No. 663,884. Patented Dec. 18, 1900

A. E. GROOM.

TIRE BOLT WRENCH.

(Application filed Mar. 20, 1900.)

(No Model.)

Fig. 1.

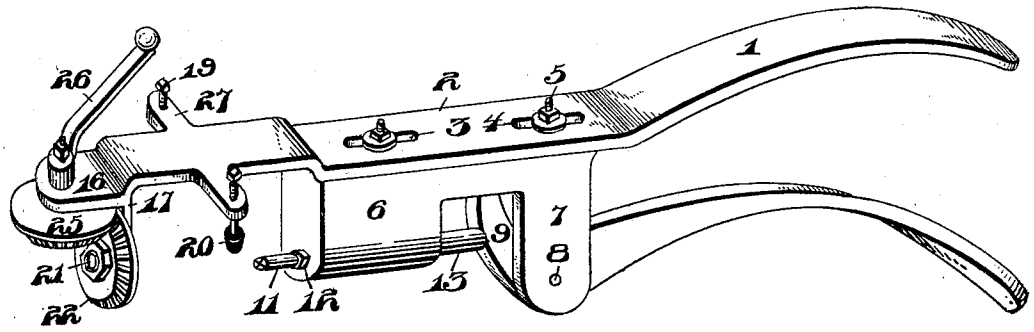


Fig. 2.

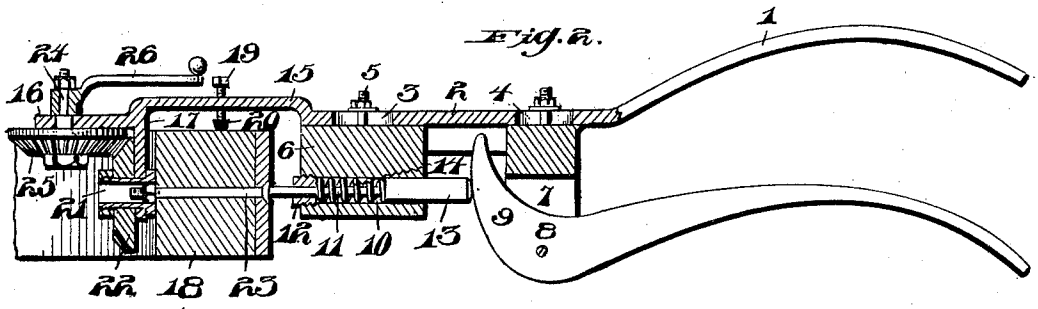


Fig. 3.

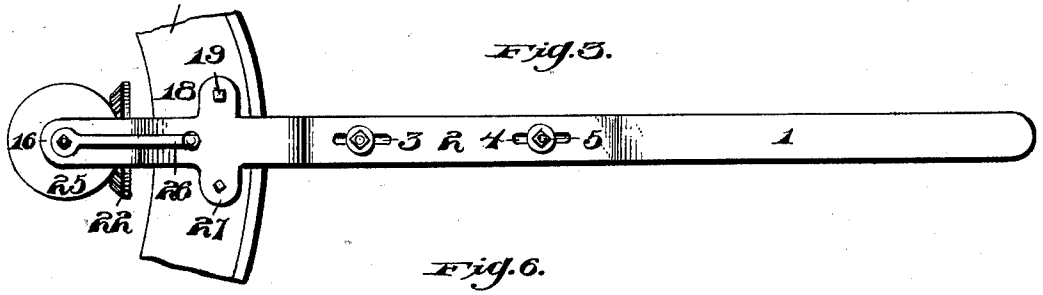


Fig. 6.

Fig. 4.



Fig. 5



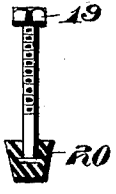


Fig. 7.



Fig. 8.

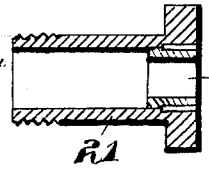
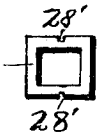


Fig. 9.



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TIRE-BOLT WRENCH.

SPECIFICATION forming part of Letters Patent No. 663,884, dated December 18, 1900.

Application filed March 20, 1900. Serial No. 9,390. (No model.)

To all whom it may concern:

Be it known that I, AMOS E. GROOM, a citizen of the United States of America, residing at Mars, in the county of Butler and State of Pennsylvania, have invented certain new and useful Improvements in Tire-Bolt Wrenches, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in nut-wrenches, and is particularly adapted for use in connection with tire bolts and nuts.

The object of the invention is to construct a wrench of this character which shall be adapted for use in the removal of nuts from the ends of tire-bolts; and it consists of a body portion provided with a handle and a cam-lever, a spring-actuated clamping-rod which is adapted to bear against the head of the bolt, and means carried by the body portion when operated adapted to remove a nut from the end of a tire-bolt.

With the above and other objects in view the invention consists in a wrench of this character which shall be extremely simple in construction, strong, durable, efficient in its use, and comparatively inexpensive to manufacture.

The invention finally consists in the novel combination and arrangement of parts to be hereinafter more fully described, and specifically pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate corresponding parts throughout the several views, in which—

Figure 1 is a perspective view of my improved wrench. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a top plan view thereof. Fig. 4 is a side view of the nut-receiving sleeve. Fig. 5 is an end view thereof. Fig. 6 is an enlarged side view of the position-bars, showing the rubber tip at the lower end thereon in section. Fig. 7 is a detail plan view of the spring-actuated clamping-rod with the parts disassembled. Fig. 8 is an enlarged longitudinal sectional view of the nut-receiving sleeve, showing the bur arranged therein to permit of the device operating upon different-sized nuts. Fig. 9 is an end view of the removable bur for the nut-receiving sleeve.

Referring to the drawings by reference-numerals, 1 indicates a handle which is formed integral with a rectangular bar of suitable metallic material 2, forming the top of the wrench. The top of the wrench is provided with a pair of openings 3 4, through which operate set-screws 5, connected to the body portion 6, and permits of the adjusting of the same to the position desired. The body portion of the wrench is formed with a pair of downwardly-extending hangers 7, in which is pivotally secured, by means of a pin 8, a cam-lever 9. The body portion 6 is further provided with an opening 10, through which operates a clamping-rod 11 and carries a stop-nut 12. The clamping-rod is formed of two different diameters, the larger, 13, adapted to be engaged by the cam-lever 9, and the smaller has mounted thereon between the nut 12 and the larger portion 13 a coiled compression-spring 14.

The top 2 extends outwardly from the body portion 6 and is bowed, as at 15, and formed at one end with an outwardly-extending flange 16 and a downwardly-extending hanger 17. Between the hanger 17 and body portion 6 is adapted to be arranged a felly 18, and extending through the bowed portion 15 and engaging the felly 18 is a screw-threaded set-rod 19, provided at its lower end with a rubber tip 20, this tip engaging the felly, and by the action of the rod 19 sets the tire in proper position, as desired.

Mounted within the hanger 17 is a nut-receiving sleeve 21, carrying a bevel-gear 22. The nut-receiving sleeve acts as an axle for the bevel-gear 22, as well as receiving the nut when it is removed from the bolt 23 in the tire. Extending downwardly through the flange 16 is a short shaft 24, which has connected to its lower end a bevel-gear 25, meshing with the bevel-gear 22 for imparting motion thereto. Suitably secured to the upper end of the short shaft 24 is a crank or handle 26 for imparting motion to the bevel-gear 25. The set-rods 19 extend through offsets or shoulders 27, formed integral with each side of the bowed portion 15. When it is desired to use the device upon different-sized

nuts, the locking-sleeve is provided with a bur 28, as will be seen in Fig. 8 of the drawings, which is of a size to fit neatly in the opening of the sleeve and is provided with notches 28′ to receive a spanner or other tool for placing the nut in position. To give sufficient space for the manipulation of the spanner, the sleeve may be also provided with notches 21′.

The operation of the device is as follows: Assuming that the felly is in position as shown in Fig. 2 of the drawings, the cam-lever is grasped by the hand, causing the clamping-rod to engage the head of the bolt and securely hold the felly in position, when the handle 26 is turned, imparting motion to the bevel-gear 25, transmitting motion to the gear 22, revolving the nut-receiving sleeve 21, and removing the nut from the bolt.

Owing to the fact that the body portion is secured by set-screws in the manner shown, the same can be adjusted for any size of tire where it is desired to remove nuts from tire-bolts, and it will be evident that by providing a series of different-sized burs for the locking-sleeve the wrench can be used upon any-sized nut that it is desired to remove from a tire-bolt. It will also be evident that the set-rods 19 will always keep the felly in the desired position during the operation of removing a nut.

It is thought that the many advantages of my improved device can be readily understood from the foregoing description, taken in connection with the accompanying drawings, and it will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In a device of the character described, the combination of the handle having the downwardly-extending hangers, the horizontally-adjustable body portion connected to the handle and provided with a longitudinal opening, the extension carried by the handle, the bevel-gear 25 carried by said extension, and the adjustable set-rods mounted in the extension, the nut-receiving sleeve carried by the extension of the handle, the spring-actuated clamping-rod carried by the body portion, and the cam-lever adapted to engage said clamping-rod to hold the same in engagement with a tire-bolt, substantially as shown and described.

2. In a device of the character described, the combination of the slotted bar having the handle at one end and the bowed extension at the other end, the horizontally-adjustable body portion carried by said bar and provided with a longitudinal opening, the nut mounted in said opening, the spring-actuated clamping-rod mounted in said opening and operating through said nut, the cam-lever carried by the bar and adapted to engage said clamping-rod, the nut-receiving sleeve carried by the extension of the bar, and the means carried by said sleeve and extension for rotating the sleeve, substantially as described.

3. In a device of the character described, the combination of the slotted bar having the handle at one end and the bowed extension at the other end, the horizontally-adjustable body portion carried by said bar, the spring-actuated clamping-rod carried by said body portion, the adjustable set-rods mounted in said bowed extension and provided with rubber tips to engage the felly, the cam-lever to engage said clamping-rod, the nut-receiving sleeve carried by the bowed extension with the removable bur mounted therein, and the means carried by the bowed extension and sleeve for rotating the latter, substantially as described.

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

AMOS E. GROOM.

Witnesses:
JOHN NOLAND,
E. W. ARTHUR.