W. S. JOHNSON.

PNEUMATIC HAMMER.

APPLICATION FILED MAR. 31, 1910.

1,047,532. Patented Dec. 17, 1912

Fig. 1.

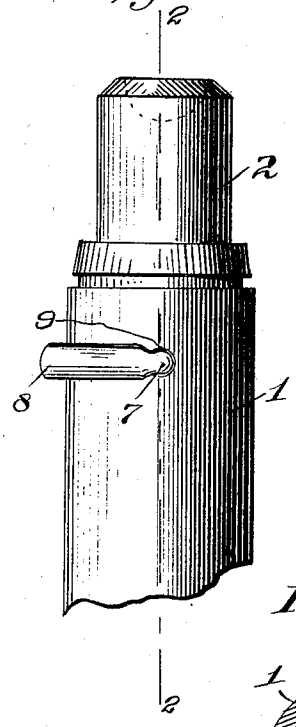


Fig. 2.

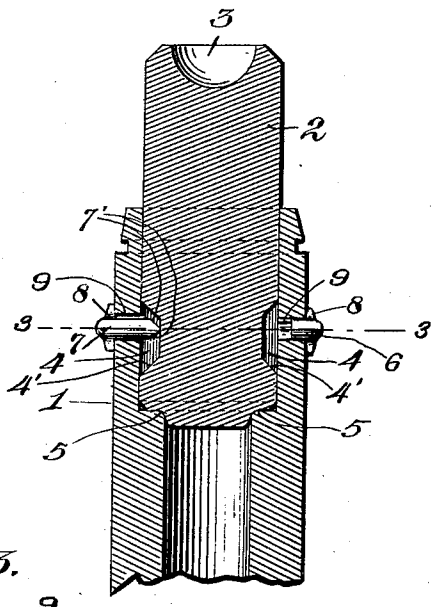
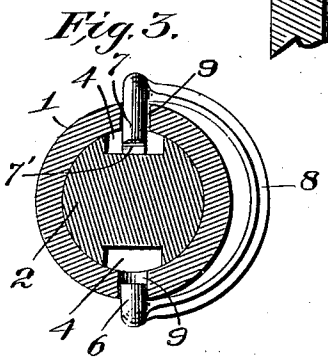


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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PNEUMATIC HAMMER.

1,047,532. Specification of Letters Patent. Patented Dec. 17, 1912.

Application filed March 31, 1910. Serial No. 552,727.

To all whom it may concern:

Be it known that I, WILLIAM S. JOHNSON, residing at Berwick, Pennsylvania, and being a citizen of the United States, have invented certain new and useful Improvements in Pneumatic Hammers, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and to use the same, reference being had to the accompanying drawings, which illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof will occur to persons skilled in the art.

In said drawings: Figure 1 is a view in side elevation of a rivet set embodying the features of the present invention. Fig. 2 is a longitudinal vertical central section therethrough taken on a plane indicated by line 2—2 of Fig. 1, the retaining spring being seen in elevation. Fig. 3 is a transverse horizontal section taken from plane indicated by line 3—3 of Fig. 2, the retaining spring being indicated in elevation.

The object of this invention is to improve the construction of the working end of pneumatic tools, the particular feature of the improvement being the provision of a rivet set of uniform diameter practically from end to end, without circumferential grooves which weaken the set. Employing this form of "set" the invention comprises in combination, a cylinder formed with an internal shoulder against which the inner end of the "set" is adapted to abut.

In lieu of the customary circumferential groove for receiving the spring retaining pin, one or more longitudinally disposed grooves are provided in the set and the retaining pin is projected through apertures in the wall of the cylinder and into said groove.

A further object of the invention is to provide an improved arrangement of the retaining pin whereby it is reversible for distributing wear.

Referring to the drawings by numerals: 1 indicates the casing or cylinder of a pneumatic hammer and 2 the rivet set having the button head forming recess 3. The inner end of set 2 extends within the cylinder 1, as usual, and abuts against a shoulder 5 of the casing. Spaced longitudinally of the length of set 2, from the inner end thereof, is a short longitudinal groove 4. Additional grooves 4 may be provided if desired without materially affecting the strength of the set. The retaining pin 7 is carried by and preferably formed integral with an arched spring 8, extending about the outside of cylinder 1, and provided at its opposite end with an inwardly turned retaining pin 6. Pins 6 and 7 extend into apertures 9, formed at diametrically opposite points through cylinder 1. Pin 6 is preferably only of sufficient length for retaining the free end of the spring in position, while pin 7 extends entirely through the cylinder and projects into the groove 4. Thus set 2 is free to reciprocate, but is limited by pin 7 against abnormal outward movement, and when it is desired to remove the set from the casing or cylinder, it is only necessary to spring the pin 7 out of the groove 4 and withdraw the set. Obviously pin 7 may be introduced through either of the apertures 9 and accomplishes the functions in the same manner.

As clearly seen in Fig. 2, groove 4 is formed with the inner bevel terminal 4′, and the inner end of pin 7 is formed with corresponding beveled portion 7′ adapting the set 2 to have the maximum longitudinal outward travel with a minimum length of groove 4. Also, it will be noted that by reversing the arch spring 8 and introducing the retaining pin 7 into the opposite aperture 9, the opposite side of the inner end of the retaining pin will be disposed for contacting with the rear end of the groove 4. Thus the end of the retaining pin will be subjected to wear from contact with the end of the groove 4 on one side or the other according to the relative position of the arch bar.

What I claim is:

In a pneumatic hammer, the combination with a cylinder having a pair of oppositely disposed apertures extending therethrough, of a member reciprocable within and fitting said cylinder, said member having a groove therein, a plurality of pins, one adapted to be disposed in each of said apertures and one of said pins adapted to extend into said groove and a spring member fixedly attached to said pins and having a portion thereof spaced from said cylinder.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

WILLIAM S. JOHNSON.

Witnesses:

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