C. T. HARNER.

WRENCH.

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1,088,985.

Patented Mar. 3, 1914.

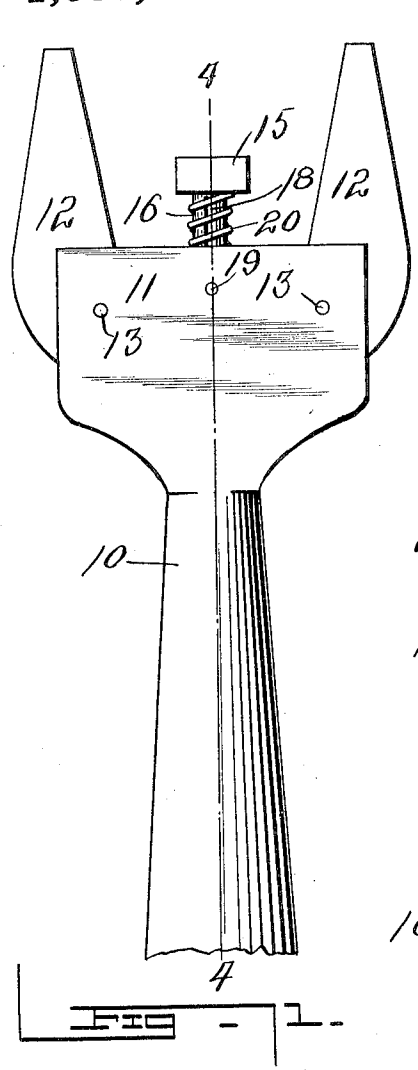


FIG. 1.

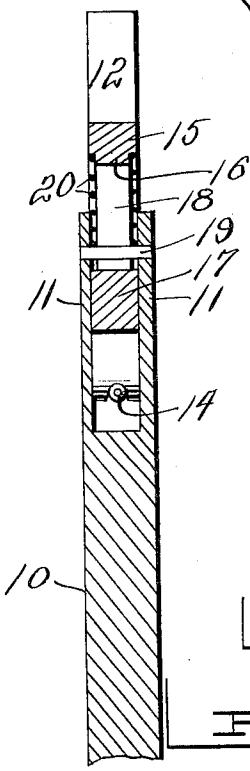


FIG. 4.

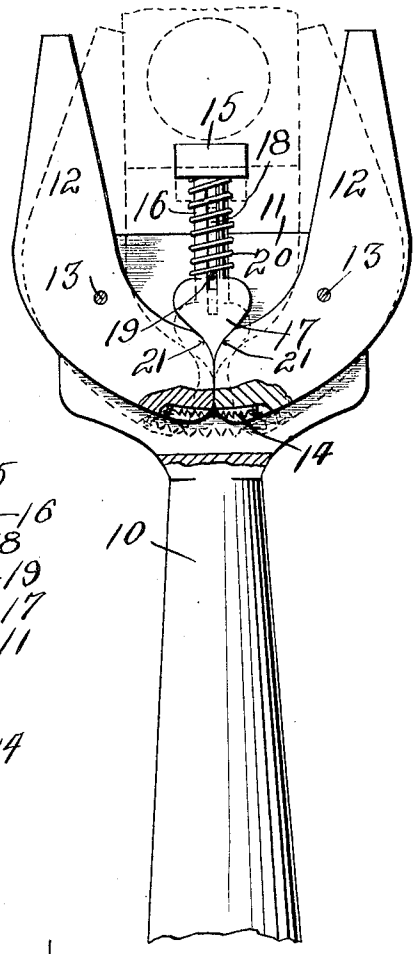


FIG. 3.

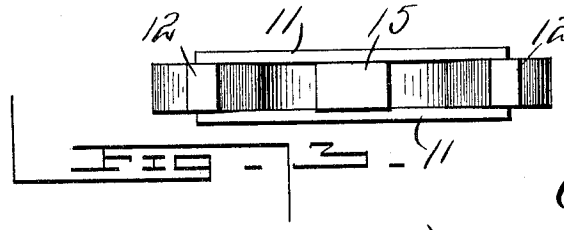


FIG. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

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WRENCH.

1,088,985. Specification of Letters Patent. Patented Mar. 3, 1914.

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To all whom it may concern:

Be it known that I, CLARENCE T. HARNER, a citizen of the United States, residing at Suver, in the county of Polk, State of Oregon, have invented certain new and useful Improvements in Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to wrenches and has for an object to provide a wrench having jaws that will automatically grip nuts of various sizes without any adjustment of the jaws.

A further object of the invention is to provide a simplified and improved spring controlled plunger device for contact with a nut and operating to move the wrench jaws into engagement with the nut.

With the above objects in view the invention consists of certain novel details of construction and combination of parts hereinafter fully described and claimed, it being understood that various modifications may be made in the minor details of construction within the scope of the appended claims.

In the accompanying drawing illustrating this invention:—Figure 1 is a side elevation of a wrench embodying my improvements. Fig. 2 is a side elevation with one of the side plates removed to expose the jaws and plunger. Fig. 3 is an end view. Fig. 4 is a longitudinal section on the line 4—4 Fig. 1.

Referring now to the drawing in which like characters of reference designate similar parts, the wrench is shown to comprise a handle 10 that terminates in an enlarged bifurcated head producing parallel side plates 11. A pair of jaws 12 are pivoted intermediate the ends on pivot pins 13 carried by the side plates, the inner ends of the jaws being connected by a helical spring 14 which is normally under tension and holds the jaws open.

Slidably mounted between the side plates is a plunger comprising a head 15, a reduced stem 16, and a substantially triangular-shaped cam 17 on the stem opposite the head, there being a longitudinal slot 18 in the stem which receives a transverse guide pin 19 carried by the side plates 11. A helical spring 20 is seated on the stem and is confined under tension between the head 15 and guide pin 19, this spring exerting an outward pressure upon the plunger and normally holding the same at its outward limit of movement with the apex of the triangular cam 17 disposed between and bearing lightly upon the adjacent inner edges of both jaws 12, said edges being cut away obliquely to provide cam surfaces 21.

In operation, the wrench is applied to the nut by passing the jaws 12 on either side of the nut with the plunger head 15 bearing against the near face of the nut, the wrench being then forced snugly against the nut with a resultant urging of the plunger rearwardly whereby the trangular cam forces the rear ends of the jaws apart as it rides rearwardly on the cam surfaces 21 whereby the gripping ends of the jaws are locked into clamping engagement with the sides of the nut, the parts being returned to normal position upon retraction of the wrench from the nut as will be understood.

From the above description it will be seen that I have provided an extremely simple and inexpensive wrench that will automatically grip nuts of various sizes without any adjustment to the wrench jaws.

What is claimed, is:—

1. A wrench including a handle having a bifurcated head providing side plates, a pair of jaws fulcrumed intermediate the ends between said side plates, a helical spring connecting the rear ends of said jaws and normally holding said jaws open, and a spring pressed plunger slidably mounted between said jaws on said side plates and carrying an integral triangular shaped cam at the rear end engageable between the confronting edges of said jaws and adapted upon forcing of said plunger rearwardly to cam the rear ends of said jaws apart and dispose the front ends of said jaws in clamping engagement with the sides of a nut.

2. In a wrench the combination of a handle having a bifurcated head, a pair of jaws fulcrumed intermediate the ends in the bifurcation of said head, a helical spring connecting the rear ends of said jaws and normally holding said jaws open, a stem in said bifurcation between said jaws having a lon-

gitudinal slot, a head on one end of said stem for engagement with the nut to be turned, a triangular shaped cam on the opposite end of said shank bearing upon obliquely disposed cam faces formed on the inner edges of said jaws, a transverse pin engaged through said slot and terminally secured in said bifurcation, and a helical spring seated on said shank and confined under tension between said head and said pin.

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

CLARENCE T. HARNER.

Witnesses:
C. N. PLOWMAN,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."