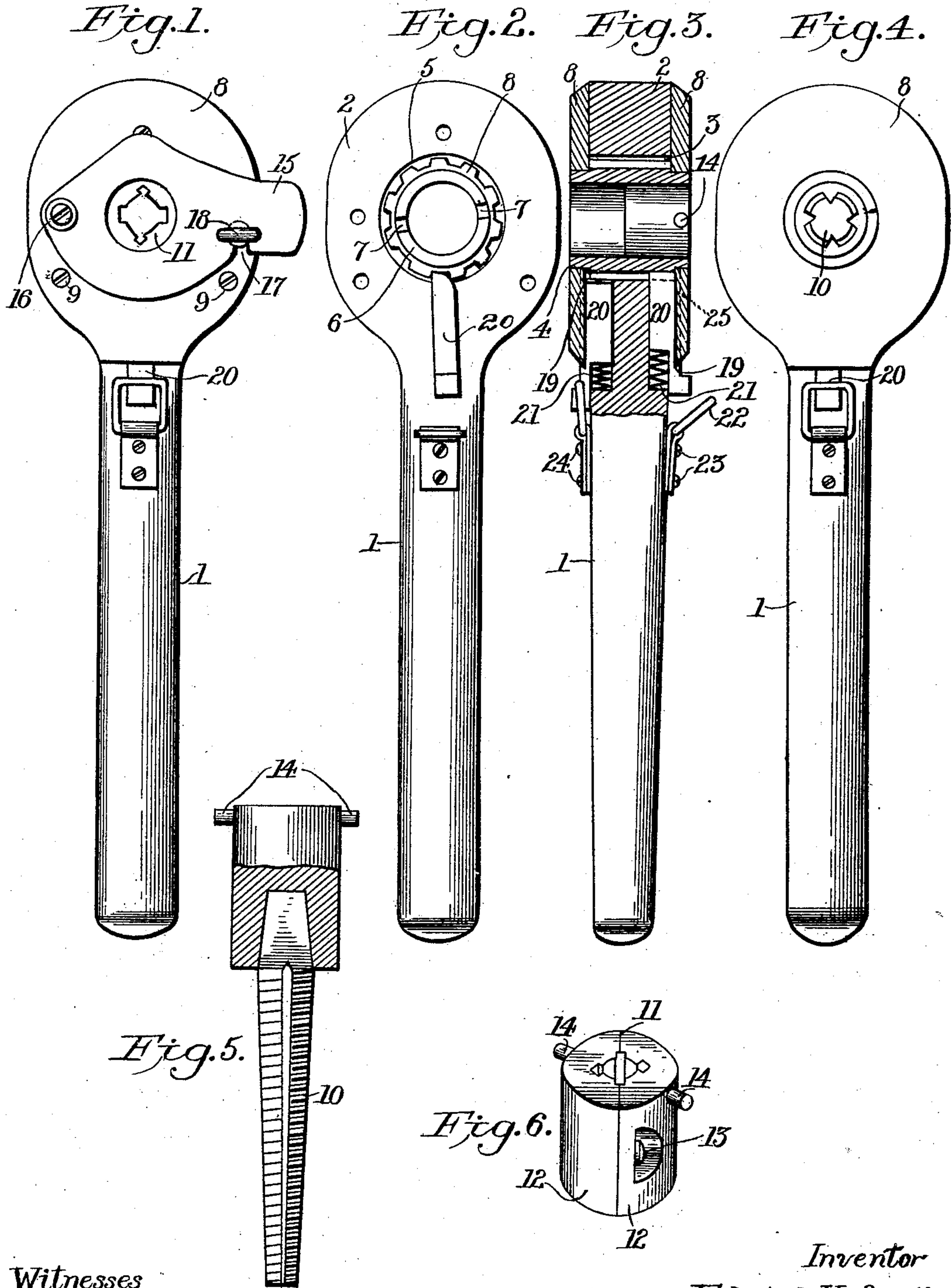


E. H. SMITH.
 RATCHET DIE STOCK.
 APPLICATION FILED JULY 2, 1908.

929,036.

Patented July 27, 1909.



Witnesses

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UNITED STATES PATENT OFFICE.

EDWARD H. SMITH, OF ABERDEEN, WASHINGTON, ASSIGNOR OF ONE-HALF TO JAMES BEEMER, OF ABERDEEN, WASHINGTON.

RATCHET DIE-STOCK.

No. 929,036.

Specification of Letters Patent.

Patented July 27, 1909.

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To all whom it may concern:

Be it known that I, EDWARD H. SMITH, a citizen of the United States, residing at Aberdeen, in the county of Chehalis and State of Washington, have invented certain new and useful Improvements in Ratchet Die-Stocks, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in die-stocks, and the primary object thereof is to provide a simple, durable, and inexpensive device of this class, which is adapted to receive and maintain as a component part of its organization any suitable type of die or other similar tool.

Another object contemplated by this invention is the employment of means or appurtenances for efficaciously receiving the movement of the die-socket relative to the handle, so that upon a continuous oscillation of the latter the former may be rotated in either direction that convenience may dictate.

To the accomplishment of the recited objects and others coördinate therewith, the preferred embodiment of my invention resides in that construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and embraced within the scope of the appended claim.

In said drawings: Figure 1 is a side elevation of the complete device embodying my invention. Fig. 2 is a similar view, the side and side-plate being removed. Fig. 3 is an end elevation of the die-socket, and handle, the die-socket or head portion being shown in section. Fig. 4 is a view similar to Fig. 1, showing the opposite side of the device. Figs. 5 and 6 are, respectively, an elevation partly in section and a view in perspective of two forms of taps.

Similar reference numerals designate corresponding parts throughout the several views.

Referring to the accompanying drawings, 1 designates the handle, and 2 the integrally-formed terminally-enlarged head, the latter having a central bore 3, with a diameter sufficiently large to freely accommodate the rotatable tubular die-socket 4, which is provided circumferentially with a series of ratchet teeth 5, and with lateral oppositely-disposed annular flanges 6. One of said annular flanges is recessed at diametrically op-

posite points, as clearly exhibited and indicated by 7, in Fig. 2 of the drawings, and the socket as an entirety is retained and guided in its movement by the detachable plates 8, which, to that end are provided with central circular orifices lying loosely about the said flanges, and secured to the head 2 by any suitable fastening means, such for example, as the screws 9.

Conjunctively, with the foregoing arrangement and construction, I utilize slightly modified types of taps, two forms of which are disclosed in the drawings. In Fig. 5 a tap 10 for internally screw-threading is shown, the shank portions being attached to the head. In Fig. 6 a sectional adjustable externally threading die 11 is illustrated, the expansion or contraction of the sections 12 being attained by the appropriate manipulation of the counter-sunk screws 13, one being located on each side of one of the said sections. Obviously, various other forms of taps, dies, nut-holders, or the like may be used interchangeably, the illustrations in the drawings being only of suggestive scope sufficient to afford full explication of the principle of my invention.

Upon the introduction of either of the taps shown in the socket, the laterally projecting lugs 14 thereof will register with and engage the recesses 7 of the annular flanges 6, the said lugs being arranged relatively to each tap, so that the latter will assume a position entirely flush with the outer surface of the annular flanges. To provide for the ready insertion and extraction, and fastening of the tap, I employ a slidable plate 15, pivoted at 16, the terminally reduced portion constituting a handle, and having a slot 17, which may be engaged or disengaged, as the occasion may require, by loosening or tightening the thumb-screw 18.

To insure a free rotation of the die-socket in either direction relative to the handle, I have designed a simple and positive ratchet mechanism, the constituent parts of which will now be described. On opposite faces of the head 2 are arranged vertically disposed slots 19, in which are slidably mounted pawls 20, the lower terminals thereof being related on their inner sides for the reception and working of the extensible coil-springs 21, and projecting laterally outward to present a suitable surface for engage-

ment with the swinging catch 22, which is mounted adjacent thereto, preferably, by means of a piece of metal 23 bent upon itself and fastened to the handle portion by screws 24. To preclude any possibility of the displacement of the pawls 20, I prefer to have the inner sides of the plates 8 slotted or recessed as at 25, clearly indicated by dotted lines in Fig. 3.

Assuming that it is desired to use the device, the tap or other tool is inserted and secured, and the direction of rotation of the socket adjusted in the manner hereinafter described. In this assembled condition the device is applied to the particular work. The handle 1 is then oscillated in one direction one of the pawls 20 positively engaging the teeth 5. Upon the reverse movement of the handle the teeth 5 will strike the inclined face of the pawl and force the latter downwardly against the spring 21, thereby permitting the die-socket to rotate freely in this direction. Should it be found desirable to rotate the socket in the opposite direction, it is only necessary to cause the other pawl to be thrown out of engagement with the teeth.

It is evident that with my invention friction is reduced to a minimum, that the comparatively few parts of the mechanism may be assembled and separated for the substitution of new for wornout portions, or for purposes of lubrication, and that the tapping or other work to be performed may be accomplished in a facile manner.

It should be understood that in its broader

aspects my invention comprehends the employment not only of the various means described, but of equivalent means for performing the recited functions. While the arrangement shown is thought, at the present time, to be preferable, I desire to reserve the right to effect such modifications and variations thereof as may come fairly within the scope of the appended claim.

Having thus described the invention what is claimed is:

In a device of the character described, the combination of a handle portion, a head portion provided with an opening therein, a ratchet socket rotatably mounted in said opening, a plate secured to one face of said head portion to retain the ratchet socket in its opening, registering slots formed in the adjacent faces of said head portion and plate, a pawl rabbeted on its under side at one end and slidably mounted in said slots, a spring mounted in the rabbeted portion of the pawl and arranged to bear against one end of the slot, a lateral extension fixed on the rabbeted end of the pawl and arranged to extend through an uncovered portion of the slot, and a latch on the handle arranged to engage the said extension to hold the pawl out of action.

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

EDWARD H. SMITH.

Witnesses:

L. McGRAGOR,
JOHN O'HARA.