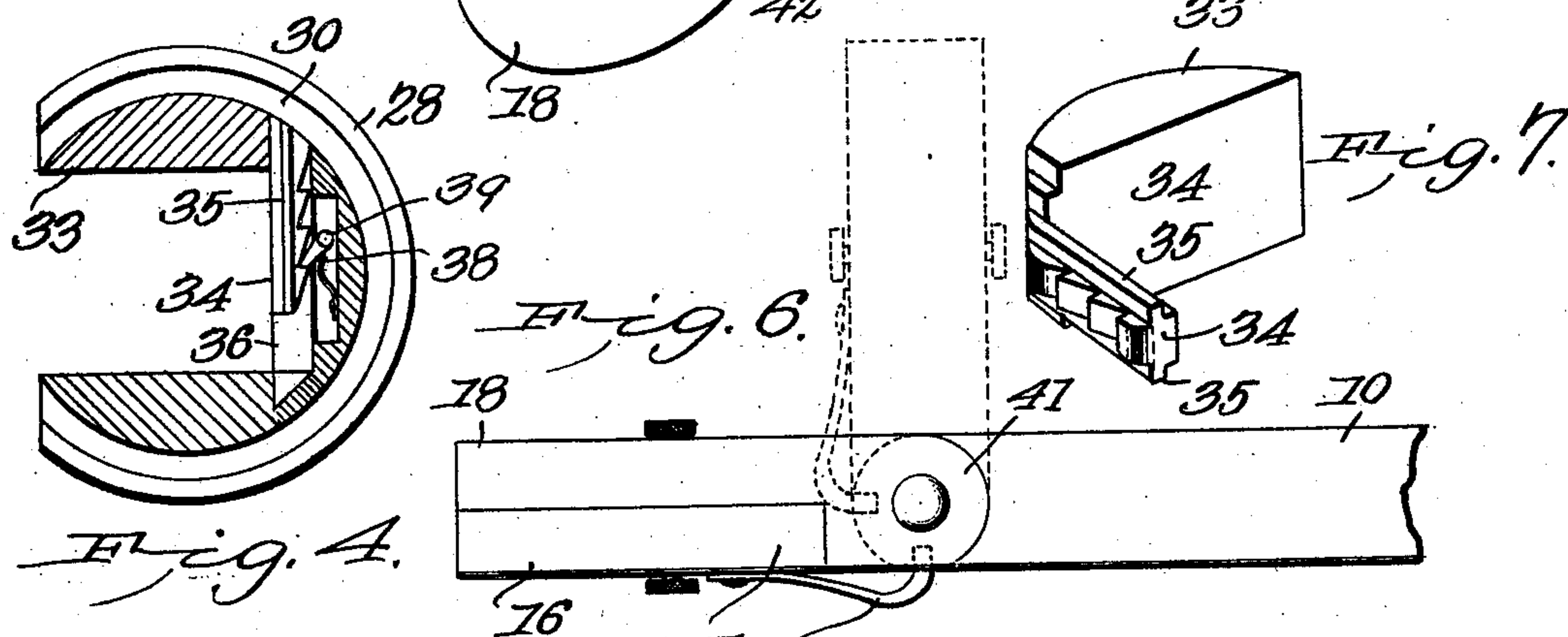
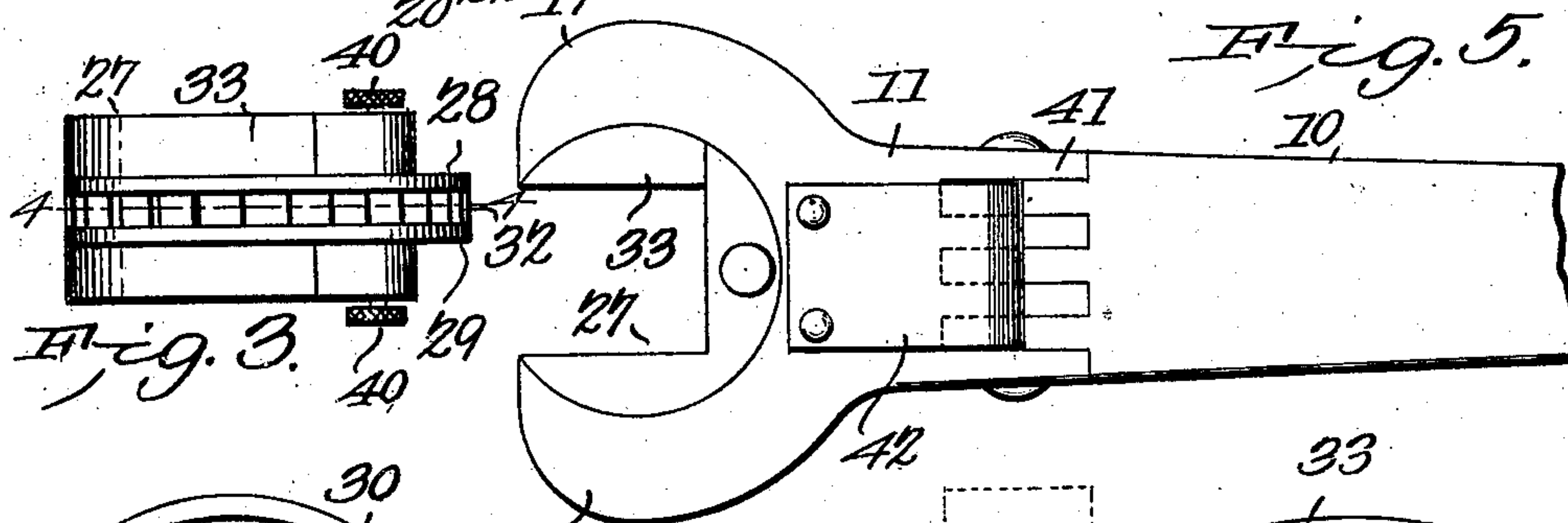
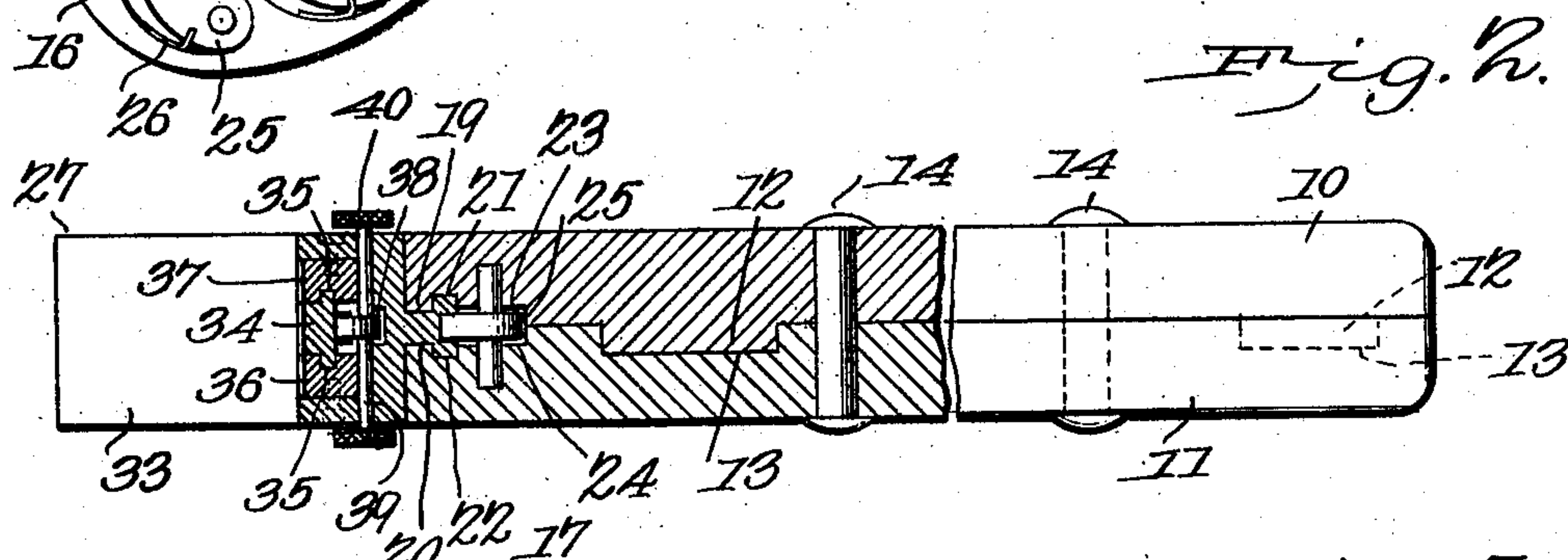
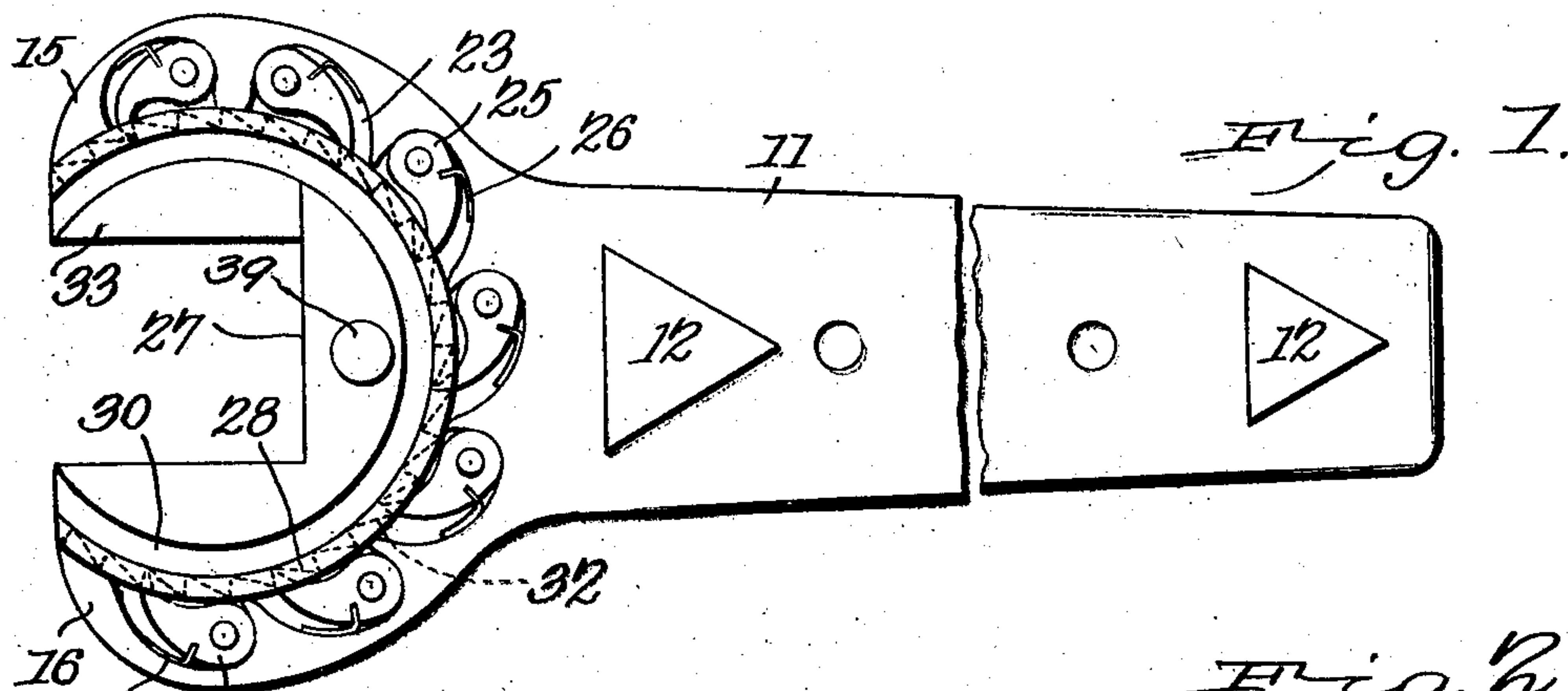


No. 763,105.

PATENTED JUNE 21, 1904.

**B. H. MORRISON.**  
**RATCHET WRENCH.**  
**APPLICATION FILED SEPT. 10, 1903.**

NO MODEL.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

BYRON H. MORRISON, OF BRADFORD, PENNSYLVANIA.

## RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 763,105, dated June 21, 1904.

Application filed September 10, 1903. Serial No. 172,656. (No model.)

*To all whom it may concern:*

Be it known that I, BYRON H. MORRISON, a citizen of the United States, residing at Bradford, in the county of McKean and State of Pennsylvania, have invented a new and useful Ratchet-Wrench, of which the following is a specification.

This invention relates to ratchet-wrenches, and has for its object to produce a simply-constructed and easily applied and operated device of this character which may be employed upon any form or size of nut and which may be adjusted to enable it to be used in cramped and confined localities inaccessible to wrenches of ordinary construction.

To this end the invention consists in certain novel features of construction, as hereinafter shown and described, and specified in the claims.

In the drawings illustrative of the invention, in which corresponding parts are denoted by like designating characters, Figure 1 is a side view with one of the handle-sections removed. Fig. 2 is a longitudinal sectional view. Fig. 3 is a side elevation of the socket member detached. Fig. 4 is a side view of the socket member in section on the line 4 4 of Fig. 3. Fig. 5 is a plan view, on a reduced scale, illustrating a modification in the construction. Fig. 6 is a side view of the form of structure shown in Fig. 5. Fig. 7 is a perspective view of the adjustable jaw member detached.

The improved device consists of a handle portion comprising two parts 10 11, one part having projections 12 and the other part having corresponding cavities 13 to receive the projections, so that when the two sections are united, as by bolts or rivets 14, they will be firmly supported from lateral strains and their relative displacement prevented.

Each of the handle-sections is provided with a parti-circular recess embraced by segmental "horns" 15 16 17 18, the two cavities being disposed in alinement transversely of the handle-sections when the latter are united, as shown.

Formed within the handle-sections parallel with and concentric to the curved faces of the parti-circular cavities are ribs 19 20 and cor-

responding adjoining channels 21 and 22, as indicated in Fig. 2, and in the inner faces of the members 10 11, in the rear of the channels 21 22, are cavities 23 24, in which a plurality of pawls 25 are pivotally supported and held yieldably in operative position by springs 26.

Fitting into the alined cavities in the handle-sections is a socket member (represented as a whole at 27) formed to correspond to the cavities and rotative therein and provided with ribs 28 and corresponding channels 30 and intermediate ratchet-segment 32, the channels 30 for engagement by the ribs 19 20 and the channels 21 22 for engagement by the ribs 28, while the ratchet-segment 32 is for engagement by the pawls 25, as shown. By this arrangement it will be obvious that when the parts 10 11 are united with the socket member 27 in position in the alined parti-circular cavities and the corresponding ribs and channels interengaging and the pawls operatively engaging the ratchet-segment the socket member is free to rotate in one direction relative to the handle-sections, but will be held from turning in the opposite direction.

It will be noted that the cavities embraced by the horns 15, 16, 17, and 18 are more than one-half of a circle, so that the socket member cannot be withdrawn when the handle-sections are clamped together.

The socket member 27 is formed with a square or rectangular central cavity for engagement with the nut.

To enable the socket member to be adapted to nuts of different sizes, a movable jaw member 33 is arranged within the socket and adjustable therein.

To provide for the adjustment of the jaw 33, the bottom of the nut-recess is provided with a cavity in which an arm 34 on the jaw 33 is slidably disposed, as by guide-ribs 35 and guide-plates 36 37, the latter attached, as by screws or other means, to the socket member. The lower side of the arm 34 is provided with a plurality of spaced ratchet-teeth with which a spring-controlled pawl 38 engages, the pawl, mounted on a transverse shaft 39, mounted for rotation in the socket member 27 and operative from the outside thereof



by finger-disks or buttons 40, as shown. By this arrangement it will be obvious that the jaw member 33 may be moved transversely of the socket-cavity and held rigidly at any desired point, and thus adapted for any required size of nut.

In Figs. 5 and 6 the handle member is provided with a joint 41 to enable the socket end to be turned at an angle to the body of the handle member, as shown in Fig. 6, which will be required when the implement is to be used in cramped or confined localities, and adds materially to the value and efficiency of the invention.

A spring-catch 42 is shown attached to the device at the hinge to hold the parts in their different positions.

The parts will be formed of metal, preferably of steel, and may be of any size required and may be varied in minor particulars without departing from the principle of the invention or sacrificing any of its advantages.

What I claim is—

1. A ratchet-wrench comprising a handle divided longitudinally and with a parti-circular cavity in each portion and disposed in transverse alinement when the portions are united, each of said handle portions having a rib and channel concentric to its cavity, a socket member mounted for rotation in said cavities and having ribs and channels for engagement with the ribs and channels in said handle portions, and formed with a lateral

guideway, a movable jaw-section having an arm engaging said guideway, and provided with a plurality of spaced transverse teeth, a pawl carried by said socket member for engagement with said teeth, and means for rotating said socket member and its attachments, in one direction by the intermittent movement of said handle member, substantially as described.

2. A ratchet-wrench comprising a handle divided longitudinally and with a parti-circular cavity in each portion and disposed in transverse alinement when the portions are united, one of said handle-sections having spaced cavities and the other with corresponding spaced projections engaging the cavities, and each of said handle portions provided with a rib and channel concentric to its cavity, and a socket member mounted for rotation in said cavities and having ribs and channels for engagement with the ribs and channels in said handle portions, and means for rotating said socket member in one direction by the intermittent movement of said united handle portions, substantially as described.

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

BYRON H. MORRISON

Witnesses:

GEO. L. MEYERS,  
CHAS. A. DICKEY.