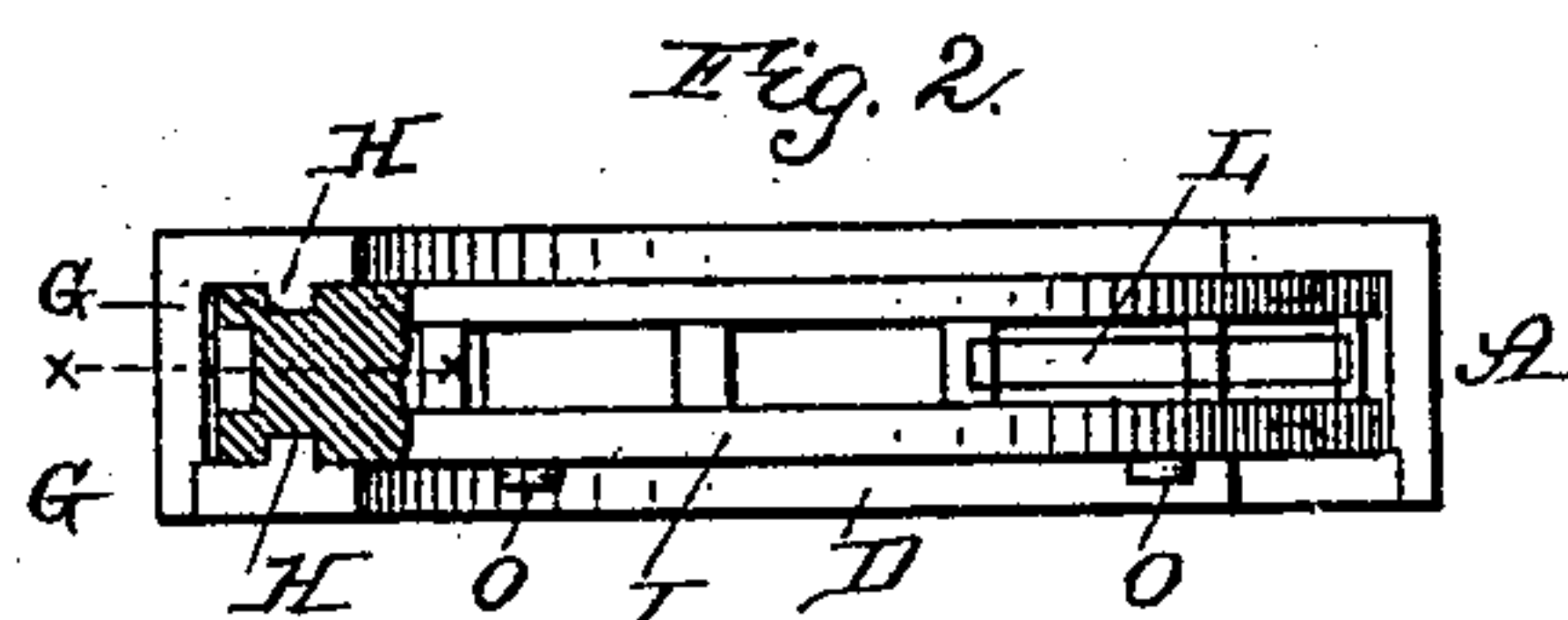
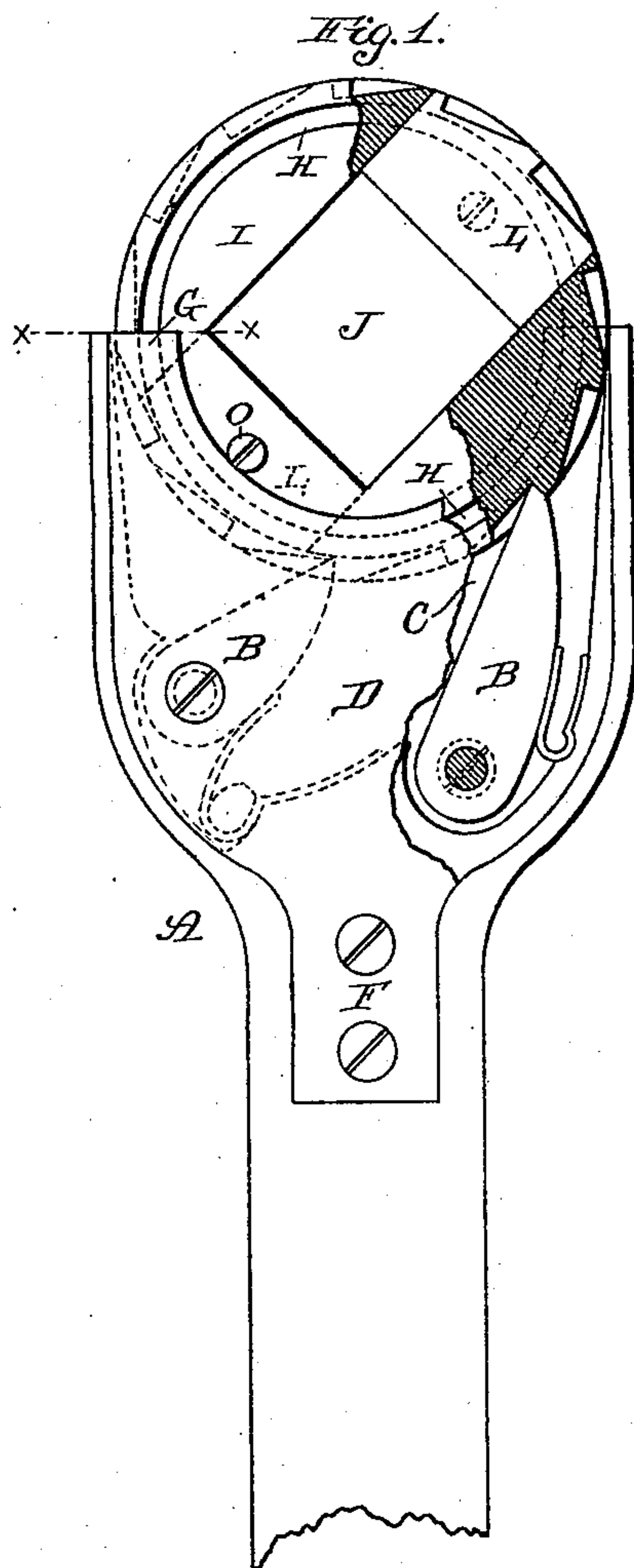


(Model.)

S. A. THOMAS.
REVOLVING WRENCH.

No. 287,194.

Patented Oct. 23, 1883.



Witnesses:

J. W. Garner
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Inventor:

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UNITED STATES PATENT OFFICE.

SAMUEL A. THOMAS, OF CHARLESTON, MISSOURI.

REVOLVING WRENCH.

SPECIFICATION forming part of Letters Patent No. 287,194, dated October 23, 1883.

Application filed September 5, 1883. (Model.)

To all whom it may concern:

Be it known that I, S. A. THOMAS, of Charleston, in the county of Mississippi and State of Missouri, have invented certain new and useful Improvements in Wrenches; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in wrenches; and it consists in the combination of a suitable handle provided with spring-actuated pawls with a ratchet-wheel having an opening through its center to catch over the nuts, and suitable adjustable plates, which are passed through slots in the side of the wheel for the purpose of decreasing the size of the opening through the wheel, so as to adapt the wheel to different-sized nuts, all of which will be more fully described hereinafter.

The object of my invention is to provide a ratchet-wrench in which the wheel is provided with adjusting devices, so as to adapt the same wheel to nuts of different sizes.

Figure 1 is a side elevation of my invention, partly in section. Fig. 2 is an end view, partly in section on the line *x x* of Fig. 1.

A represents the handle, which is enlarged at its upper end, as shown, and hollowed out to receive the spring-actuated pawls B, one of which is longer than the other. This recess C in the top of the handle A is to be closed by the plate or casting D, which is to be applied thereto and fastened in position by means of suitable clamping bolts or screws, which may serve as the pivots upon which the pawls B move.

Upon the lower end of the plate or casting D is provided a suitable projection, F, which fits in a corresponding socket made in the side of the handle, and through which are passed suitable screws or other fastening devices.

The upper edge of both the handle and the plate or casting D are made concave, as shown, and upon both of these edges are formed the flanges G, which project inwardly toward each other for the purpose of catching in corresponding grooves, H, in the opposite sides of the ratchet-wheel I. The grooves

H in opposite sides of the ratchet-wheel I form perfect circles, and hence the wheel, while held in position by means of the flanges G, can revolve freely around in one direction, but is prevented from revolving in the opposite direction by means of the pawls B. Through the center of this ratchet-wheel I is formed a suitable opening, J, for catching over the nuts which are to be turned, and upon the edge or periphery of the wheel are formed ratchet-teeth, as shown in Fig. 1. Were no provision made for decreasing the size of the opening I through the ratchet-wheel, it would fit nuts of but a few sizes. In order to therefore adapt the ratchet-wheel to operate nuts of many different sizes, there are cut through opposite sides suitable slots or openings, in which are inserted the plates L, which have ratchet-teeth formed upon their outer edges. These plates L can be adjusted laterally in the slots cut in opposite sides of the ratchet-wheel I, and secured in any desired position by means of set-screws O, which are passed through opposite sides of the wheel, the inner ends of which screws bear against the plates L. By adjusting one or both of the plates L inward, the size of the opening J can be diminished to such an extent that the wheel I can be applied equally as well to nuts of all sizes. The ratchet-teeth in the edge of the wheel I will be wider than the width of the slots in which the plates L are placed, and hence the pawls B, whose biting-edge is also wide, as are the ratchets on the wheel, will operate as well opposite the slots as upon any other part of the wheel when the slides are moved inward. In decreasing the size of the opening J, so as to adapt the wheel to nuts of smaller size, one of the plates L only may be moved, or both, as may be found necessary. It is only necessary to loosen one of the set-screws O, adjust the plate L, and then tighten the screw again, when the wrench is ready for nuts of different sizes.

Having thus described my invention, I claim—

1. The combination of the handle A, suitable casting, D, which is applied to the upper end thereof, the handle and the casting being provided with circular flanges G, with the ratchet-wheel I, provided with grooves H, the pawls S, the adjusting-plates L, and set-

screws for holding them, substantially as shown.

2. The combination of a suitable handle, the ratchet-wheel I, which is applied thereto, 5 having the opening J through its center, the adjusting-plates L, and suitable means for holding the plates in position, substantially as described.

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

S. A. THOMAS.

Witnesses:

W. S. COCHRAN,
CHAS. H. ORRILL.