R. A. NORLING.

PNEUMATIC TOOL.

APPLICATION FILED MAY 9, 1910.

977,826. Patented Dec. 6, 1910.

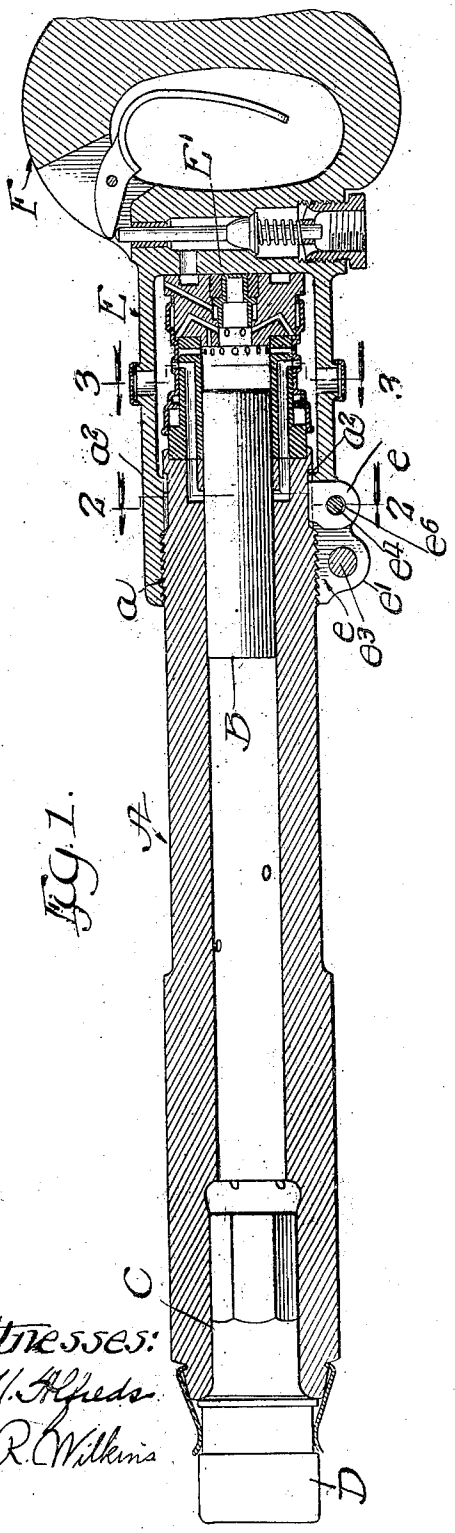


Fig. 1.

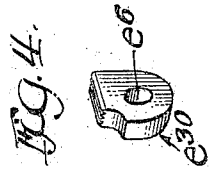


Fig. 4.

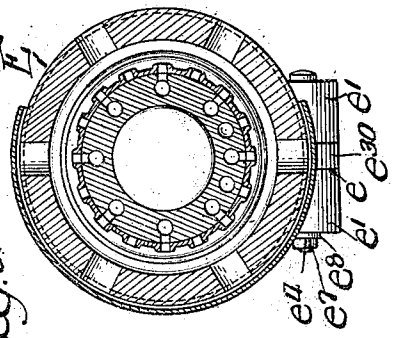


Fig. 3.

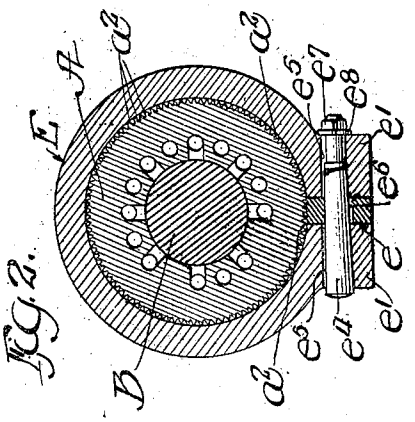


Fig. 2.

Witnesses:
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UNITED STATES PATENT OFFICE.

REINHOLD A. NORLING, OF AURORA, ILLINOIS, ASSIGNOR TO AURORA AUTOMATIC MACHINERY COMPANY, OF AURORA, ILLINOIS, A CORPORATION OF ILLINOIS.

PNEUMATIC TOOL.

977,826. Specification of Letters Patent. **Patented Dec. 6, 1910.**

Original application filed March 8, 1910, Serial No. 547,977. Divided and this application filed May 9, 1910. Serial No. 560,270.

To all whom it may concern:

Be it known that I, REINHOLD A. NORLING, a citizen of the United States, and a resident of the city of Aurora, county of Kane, and State of Illinois, have invented certain new and useful Improvements in Pneumatic Tools; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to a portable pneumatic tool or hammer of that class embracing a barrel or cylinder, a piston or plunger adapted to move therein, and a controlling valve through which the air or other fluid under pressure is admitted to and permitted to escape from the opposite ends of the cylinder or barrel to give reciprocatory movement to the plunger therein.

The invention is illustrated and described herein as applied to a riveting hammer, otherwise known as a long stroke hammer, in which the movement of the piston or plunger is greater than its own length. The main features of the hammer are described in an application filed by me on March 8th, 1910, Serial No. 547,977, entitled "Pneumatic hammers" of which the present application is a division.

The invention relates particularly to a hollow head provided at the inner end of the barrel, and to the means for rigidly securing said head to the barrel.

In the drawings:—Figure 1 is a longitudinal section through the hammer in a plane containing the axis of the barrel or cylinder. Fig. 2 is a cross-section through Fig. 1 on the line 2—2 thereof. Fig. 3 is a cross-section through Fig. 1 on the line 3—3 thereof. Fig. 4 is a perspective view of a block to be more particularly referred to later.

In that embodiment of my invention illustrated in the accompanying drawings, A represents the barrel or cylinder of the hammer; B, the piston or plunger adapted to reciprocate therein; C, the tool carrying spindle, and D, the tool, in this case, a riveting head.

The inner end of the cylinder A is externally screw-threaded, as at a, to receive the outer, internally screw-threaded end of a hollow head E. Said hollow head E is closed at its inner end, by an end wall E^1 and has formed integrally with it a handle F. The hollow head E is split at its forward end and is provided with a longitudinal recess e inclosed by laterally extending ears or lugs e^1, e^1. Said lugs are provided with openings through which extends a clamping bolt e^3 which is adapted to draw said ears together. The inner end of the main barrel is provided near its end with a series of longitudinally extending serrations a^2 and in said serrations engage the serrated end of a block e^{30} which is located in the slot e, (see Figs. 1 and 4), and which is held in rigid engagement with the serrations in said main barrel by means of a taper pin e^4 which is located in openings e^5, e^5 in the ears or lugs e^1 and which engages in a hole or opening e^6 in the said block e^{30}. Said opening e^6 is arranged eccentrically with respect to the axis of the openings e^5 so that the taper pin engages between the opposite sides, respectively, of the opening e^6 and of the openings e^5 and wedges the block e^{30} against the barrel. Said taper pin is held in place by means of a nut e^7 between which and the outer surface of the adjacent ear or lug, there is interposed a spring washer e^8 to lock said taper pin in position.

The construction described forms a rigid connection between the head and the barrel.

I claim as my invention:—

1. In combination with a cylinder and a reciprocating plunger, an extension of said cylinder embracing a hollow head, the end of said cylinder being threaded into the open end of said head and being provided on its outer surface beyond the thread with longitudinally extending serrations, the longitudinal wall of said head being split at its end to form a recess, a block located in said recess provided with serrations at its inner end to engage the serrations on the outer surface of said cylinder, means for wedging said block against the cylinder and for locking it in that position, and means for drawing the split sections of said head together.

2. In combination with a cylinder and a reciprocating plunger, an extension of said cylinder embracing a hollow head, the end of said cylinder being threaded into the open end of said head and being provided on its

outer surface beyond the thread with longitudinally extending serrations, the longitudinal wall of said head being split at its open end to form a recess, lugs or ears formed at each side of said recess provided with transverse openings, a block located in said recess provided with a transverse opening, said block having a serrated end adapted to engage the serrations on the outer surface of said cylinder, one set of openings through said ears being eccentrically arranged with reference to the opening through said block, a taper pin extending through the openings in said ears and the opening through said block adapted to draw said block against said cylinder, means for locking said taper pin in position, and a clamping bolt extending through a second pair of openings through said ears adapted to draw said ears together.

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 5th day of May, A. D. 1910.

REINHOLD A. NORLING.

Witnesses:

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