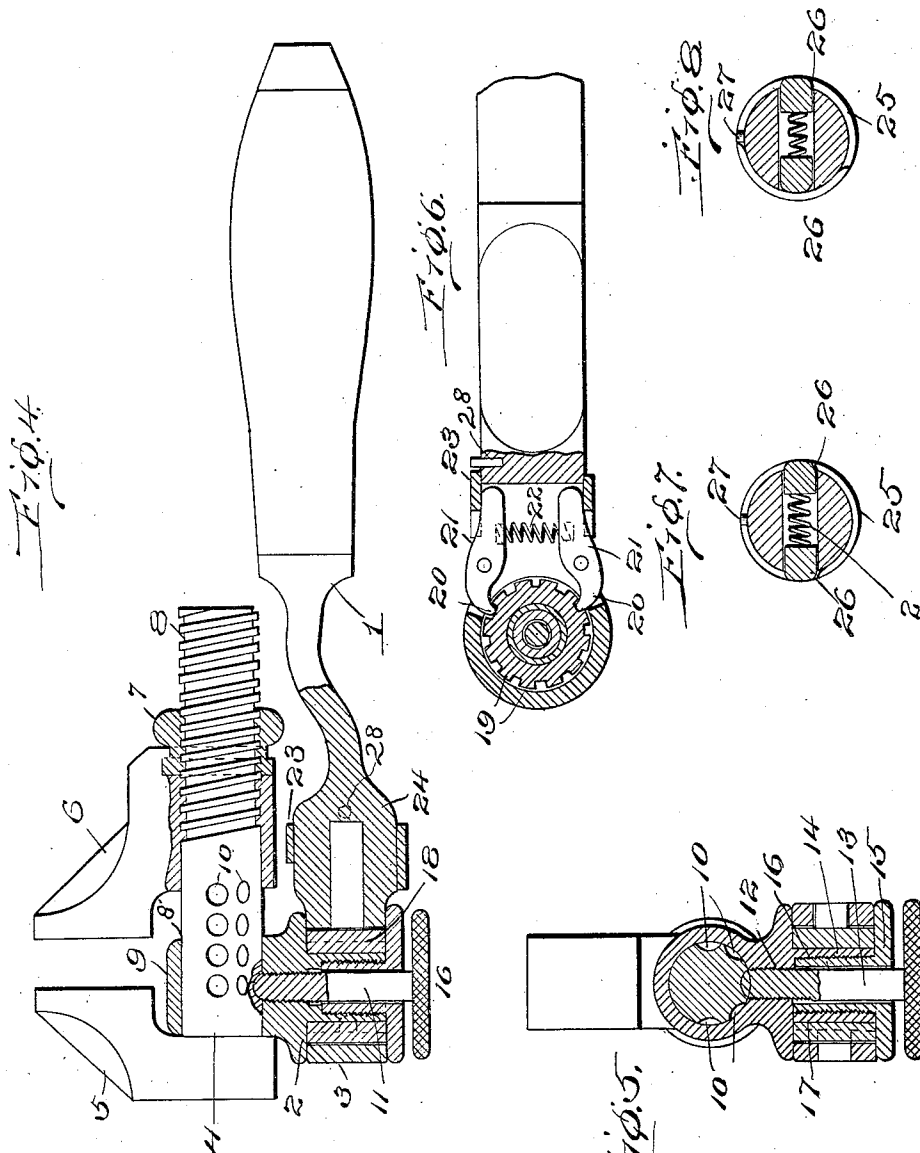
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JAMES C. HAWES, OF BROOKLYN, NEW YORK.

WRENCH.

1,050,131.

Specification of Letters Patent.

Patented Jan. 14, 1913.

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To all whom it may concern:

Be it known that I, JAMES C. HAWES, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to improvements in wrenches, and is especially designed as an improvement over the wrench shown in the patent to Smith, granted May 30, 1905, Patent No. 791,298, now assigned to me.

In the patent to Smith a wrench is shown which may be used either as an ordinary or rigid wrench or as a ratchet wrench, the important features of the device residing in the fact that the jaws may be adjusted to various positions to enable the wrench to be used in corners and other places where it would be impossible to use an ordinary wrench, and in the ratchet mechanism for using the device as a ratchet wrench. In using the device as constructed in accordance with the Smith patent, however, it has been found that the means for locking the jaw carrying shaft in various angular and longitudinal adjustments has been found unsatisfactory and even ineffectual.

One of the objects of this invention is to provide a positive locking means for the jaw carrying shaft that may be readily manipulated by the operator and will not become impaired or unfit for service, as in the case of the locking device in the Smith patent. The ratchet mechanism for the wrench shown in the Smith patent has also been found to be unsatisfactory, particularly in view of its delicate and rather complicated construction.

The second object of this invention is therefore to provide a ratchet mechanism that will be a decided improvement over the one just referred to, both as regards simplicity and convenience in adjustment.

With the foregoing and other objects in view, the invention consists in the novel features of construction, combination and arrangement of parts illustrated in the drawings and more particularly pointed out in the appended claim.

In the accompanying drawings:—Figure 1 is a side elevation of the complete wrench when used as an ordinary or rigid wrench. Fig. 2 is a similar view of the wrench as arranged for use as a side wrench. Fig. 3

is a view of the wrench as used as an end wrench. Fig. 4 is a sectional elevation of Fig. 1, the pawl spring omitted. Fig. 5 is a transverse sectional view taken through the jaw carrying shaft, its bearing and the ratchet head. Fig. 6 is a horizontal sectional view taken through the ratchet head and the ratchet device, and Figs. 7 and 8 are transverse sectional views showing different positions of the ratchet device.

Referring to the drawings for a more particular description of the invention, the device comprises the handle bar 1, the rotating ratchet head 2, the bearing head 3 at the inner end of the handle bar for the ratchet head, the jaw carrying shaft 4, the fixed jaw 5, the adjustable jaw 6 slidably mounted on the shaft 4 and the adjusting nut 7 which screws on the threaded portion 8 of the shaft and is for the purpose of adjusting the movable jaw 6. The shaft 4 is mounted for longitudinal and rotary adjustment in the bearing 8¹ formed by an extension of the ratchet head 2, and is provided with five or more longitudinal series of sockets 10, the socket of any one of which series is adapted to be engaged by or to receive the inner end of the locking screw 11. The inner end of the locking screw 11 is exteriorly threaded, as at 12, while the outer end 13 thereof is smooth and is adapted to turn in the stem 14 of the bearing plug 15. The outer end of the adjusting screw passes through and beyond the bearing plug 15 and is provided with the knurled head 16, by means of which the screw may be turned to provide for its adjustment.

The stem or tubular portion 14 of the bearing plug 15 is exteriorly threaded, as at 16, and screws in a tubular interiorly threaded extension 17 of the ratchet head. A ratchet wheel 18 encircles the tubular extension 17 and is keyed or otherwise attached thereto. The teeth 19 of the ratchet wheel are adapted to be engaged by the pivoted ends 20 of the pawls 21 carried by the handle 1 of the wrench and normally held in engagement with said teeth by the coil spring 22 arranged between the free ends of the pawls.

The pawl releasing ring 23 is revolubly mounted on the bearing portion 24 of the handle bar. This ring is provided at its inner end with a cam portion 25 which extends somewhat less than one-half the dis-

tance around the ring and the ends of which are beveled, as at 26, for engagement with the free ends of the pawls. The rotary or turning movement of the releasing ring is limited in either direction by the stop pin 27 projecting from the bearing portion 24 of the handle bar 1.

The wrench may be used in the usual manner, as clearly shown in Figs. 1 and 4 of the drawings, or it may be used as a side wrench by partially unscrewing the adjusting screw and turning the jaw carrying shaft 4 to bring the jaws in the position indicated in Fig. 2.

To use the wrench as an end wrench, the jaws and handle bar are adjusted to the position shown in Fig. 3.

When the device is used as an ordinary or rigid wrench, the releasing ring is turned to the position indicated in Fig. 7 of the drawings, which permits both pawls to engage the teeth of the ratchet wheel.

To use the wrench as a ratchet wrench, either to the right or left, the releasing ring is turned a quarter of a revolution, as clearly shown in Fig. 8, to throw one of the pawls out of use. A pin 28 is arranged at the bearing portion 24 of the handle bar to engage the inner edge of the pawl releasing ring, whereby the latter is held in place.

From the foregoing description taken in connection with the drawings, it is thought that the construction and operation of this

invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportions, and minor details of construction may be resorted to without departing from the principles or sacrificing any of the advantages of this invention as defined in the appended claim.

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

A wrench of the class described comprising a ratchet head, a handle bar having a bearing for said head, a bearing formed by an extension of the ratchet head, a jaw carrying shaft slidably and rotatably mounted in said last mentioned bearing and provided with longitudinal sockets, a locking screw for rigidly holding said shaft at the desired adjustment, said screw screwing in the ratchet head and adapted to engage any one of the sockets of the shaft, pawls pivoted to the handle bar and arranged to engage the teeth of the ratchet head with means to throw said pawls into and out of engagement.

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

JAMES C. HAWES.

Witnesses:

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