

No. 685,698.

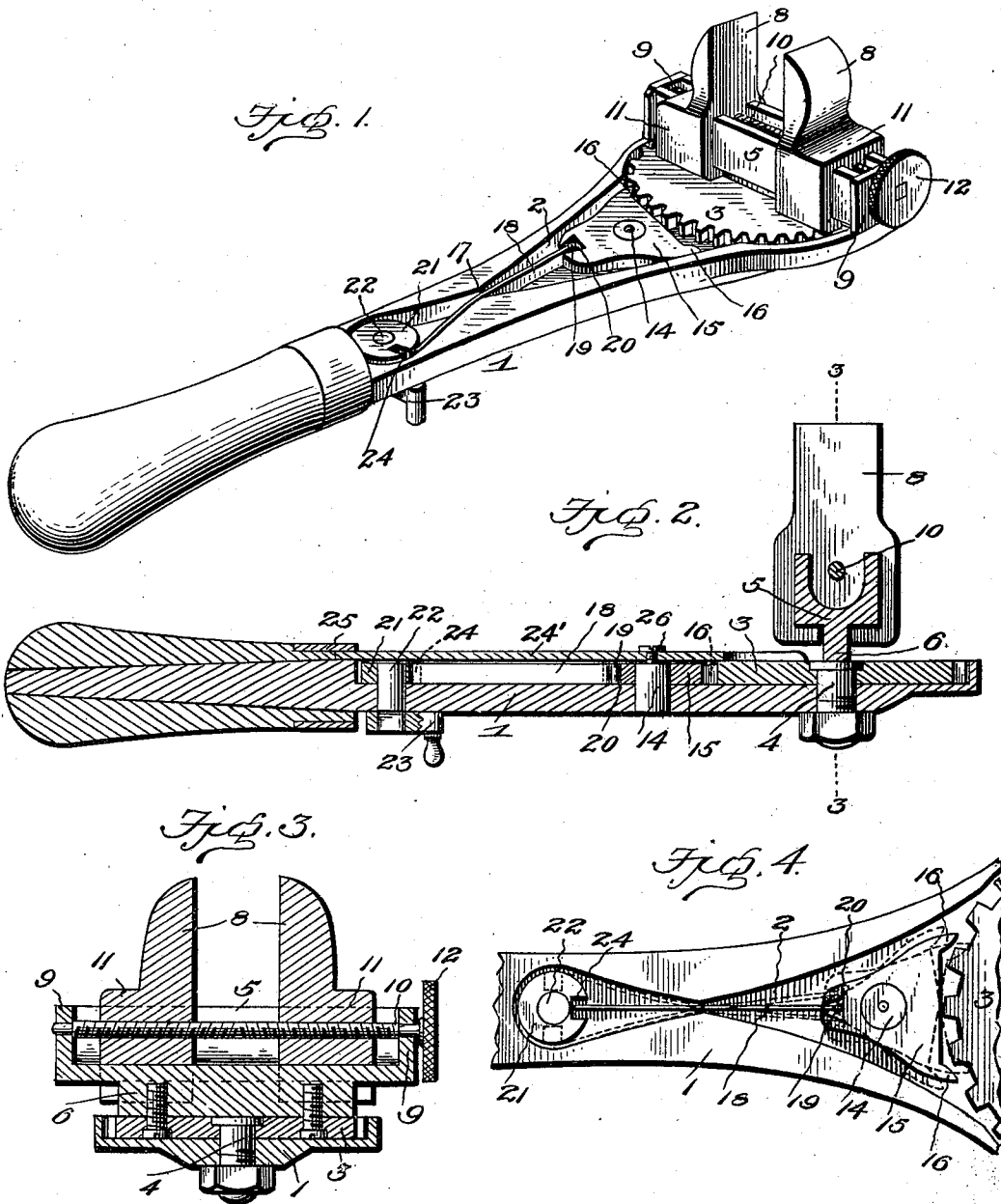
Patented Oct. 29, 1901.

G. F. SPRAGUE.

WRENCH.

(Application filed July 30, 1901.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE FRANKLIN SPRAGUE, OF GETTYSBURG, PENNSYLVANIA, ASSIGNOR
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WRENCH.

SPECIFICATION forming part of Letters Patent No. 685,698, dated October 29, 1901.

Application filed July 30, 1901. Serial No. 70,277. (No model.)

To all whom it may concern:

Be it known that I, GEORGE FRANKLIN SPRAGUE, a citizen of the United States, residing at Gettysburg, in the county of Adams and State of Pennsylvania, have invented a new and useful Improvement in Ratchet-Wrenches, of which the following is a specification.

My invention relates to certain improvements in wrenches, and particularly to that class of wrenches in which the jaws are mounted upon a base capable of being revolved by a ratchet mechanism in either direction.

The object of the invention is to provide a device of the most simple and economical character in which the jaws will be firmly held and guided; and, furthermore, it consists in means for changing a pawl-operating mechanism, so that the action of the pawl on the teeth of the ratchet-wheel may be made effective in either direction of movement.

With this and other objects in view the invention consists in the improved construction and novel combination and arrangement of parts, as more fully specified hereinafter, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view of a ratchet-wrench constructed in accordance with my invention, the top or cover plate being removed. Fig. 2 is a longitudinal sectional elevation of the same. Fig. 3 is a transverse sectional elevation of the wrench on the line 3-3, Fig. 2; and Fig. 4 is a plan view of a portion of the wrench-handle, illustrating the construction of the pawl-operating mechanism.

Similar numerals of reference indicate corresponding parts in the various figures of the drawings.

1 designates a base or handle, provided on its upper face with a recess 2, enlarged at its outer end for the reception of a toothed wheel 3, the latter being mounted on a stud 4, secured to the handle portion and capable of free movement thereon in either direction.

Secured diametrically across the wheel 3 is a channeled bar 5, having a central narrowed web 6 and finished to form guiding-faces for the reception of the shank portions of oppositely-disposed jaws 8. In the end walls 9 of

the bar 5 is journaled a screw-shaft 10, having right and left handed threads adapted to engage in threaded openings in bosses 11, forming part of the jaws, the screw being turned in either direction to effect the opening or closing of the jaws by a milled operating wheel or disk 12.

In the recess 2 of the handle is secured a stud 14, on which is mounted a pawl-block 15, having on each of its forward edges a tooth 16, adapted to engage with the teeth of the wheel 3, the construction and arrangement of the pawl-block being such that but one of the pawl-teeth can be engaged with said wheel at a time.

The recess 2 is of double-V shape in contour, the contracted portions 17 forming fulcrums for an operating-spring 18, one end of which has a slightly-rounded head 19, adapted to engage in a recess 20, formed in the rear portion of the pawl-block 15. The rear end of the spring finds a bearing on either one side or the other of a disk 21, seated at the rear end of the recess and mounted on a spindle 22, passing through the handle and having at its lower end a crank 23, by which the disk may be turned. Formed in the edge of the disk is a slot 24, of such depth as to receive the free end of the spring 18 when turned into alinement therewith, as shown in Fig. 4, this figure illustrating the central position of the spring and disk, and the pawl-block being held inoperative in either direction. When the parts are in the position shown in Fig. 4, a slight turn of the disk 21 will carry the free end of the spring to one side of such disk, this movement causing a movement in the opposite direction of the pawl-block to effect the engagement of one of its teeth with the wheel 3. The similar movement of the disk in the opposite direction will cause the opposite pawl-tooth to engage with the wheel, the shifting of the adjustment to effect rotation in one direction or the other being thus accomplished in the simplest manner.

The construction is such that the work of assembling is very readily accomplished, the spring not requiring any fitting or fastening in place and being readily removed and renewed when necessary.

The recess is covered by a top plate 24, one

end of which fits into a recess under the handle-ferrule and the opposite end being secured in place by a single screw 26, which passes through the cover and into the stud 5 14, thus forming a readily-removable top which will prevent the accumulation of dirt or dust within the recess.

Various changes in the form, proportions, and the minor details of construction may be 10 resorted to without departing from the principle or sacrificing any of the advantages of my invention.

Having thus described my invention, what I claim is—

15 1. The combination in a ratchet-wrench, of a handle portion having an upper recessed face, a toothed wheel mounted in said recess, adjustable jaws carried by said wheel, a pawl-block pivoted in the recess and having two 20 operating-pawls, a spring having one of its ends in operative engagement with said pawl-block, a rotatable disk forming an end bearing for the opposite free end of the spring, said disk having a radial slot or recess adapted 25 to engage with the end of the spring to effect the reversal of its bearing-points, and opposing fulcrums arranged about midway of the length of the spring, substantially as specified.

30 2. The combination in a device of the class described, of the toothed operating-wheel, a pawl-block having two pawls or teeth adapted

to engage said wheel, a spring in operative engagement with said pawl-block, a rotatable disk forming an end bearing for the opposite 35 free end of the spring, said disk having a radial slot or recess adapted to engage with the spring to effect the reversal of its bearing-point, a spindle carrying said disk, a crank on the outer end of said spindle, and opposing 40 fulcrums arranged about midway of the length of said spring, substantially as specified.

3. The combination in a ratchet-wrench of the base or handle portion 1 having a recess 45 2, a toothed wheel 3 mounted in said recess, a bar 5 secured to said wheel, adjustable jaws 8 guided on said bar, a threaded shaft 10 adapted to engage with said jaws, a stud 14, a pawl-block 15 pivoted thereon and having 50 engaging teeth 16, a spring 18 in operative engagement with the rear end of the pawl-block, a notched disk 21 forming an end bearing for the opposite end of said spring, a crank 23 connected to said disk, and opposing ful- 55 crums 17 arranged intermediate of the length of the spring, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE FRANKLIN SPRAGUE.

Witnesses:

JAMES W. BUNBAUGH,
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