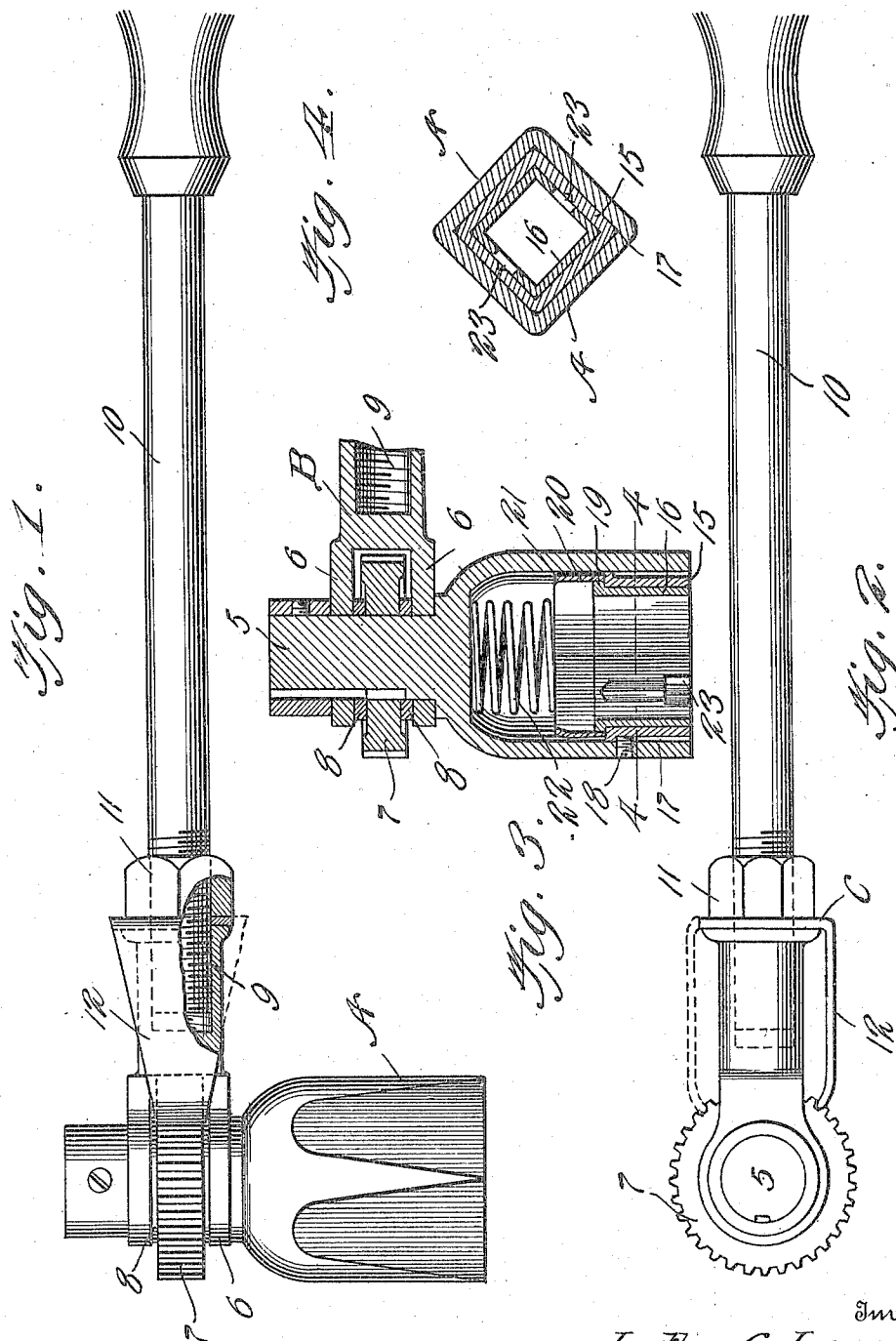


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WRENCH.
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WRENCH.

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To all whom it may concern:

Be it known that I, LUTHER C. LAWRENCE, a citizen of the United States, residing at Newcastle, in the county of Henry and State of Indiana, have invented new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to that class of wrenches which are generally known as socket wrenches; and it has among its objects to produce a wrench of this character of simple and efficient construction which may be readily adapted to operate upon nuts of different sizes without the necessity of special adjustment.

A further object of the invention is to provide a wrench of the character described which shall be equipped with a simple and efficient ratchet mechanism which may be quickly and conveniently reversed.

Further objects of the invention are to simplify and improve the construction and operation of this class of devices.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawing has been illustrated a simple and preferred form of the invention; it being however understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the invention may be resorted to when desired.

In the drawing: Figure 1 is a side elevation of a wrench constructed in accordance with the invention. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical sectional view taken through the socket and a portion of the handle. Fig. 4 is a transverse sectional view taken on the plane indicated by the line 4—4 in Fig. 3.

Corresponding parts in the several figures are denoted by like characters of reference.

A socket A which is preferably made square in cross section for a portion of its length as will appear particularly by reference to Fig. 4 of the drawings, is provided with an axial extension forming a shaft or pintle 5 upon which a head B is supported for rotation, said head being provided with

spaced eye members 6—6 engaging the pintle 5. A spur wheel 7 is supported upon and securely connected with the pintle intermediate the eyes 6, spacing members such as washers 8 being provided if desired. The head B has a screw-threaded socket 9 for the reception of a correspondingly threaded handle member 10 equipped with a jam nut 11 between which and the head B there is interposed an L-shaped spring C the tongue of which, 12, engages the spur wheel 7; it will be readily seen that by slightly loosening the handle member 12, or the jam nut 11, the spring C may be reversed so as to engage the spur wheel adjacent to either side of the head, thus checking the rotation in one direction or the other.

The socket member A which constitutes the wrench head or jaw is adapted for direct engagement with square or hexagonal nuts of a certain size; but in order to enable the wrench to be used in connection with differently sized nuts, I provide the socket A with reducing sleeves, two of which designated respectively 15 and 16 have been shown. The outer reducing sleeve 15 that is to say the one adjacent to the walls in the socket is provided with a groove 17 to receive the point of a set screw 18 operating through the wall of the socket for the purpose of retaining the sleeve 15 within the socket; the sleeve 16 is slidable in the sleeve 15 and is provided at its inner end with a flange or shoulder 19 engaging the inner end of the sleeve 15 for the purpose of retaining the sleeve 16 in position. A relatively thin sleeve or band 20 surrounds the inner end of the sleeve 16 and abuts upon the inner edge of the sleeve 15; said band being contracted at its inner end, as shown at 21 to receive the outward pressure of a tension spring 22 accommodated in the socket. The reducing sleeve 15 will thus be normally forced in an outward direction by the spring-pressed band 20, the movement being limited by the obstructing screw 18 engaging the groove 17 which is so proportioned that the outer extremity of the sleeve 16 will normally lie flush with the outer edge of the socket; when the wrench is held with the mouth of the jaw or socket member downward, the sleeve 16 will drop by gravity to a position bringing its outer edge flush with that of the sleeve 15. The several adjusting sleeves are provided with

notches as shown at 23 of any suitable shape to enable said sleeves to engage nuts of various shapes.

5 It will be readily seen that when the improved wrench is applied to a nut, the latter, if too large to be engaged by the smallest reducing sleeve will push one or more of the reducing sleeves inwardly into the socket, the latter being adapted to operate
10 directly upon nuts of relatively large size.

The improved wrench is simple in construction and it may without necessity for special adjustment be utilized successfully for operating upon nuts of various sizes as
15 will be readily understood.

Having thus described the invention, what is claimed is—

1. In a wrench of the character described, a socket having an axial extension, a spur
20 wheel fixed upon said extension, a head pivoted upon the extension and having a threaded socket, a correspondingly threaded handle member engaging the socket and having a jam nut, and an L-shaped spring member
25 mounted upon the handle between the head and the jam nut and having a lip engaging the spur wheel.

2. In a wrench of the character described,

a socket member, a reducing sleeve slidable therein, means for limiting the outward
30 movement of the reducing sleeve, a second reducing sleeve slidable in the first sleeve and having a flange engaging the inner end of the latter, and a spring-pressed band surrounding the second reducing sleeve and
35 abutting upon the inner end edge of the first reducing sleeve.

3. In a wrench of the character described, a socket member, a reducing sleeve slidable therein, means for limiting the outward
40 movement of the reducing sleeve, a second reducing sleeve slidable in the first sleeve and having a flange engaging the inner end edge of the latter, a relatively thin band surrounding the second reducing sleeve
45 abutting upon the inner end edge of the first reducing sleeve and having a contracted inner end, and a spring interposed between the contracted inner end of the band and the
50 bottom of the socket.

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

LUTHER C. LAWRENCE.

Witnesses:

F. N. HUNT,
G. E. LEWIS.