

(No Model.)

D. V. MILLER

WRENCH.

No. 283,801.

Patented Aug. 28, 1883

Fig. 2.

Fig. 1.

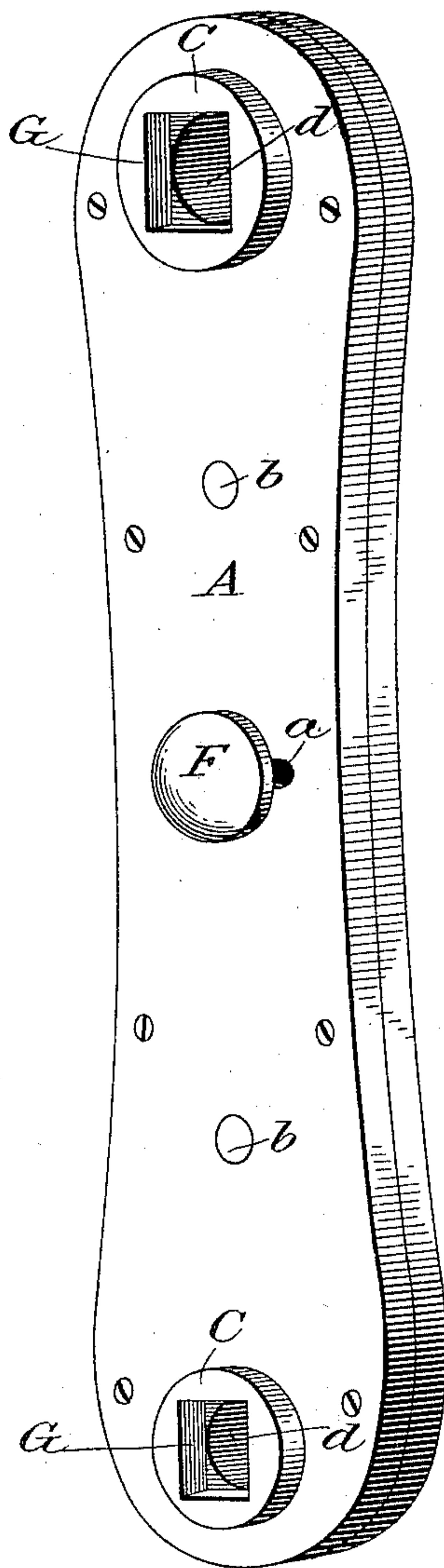
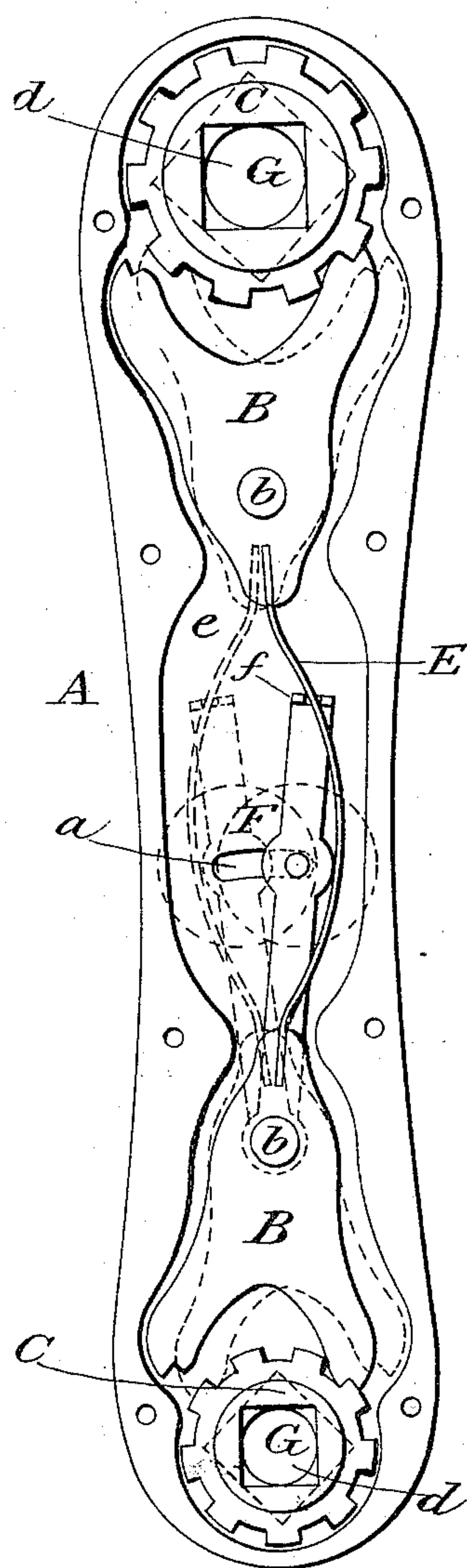
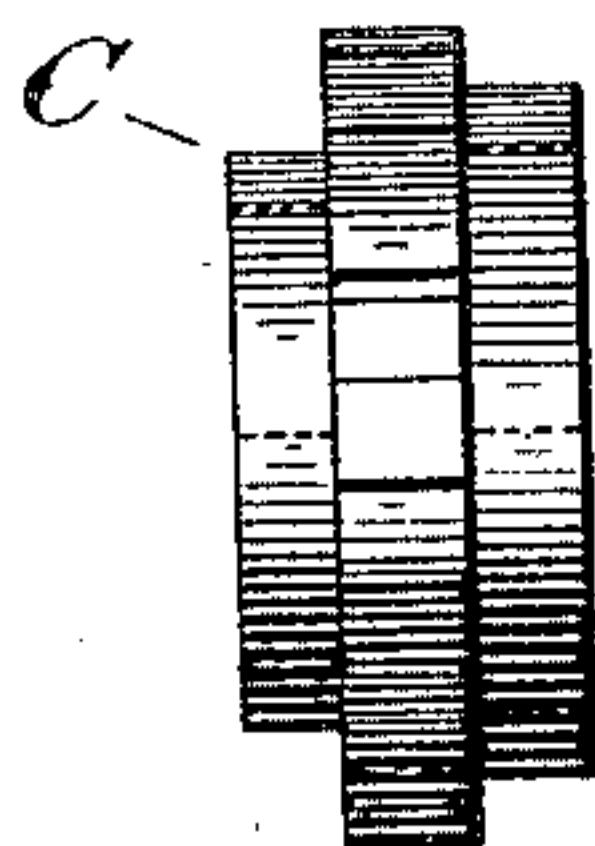


Fig. 3.



Witnesses:

C. E. Adams  
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# UNITED STATES PATENT OFFICE.

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## WRENCH.

SPECIFICATION forming part of Letters Patent No. 283,801, dated August 28, 1883.

Application filed March 3, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, DARWIN V. MILLER, a citizen of the United States, residing at Weedsport, in the county of Cayuga and State of New York, have invented a new and useful Improvement in Ratchet-Wrenches; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

The object of my invention is to furnish a cheap and convenient ratchet-wrench. Other wrenches of this description are objectionable, inasmuch as they require separate forms or dies, which have to be substituted to fit different-sized nuts. This troublesome change renders a wrench inconvenient, if not wholly impracticable, for common use. In my wrench there is no change required, as each wrench has two rotary heads on the same handle, fitting four various-sized nuts, which includes all ordinarily found on any carriage or machine. Of course larger wrenches are made for extraordinary work, which will turn the largest nuts used. There is also only one simple spring used to govern both rotary heads. This spring consists in only one flat piece of steel, which is much cheaper than any now in use for this purpose, and less liable to get out of repair.

Figure 1 is a perspective view of my improved double-ratchet wrench when ready for use. Fig. 2 is a full view of the wrench with half of the case or handle removed. Fig. 3 is an aside view of one of the rotary heads when separated from the case or handle.

In these drawings, the letter A indicates the case or handle, which is of iron, made in two parts, with a rim running around the edge, so that the two halves, when joined, form a chamber inside, with suitable openings in the faces for receiving the rotary head, the pawls, the spring, and the lever.

B B represent the double pawls at either end of the handle, which are made to partially turn on their axes *b b*, thus bringing the opposite arms of the pawl in connection with the ratchet-rim of the rotating heads C C.

C C are the rotating heads, in which are formed, on either side, nut-seats G G of dif-

ferent sizes. These nut-seats G G are square on the outer faces, with a central round aperture, to prevent the nut from dropping through. The outer circumference is also enlarged in the center, and on its edge is formed a ratchet-edge to receive the arms of the pawls B B, to hold the rotary head and prevent it from turning only in the desired direction. These rotary heads C C are held in their places by the case A, which forms a collar around the nut-seat, inside, and under which is the ratchet projection connecting with the pawls.

D represents the lever which is used for changing the spring, and thus reversing the motion of the heads. This lever is connected through an aperture in the case A with the button F on the face of the handle, by means of which the spring E is moved to either side. This lever is pivoted at one end, under and lengthwise of the spring E, and the opposite end is turned up at a right angle with its main surface, and in this upward extension an opening is formed, through which passes the spring. The spring E is cut somewhat longer than the space between the two double pawls B B, and securely fastened to them at both ends. When the lever D is moved to one side, by means of the button F this spring is carried with it to the same side of the chamber of the case, and when in position on either side it forms a bow or a section of a circle, and the pawls, being carried or turned with it, have the same inclination from a straight line. Thus it will be seen that with every change of the spring to the opposite side of the chamber the arms of the pawls are brought in contact with and catch into the rotary ratchet-head C C, thus changing the direction of the head as may be desired. A close examination of this spring, I think, will suffice to show its advantages in simplicity and cheapness over anything heretofore invented for this purpose.

I wish it understood that I make no claim for a rotary head for a ratchet-wrench, or for the double pawls, or for anything except this spring and its peculiar combination with these parts.

Having thus described my invention, what I claim as new is—

1. The double-acting single spring E, when

attached to the pawls B B and operated by the reversing-lever D, substantially as set forth.

2. The combination, in a wrench having two  
5 ratchet-wheels, of the reversing-lever, the single flexible spring attached to the pawls of the ratchet-wheels, the two wrenches being

combined in one handle, and both operated by said spring, substantially as described.

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Witnesses:

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