(No Model.)

J. D. BOWMAN.

WRENCH.

No. 348,185. Patented Aug. 31, 1886.

Fig. 4

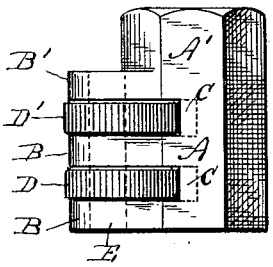


Fig 1

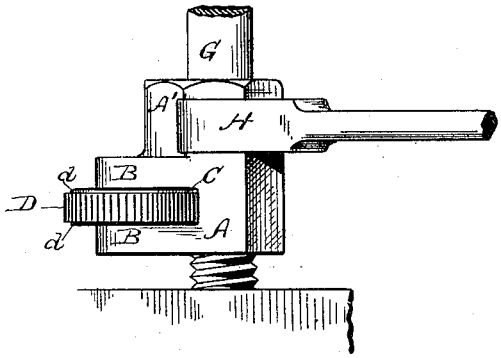
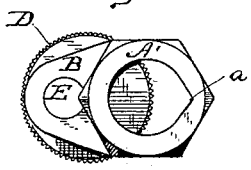


Fig. 3



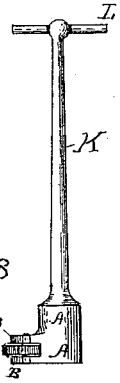


Fig 8

Fig 2

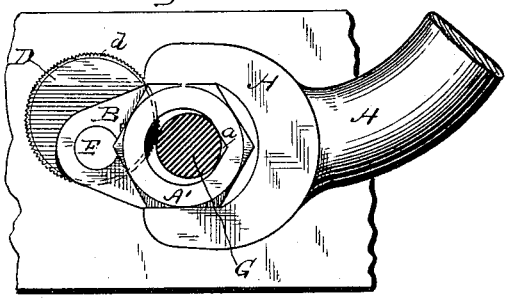


Fig 5

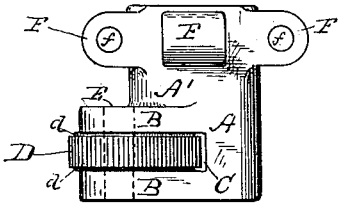


Fig 6

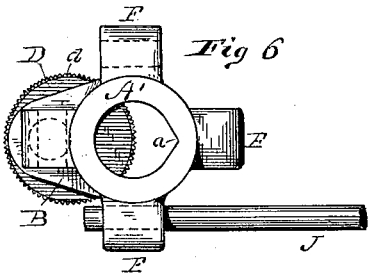
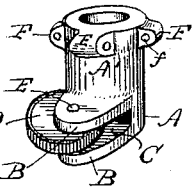


Fig. 7



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SPECIFICATION forming part of Letters Patent No. 348,185, dated August 31, 1886.

Application filed June 29, 1886. Serial No. 206,598. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. BOWMAN, of Altoona, Blair county, State of Pennsylvania, have invented a new and useful Improvement in Stud-Wrenches, of which the following is a true and exact description, due reference being had to the accompanying drawings, which form part hereof.

My invention has reference to that class of wrenches which are intended to act upon smooth cylindrical surfaces, like the central part of a stud, and my object in inventing this device has been to provide a wrench which will grasp the stud or similar object promptly and firmly, and which may be conveniently used to screw the bolt into place without necessitating a constant succession of fresh holds to be taken on the cylindrical surface, as is generally requisite with the pipe or stud wrenches now in use. I have also designed my wrench so that it may be readily used in both directions, as to screw and unscrew a bolt, and have provided it with certain modifications to adapt it for special uses, as hereinafter described.

Reference is now to be had to the drawings which illustrate my improvement, and in which—

Figure 1 is a side view of my wrench in use; Fig. 2, a plan view of the same; Fig. 3, a plan view of the wrench; Fig. 4, a view of my wrench provided with two eccentric gripping-wheels; Figs. 5, 6, and 7, views of my wrench in a modified form, and Fig. 8 another modification.

A A′ is a tube or sleeve, preferably of steel or malleable iron, at one end of which, A, are formed lugs B B, between which is a slot, C, penetrating to the hollow portion of the tube.

D is a serrated eccentric roller made of hardened steel and pivoted between the lugs B by means of the pin E, around which it turns freely, the slot C being large enough to permit it to project into the bore of the tube and to rotate freely without interference. The portion of the tube or sleeve, A′, which extends above the lugs B is preferably made hexagonal, as shown in Figs. 1, 2, 3, and 4, so that an ordinary nut-wrench, H, may be used to turn it; or it may be provided with lugs, such as F, Figs. 5, 6, and 7, in which a rod or lever may be inserted through openings *f* to turn the wrench, and for some uses the tube A′ may be continued upward in the form of a rod with a handle at its end, as shown in Fig. 8.

The edges of the roller D are preferably turned down, as shown at *d*, so that dirt or scale shall not interfere with its free working between the lugs B.

The sleeve A A′ should have a slight V-shaped recess, *a*, slotted, cored, or filed in its inner opening or bore directly opposite to the center line of the pin E, upon which the gripping-roller D rotates, so that the stud or pipe will be held at two points back of that where the serrated roller grips it, thus insuring a firm hold.

G in the drawings represents a stud in the act of being turned by my wrench, and J a lever or rod inserted in the lug E.

In Fig. 4 I have shown a second serrated roller, D′, attached to my wrench, which, when constructed as there shown, is still fitted for ordinary use, and especially adapted for special uses—as, for instance, where it is desired to act upon a stud so placed that the wrench cannot be got at with an ordinary bolt-wrench the lower roller may be made to grip the stud, and a rod inserted into the other end of the sleeve, so as to be gripped by the upper roller, the wrench may then be actuated by means of said rod.

The mode of use of my wrench is of course apparent. The stud is inserted in its socket by hand, and the sleeve then slipped over it, and the serrated roller D is then pressed or allowed to rest against the unthreaded section in the direction the stud is to be turned. The wrench is then turned, and the roller at once bites into the metal and clamps it between itself and the plain sides of the V-shaped recess in the bore, gripping it so firmly that it will turn with the wrench, for the more resistance it offers the tighter it is clamped. Having once taken hold of the stud or other metal rod, the wrench may remain fixed and immovable relative thereto until it is screwed home, the nut-wrench or lever used to actuate it being changed in position, as desired, without necessitating the taking of a fresh grip upon the stud. This is very important where, as in the case of ordinary pipe-tongs, it is constantly necessary to take a fresh hold, the stud becoming defaced and even at times weakened. When it is desired to remove the wrench a

slight turn in the opposite direction will at once loosen it, and it is evident that the same wrench may be used with the same facility to unscrew a stud as to screw it in.

It is of course evident that the sleeve A A′ may, if desired, have a longitudinal slot or opening through which the rod or stud may pass to enter it.

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

1. A wrench for studs or other round metallic bodies, consisting of a sleeve, A A′, having a serrated eccentric gripping-roller, D, pivoted in a slot, C, in one end thereof, and its other end projecting beyond said gripping device, substantially as and for the purpose specified.

2. A wrench for studs or other round metallic bodies, consisting of a sleeve, A A′, having a serrated eccentric roller, D, pivoted in a slot, C, formed in one end thereof, and having its other end projecting beyond said gripping device, and adapted to be firmly grasped by a removable actuating wrench or lever, substantially as and for the purpose specified.

3. In a wrench, substantially as shown and described, the combination of the sleeve A A′, having the V-shaped slot *a* and slotted opening C, the serrated eccentric roller D, pivoted in said slot, and the sleeve continued above said gripping-roller to form a holding-place for an actuating-lever, all substantially as specified.

JOHN D. BOWMAN.

Witnesses:
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A. B. SWOPE.