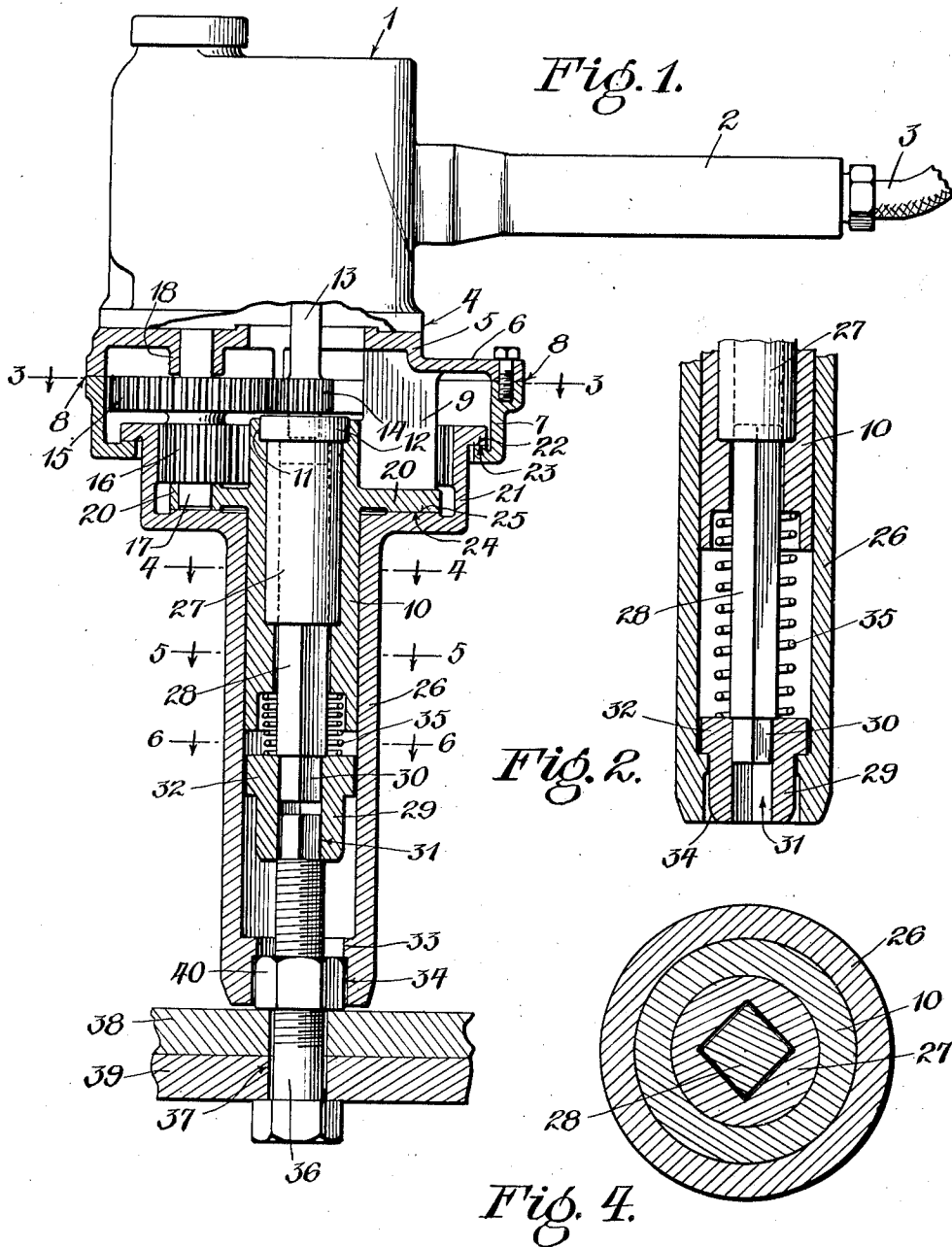


C. EVENSEN.
 BOLTING-UP DEVICE.
 APPLICATION FILED JULY 12, 1919.

1,343,667.

Patented June 15, 1920.

2 SHEETS—SHEET 1.



Inventor
 Carl Evensen.
 By *Fred P. Goin*
 Attorney

C. EVENSEN.
BOLTING-UP DEVICE.
APPLICATION FILED JULY 12, 1919.

1,343,667.

Patented June 15, 1920.

2 SHEETS—SHEET 2.

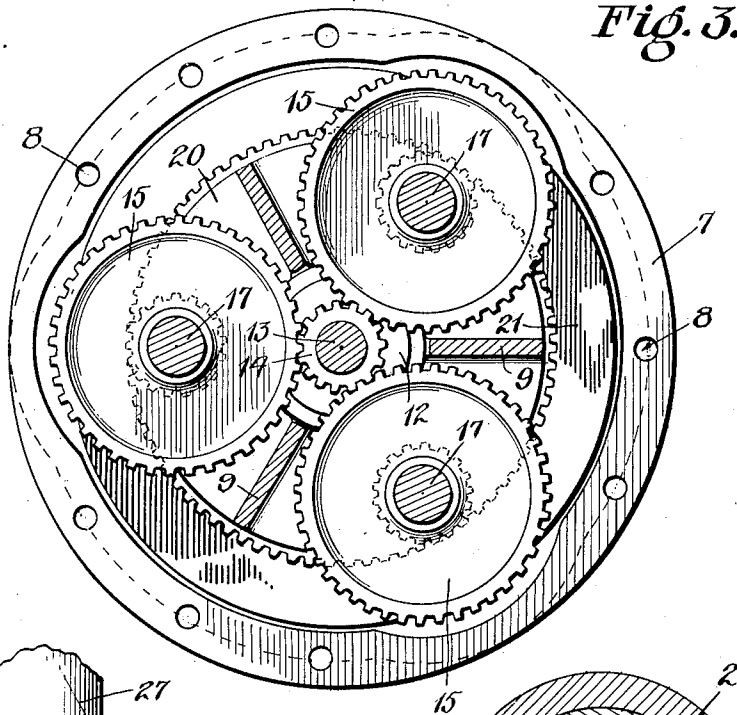


Fig. 3.

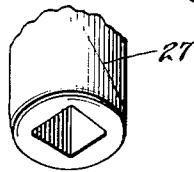


Fig. 5.

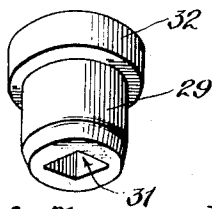
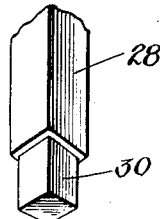
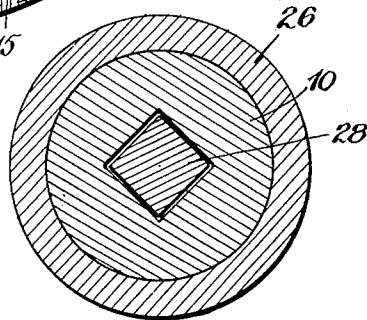
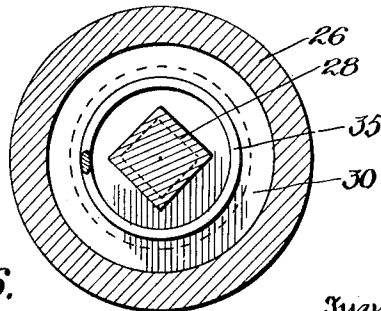


Fig. 7.

Fig. 6.



Inventor
Carl Evensen.

By

Jud P. Gorin

Attorney

UNITED STATES PATENT OFFICE.

CARL EVENSEN, OF SEABOLD, WASHINGTON.

BOLTING-UP DEVICE.

1,343,667.

Specification of Letters Patent. Patented June 15, 1920.

Application filed July 12, 1919. Serial No. 310,299.

To all whom it may concern:

Be it known that I, CARL EVENSEN, a subject of the King of Norway, residing at Seabold, in the county of Kitsap and State of Washington, have invented certain new and useful Improvements in Bolting-Up Devices, of which the following is a specification.

This invention relates to a power driven wrench for holding a bolt and tightening the nut thereon.

The object of the invention is to provide means for holding the bolt while the nut is being tightened, and to facilitate the use of bolts not having polygonal shaped heads, and to eliminate the torsional strain on the portion of the bolt between the head and the nut.

With these and other objects in view my invention is illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section through the wrench showing the members in active engagement with a bolt and nut securing two plates.

Fig. 2 is a similar section showing the bolt gripping member in position for use.

Fig. 3 is a cross section on the line 3—3 of Fig. 1.

Fig. 4 is a cross section on the line 4—4 of Fig. 1.

Fig. 5 is a similar view on the line 5—5 of Fig. 1.

Fig. 6 is a similar view on the line 6—6 of Fig. 1.

Fig. 7 is a perspective view of the bolt holding members, the parts being separated.

Similar reference characters indicate similar parts throughout the several views.

1 indicates a motor suitably mounted in a casing having a handle 2, and connection 3, to a source of power. The motor case is constructed at 4, to connect to the upper portion 5 of a sectional cover. The portion 5 has a flange 6 extending to form a raised face to receive a similar face on the lower portion 7 of the cover. The sections of the cover are bolted together at 8, and said cover is made in sections to permit easy access to the parts. 9 indicates webs joining the wrench supporting frame 10 with the upper portion 5 of the cover. The main portion of the supporting frame 10 is cylindrical and has a seat 11 at its upper end supporting a bearing 12 for the motor shaft 13. The motor shaft 13 carries a pinion 14 in

mesh with a gear 15. The gear 15 is formed with a pinion 16 on shaft 17. The shaft 17 is carried by bearings 18, in the upper portion 5 of the cover, and 20 is an annular flange extending from the body of frame 10. Pinion 16, meshes with internal gear teeth on a drum 21. A raised bearing surface 22 on the drum 21 engages a similar surface 23, on the portion 7 of the cover, preventing lateral motion of the drum 21 and keeping the bearing surface 24 in the web of the drum in contact with a similar surface 25 on the flange 20.

The drum 21, is formed on the end of the main wrench case 26, the whole being rotatable and forming the outer wrench member. The outer periphery of the supporting frame 10 below the flange 20 forms a bearing for the casing 26. In the center of the supporting frame 10, is mounted a shaft 27. An angular rod 28 is slidably mounted in shaft 27 and is guided by the frame 10. A gripping member 29 is mounted on the reduced end 30 of the angular rod 28, and is provided with a socket 31 for engaging the squared end portion of a bolt. The gripping member 29 has a flange 32 on its upper portion. 33 indicates an annular internal flange on the casing 26 which forms a stop for the gripping member 29 and an end for the socket 34 adapted to receive a nut. 35 indicates a coil spring interposed between the frame 10 and the gripping member 29, forcing the gripping member in contact with flange 32, as best shown in Fig. 2.

The coil spring 35 acts to hold the gripping member 29 in contact with the bolt when the device is in use as shown in Fig. 1. The end portion of the frame 10 is recessed to receive one end of the coil spring 35.

In operation, a bolt 36 is inserted in a hole 37 in the plates 38 and 39, and a nut 40 is manually threaded on until it reaches the approximate position shown in Fig. 1. The wrench with the parts in position shown in Fig. 2 is applied to the bolt 36 and nut 40, the socket 31 of the gripping member 29 engaging the squared end portion on the bolt, and the socket 34 in casing 26 receiving the nut 40. The end portions of the bolts are squared to correspond to the shape of the socket 31 in the gripping member 29 to hold the former against rotation. Power is now supplied to the motor which imparts rotary motion to the casing 26 through gears 14, 15 and 16 and drum 21 which ro-

tates the nut on the bolt. The motor may easily be removed and a handle attached for operating the device manually.

The torsional strain on the bolt between the head and the unit is greatly reduced, and the power to rotate the nut is thereby conserved. Usually an operator is required to hold the bolt on one side of the plate, while another tightens the nut on the other side. According to this invention, the gripping member 29 holds the bolt while the casing 26 turns the nut so that the nut may be tightenend on the web from one side of the plate by a single operator. It is apparent that the gripping member 29 may be rotated instead of the casing 26, by slight changes in construction without departing from the spirit of the invention.

Having described my invention what I claim is:—

1. A device of the class described including a motor, a train of gears for transmitting power from the motor, a casing having a drum on one end provided with internal gear teeth to mesh with one of said gears and receive power from the motor, a socket formed at the other end of the casing to receive a nut, a frame to support the casing and gears, a telescopic shaft mounted in the casing, a gripping member on said telescopic shaft for gripping the squared end portion of a bolt, and means for supplying power to the motor.

2. A power operated wrench, including the combination of a motor, a frame detachable from the motor, a train of gears mounted in the frame for receiving and transmitting power from the motor, a cover for protecting the gears, a casing rotatably mounted on the frame, means on one end for receiving the power transmitted by said train of gears, means on the other end for gripping a nut, a telescopic shaft mounted in the frame, gripping means mounted on said shaft for gripping the squared end portion of a bolt, and means for supplying power to the motor.

3. A tool, including a sleeve provided with a socket adapted to receive a nut, a

frame for supporting the sleeve, a shaft mounted in the frame, a rod slidably mounted in the shaft, a gripping member mounted on the rod for gripping the squared end portion of a bolt, and means for producing rotary motion between the sleeve, and the gripping member.

4. A combination wrench, comprising a sleeve provided with a socket adapted to receive a nut, a frame within said sleeve, a telescopic shaft mounted in the frame, a gripping member mounted on the shaft for gripping a bolt, a spring for keeping said member in engagement with the bolt, and means for producing rotation between the sleeve and the shaft.

5. A wrench, including members, one rotatable within the other, one member comprising a shaft, an angular rod slidably mounted therein, a gripping member mounted on the rod for gripping the end of a bolt, a spring acting on said gripping member forcing it to engage the bolt, a frame for supporting the members, the outer one of the members having a socket adapted to receive a nut, and means for producing rotation between the members.

6. In a wrench, the combination of a cylindrical casing having a socket at one end to receive a nut and an internal flange, a gripping member constructed to engage the flange on the casing, said gripping member being slidably and rotatably mounted in said casing and provided with a socket for gripping the squared end portion of a bolt, an angular rod secured to the gripping member, a hollow shaft for receiving the angular rod, the rod being constructed to slide in the shaft, a frame rotatably mounted in the casing and in which the rod and shaft are guided, a coil spring interposed between the frame and gripping member to force said gripping member toward the internal flange on the casing, and means for producing rotary motion between said casing and the gripping member.

In testimony whereof I affix my signature.
CARL EVENSEN.