March 4, 1947. B. PARIZO 2,416,882

RECEIVER FOR NUT REMOVING TOOLS

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Fig. 1

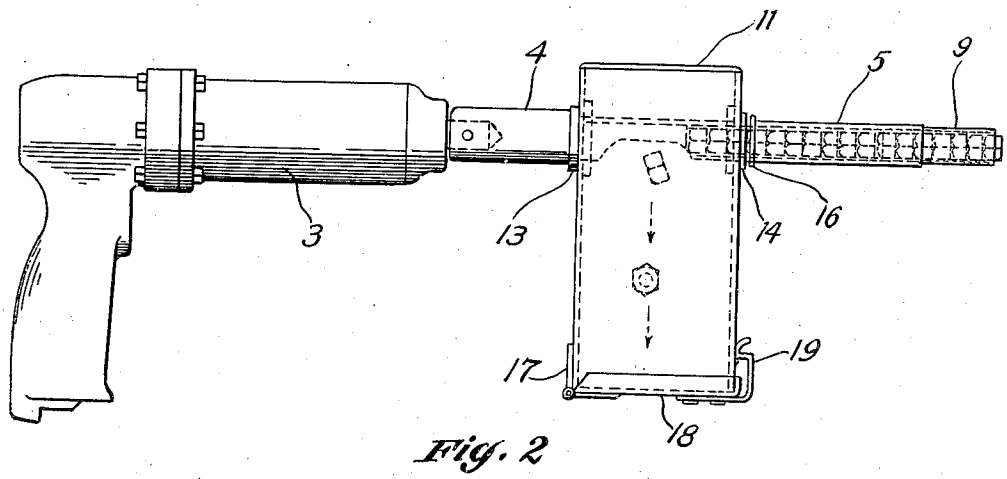
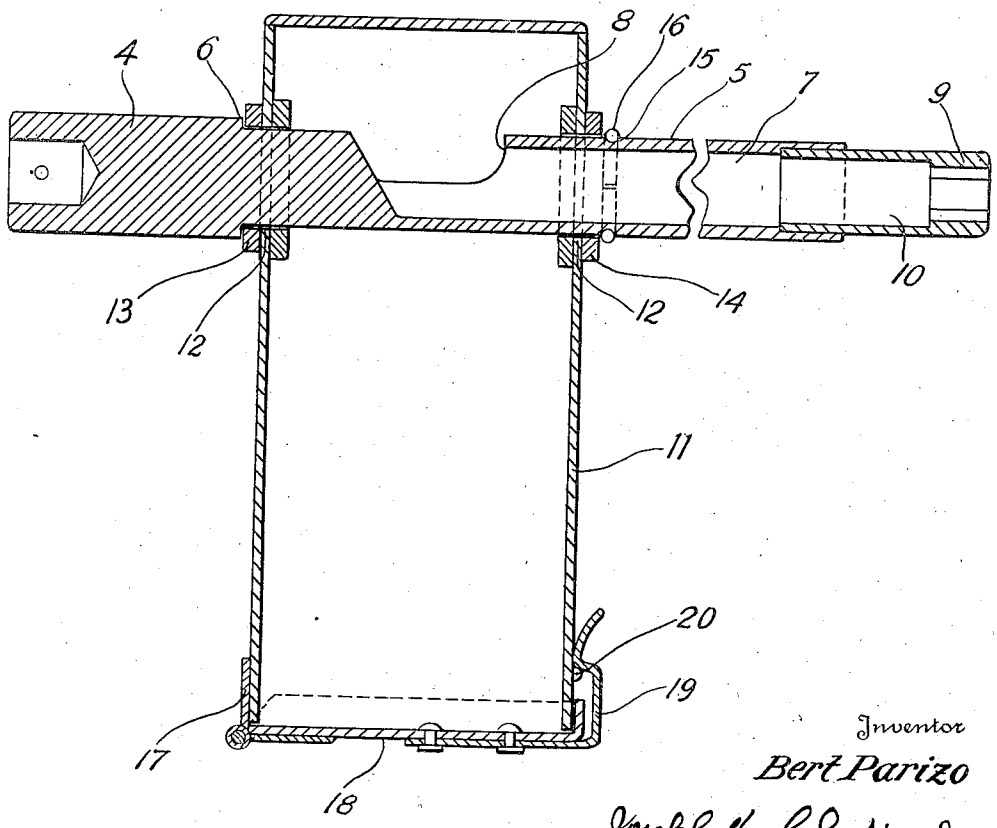


Fig. 2



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RECEIVER FOR NUT REMOVING TOOLS

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4 Claims. (Cl. 81—53)

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The invention to which the following description relates is a novel receiver for power operated nut removing tools.

In removing nuts from bolts by backing them off or unscrewing them, use is generally made of an electric or air driven socket wrench. These tools operate at considerable speed and the operation is slowed by the requirement of collecting the nuts or removing them individually from the sockets. Where the tool has a hollow head through which the loose nuts are fed and ultimately discharged, the nuts are scattered over a considerable area and frequently lost or otherwise become a nuisance. It is an object of my invention, therefore, to provide means adapted for mounting on a rotary nut removing tool by which the nuts may be collected as they are successively removed and conveyed away from the socket wrench.

A further object of my invention is to prevent such nuts from flying centrifugally from the hollow shaft of a power driven tool and thus becoming lost or otherwise being a source of nuisance and inconvenience.

A still further object of my invention is to provide an accessory in the form of a holder for the removed nuts suitable for use with tools of existing designs.

Among the objects of my invention also is to provide an accessory for the purpose intended, and which permits periodic discharge of the accumulated removed nuts.

Incidentally my invention is simple, easy and economical to manufacture, convenient to use and rugged and serviceable.

As illustrating one form of my invention I have shown the preferred form on the accompanying drawings by way of example in which:

Figure 1 is a side elevation in outline of a rotary socket wrench equipped with my nut receiving holder or magazine, and

Fig. 2 is a vertical longitudinal section of the receiver and associated wrench shown upon an enlarged scale.

I have illustrated my invention as applied to a conventional and well-known type of power driven rotary tool assembly 3. This tool may be operated by electrical, manual, pneumatic or mechanical means to rotate its shaft and the shank or shaft 4 connected thereto.

The nut removing tool proper consists of a steel shank or shaft 4 fastened to one end of the power driven shaft of the rotary tool 3.

The shaft 4 has an end 5 reduced in diameter and provided with a shoulder 6. A central passageway 7 runs longitudinally of the shaft 4 inwardly from the end opposite its attachment to the shaft of tool assembly 3. Intermediate the length of the shaft 4 there is a lateral ejector outlet 8 which extends through the side wall of the shaft 4 and connects with passageway 7.

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The free end of the reduced part 5 of the shaft carries a suitable socket wrench 9 adapted to fit the particular type and size of nuts being removed. This adapter also has a central passageway 10 connecting with passageway 7. The socket wrench 9 is firmly fastened in the shaft 4 and preferably it may be removably connected thereto.

The passageways 7 and 10 are of materially greater diameter than the opening in the socket wrench 9 so that loosened nuts pushed into passageway 10 from the wrench 9 will travel freely toward the outlet 8.

I have provided a receiver or magazine 11 to receive the nuts discharged centrifugally or falling by gravity from the outlet 8. This receiver may be of any suitable shape and size. Preferably it may hold from 250 to 300 loose nuts and may be of cylindrical form as shown.

The upper side walls of the receiver 11 have a pair of aligned round openings 12, 12. Surrounding each opening 12 are provided on opposite sides flange bearing members 13, 14 which may be welded or otherwise secured to the side walls.

The outer flange bearing member 13 abuts loosely against the integral shoulder 6 of the shaft 4. On the opposite side of the receiver 11 and slightly beyond the outer bearing 14, the hollow shaft 5 is grooved as at 15 to receive a resilient split ring retaining collar 16. The magazine is therefore mounted on the shaft 4 and its extension 5 to permit the shaft to rotate freely within the openings 12.

The receiver 11 is open at the bottom and carries on one side a hinge 17. A bottom plate or cover 18 is attached to the hinge 17 and extends across the opening of the receiver 11. On the opposite side a bottom 18 carries a spring latch in removable engagement with a detent 20 on the outer surface of the wall of the receiver to permit convenient removal of nuts collected within the magazine.

The rotary shaft and wrench form part of the usual power driven tool. A receiver of the above description may be slipped over the reduced part of the hollow shaft 5 and retained loosely thereon between the shoulder 6 and the split ring 16. The bearings 13 and 14 provide for a support of the magazine on the shaft. Thus the shaft 5 may be rotated at relatively high speed while the re-

ceiver remains suspended on its bearings with its center of gravity below the shaft.

As the nuts are successively backed off from their bolts they will feed backwardly and loosely through the passageways 10 and 7 until they are opposite outlet 8. At this point they fall by gravity into the receiver as indicated in Fig. 1. If the shaft is rotating very fast and the nuts are discharged with any centrifugal force, the receiver serves to confine them against scattering or loss.

The operation of removing the nuts may be carried out rapidly and easily until the receiver contains a considerable number. It is then a matter of a moment only to release spring latch 19 and to permit the bottom 18 to drop, discharging loose nuts in any storage bin or other selected spot for again using them.

While I have illustrated and described my preferred form of the invention, it may be given several embodiments with minor changes in shape and proportions. Consequently the invention is to be limited only by the scope of the appended claims.

What I claim is:

1. In combination, a nut-removing tool comprising a rotary hollow shaft having a nut-holding socket at one end, a shoulder on the shaft, said shaft having an outlet between the shoulder and the nut-holding socket, a receiver having alined openings in its opposite sides above its normal center of gravity, journal bearings surrounding said openings, and removable means for holding the receiver loosely on the shaft adjacent the shoulder and over the said shaft outlet.

2. In combination, a nut-removing tool comprising a rotary hollow shaft having a nut-receiving socket at one end, a shoulder on the shaft, said shaft having an outlet between the shoulder and the nut-receiving socket, a receiver having alined openings in its opposite sides above its normal center of gravity, removable means for holding the receiver loosely on the shaft adjacent the shoulder and over the shaft outlet, and a removable bottom for the receiver.

3. In combination, a nut-removing tool comprising a rotary hollow shaft having a nut-receiving socket at one end, a shoulder on the shaft, a groove formed between the shoulder and the hollow end of the shaft, said shaft having an outlet between the shoulder and groove, a receiver journaled on the shaft between the shoulder and groove, a removable retainer ring mounted in the groove, a removable bottom closure hinged to the receiver, and means for latching the bottom in closed position.

4. A nut-removing tool comprising a box-like receiver having a removable closure, and a hollow shaft journaled in opposite side walls of said receiver intermediate the top and bottom walls of the latter so as to be freely rotatable in relation to the receiver and to protrude therefrom with both its ends, one of said ends embodying means to apply a rotative force to said shaft, the other end being shaped to engage a nut circumferentially, and said shaft having an opening in its side wall interiorly of said receiver so as to provide a permanently unobstructed passage for a nut from said other end through said shaft into said receiver.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
545,969	McCoy	Sept. 10, 1895
578,636	Hertzler et al.	Mar. 9, 1897
634,027	Poe	Oct. 3, 1899
793,911	Russell	July 4, 1905