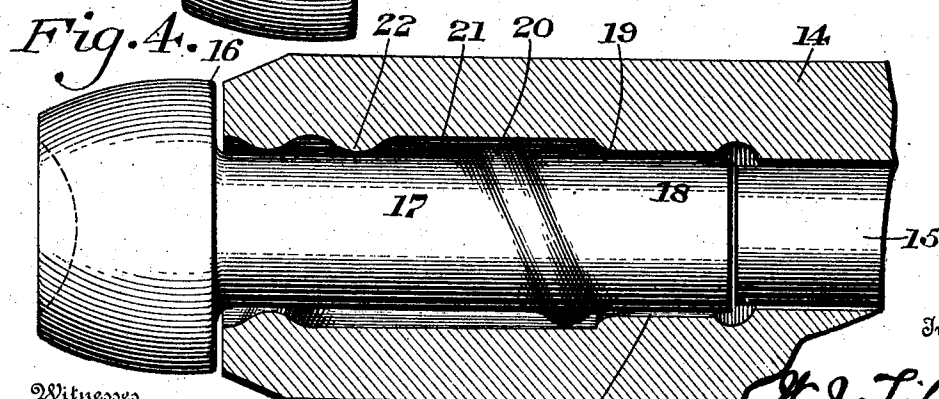
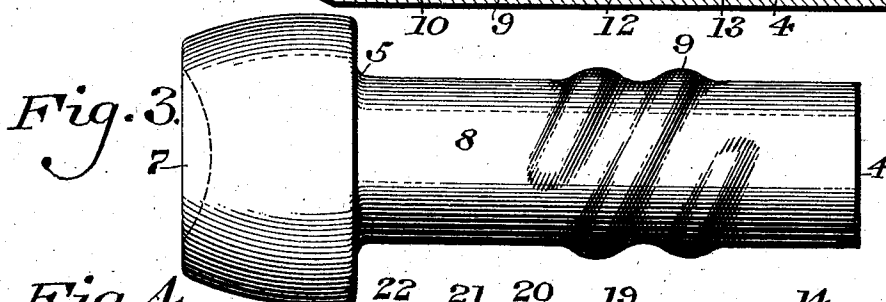
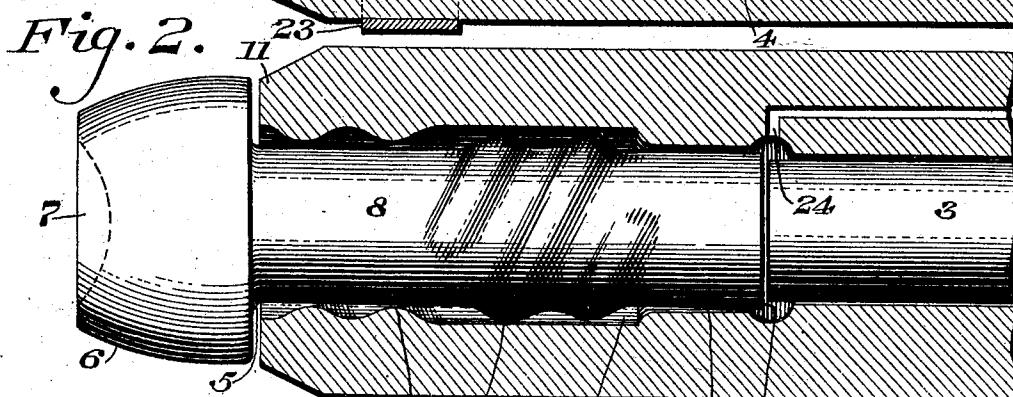
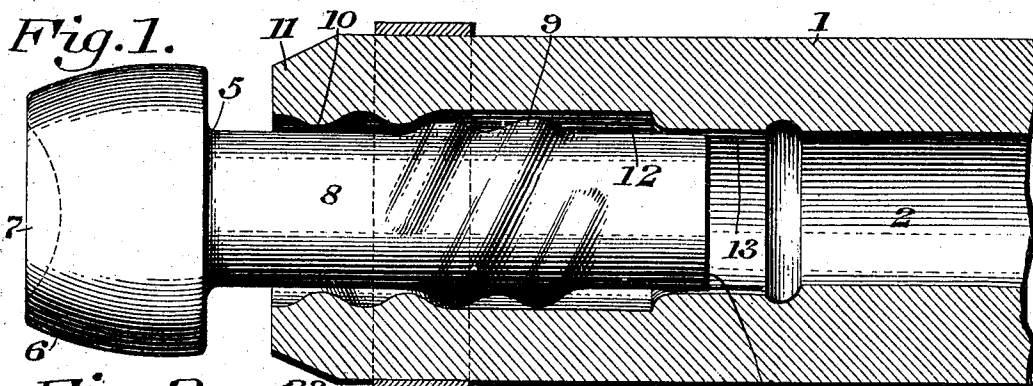


No. 806,510.

PATENTED DEC. 5, 1905.

W. J. TIBBITT.
RIVET SET RETAINING DEVICE.

APPLICATION FILED FEB. 7, 1905.



Witnesses

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WILLIAM J. TIBBITT, OF PHILADELPHIA, PENNSYLVANIA.

RIVET-SET-RETAINING DEVICE.

No. 806,510.

Specification of Letters Patent.

Patented Dec. 5, 1905.

Application filed February 7, 1905. Serial No. 244,538.

To all whom it may concern:

Be it known that I, WILLIAM J. TIBBITT, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Rivet-Set-Retaining Device, of which the following is a specification.

My invention consists of a novel construction of a rivet-set-retaining device adapted for use in a pneumatic, electric, or other riveting-cylinder whereby the rivet-set is prevented from being driven or forced out of the cylinder of the riveting-tool during the act of riveting.

It also consists of novel features of construction whereby the rivet-set may be readily and easily inserted and removed from the riveting tool or machine.

It also consists of a novel construction of a rivet-set having a thread or threads thereon adapted to coact when in use with a contiguous part of the riveter-cylinder.

It further consists of novel features of construction, all as will be hereinafter fully set forth.

Figure 1 represents a longitudinal view, partly in section, of a rivet-set-retaining device embodying my invention. Fig. 2 represents a longitudinal view, partly in section, similar to Fig. 1, but showing a rivet-set in a different relation to the coacting cylinder. Fig. 3 represents a side elevation of the rivet-set removed from the tool. Fig. 4 represents a longitudinal view, partly in section, of another embodiment of my invention.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates the cylinder or casing of a riveting-machine having an internal bore 2, within which a piston 3 is adapted to reciprocate and to impact against the end 4 of a rivet-set 5, the head 6 of which I have shown in the present instance as being hollowed or cupped out, as at 7, adapting the same to form a button-head on the finished rivet; but it is evident that the head may be of any desired shape and cupped in any of the ways well known in the art adapting the same to drive flush, button-head, or steeple-chase rivets or to shape the head of the rivet in any desired form.

8 designates the shank of the rivet-set, upon the periphery of which at a suitable point is located one or more threads 9.

10 designates one or more internal threads in the nose 11 of the cylinder 1, said threads

corresponding to the thread 9 on the rivet-set 5, with which it is adapted to engage, so that by simply turning the rivet-set the shank 8 thereof may be inserted in the end of the cylinder, the internal diameter of which is enlarged at 12 to form a chamber in which the enlargement of the rivet-set caused by the thread 9 on the shank 8 may reciprocate or be contained.

13 designates the internal diameter of the cylinder at the rear of the chamber 12, which is slightly larger than the diameter of the shank 8 and is of such length that the rivet-set will have a sufficient amount of play and still have the shank near its end within the internal diameter or bore 13, which will prevent motive fluid escaping at this point and also serve to keep the rivet-set in direct alignment with the piston 2.

In the embodiment shown in Fig. 4, 14 designates the casing or cylinder, within which a piston 15 is adapted to impact against the rivet-set 16, the latter having a shank 17, which near its end 18 is adapted to closely fit the internal bore 19 of the cylinder and having suitably located upon its shank 17 a thread 20. 21 designates a chamber located beyond the bore 19, near the end of the tool, which latter has the internal thread 22, adapted to receive the thread 20. In this embodiment (shown in Fig. 4) I have only shown one right thread, while in Figs. 1, 2, and 3 I have shown two left threads in the cylinder and two left threads on the rivet-set, it being evident that either a right or left thread may be employed without departing from the spirit of my invention and also that one or more threads may be used in the cylinder or on the rivet-set or with both rivet-set and cylinder. I have not shown the ports and passages in the cylinder for the motive fluid, as the same *per se* forms no part of my present invention.

The operation is as follows: The rivet-set is inserted in the end of the cylinder by turning said set, the thread thereon engaging with the internal thread of the cylinder, the enlarged chamber to the rear of the thread being of such length that the set may reciprocate therein without said rivet-set thread striking against the internal thread of the cylinder. The end of the rivet-set shank will be within the bore 13 or 19. The nose 11 of the cylinder may be reinforced or have a ring 23 secured thereon if necessary to increase the strength of the cylinder, as I have shown in dotted lines in Fig. 1, this ring being omit-

ted, if desired. It is evident that by the use of my invention the rivet-set will be securely retained in the tool during the working operation and also easily removed therefrom, and as the thread on the rivet-set does not touch or engage with the internal thread of the cylinder during said working operation there will be no more wear or tear on the set or tool than there is in the construction heretofore employed.

Heretofore in the art it has been common to employ a spring or clip which fits in a groove on the head of the rivet-set and a corresponding groove on the end of the cylinder; but owing to the heating of the rivet-set during the riveting operation and the consequent heating of the spring it has been found impossible to retain the temper in the latter, which becomes useless in a very short time. My device does not increase the number of parts and can be very cheaply manufactured, at the same time being very durable and brings about the desired result—namely, a rivet-set easily inserted and removed from the riveter-cylinder and during the riveting operation retained therein and prevented from being accidentally driven out of the cylinder.

While I have shown my device as being applicable to riveting-hammers, it is evident that the same may be employed in any machine, such as a chipping, calking, flue-beading, or other impact tool wherein a reciprocating piston impacts against the shank of a working tool. As is well-known to those skilled in the art, in the practical use of riveters on bridge-work and structural-steel work and shipwork great annoyance and inconvenience result from the accidental loss of pistons and rivet-sets by their being driven out of the tool-cylinder, whereas by the use of my invention all such loss is avoided.

It will be evident that various changes may be made by those skilled in the art which may come within the scope of my invention, and I do not, therefore, desire to be limited in every instance to the exact construction herein shown and described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, a work-

ing tool, a shank therefor and one or more threads on said shank adapted to retain the latter in operative position with respect to the coating cylinder, said threads being located substantially midway between the ends of said shank and the extremities of said shank at each side of said threads being a plain cylindrical surface.

2. In a device of the character described, a rivet-set or other working tool having a thread on the shank intermediate the ends thereof, a casing provided with means at its outer end for engaging said thread, and a chamber within said casing for permitting the reciprocation of said working tool.

3. In a device of the character described, a casing having an internal thread at the outer end thereof, a chamber contiguous to said thread and a rivet-set having a thread thereon intermediate its ends adapted to engage with the cylinder-thread.

4. In a device of the character described, a cylinder having a thread in the outer end thereof, a chamber adjoining said thread, a rivet-set having a shank therefor, and means on the shank between its ends adapted to engage the cylinder-thread whereby said set may be inserted in said cylinder and retained therein during the riveting operation.

5. In a device of the character described, a cylinder provided with an internal thread at the outer end thereof, and a chamber contiguous to said internal thread, a rivet-set provided with a thread on the shank thereof intermediate its ends, the diameter of said chamber being greater than a cross-section of said rivet-set taken through said rivet-set thread, and a bearing beyond said chamber in which the shank of said rivet-set fits.

6. The combination of a cylinder having its forward end internally threaded at its outer portion and a chamber 12 at the rear of said threads, said chamber terminating in the bore 13 of reduced diameter, with a working tool, having a shank, said shank having a thread thereon intermediate its ends.

WILLIAM J. TIBBITT.

Witnesses:

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