T. A. Weston

Ratchet Lever

No. 75090 Patented March 3. 1868

Fig. 1.

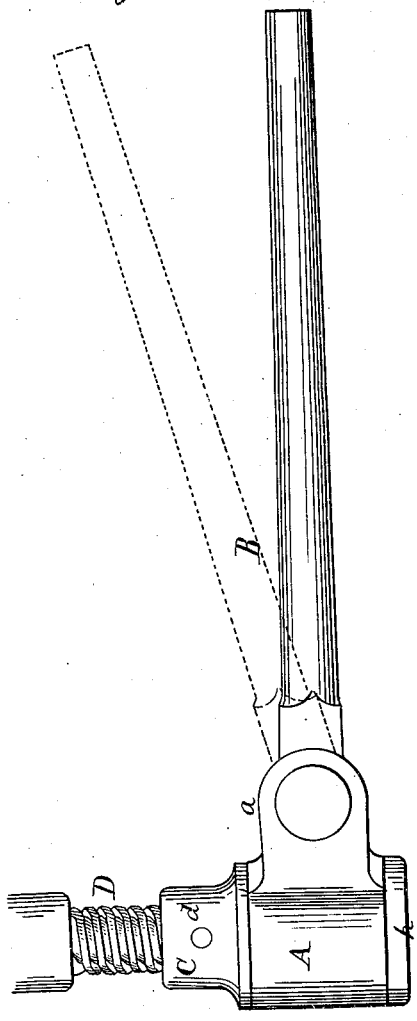



Fig. 3.

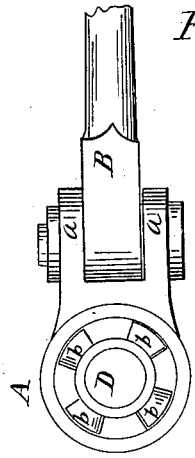



Fig. 4.

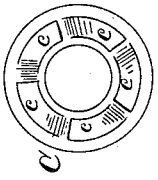
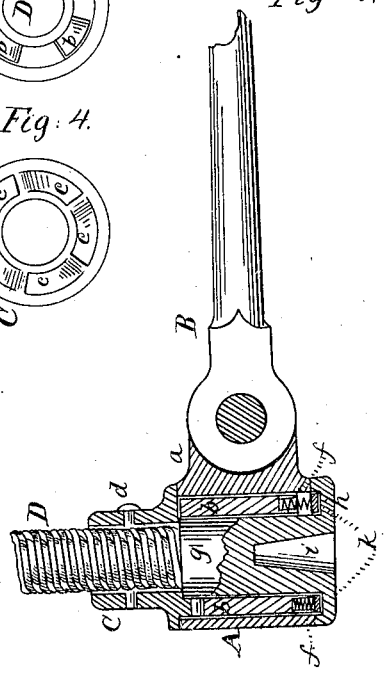



Fig. 2.




Witnesses:

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# United States Patent Office.

T. A. WESTON, OF BUFFALO, NEW YORK.

*Letters Patent No.* 75,090, *dated March* 3, 1868.

## IMPROVEMENT IN RATCHET-HEAD AND LEVER.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, T. A. WESTON, of the city of Buffalo, in the county of Erie, and State of New York, have invented a certain new and useful Improvement in Ratchet-Levers or Heads; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is an elevation of my improved device.

Figure 2, a central vertical section.

Figure 3, a plan with the ratchet-head removed, showing the pawl-barrel.

Figure 4, a plan of the under end of the ratchet-head.

Like letters of reference indicate corresponding parts in all the figures.

I embody in this improvement my differential principle of teeth and pawls, viz, the use of an unequal relative number of large teeth and pawls, whereby I am enabled to attain the same nicety of adjustment as is attained by the use of fine teeth, which, by their rapid wear, soon become useless. I do not claim this principle in this present application, but my invention consists in the special construction and arrangement of the device containing these parts, whereby this principle is made effective.

In the drawings, A indicates the pawl-barrel, which is made hollow, and has two ears or lugs, *a a*, between which is pivoted the end of the lever B, so as to turn upward or downward, as indicated by red lines. In the rim of the pawl-barrel is arranged a series of pawls *b b*, which are pressed forward by springs *f f*, to engage with teeth *c c*, formed on the face of a ratchet-head, C, fig. 4. This ratchet-head is secured fast by any suitable means to the feed-screw D, that shown in the drawing being a pin, *d*, passing through both parts. The screw D, not only forms the feed-screw, but it also serves as the nozzle or socket to receive the head or end of the article which is to be acted on. To this end it has a smooth body, *g*, which rests and turns in the centre or opening of the pawl-barrel, and has a flanged head, *h*, which abuts the lower end of the pawl-barrel, and the nozzle or socket *i* is made in the head. A thin washer or ring, *k*, is fastened in a groove in the head, and held by a pin, *l*, of the pawl-barrel, so as to form a rest for the springs and pawls as the screw is revolved.

The relative number of the teeth and the pawls is unequal; that is, the teeth are one more or one less in number than the pawls. By this arrangement, the pawls do not all engage with the teeth simultaneously, but rather in succession, so that in passing the space of a single tooth, the pawls all engage one after another, thus insuring as nice an adjustment as where a large number of fine teeth are employed with a single pawl, while the great wear and slight contact of small teeth are avoided.

By this arrangement of the device, holding these engaging parts, it is particularly adapted as a feeding-ratchet to the work to be accomplished. The screw D being made in a single piece, and answering the three-fold purpose of feeding the ratchet forward, of serving as a bearing for the pawl-barrel, and as a nozzle for the article to be acted upon, insures great strength with simplicity of action. The ratchet is moved downward as fast as the cut is made, and by its own action. The ratchet-head is firmly and securely held in place between the two shoulders, *h* C, so that there can be no irregularity of movement, and the action of the pawls is free and unrestrained. These parts are all of regular form, so that they may be easily turned in the lathe, or otherwise dressed, which requires but little work. The washer *k*, which serves as the rest for the springs *f*, being held by pin *l* from turning with the screw-head *h*, retains said springs from injury, which might occur were they to come directly in contact with the screw-head.

Beside these advantages, the jointing of the lever at the point *a a*, enables the same to be raised or lowered at pleasure, as indicated by red lines, so that the ratchet may itself be worked in an inconvenient place, for instance, in a narrow inclined space, or over any obstruction which stands in the way; or, if desired, the pivot itself may be removed, and the end of the lever may be inserted through the pivot-holes half way, and serve as a double-acting lever for two persons.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a ratchet-lever, with a series of differential teeth and pawls *b c*, as described, I claim the construction and arrangement of parts as herein set forth, consisting of the feed-screw D, socket *i*, the barrel A, turn-

ing thereon, and operated by lever B, the ratchet-head C, secured to the screw by the pin *d* and the washer *k*, for retaining the springs in place, the whole operating in the manner and for the purpose specified.

2. I also claim the jointed lever B, in combination with the devices thus constructed, substantially as set forth.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

T. A. WESTON.

Witnesses:

JAY HYATT,

ALBERT HAIGHT.