

June 19, 1923.

1,459,291

L. L. HALL.

WRENCH

Filed June 28, 1922

Fig. 1.

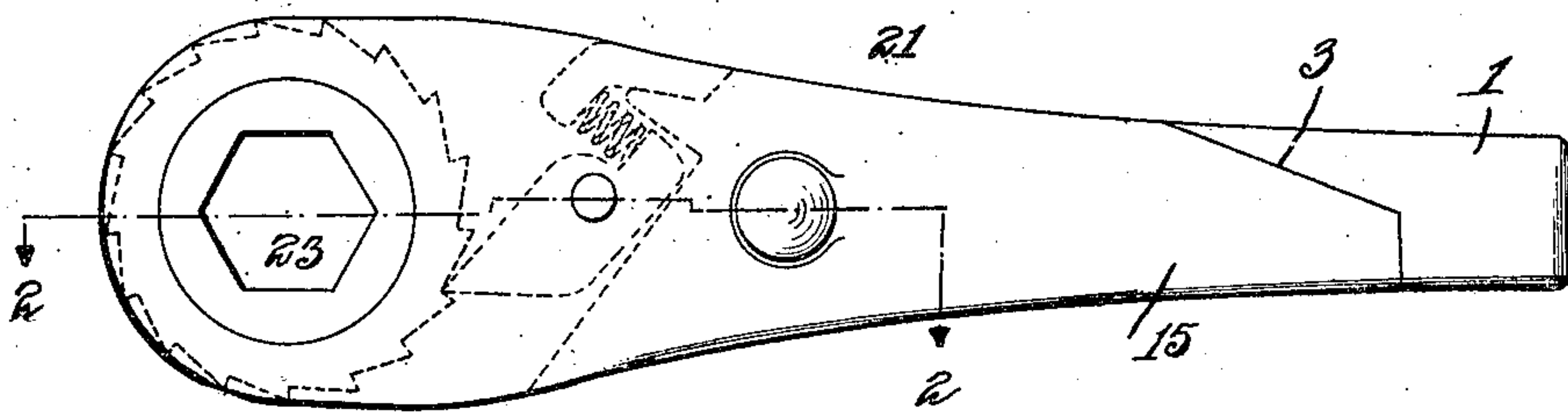


Fig. 2.

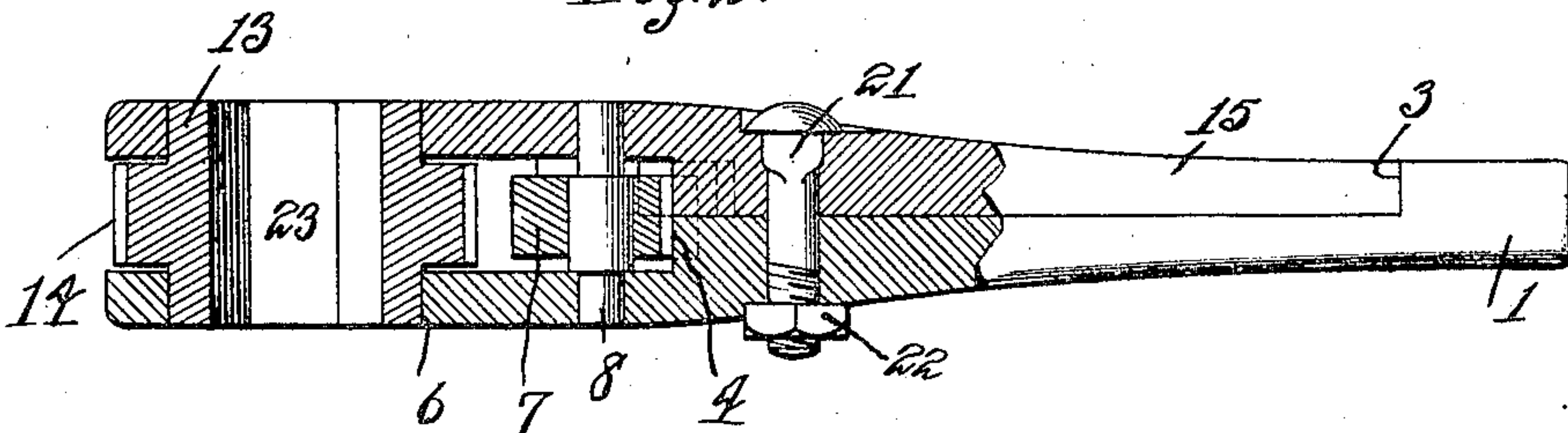


Fig. 3.

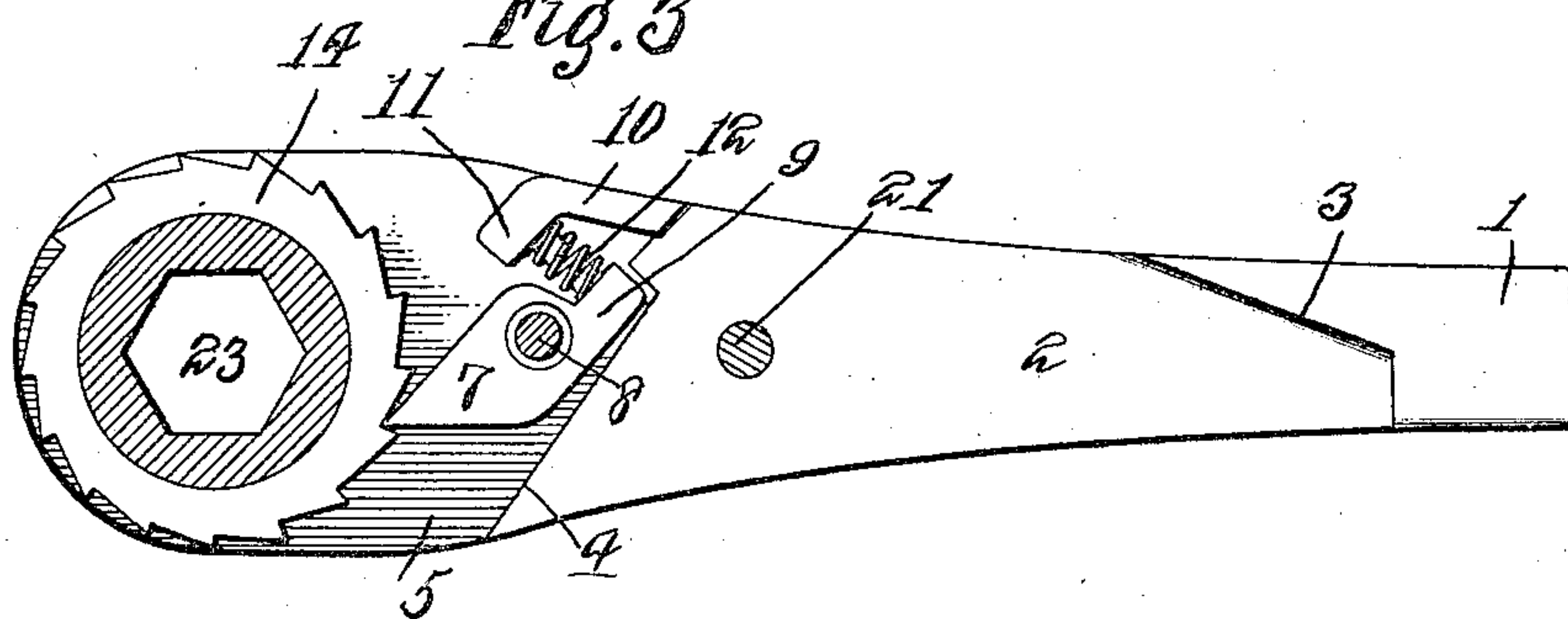
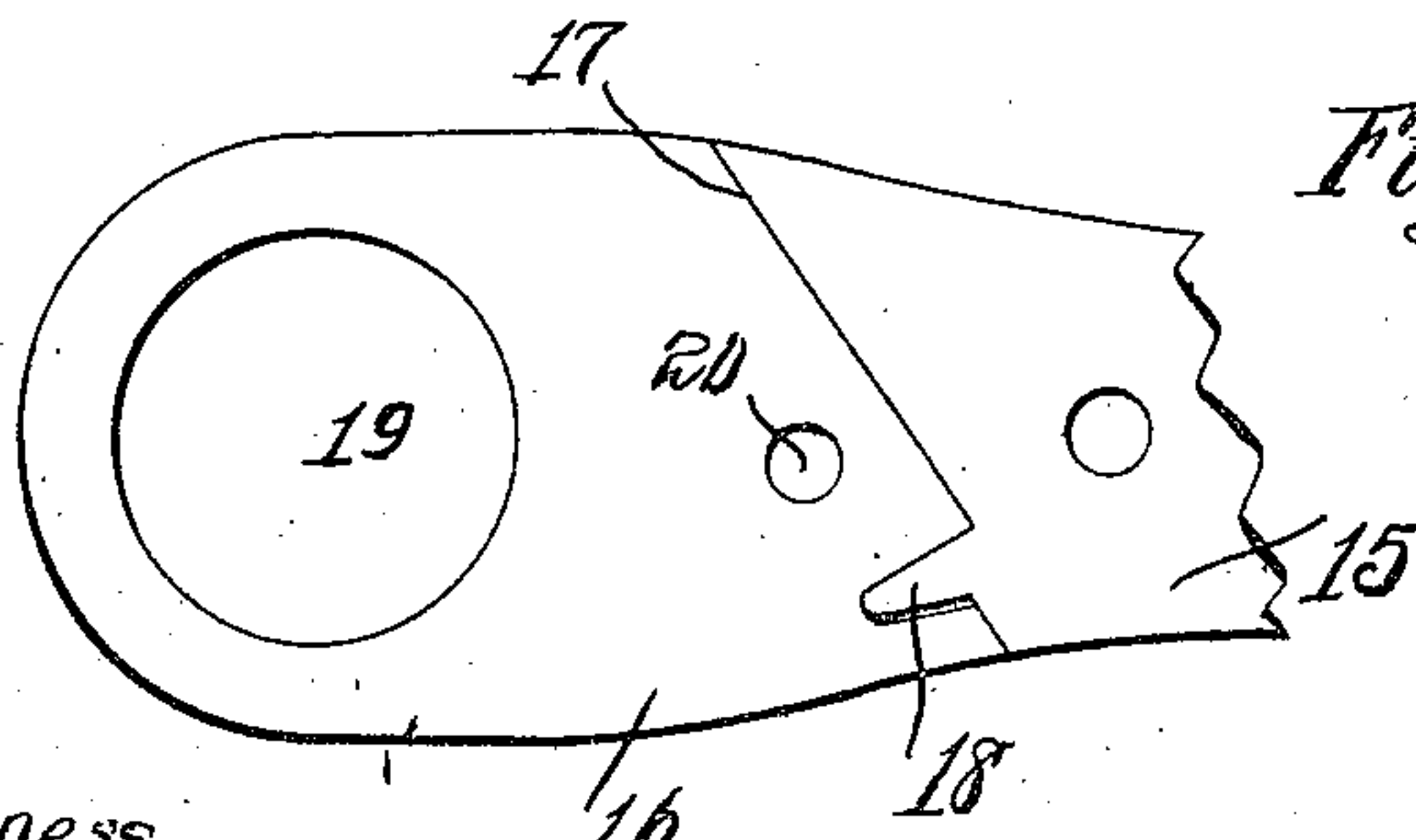


Fig. 4.



Inventor
Lewis L. Hall.

Witness
Robt. L. Garrison

By Richard B. Owen,

Attorney

UNITED STATES PATENT OFFICE.

LEWIS L. HALL, OF CLENDENIN, WEST VIRGINIA.

WRENCH.

Application filed June 28, 1922. Serial No. 571,396.

To all whom it may concern:

Be it known that I, LEWIS L. HALL, a citizen of the United States, residing at Clendenin, in the county of Kanawha and State of West Virginia, have invented certain new and useful Improvements in a Wrench, of which the following is a specification.

This invention relates to a ratchet wrench and has for its principal object to provide a wrench which can be adapted for use with several sizes of wrench heads, thereby doing away with the necessity of having separate and individual ratchets for different size wrench heads.

Another object of the invention is to provide a ratchet wrench of the above mentioned character which can be easily assembled and is furthermore provided with means for preventing relative movement of the cover plate on the handle when the same are assembled.

A still further object of the invention is to provide a ratchet wrench of the above mentioned character which is inexpensive in its manufacture, simple in construction, strong and durable.

Other objects and advantages of the invention will become apparent during the course of the following description.

In the accompanying drawings forming a part of the description and wherein like numerals are employed to designate like parts throughout the several views,

Figure 1 is a top plan view of the invention;

Fig. 2 is a central longitudinal section, taken on line 2—2 of Fig. 1;

Fig. 3 is a plan view of the wrench showing the cover plate removed; and

Fig. 4 is a fragmentary view showing the under side of the cover plate.

In the drawings, wherein for the purpose of illustration is shown the preferred embodiment of my invention, the numeral 1 designates a handle and is provided at its smaller end with a reduced portion 2. This reduced portion 2 extends from the angular offset 3 formed by such reduced portion and terminates into a second angular offset portion 4 which is formed diagonally across the handle as shown more clearly in Fig. 3 of the drawings. A second reduced portion 5 is formed from the second offset portion 4

to the opposite end of the handle. The purpose of this second offset portion will be hereinafter fully described.

The reduced portion 5 which will be hereinafter termed, the enlarged head portion of the handle for the purpose of more conveniently describing the same in connection with the other features, is provided with a circular opening 6 for the purpose of receiving a portion of a socket wrench head to be later described, and also is adapted to receive a pivoted pawl 7 which is pivotally mounted upon the pin 8 which is mounted upon the enlarged head 5. The pawl 7 has a rearwardly extending foot 9 which is adapted to engage or abut the diagonal offset 4 formed on the handle 1 at the forward end of the reduced portion 2. An upstanding lug 10 is mounted upon the reduced portion 5 and extends from the handle at right angles to the plane thereof. This upstanding lug 10 is provided with an angular extension 11 which is adapted to co-operate with the rearwardly extending foot 9 of the pawl 7 by means of a coil spring 12. This coil spring 12 is disposed between the angularly extending arm of the upstanding lug 10 and the rearwardly extending foot 9 of the pawl 7 for the purpose of normally keeping the pawl in engagement with the ratchet teeth formed on the wrench head. The well known type of socket wrench head 13 may be used with my form of wrench handle, and is provided with ratchet teeth on its peripheral edge as indicated at 14 in the drawings.

A cover plate 15 is adapted to rest upon the reduced portion 2 of the handle 1 and has its end terminating in the same manner as the angular offset 3 formed on the handle 1, for engagement with the same. This cover plate 15 is also provided with a reduced portion 16 formed on the under face thereof for the purpose hereinafter to be fully described. A similar diagonally extending portion 17 is formed similar to the diagonal extension 4 formed on the handle 1, on the under face of the cover plate 15 and is provided with a finger 18 which extends on to the reduced portion 16 thereof. A circular recess 19 is also formed in the cover plate for the purpose of receiving the opposite end of the socket head 13 when the same is placed upon the handle 1.

An aperture 20 is also formed in the cover plate 15 for the purpose of receiving the pin 8 which supports the pawl 7.

After the socket wrench head 13 has been placed upon the handle 1 in the reduced portion 5 thereof so that the bottom of the ratchet teeth 14 formed on the socket wrench head 13 ride flush with the top face of the reduced portion 5, the cover plate is then placed upon the reduced portion 2 in the manner wherein the reduced portion 2 receives the portion 15 of the cover plate 15 so that the angular extension 3 formed on the handle 1 will engage the end of the cover plate 15. The circular recess 19 is then placed over the opposite end of the socket wrench head 13 so that the same completely fits on the top face of the ratchet teeth 14 and also the recess 20 will fit over the pin 8 and the finger 18 formed on the under face of the cover plate 15 will fit between the lug 10 formed on the reduced portion 5 of the handle 1 and the rearwardly extending foot 9 formed on the pawl 7. To further prevent displacement or relative movement of the cover plate 15 upon the handle 1 a suitable bolt 21 is adapted to pass through the cover plate and handle 1 and has a suitable nut 22 carried at its opposite end for permanently and securely fastening the two elements together. The socket head 13 will thus be free to rotate within the cover plate and handle and by having the pawl 7 in engagement with the ratchet teeth 14 formed on the socket wrench head, the same may be easily rotated and also will prevent movement in the reverse direction. The socket head 13 may be provided with any size nut engaging portion 23 so as to allow the use of the cover plate 15 and the handle 1 with various sizes of socket heads.

Of course, the bolt 21 and nut 22 can be disposed with, whereby the finger 18 formed on the under face of the cover plate 15 will prevent the relative movement of the cover plate 15 on the handle 1 in one direction and the angular extension 3 formed on the handle 1 and also on the end of the cover plate 15 will prevent relative movement in the opposite direction. This is accomplished by the finger 18 abutting the lug 10 when it is attempted to move the cover plate in one direction and also being disposed between the rearwardly extending foot 9 of the pawl 7 and the lug 10, the same can not be accidentally displaced. Whenever it is desired

to release the pawl from the ratchet teeth 14, the operator merely places an implement or his finger so that the same engages one of the side faces of the pawl 7 and causes the spring 12 to be compressed thereby releasing the pawl 7 from engagement with the ratchet teeth 14 whereby the ratchet head may be freely rotated in either direction.

It will thus be seen from the foregoing description that I have invented a new and useful ratchet wrench whereby the same may be easily assembled and disassembled and also made to accommodate various sizes ratchet wrench without the necessity of providing an excess number of parts.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention and the scope of the subjoined claim.

Having thus described my invention what I claim is:—

A wrench comprising a handle, an offset apertured head disposed at the forward end of the handle, the handle being reduced in thickness between the head at a point short of the rear end thereof, defining a transversely extending shoulder and a diagonally extending shoulder, an upstanding lug formed on the inner surface of the head extending beyond the outer face of the reduced portion, an elongated cover plate arranged to engage the reduced portion and having its rear end provided with a transverse and a diagonally extending edge for engaging the shoulders, an offset apertured head formed on the forward end of the plate arranged to overlie the first-mentioned head, a socket wrench head rotatably carried by the heads, a pivoted pawl disposed between the heads, a spring engaging the pawl and lug for normally urging the pawl in engagement with the wrench head, means securing the cover plate on the handle, and an inwardly extending finger formed on the cover plate for engagement with the lug, as and for the purpose specified.

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

LEWIS L. HALL.

Witnesses:

J. A. GARUES,
BELLE SHABER.