G. L. BROWN.

HANDLE LOCK FOR PNEUMATIC TOOLS.

APPLICATION FILED OCT. 2, 1907.

915,735. Patented Mar. 23, 1909.

Fig. 1.

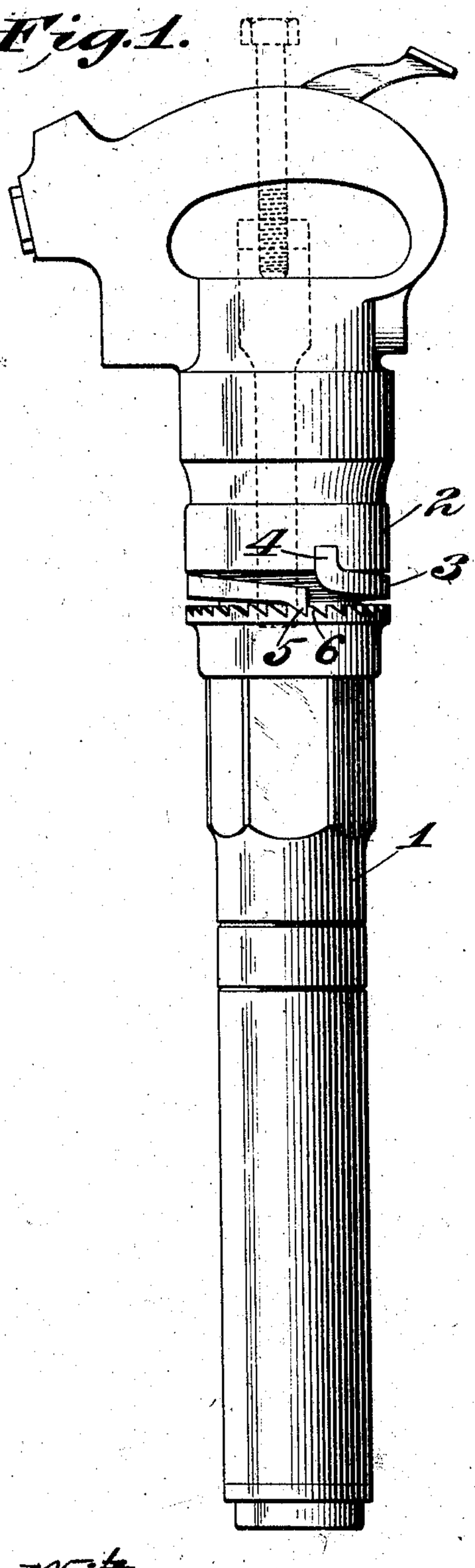


Fig. 2.

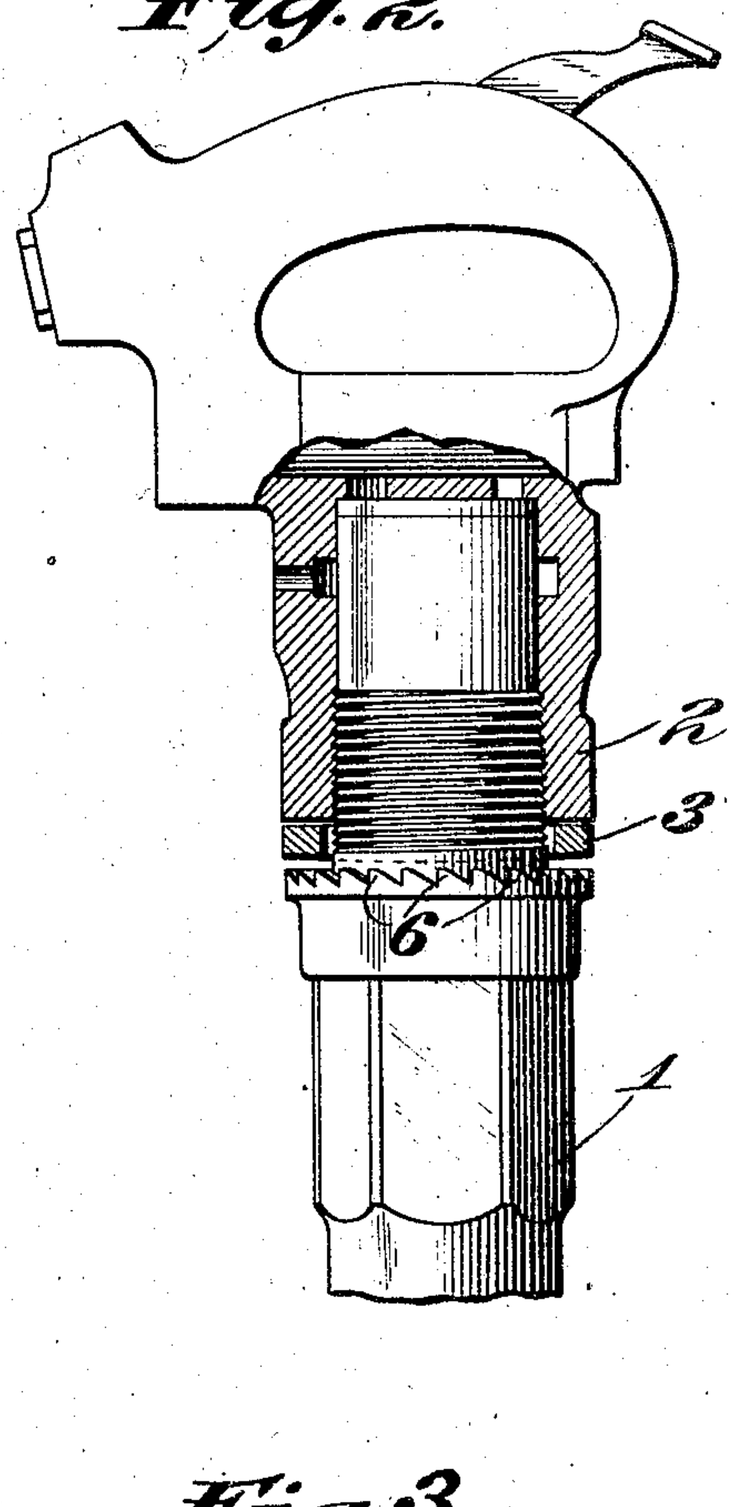


Fig. 3.

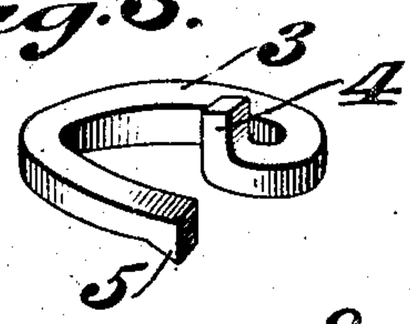
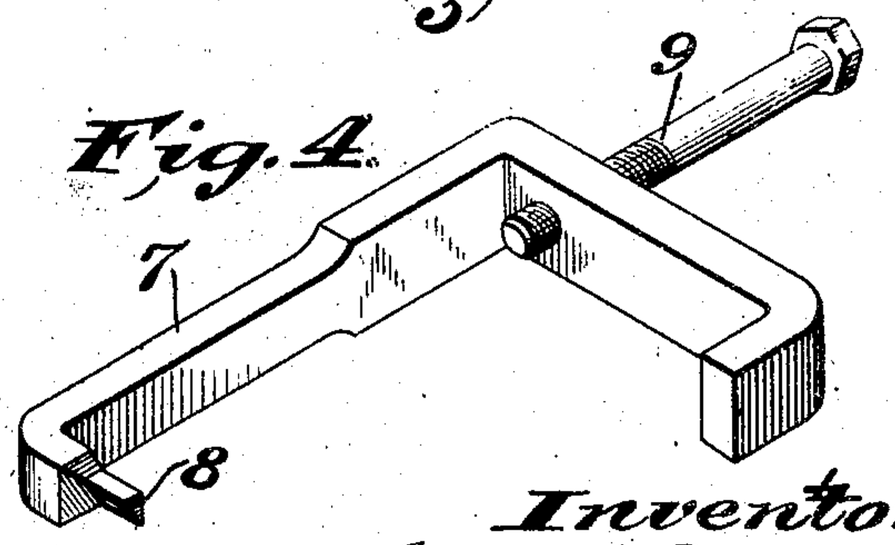


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE L. BROWN, OF LOUISVILLE, KENTUCKY, ASSIGNOR TO STANDARD RAILWAY EQUIPMENT COMPANY, OF EAST ST. LOUIS, ILLINOIS, A CORPORATION OF ILLINOIS.

HANDLE-LOCK FOR PNEUMATIC TOOLS.

No. 915,735. Specification of Letters Patent. Patented March 23, 1909.

Application filed October 2, 1907. Serial No. 396,533.

To all whom it may concern:

Be it known that I, GEORGE L. BROWN, a citizen of the United States, and a resident of the city of Louisville, county of Jefferson, State of Kentucky, have invented a Handle-Lock for Pneumatic Tools, of which the following is a specification.

In the common type of pneumatic hammers, the cylinder or barrel has a screw-threaded connection with the handle portion; and, however tight this connection may be originally, the continual jarring of the tool in practical use is liable to affect the threads so as to produce a looseness even when the parts are securely locked against rotation.

The principal object of my invention is to prevent such looseness.

The invention consists in the construction hereinafter described and claimed.

In the accompanying drawings, which form part of this specification, and wherein like symbols refer to like parts wherever they occur, Figure 1 is a side view of a pneumatic riveting hammer equipped with my coupling device; Fig. 2 is a fragmentary view partly in elevation and partly in section; Fig. 3 is a detail perspective view of the coupling member; and, Fig. 4 is a detail view of a special tool for disengaging the coupling member from the member with which it interlocks.

In pneumatic hammers of the type illustrated in the drawing, the rear end of the barrel 1 is reduced in diameter and screw-threaded so as to fit in the screw-threaded socket of the handle portion 2. By this arrangement, an annular shoulder is formed on the barrel opposite the end of the socket portion of the handle. According to my invention, the locking member 3 adapted for engagement both with said shoulder and with the end of said socket portion is interposed between them.

As illustrated in Fig. 3, the locking member 3 is a strong piece of resilient steel whose body portion is of helical form with an internal diameter sufficient to let it pass over the reduced end of the barrel. One end 4 of this helical piece is bent transversely to the body portion, and the other end has a ratchet tooth 5 formed thereon. The bent end of the locking member fits in a mortise provided therefor in the end of the wall of the handle portion, whereby said locking member is permanently secured to said handle portion. The ratchet tooth at the other end of said locking member is adapted to coöperate with ratchet teeth 6 provided therefor on the shoulder of the barrel.

In practice, the helical member is firmly secured to the end of the socket member, the valve block and valve are positioned in the socket, and then the threaded reduced end of the barrel is inserted into the threaded portion of said socket and turned therein. During the turning of the barrel, the ratchet tooth on the end of the locking member rides over the ratchet teeth on the shoulder in the usual manner, and the helical spring is compressed transversely. Eventually, the end of the barrel jams the valve block firmly against the bottom of the socket, whereupon the several members act as a solid piece. In this position, the tooth of the resilient locking device automatically engages one of the teeth on the shoulder of the barrel and thus automatically locks the barrel against rotation relative to the handle. In this position, however, the locking device does not provide against looseness that may be occasioned by a change in the threads resulting from continuous jarring. In order to guard against such looseness, the locking device is expanded peripherally until its ratchet tooth rides over one or more of the coöperating ratchet teeth on the barrel. The engagement of the ratchet tooth of the locking device thus expanded beyond its normal diameter maintains a continuous peripheral pressure tending to turn the barrel relative to the handle in the proper direction to take up any looseness that may occur during the use of the tool. The peripheral expansion of the locking member may be conveniently effected by means of an ordinary spanner-wrench.

In order to disengage the helical spring from the barrel, the tool illustrated in Fig. 4 is especially convenient, as it can be easily applied to the tool and disengaged therefrom. This tool comprises a yoke 7, one end 8 of which is shaped to enter the triangular space between the helical member and the beveled surface of a tooth on the shoulder of the barrel. The other end of the yoke has a screw-threaded hole therein through which extends a threaded bolt 9. In practice, the triangular end of the yoke is inserted under the helical spring and the other end of the

yoke is placed over the rear end of the socket portion of the handle with the bolt in alinement therewith. The bolt is then screwed inwardly with the result that, as the inner end of the bolt bears against a fixed abutment, the power applied thereto is transferred directly to the helical member and draws or pulls it backwardly away from the shoulder of the barrel. The tool will hold the helical spring thus disengaged as long as desired, and thus the operation of screwing and unscrewing the parts together are simplified and facilitated.

Obviously, the construction hereinbefore described admits of considerable variation without departing from my invention. For instance, the ratchet tooth may be formed on the end of the handle portion instead of on the barrel, in which case the locking member could be permanently fixed to the barrel. So, too, the locking member may be secured otherwise than by mortising; and the ratchet teeth may be formed on the peripheral face of one of the members to be secured.

What I claim is:

1. In a pneumatic tool, the combination with a handle member having a threaded socket therein and a barrel member having a reduced end portion threaded to enter said socket, of a resilient helical locking member interposed between said members, the shoulder of said barrel member having teeth formed thereon and said locking member being fixed at one end to said handle member and being peripherally expanded beyond its normal diameter and having its other end adapted to coöperate with said teeth the body portion of the locking member being clear of the handle member.

2. In a pneumatic tool, a handle piece having a socket, a barrel having a reduced end portion engaging said socket and ratchet teeth on the shoulder formed by said reduced end, and a helical member having one end fixed to said handle and having its other end adapted to interlock with said teeth said helical member being narrower than the distance between the handle member and said shoulder and being resilient peripherally and transversely and being expanded beyond its normal diameter.

3. The combination with the handle member and the barrel member of a pneumatic tool of a resilient curved locking member interposed between and adapted to engage said members, and a yoke having one end adapted to secure a purchase on the forward face of said locking member and whose other end comprises a movable part adapted to secure a purchase on the rear portion of the handle.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses this 28th day of September, 1907, at St. Louis, Missouri.

GEORGE L. BROWN.

Witnesses:
A. A. POTTS,
G. A. PENNINGTON.