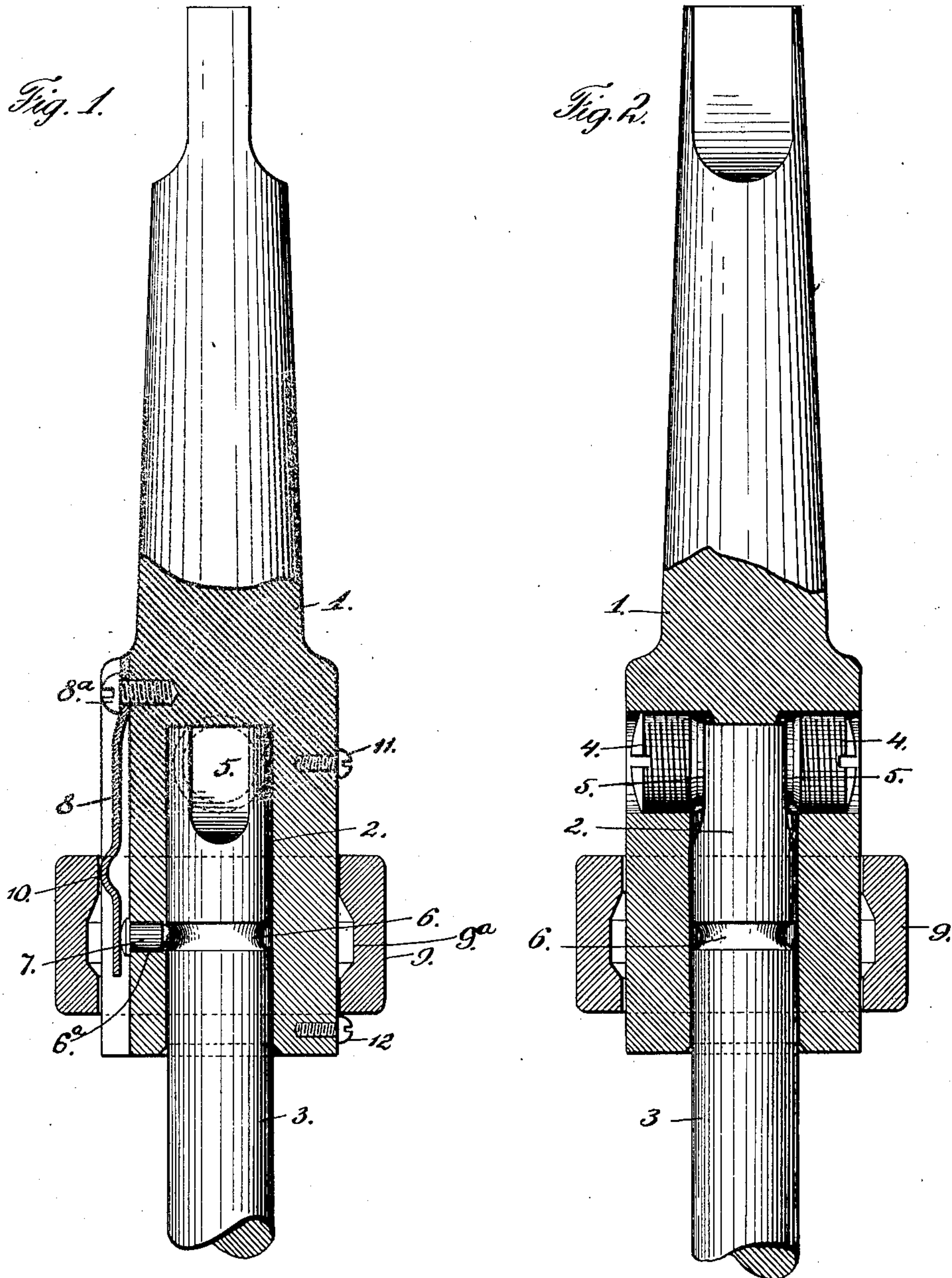


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NUT TAP SOCKET.  
APPLICATION FILED MAR. 11, 1907.

943,863.

Patented Dec. 21, 1909.



Witnesses:  
Daniel E. Haly  
H. L. McDonnell.

Inventor:  
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his attorneys.



# UNITED STATES PATENT OFFICE.

WILLIAM L. CLOUSE, OF TIFFIN, OHIO, ASSIGNOR TO THE NATIONAL MACHINERY COMPANY, OF TIFFIN, OHIO, A CORPORATION OF NEW JERSEY.

## NUT-TAP SOCKET.

943,863.

Specification of Letters Patent.

Patented Dec. 21, 1909.

Application filed March 11, 1907. Serial No. 361,668.

*To all whom it may concern:*

Be it known that I, WILLIAM L. CLOUSE, a citizen of the United States of America, residing at Tiffin, in the county of Seneca and State of Ohio, have invented certain new and useful Improvements in Nut-Tap Sockets; and I 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 pertains to make and use the same.

This invention relates to tap sockets especially adapted for holding taps employed in power nut-tapping machines.

The object of this invention is to provide a socket so constructed as to permit of the ready removal of the tap secured therein without stopping the machine.

A further object of the invention is to provide a tap socket so constructed as to permit of the insertion or removal of the tap with little pressure.

A still further object of the invention is to provide the improved socket with means for preventing breakage of either the tap or its securing pin in case the nuts should collect on the shank of the tap and tend to crowd the tap from the socket.

The construction of the improvement will be fully described hereinafter in connection with the accompanying drawing, which forms a part of this specification, and its novel features will be defined in the appended claims.

In the drawings Figure 1 is a central longitudinal sectional view of a tap socket embodying the invention. Fig. 2 is a similar view on a line at right angles to the section line of Fig. 1.

The reference numeral 1 designates the body-portion of the socket bored longitudinally to receive the shank 2 of the tap 3, and transversely bored and threaded to receive two diametrically opposed screws 4 which frictionally engage the opposite flattened faces 5 of the shank at the upper end thereof to removably secure the tap within the socket. An annular groove 6 is formed in the shank of the tap and in the wall of the socket is formed an opening 6<sup>a</sup> to register with the annular groove in the shank of the tap. A pin 7 having a rounded end is inserted in the opening 6<sup>a</sup> and its inner end enters the annular groove 6. A guard plate 8, formed of resilient material, is

secured to the socket 1 by means of a screw 8<sup>a</sup> and is arranged to extend down over the head of the pin 7. The plate 8 is arranged so that it will normally stand away from the head of the pin 7 and at a short distance above the lower end thereof is formed a shoulder or projection 10 which is preferably formed by making a bend in the plate itself. A slidable ring 9 is arranged around the lower end of the socket and in the inner face of said ring is formed an annular groove or recess 9<sup>a</sup>. The internal diameter of the ring is such that when the ungrooved portion thereof is in contact with the shoulder 10 on the guard plate 8, the guard plate will be pressed in and caused to bear on the head of the pin 7 and when the guard ring is raised and the recess is brought opposite the shoulder then the plate 8 will spring back from the head of the pin 7 a sufficient distance to permit the pin 7 to move out so as to withdraw the inner end thereof from the annular groove 6. Stop screws 11 and 12 are provided for limiting the upward and downward movement of the ring 9.

By my invention I am able to provide means for holding the tap firmly in the socket when the machine is running under proper conditions and at the same time the tap can be quickly removed by simply raising the ring 9 which permits the guard plate 8 to spring back thereby releasing the pin 7 and a pull on the tap will force the end of the pin 7 out of the groove 6. Now in case the tap should become crowded with nuts through the neglect of the operator the unusual pressure caused by the accumulation of nuts on the tap will automatically withdraw the tap from the socket thereby preventing the breaking of the tap. The automatic release of the tap is due to the fact that the plate 8 is resilient and although when it is held or pressed in by the ring 9 it will exert sufficient pressure to hold the pin 7 in the groove 6 under normal conditions nevertheless when an abnormal pull comes upon the tap the end of the plate 8 will bend back under the outward pressure of the pin 7 permitting the tap to be withdrawn from the socket.

What I claim is:—

1. The combination with a tap socket of a tap provided with a groove, a pin extending through an opening in said socket and



adapted to enter the groove in the tap and means for retaining and releasing said pin comprising a spring plate secured to the socket and bearing on said pin, said spring  
5 plate being formed with an outwardly extending bend and a ring movable on said socket and formed with a groove on its inner surface arranged to receive the bent portion of said spring when the ring is shifted  
10 to release the tension on said spring.

2. The combination with a tap socket of a tap provided with an annular groove, a pin extending through an opening in said socket and adapted to enter the groove in the tap  
15 and means for retaining and releasing said pin comprising a spring plate secured to

the socket and bearing on said pin, said spring plate being formed with an outwardly extending bend and a ring movable on said socket and formed with an annular  
20 groove on its inner surface arranged to receive the bent portion of said spring when it is desired to release the tension of said spring, substantially as described.

In testimony whereof, I sign the foregoing  
25 specification, in the presence of two witnesses.

WILLIAM L. CLOUSE.

Witnesses:

E. R. FROST,

WALTER N. CLOUSE.