

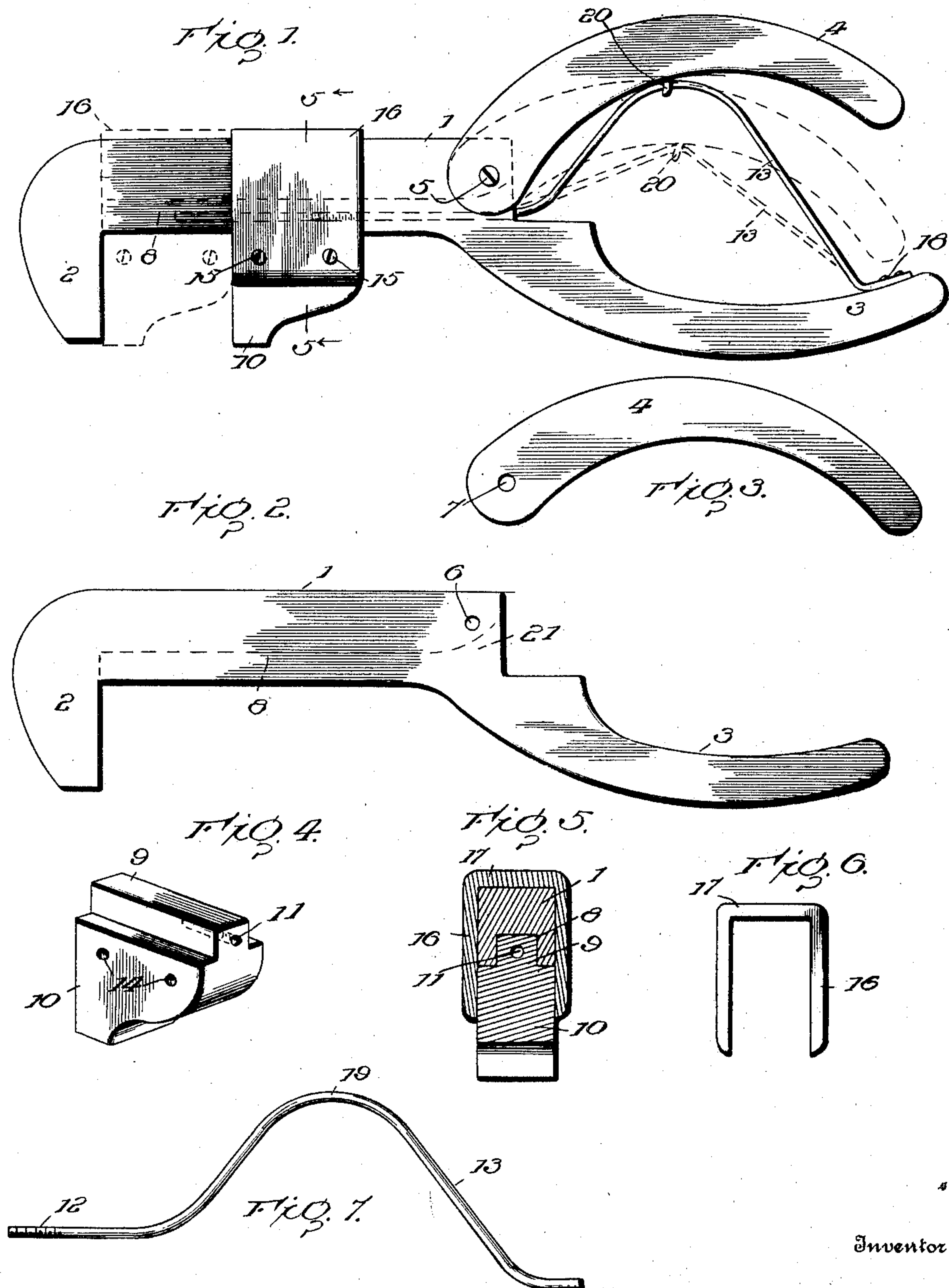
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A. P. MILLER.
WRENCH.

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NO MODEL.



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WRENCH.

SPECIFICATION forming part of Letters Patent No. 737,645, dated September 1, 1903.

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To all whom it may concern:

Be it known that I, AUGUSTUS PRICE MILLER, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Wrenches; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in wrenches; and it has for its objects, among others, to provide a simple, easily-operated wrench composed of a few parts, those parts being readily assembled and not liable to get out of order.

The present invention comprises in its broad sense a wrench having a movable jaw operated directly by the elongation of a spring or spring-plate which is put into motion by the movement of one handle or portion of the handle toward the other as the same is grasped by the hand. When pressure is removed from such handle, the spring or spring-plate returns the parts to their normal position and moves the movable jaw away from its companion. No means of adjustment other than the said spring and movable handle are necessary, the necessary adjustment being obtained by manipulation of the handle.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention in its preferred form is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation of my improved wrench. Fig. 2 is a side elevation of the shank, fixed jaw, and the handle. Fig. 3 is a similar view of the movable portion of the handle. Fig. 4 is a perspective view of the movable jaw detached. Fig. 5 is a vertical cross-section on the line 5 5 of Fig. 1 looking in the direction of the arrows. Fig. 6 is an end elevation of the saddle or stirrup removed.

Fig. 7 shows in elevation the spring employed.

Like numerals of reference indicate like parts throughout the several views.

Referring now to the drawings, 1 designates the shank having the fixed jaw 2 and the handle portion 3.

4 is the movable handle portion pivotally mounted on the shank 1 by any suitable means, as the screw or bolt 5, passed through the coincident openings 6 and 7 in the shank and the adjacent end of the movable handle portion, respectively.

The shank 1 is provided upon its inner face with a longitudinal groove 8, in which is adapted to slide the projection 9 on the movable jaw 10. This movable jaw is provided with a longitudinal screw-threaded opening 11, in which is received the screw-threaded end 12 of the spring 13, and upon opposite sides with openings 14 for the reception of screws or analogous means 15, which serve to secure thereto the saddle 16, (shown detached in Fig. 6,) and the cross portion 17 of which is designed to bear upon the outer face of the shank 1, as seen clearly in Fig. 5. The opposite end of the spring is securely fastened, as at 18, to the inner face of the outer extremity of the fixed handle portion 3, the said spring being "humped" or bent between its ends, as seen at 19, and this portion passes laterally through a keeper 20, which may be of any suitable construction and carried by the inner face of the movable handle portion 4 at a point substantially midway between its ends. The under face of the shank is provided at its inner end with an enlarged opening 21, through which the spring passes and which permits of the necessary movement of the spring as the same is elongated or contracted in the movement of the handle.

The parts are readily assembled, and the movable jaw may be easily removed, when desired for any purpose, by the removal of the saddle-piece 16, which latter serves to guide the movable jaw in its movements and prevent undue lateral movement thereof, this guiding being in addition to the guiding movement received by the projection 9, moving in the groove 8 of the shank 1.

The operation will be apparent, the parts

being in position seen in full lines in Fig. 1 the jaws are separated and the article to be acted upon can be readily placed therebetween, when pressure on the movable handle 5 sufficient to force it toward the fixed handle portion 3 will cause the spring to elongate and by its elongation cause the movable jaw to approach the fixed jaw 2, the parts assuming the position indicated by dotted lines in 10 Fig. 1 or a position intermediate that indicated by the dotted and full lines, according to the amount of pressure brought to bear upon the handles. When the pressure is removed, the spring will return the parts from 15 the position indicated in dotted lines to that seen in full lines.

From the above it will be seen that I have devised a simple, novel form of wrench, and while the structural embodiment of the invention, as herein disclosed, is what I at present consider preferable, it is evident that the same is subject to changes, variations, and 20 modifications without departing from the spirit of the invention or sacrificing any of its advantages, and I therefore do not wish to be restricted to the details of construction herein disclosed, but reserve the right to make such changes, variations, and modifications 25 as come properly within the scope of the protection prayed.

What I claim as new is—

1. In a wrench, a shank with fixed jaw, a movable jaw and longitudinally-expansible compressible integral means having one end 35 fixed with relation to the movable jaw and the other end connected to the movable jaw to actuate the same by compression of said means.

2. In a wrench, a shank with fixed jaw, a 40 movable jaw and longitudinally-expansible compressible integral means for actuating the latter, said means being guided within the groove in the shank and having one end fixed with relation to the movable jaw and constructed to automatically return the latter to 45 its normal position.

3. A wrench comprising a shank, a fixed jaw and a fixed handle portion, a movable jaw, a movable handle portion, and longitudinally-expansible compressible integral 50 means having one end directly engaged with the movable jaw and the other end fixed with relation thereto, said means being slidably connected with the movable handle portion and put in motion by the compression of the 55 handle.

4. In a wrench, a movable jaw, and a longitudinally-expansible bowed spring having one end connected with the movable jaw and 60 the other end fixedly secured, said spring being longitudinally expansible and compressible to actuate the movable jaw.

5. In a wrench, a shank having a fixed jaw

and handle portion, a movable jaw, a movable handle and an interposed bowed member made longitudinally expansible by the 65 movement of the movable handle and slidably connected therewith and having one end secured to the fixed handle portion.

6. In a wrench, a shank with stationary 70 jaw, a pivotally-mounted handle, a movable jaw and a spring-plate having one end connected with the movable jaw and the other end with the fixed handle, with an intermediate portion adapted to be actuated by the 75 movable handle.

7. In a wrench, a stationary jaw, a shank, a fixed handle, a movable handle, a movable jaw, a spring connected at one end with the movable jaw and at the other end with the 80 fixed handle and having a portion intermediate its ends movably connected with the movable handle.

8. In a wrench, a shank with stationary jaw, a movable jaw, a fixed and movable handle, and compressible integral means intermediate the fixed handle and movable jaw 85 mounted for endwise movement and longitudinally expansible by the compression of the handle to actuate the movable jaw. 90

9. In a wrench, a shank with stationary jaw, a movable jaw, a fixed and movable handle, and means intermediate the fixed handle and movable jaw mounted for endwise movement by the compression of the handle to actuate the movable jaw, and slidable within 95 the shank.

10. In a wrench, a shank with fixed jaw, a movable jaw, a detachable stirrup receiving the shank, and a spring compressible for extension lengthwise to actuate the movable 100 jaw.

11. In a wrench, a shank with fixed jaw, a movable jaw, a detachable stirrup receiving the shank and a spring compressible for extension lengthwise to actuate the movable 105 jaw, and slidably connected with one of the handles.

12. In a wrench, a shank, a rigid jaw, a movable jaw, a flexible longitudinally-expansible bowed member for operating the movable jaw, and means for compressing said 110 member.

13. In a wrench, a shank, a rigid jaw, a movable jaw, a bowed spring connected at 115 one end with the movable jaw and its other end attached to some fixed part, and means for engaging the bowed part of the spring to compress it and move the spring lengthwise to actuate the movable jaw. 120

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

AUGUSTUS PRICE MILLER.

Witnesses:

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