

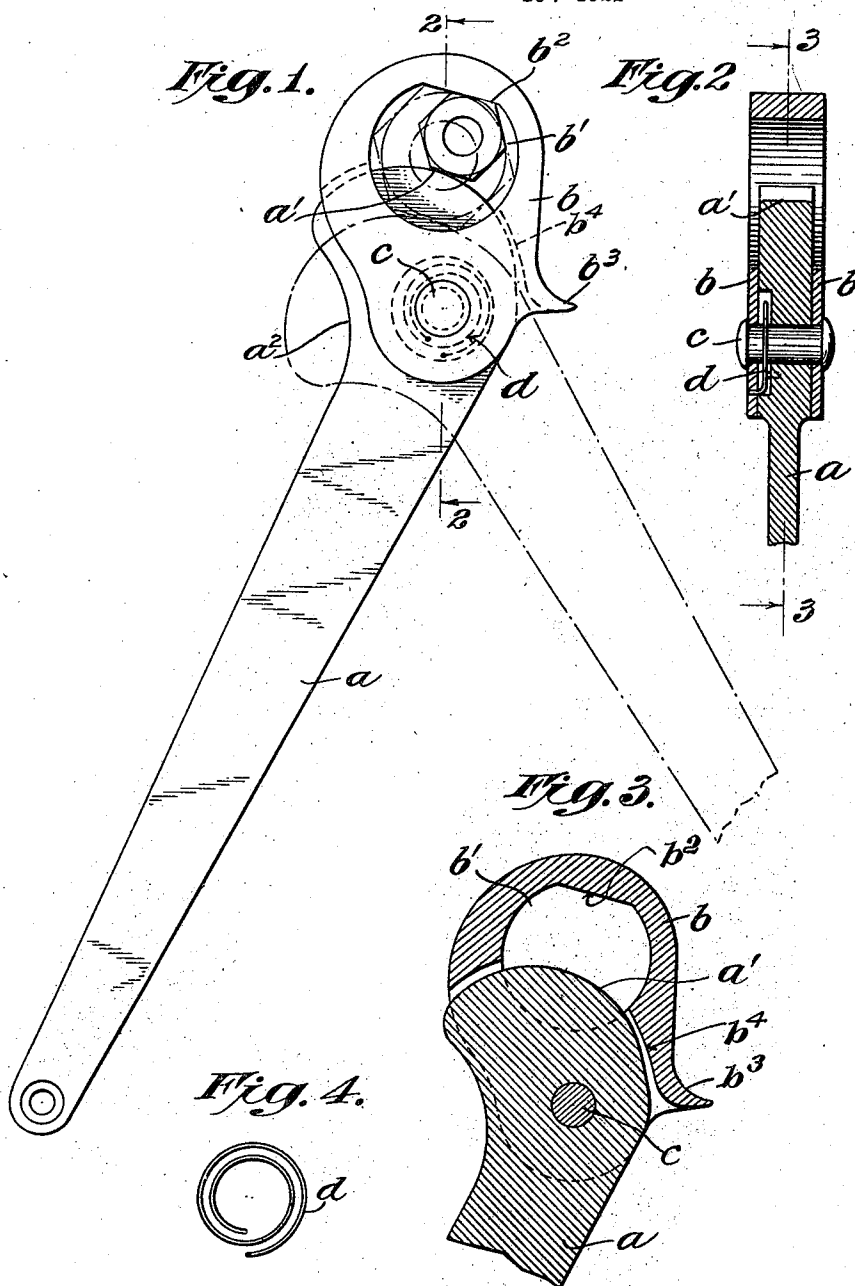
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WRENCH

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WRENCH.

Application filed November 15, 1922. Serial No. 601,017.

To all whom it may concern:

Be it known that I, PAUL JULES ERNEST MAGNAN, a citizen of the Republic of France, residing in Tours, France, have invented certain new and useful Improvements in Wrenches, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to wrenches and has for its object to provide a wrench in which the gripping member shall be held automatically in secure engagement with the nut or bolt-head engaged so that, among other reasons, if the user accidentally releases the handle the wrench will remain automatically in proper engagement with the element engaged. A further object of the invention is to provide in a wrench of the character described a gripping element independently of the handle which may be brought into engagement with the nut or bolt-head through manipulation with a finger of the same hand that grips the handle and disengaged from the element through a similar manipulation. A further object is to so form the parts as to afford a secure hand grip in which all of the fingers naturally assume the most effective position for applying the turning effort to the wrench.

The wrench will be described in connection with one suitable embodiment thereof which is illustrated in the accompanying drawings. In the drawings:

Figure 1 is a view in plan of the wrench the operative relation of the parts when in use being indicated in dotted lines.

Figure 2 is a detail sectional view taken on the plane indicated by the line 2—2 of Figure 1 and looking in the direction of the arrows.

Figure 3 is a detail view in transverse section of the parts shown in Figure 2 and taken on the plane indicated by the line 3—3 and looking in the direction of the arrows.

Figure 4 is a detail view of the spring employed.

The wrench comprises generally a handle *a* and what will be termed hereinafter a gripping element *b* pivoted thereon through a pin *c*. The gripping element has formed therein an opening *b'* of suitable

configuration for adapting the element to proper engagement with a nut or bolt-head of any one of a number of sizes, one of the features of the invention having to do with the automatic compensation of the wrench for elements of different sizes to be operated upon. To this end, the inner end of the handle *a* beyond the pivot *c* is formed with an eccentric edge *a'* which is adapted to overlie the opening *b'* in the gripping element when the wrench is in use. The opening *b'*, preferably at the side generally opposite to the eccentric edge *a'* is flattened at *b²* to rest against a flat surface on the nut or bolt-head engaged. This permits the eccentric edge *a'* of the handle *a* to apply a clutching pressure to the opposite side of the nut or bolt-head and, under the pressure applied to the end of the handle *a* in turning the wrench to more effectively hold the gripping element in engagement with the part to be operated upon, regardless of the size of the latter. Between the handle *a* and the gripping element *b* is operatively interposed a spring of any suitable form, illustrated as a spiral spring *d* which normally tends to press the gripping element *b* in a counter-clockwise direction on the pin *c* as viewed in Figure 1. A shoulder *b⁴* formed between the portions of the gripping element which embrace the end of the handle is so arranged that it comes in contact with the portion of the eccentric edge *a'* nearly or quite farthest distant from the pivot *c* when the gripping element is swung in counter-clockwise direction by the spring, thus preventing the gripping element from being swung so far around by the spring that the opening *b'* would not be opposite the eccentric edge *a'*. By this stopping, action of shoulder *b⁴* the gripping element, when the wrench is not in use, is held in such position that the thumb piece *b³* need be moved a short distance only to move the gripping element into position to receive the article to be gripped in the opening *b¹*.

In use, when the handle *a* is gripped by the fingers the thumb may be brought into engagement with the spur *b⁵* formed on the gripping element *b* at one side of the pivot pin *c*. By pressing on the spur *b⁵* with the thumb the gripping element *b* may be moved in a clockwise direction about the pin *c* so as to bring the opening *b'* more out of aline-

ment with the overlying eccentric edge a' of the handle a , thereby permitting the nut or bolt-head to enter the opening freely. Upon release of the spur b^3 the gripping element b will be revolved under the influence of the spring d in a counter-clockwise direction until the nut or bolt-head is jammed between the flat b^2 and the eccentric edge a' of the handle a . At this time, the forefinger will rest on the edge a^2 of the handle a at the side opposite the eccentric portion a' and permit the most effective turning effort to be applied to the handle a .

The wrench is simple in construction, inexpensive to manufacture, effective in use and by virtue of the spring action will automatically maintain itself in engagement with the element to be operated upon even though the workman accidentally releases the handle a . In work in close and inaccessible positions and in situations where great loss of time and danger are involved in dropping a wrench the invention becomes of particular importance. It may be held in one hand and manipulated with one of the fingers thereof for engagement with the part to be operated upon and having been once engaged cannot become disengaged accidentally until positively released. The importance of this in work at elevations as in the mounting of electric cables will be appreciated.

The form and arrangement of the various parts, the dimensions, materials and design

may be changed in detail without departing from the spirit of the invention.

What I claim is:

A wrench comprising a handle having an opening for a pivot near its inner end and a recess on one side about the pivot opening and having its inner end beyond the pivot opening formed with its edge eccentric to the pivot opening, a gripping member having legs embracing the inner end of the handle and having pivot openings therein, a pivot pin extending through the pivot openings in said legs and the pivot opening in the handle end, said gripping element having beyond the pivot openings an opening adapted to receive the article to be gripped, having a flat face opposite said eccentric edge, a spring within the recess in the side of the handle acting to swing the gripping element towards the point on the eccentric edge of the handle farthest distant from the pivot opening, a shoulder on the gripping member in position to contact with the eccentric edge of the end of the handle to limit the movement imparted to it by the spring, and a thumb piece extending outward from the gripping member in position to be operated by the hand grasping the handle to swing the gripping member against the force of the spring.

This specification signed this 10 day of October, A. D. 1922.

PAUL JULES ERNEST MAGNAN.