

S. C. CLARK.

WRENCH.

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951,056.

Patented Mar. 1, 1910.

Fig. 1.

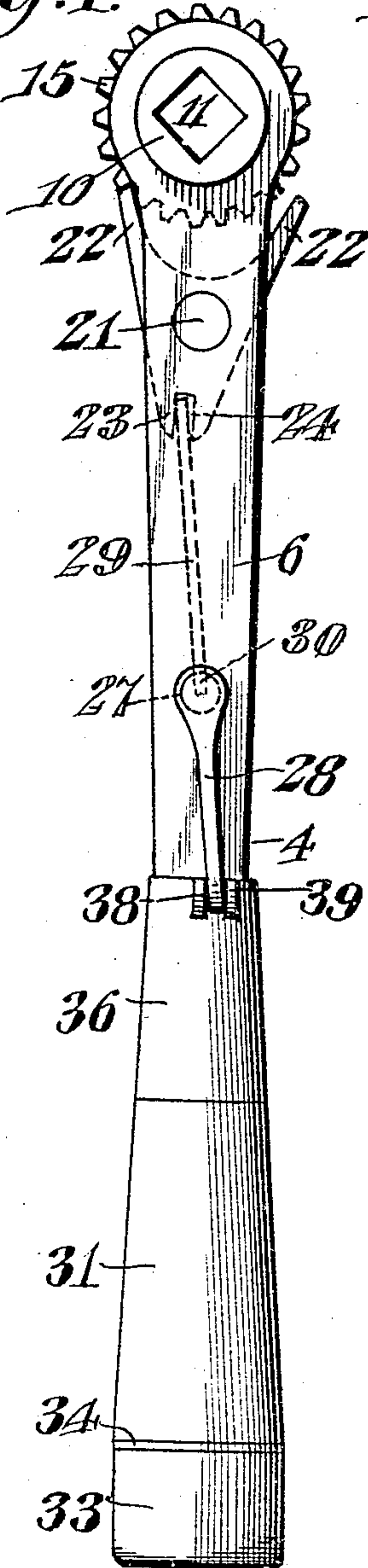


Fig. 2.

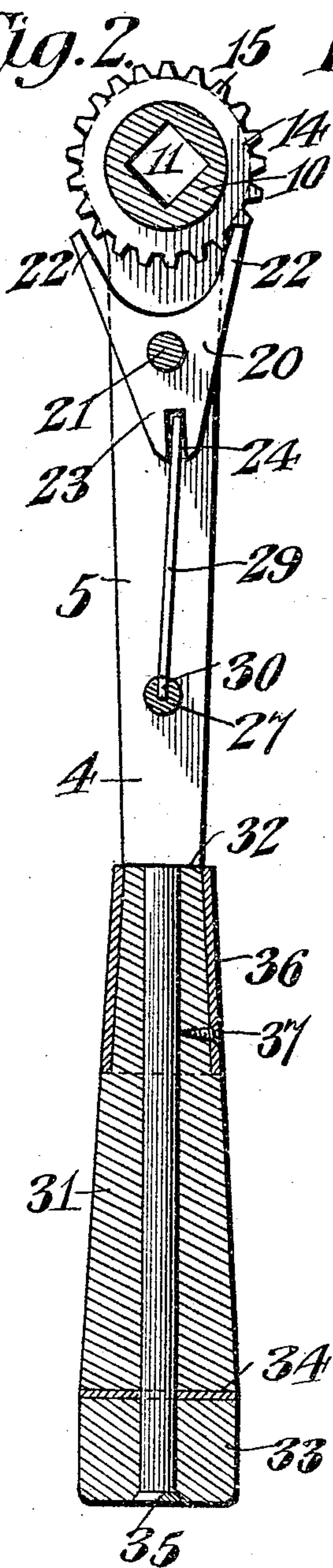
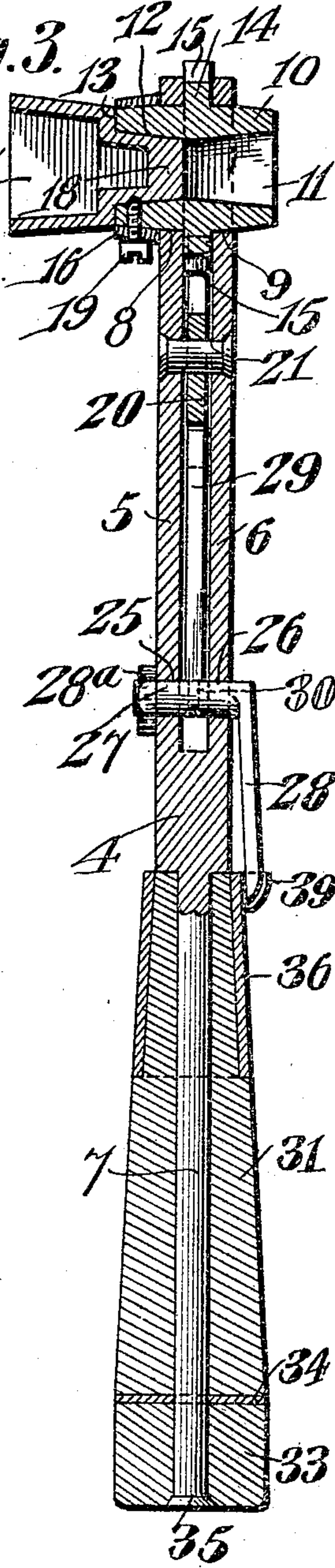


Fig. 3.



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# UNITED STATES PATENT OFFICE.

SHELTON C. CLARK, OF CARLETON, NEBRASKA.

WRENCH.

951,056.

Specification of Letters Patent.

Patented Mar. 1, 1910.

Application filed September 30, 1909. Serial No. 520,288.

*To all whom it may concern:*

Be it known that I, SHELTON C. CLARK, a citizen of the United States, residing at Carleton, in the county of Thayer and State of Nebraska, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to an improvement in that class of wrenches known as reversible ratchet wrenches, and is especially adapted for use in places where the ordinary wrench can not be readily applied.

The principal object of the invention is to provide a device of the class described in which a double acting dog is actuated by the rotation of the handle.

A further object of the invention is to provide a wrench in which a detachable socket is employed.

A still further object of the invention is to provide a wrench of a minimum number of parts, and consequently simple in construction, easy of operation and cheap to manufacture.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing, Figure 1 is a plan view of the wrench. Fig. 2 is a longitudinal sectional view through the same, and Fig. 3 is a similar view, taken at right angles to Fig. 2.

Like reference numerals designate corresponding parts in all the figures of the drawing.

Referring to the drawings, the invention comprises a body portion 4 of any suitable metal, having one end bifurcated to form cheek plates 5 and 6 respectively, and the other end reduced to form a shank 7. The cheek plates 5 and 6 are preferably flat on each side, and extend from one end to a point in close proximity to the said shank. The outer end of the said cheek plates are respectively provided with registering openings 8 and 9.

The invention further comprises a cylin-

drical head 10 having a longitudinal and angular opening 11 formed therein, one end 12 of said opening being preferably tapered outwardly toward the end 13. Integral with the head and arranged to extend around the center thereof is a collar 14 having a plurality of spaced teeth 15 forming a ratchet wheel. This head is adapted to be arranged within the openings 8 and 9 of the cheek plates in such a manner that the ratchet wheel or collar 14 is located between the said plates. A collar 16 is arranged over the head 10 and is preferably welded thereto, said collar being adapted to hold the head in its proper position. A detachable nut socket 17 having a tapered and angular shank 18 is also provided, the said shank 18 being adapted to be seated within the tapered end 12 of the head and retained therein by means of a set-screw 19 or other suitable fastening means.

Pivotaly mounted between the cheek plates 5 and 6, by means of a pivot 21 of any suitable construction, and arranged directly below the ratchet wheel or collar 14, is a double-acting dog 20. The dog comprises a pair of oppositely diverging teeth 22—22, which are adapted, as will be hereinafter described, to respectively engage, as desired, the ratchet wheel 14. The dog 20 is furthermore provided with a nose 23 which has an inwardly extending slot 24. Alined openings 25 and 26 are also formed in the cheek plates 5 and 6 between the body portion 4 and the nose 23 of the pawl 20, and a bearing-portion 27, having a crank arm 28, is adapted to be mounted within the said openings and retained therein by a nut 28<sup>a</sup> or other suitable fastening means, the said crank arm being preferably arranged on the opposite side of the body from the socket 17. A flat metallic spring 29 is also provided, one end 30 thereof being suitably connected to the said bearing portion 27, and the other end seated within the cut-out portion 24 of the nose 23 of the dog 20.

The invention furthermore comprises a handle 31 which is rotatably mounted on the shank 7, and is prevented from longitudinal movement by the shoulder 32 of the body-portion 4 and the end cap 33. A washer 34 is preferably arranged between the said handle and the end cap, the said end cap being held from movement by the end of the shank 35 being upset. The inner end of the



handle is provided with a metallic ferrule 36 which is preferably inset, and prevented from rotation by means of a screw 37 or other suitable means. The ferrule is provided near its outer edge, and in alinement with the bearing portion 27 and the pivot 21 of the dog, with a pair of upstanding ears 38 and 39 respectively, between which the end of the arm 28 is adapted to be positioned.

From the foregoing description it will be readily apparent that upon the rotation of the handle 31 to the left, the ear 39 will force the lever 28 toward the left, and the bearing portion 27 of the lever will shift the flat spring 29 toward the right, the said spring will disengage one of the teeth 22 of the dog from the ratchet wheel 14, and engage the opposite tooth thereof with the said wheel, and thereby reverse the action of the wrench.

The socket head, which is adapted to receive a nut in either end, is interiorly tapered from its center to its ends, and a bushing or sleeve may be employed for reducing the size of the head for smaller nuts.

What I claim is:—

1. In a wrench, the combination with a body-portion having a socket-carrying ratchet member rotatably mounted in one end thereof and a handle rotatably mounted at the other end, of a double-acting dog pivotally mounted on the body for engaging the ratchet member, and means connecting the dog and the handle for actuating the dog upon the rotation of the handle.

2. In a wrench, the combination with a body-portion having one end bifurcated to form cheek plates, and the other end terminating in a shank, a handle rotatably mounted on the shank, a socket-carrying head rotatably mounted in the ends of the cheek plates and provided with a ratchet wheel adapted to revolve between the said plates, a double-acting dog pivotally mounted on the body for engaging the ratchet wheel, and means connecting the dog and the han-

dle for actuating the dog upon the rotation of the handle.

3. In a wrench, the combination with a body-portion having one end bifurcated to form cheek plates, and the other end terminating in a shank, a handle rotatably mounted on the shank, a socket-carrying head rotatably mounted in the ends of the cheek plates and provided with a ratchet wheel adapted to revolve between the said plates, a double-acting dog pivotally mounted on the body for engaging the ratchet wheel, a crank arm having a bearing portion rotatably mounted in the cheek plates, a connection between the crank arm and the dog, and a separate connection between the crank arm and the handle.

4. In a wrench, the combination with a body-portion having one end bifurcated to form cheek plates and the other end terminating in a shank, a socket-carrying head rotatably mounted in the ends of the cheek plates and provided with a ratchet wheel adapted to revolve between the said plates, a double acting dog pivotally mounted between the said plates and provided with a nose having an inwardly extending slot, a handle rotatably mounted on the shank and provided with a plurality of upstanding ears, a crank arm having a bearing portion rotatably mounted in the cheek plates and the end of the arm arranged between the upstanding ears of the handle, and a spring arranged between the cheek plates, one end being mounted in the bearing portion of the crank arm and the other end extending into the slot of the dog and adapted to actuate the said dog upon rotation of the handle and consequent movement of the crank arm.

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

SHELTON C. CLARK.

Witnesses:

GEO. J. SCHAEFER,  
HIRAM MILLER.