

No. 736,687.

PATENTED AUG. 18, 1903.

J. CHANDLER.
SPANNER OR WRENCH.
APPLICATION FILED DEC. 24, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

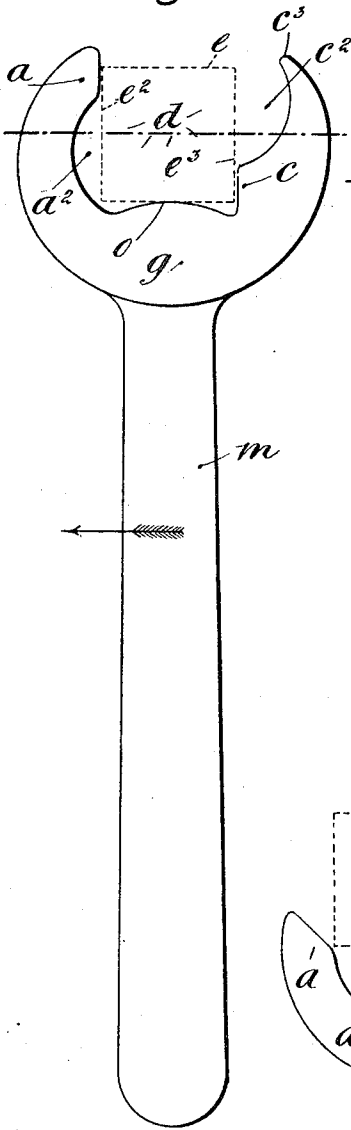


Fig. 4.

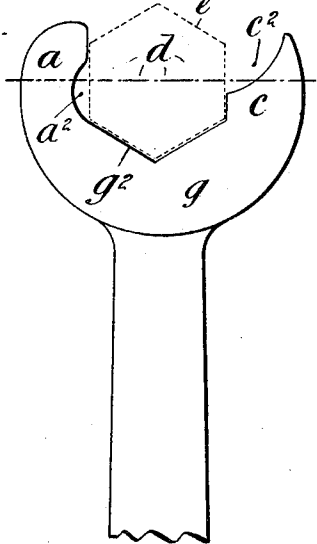


Fig. 3.

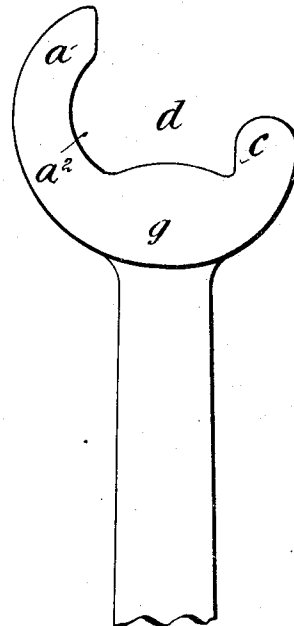


Fig. 2.

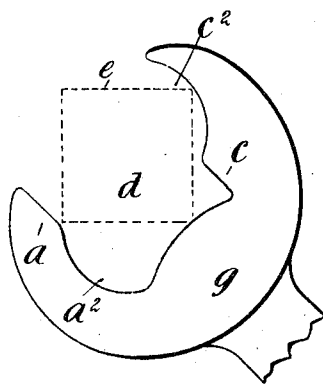
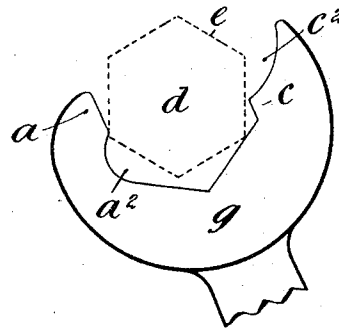


Fig. 5.



WITNESSES.

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2 SHEETS—SHEET 2.

Fig. 7.

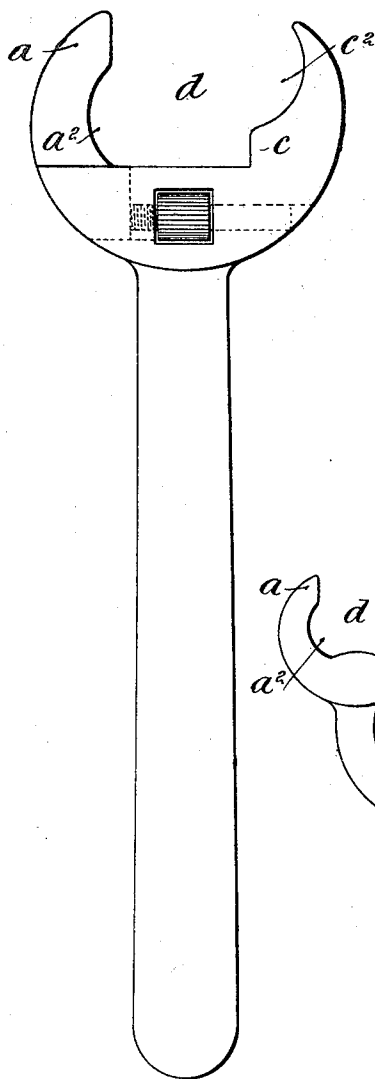


Fig. 8.

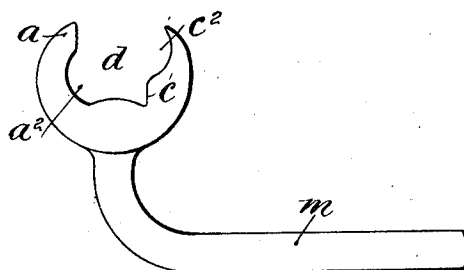
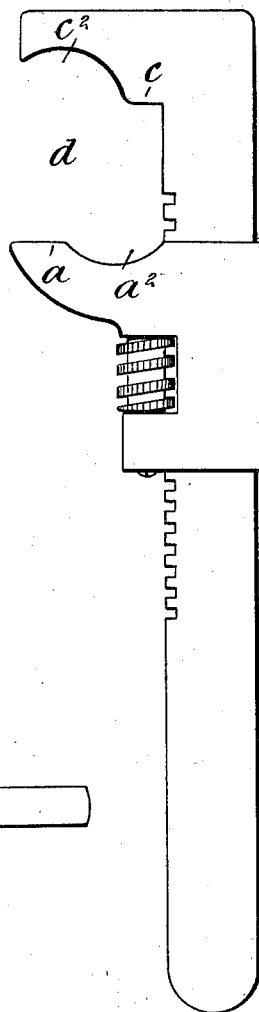


Fig. 6.

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UNITED STATES PATENT OFFICE.

JAMES CHANDLER, OF BIRMINGHAM, ENGLAND, ASSIGNOR TO MARSHAL HALSTEAD, OF BIRMINGHAM, ENGLAND, AND GEORGE HENRY BIDDLE, OF MOSLEY, ENGLAND.

SPANNER OR WRENCH.

SPECIFICATION forming part of Letters Patent No. 736,687, dated August 18, 1903.

Application filed December 24, 1902. Serial No. 136,469. (No model.)

To all whom it may concern:

Be it known that I, JAMES CHANDLER, engineer, a citizen of the United States of America, residing at present at 43 Cannon street, Birmingham, in the county of Warwick, England, but late of 1293 Broadway, New York, N. Y., have invented certain new and useful Improvements in Spanners or Wrenches, of which the following is a specification.

My invention relates to spanners or wrenches for turning or rotating faceted nuts, faceted bolt-heads, and such like, and comprises the improved features hereinafter described and claimed.

The object of the invention is to provide a simple and effective spanner or wrench which without losing hold of or leaving the nut can be changed from one pair of facets or flats to another pair of facets or flats by the simple turning of the spanner or wrench in the opposite direction to the direction in which it is turned for rotating the said nut, the latter in the changing of the facets or flats, as aforesaid, remaining stationary.

In the accompanying sheets of drawings the improvements according to the invention are shown applied to ordinary types of fixed and movable or adjustable spanners or wrenches and will be hereinafter made clear in connection therewith, the features thereof being in the formation of the jaws at the opening between them wherein the nut or bolt-head fits.

Figures 1 and 2 of the said drawings show side elevations of a fixed-size spanner according to my invention for a square nut, and Fig. 3 a side elevation of a modification of this spanner, while Figs. 4 and 5 show side elevations of a spanner according to my invention for a hexagonal nut, this latter also accommodating a square nut. Fig. 6 shows an elevation of the spanner Fig. 1 with a different-shaped handle, while Figs. 7 and 8 show by side elevations the application of the invention to two well-known forms of a shifting or adjustable spanner or monkey-wrench. Figs. 2 and 5 show clearly how the spanners turn on the nuts so as to change from one pair of facets to another pair of facets.

With reference to the spanner Figs. 1 and 2, a is the one jaw, c is the other jaw, and d is the opening between these jaws wherein the nut to be turned takes, while g is the head of the spanner, and m is the stalk and handle, the jaws being formed upon the head g . The jaw a is cut away at a^2 , so that in the turning of the nut e (shown in dotted lines) it only nips or grips the said nut beyond the center of the flat or facet e^2 it engages, while the jaw c is cut away at c^2 , so that it only nips or grips the nut inward of the center of the flat e^3 it engages, the said nipping or gripping being at diagonally opposite ends of the nut's opposite flats or facets. In other words, the jaw c nips or grips the nut only at the throat of the opening d , while the jaw a is extended beyond the jaw c , so as to nip or grip the nut only at the mouth of the said opening, the other parts of the jaws, forming sides of the opening d , being cut away at diagonally opposite points sufficient to admit the angles or corners of the nut to turn between them when the spanner is being changed from one pair of facets or flats to another pair, this changing being indicated in Fig. 2. The jaw c may be entirely cut away outside its gripping or nipping portion, as represented by the form of the invention Fig. 3; but it is preferable to continue this jaw and cut it away at c^2 in the manner shown in Figs. 1 and 2, as the inner edge of the outer part of the jaw thereby constitutes a guide for the turning of the spanner on the nut. The cut-away part a^2 is necessary both for a clearance and for a guide in changing the facets, and it must extend from the bottom of the throat of the opening d between the jaws beyond the center of the nut e . It will be seen from Figs. 1 and 2 that the extremity of the outer part of the jaw c adjacent to the cut-away part c^2 is hooked or turned inward somewhat, and this is preferable in view of making the said cut-away part a guide, as aforesaid.

In using the spanner to turn the nut e the spanner is turned in the direction of the arrow, Fig. 1, and the nut is nipped by the jaws a and c at diagonally opposite ends of the opposite flats e^2 e^3 . To change the spanner to

another pair of facets or flats, the spanner is turned (the nut being stationary) in a direction opposite to the direction of the arrow, when the cut-away parts $a^2 c^2$ of the jaws allow of the spanner to roll over the diagonals of the nut without the jaws leaving the nut or losing hold of the nut.

I would point out that it is preferable to make the bottom of the opening d a curve, as shown at o in Figs. 1 and 2, the nut e only contacting with the said bottom at the center of the curve.

The arrangement of the invention Figs. 4 and 5 is in substance in accordance with the arrangement Figs. 1 and 2, the only change being that the bottom g^2 of the throat of the opening d between the jaws a and c is V-shaped to enable the spanner to take hexagonal or similar nuts, this spanner also being able to accommodate square nuts.

The form of the invention Fig. 6 differs only from the form Figs. 1 and 2 in respect of the shape of the stalk and handle m , the latter in this case being at right angles to the gripping sides of the jaws.

The arrangement of the invention in respect of the monkey-wrenches, Figs. 7 and 8, will be obvious from the foregoing description, the formation of the jaws being exactly in accordance with Figs. 1 and 2. I may state, however, that c is the fixed jaw and a is the movable jaw in these cases.

The foregoing improved spanners have a large amount of utility, particularly where nuts and such like are in awkward places and difficult to get at.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A spanner comprising a head provided

with a pair of rigid gripping-jaws suitably spaced apart, one of said jaws having a portion of its gripping-face flattened and the remaining portion of said gripping-face segmental in contour, said flattened portion terminating in said segmental-shaped portion and said segmental-shaped portion terminating in said head, and the other of said jaws having a portion of its gripping-face flattened and the remaining portion of its gripping-face curvilinear in contour which forms at its outer end a lip, said curvilinear portion at its inner end terminating in said flattened portion and the said flattened portion terminating in said head.

2. A spanner comprising a head cut away to form a bifurcation, the lower wall of which is substantially V-shaped in contour, one of the side walls of said bifurcation having a portion of its inner face flattened and the remaining portion of its inner face segmental in contour, said flattened portion terminating in said segmental-shaped portion and said segmental-shaped portion terminating in said lower wall, and the other of the side walls of said bifurcation having a portion of its inner face flattened and the remaining portion of said inner face curvilinear in contour, thereby forming at its outer end a lip, said curvilinear portion at its inner end terminating in said flattened portion and the said flattened portion terminating in said lower wall.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES CHANDLER.

Witnesses:

GEORGE H. BIDDLE,
GEO. FEENY.