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PATENTED DEC. 11, 1906.

F. A. GARLAND.
WRENCH.

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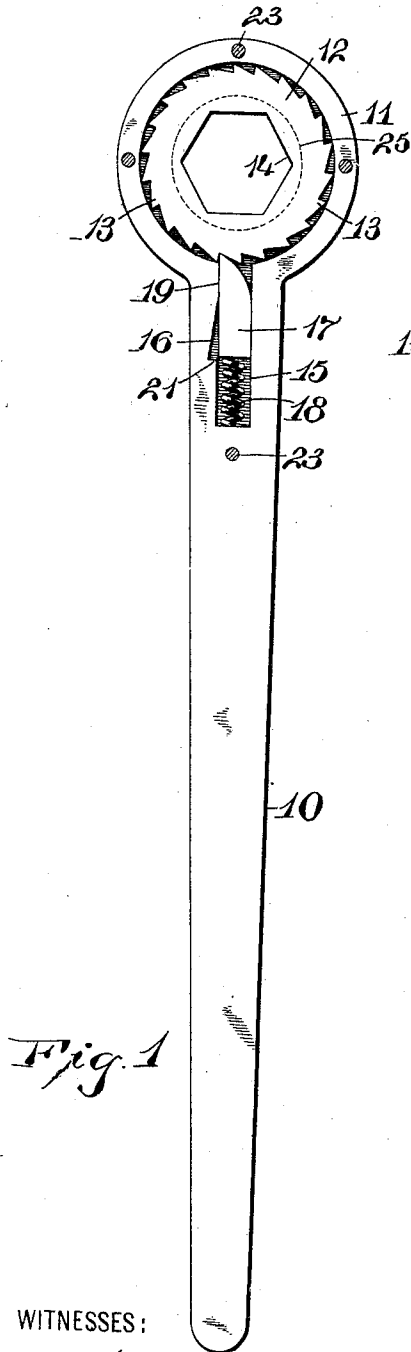


Fig. 1

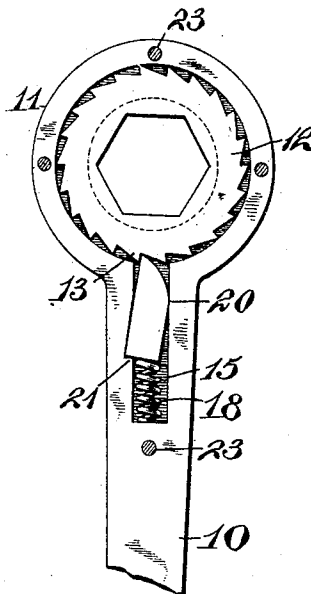


Fig. 2

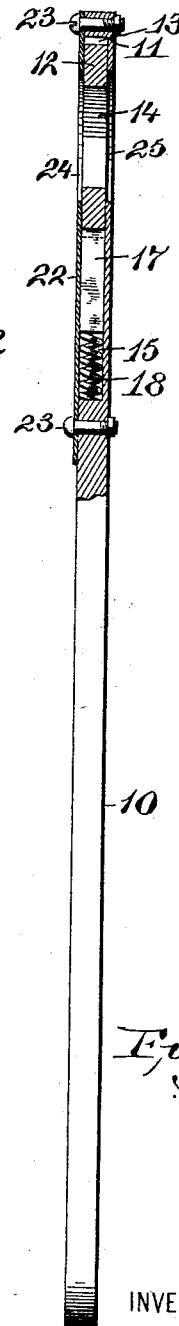


Fig. 3

WITNESSES:

Ralph Saucaster
E. A. Pell

INVENTOR

Frank A. Garland.
BY
Wm. H. Campfield.
ATTORNEY

UNITED STATES PATENT OFFICE.

FRANK A. GARLAND, OF HOBOKEN, NEW JERSEY.

WRENCH.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK A. GARLAND, a citizen of the United States, residing at Hoboken, in the county of Hudson and State of New Jersey, 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 appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention is designed to provide a wrench having a ratchet mechanism which works in the usual manner with a novel feature in the shape of the pawl and the recess in which it slides in the handle portion, the surface of the recess being provided so that when the handle is operated in one direction to allow the pawl to slide over the ratchet the pawl can retreat in the recess, but as soon as pressure is exerted on the handle in the opposite direction to cause the pawl to engage a tooth of the ratchet the pawl is caused to rock in its recess and engage a projection in the recess to cause an operation of the nut-engaging portion of the wrench from the handle.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a face view of the wrench with a covering-plate removed, and Fig. 2 is a similar view showing the wrench when the pawl is engaging a tooth to operate the ratchet, and Fig. 3 is a vertical section taken centrally through Fig. 1.

The wrench is provided with a flat shank 10 to form a handle portion and is provided with a circular head 11, this head 11 being recessed, the recess containing a ratchet 12, provided with the teeth 13 on its periphery and having a central perforation 14 to fit a nut or any machine element to be turned. In the handle portion and continuing as an extension of the recess in the head 11 is a recess 15, that is provided with a slanting portion 16, which under a certain condition allows a rocking of the pawl 17, which is narrow enough to slide down in the recess 15. A spring 18 keeps the pawl in engagement with the teeth of the ratchet.

When the handle is operated to the right, looking at the drawings, the pawl will ful-

crum at 19 in Fig. 1 and can be easily slid down into the recess 15 against the pressure of the spring 18, and the pawl slides over the teeth 13 without any hindrance; but when the handle is operated to the left, looking at the drawings, one of the teeth 13 engages the end of the pawl, the pawl fulcrums at 20, and its lower edge engages a projection 21 in the wall of the recess adjacent to the slanting portion 16. Thus the pawl rocks on the face of the recess that allows this rocking, and the elements of the wrench are tightly bound together, as shown in Fig. 2.

The parts are easily made and are cheap, and the stability of the wrench is evident. The portions of the pawl-and-ratchet mechanism are confined to their places by means of a plate 22, which is fastened by means of the screws 23 to the body portion of the wrench. The plate 22 and the head 11 are provided with the cut-away portions or perforations 24 and 25, respectively, to allow the engagement by the recess 14 of the ratchet 12 with an element to be turned.

This wrench is exceedingly compact and is adapted for all kinds of work, particularly fitting into very narrow places where flat nuts are employed and where the operation is difficult.

Having thus described my invention, what I claim is—

1. A wrench comprising a handle portion having a head on one end, the head having a recess which has an extension extending into the handle portion, the extension of the recess being provided, on one of its walls, with a surface adapted to allow the rocking of a pawl, a pawl arranged to slide in the recess and adapted to rock on the surface, a ratchet having peripheral teeth and a central perforation, arranged in the recess of the head and adapted to be engaged by the pawl, a spring to force the pawl in engagement with the ratchet, and a projection adapted to engage the free end of the pawl, when the pawl rocks on the wall of the recess, to cause the pawl to operate the ratchet.

2. In a wrench, a ratchet mechanism comprising a rotatable ratchet-wheel having peripheral teeth, a body portion in which the ratchet is mounted, the body portion having a recess adjacent to the ratchet, a pawl in the recess and arranged to slide therein, a spring in the recess to cause the pawl to engage the ratchet, a projection on one wall of

the recess, the same wall of the recess being
provided with a rocking surface for the pawl,
whereby when the wrench is operated in one
direction, the pawl rocks on the rocking sur-
5 face of the recess with its free end engaging
the projection in the recess to prevent the
sliding of the pawl in the said recess.

In testimony that I claim the foregoing I
have hereunto set my hand this 13th day of
October, 1906.

FRANK A. GARLAND.

Witnesses:

WM. H. CAMFIELD,
E. A. PELL.