No. 893,097. PATENTED JULY 14, 1908.

J. M. REAMS.

REVERSIBLE RATCHET WRENCH.

APPLICATION FILED SEPT. 27, 1907.

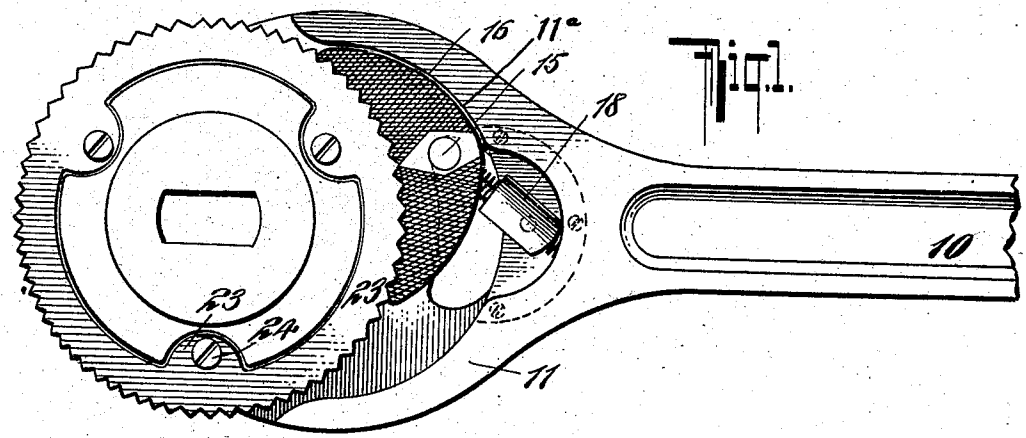

Fig. 1.

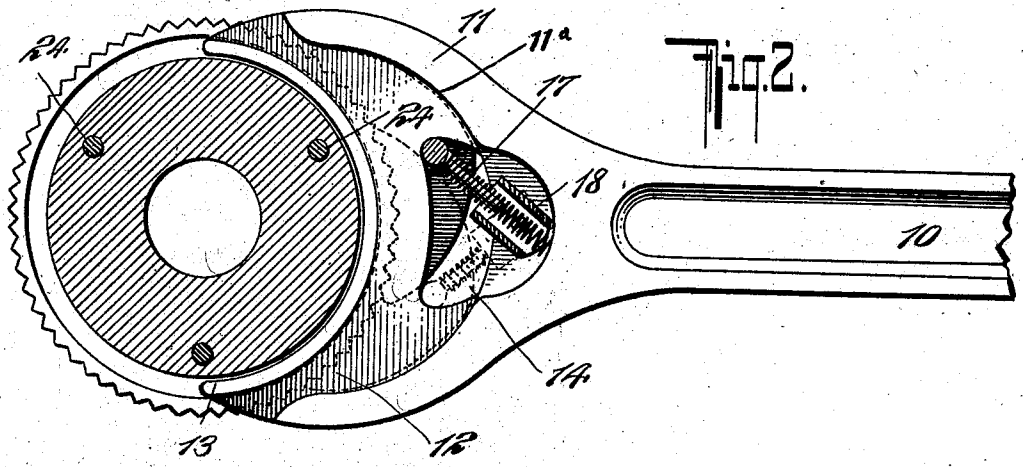

Fig. 2.

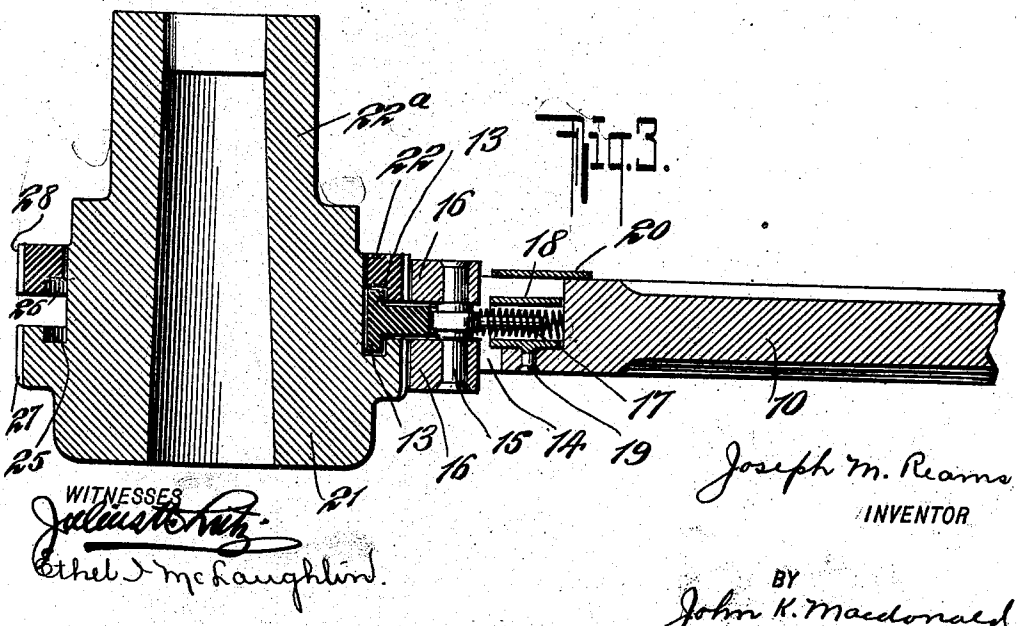

Fig. 3.

WITNESSES

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REVERSIBLE RATCHET-WRENCH.

No. 893,097. Specification of Letters Patent. Patented July 14, 1908.

Application filed September 27, 1907. Serial No. 394,794.

To all whom it may concern:

Be it known that I, JOSEPH M. REAMS, of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Reversible Ratchet-Wrenches, of which the following is a full, clear, and exact specification, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to provide a reversible ratchet wrench or other tool, which may be readily adapted for use as a wrench proper, as a drill-driving device, and for various other purposes, as will hereinafter fully appear.

Reference is had to the accompanying drawings which illustrate the preferred form of the invention, in which

Figure 1 is a plan view of the wrench with the cover plate over the spring-socket removed. Fig. 2 is a sectional plan of the same, and Fig. 3 is a vertical longitudinal section.

10 indicates the handle or shank of the tool, which is provided with an enlarged end 11 having an arc-shaped web 12, with upwardly and downwardly extending flanges 13 on its edges. The head 11 is orificed as at 14 and receives a pin 15 pivotally carrying two dogs 16. These dogs lie on opposite sides of the web 12 and have serrated arc-shaped edges, as will hereinafter more fully appear. They also have arc-shaped rear edges which match with corresponding shoulders 11^a on the end 11 of the handle. By this construction, the dog is caused firmly to engage the ratchets. Engaging the pin 15 is a spring 17, the outer end of which is fitted loosely in a sleeve 18, pivoted on the stud 19 in the aforesaid orifice 14 of the head of the handle 10. This orifice or cavity 14 not only receives the pin 15, but allows the same a limited transverse motion, so that the dogs may move from the position shown in Fig. 1 to the opposite or reverse position shown in dotted lines in Fig. 2, the pin 15 passing from one to the other side of the longitudinal center of the wrench and the sleeve 18 turning on its pivot to accommodate this motion. By this operation of the spring and the coacting parts, the dogs are held removably at either side of the longitudinal center of the wrench. If desired a cover-plate 20 (Fig. 3) may be fastened to the end 11 to protect and inclose the sleeve 18 and spring 17. The dogs 16, may if desired be milled on their outer surfaces so that they may be readily grasped and shifted from one position to another.

The head of the wrench is made up of two members 21 and 22, the latter having inwardly projecting lugs 23, through which screws or other fastenings 24 pass to engage the member 21, thus fastening the parts 21 and 22 rigidly, yet releasably, together. Said members have annular undercut races 25 and 26 opposing each other and receiving the flanges 13 of the web 12 in such manner that the head of the wrench is mounted to turn freely on the head of the handle, yet said parts are securely held engaged with each other. The members 21 and 22 of the head of the wrench are formed, directly outside of the races 25 and 26, with annular ratchets 27 and 28, and these are engaged, respectively, by the dogs 16 under pressure of the spring 17. It will thus be seen that, by springing the handle 10 back and forth, the dogs 16 will alternately engage and recover from engagement with the ratchets 27 and 28, thus producing a step by step rotation to the head of the wrench, the direction of which rotation may be changed at will by shifting the position of the dogs. It will also be seen that the head of the wrench may be readily constructed to receive various tools or instruments, thus adapting the implement to a wide range of usefulness.

The member 21 may have any desired form. As shown in the drawings, the member 21 has a tubular extension 22^a projecting from and beyond the member 22, and the form of the device illustrated is designed for the reception of a drill. By changing the form of the member 21, the head of the wrench may be constructed to receive a nut or any other device in connection with which a wrench may be used. In this connection it is pointed out that the parts 22^a may readily be made as a portion of a ratchet-drill device, such, for instance, as is shown in my co-pending application on ratchet drills, Serial No. 394,795, filed of even date herewith.

Having thus described my invention, what I claim is:

1. A ratchet-wrench having a handle with a flange portion, a wrench head formed of two parts opposing each other to produce an annular race to receive rotatably the flange on the handle, and a reversible dog mounted on the handle and coacting with the head of the wrench.

2. A ratchet-wrench having a head formed of two members with opposing annular under-cut parts forming a race, a handle having an arc-shaped portion from which oppositely disposed flanges project, said flanges being loosely received in the race of the head, and a reversible dog mounted on the handle and coacting with the head.

3. A ratchet wrench having a handle with a flange portion, a wrench head formed of two parts or members, the head having an annular race to mount rotatable the head on the handle, a reversible dog mounted on the handle and coacting with the head of the wrench, one of the members of said head having an extension projecting centrally through the other member and adapted to receive the device in connection with which the wrench is used.

4. A ratchet wrench having a head, a handle arranged to turn thereon, a transverse pin having a limited movement in the handle, dogs connected with the pin and arranged at opposite sides of the handle, and a spring exerting its pressure on the dogs to hold them in position.

5. A ratchet-wrench having a head, a handle arranged to turn thereon, a transverse pin having a limited movement in the handle, dogs carried by the pin and coacting with the head, a spring exerting its pressure on the dogs to hold them in position, a member engaged by the spring and pivoted to accommodate itself to the different positions of the spring and dogs.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH M. REAMS.

Witnesses:

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