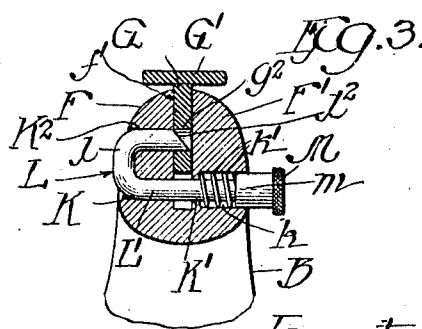
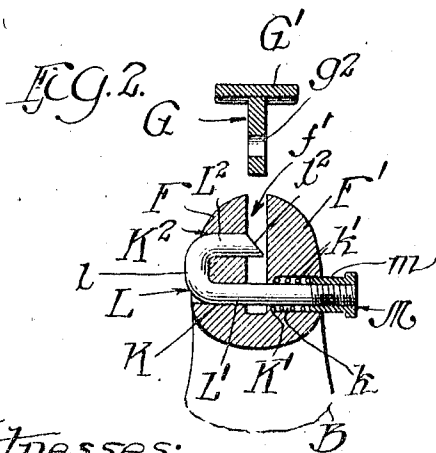
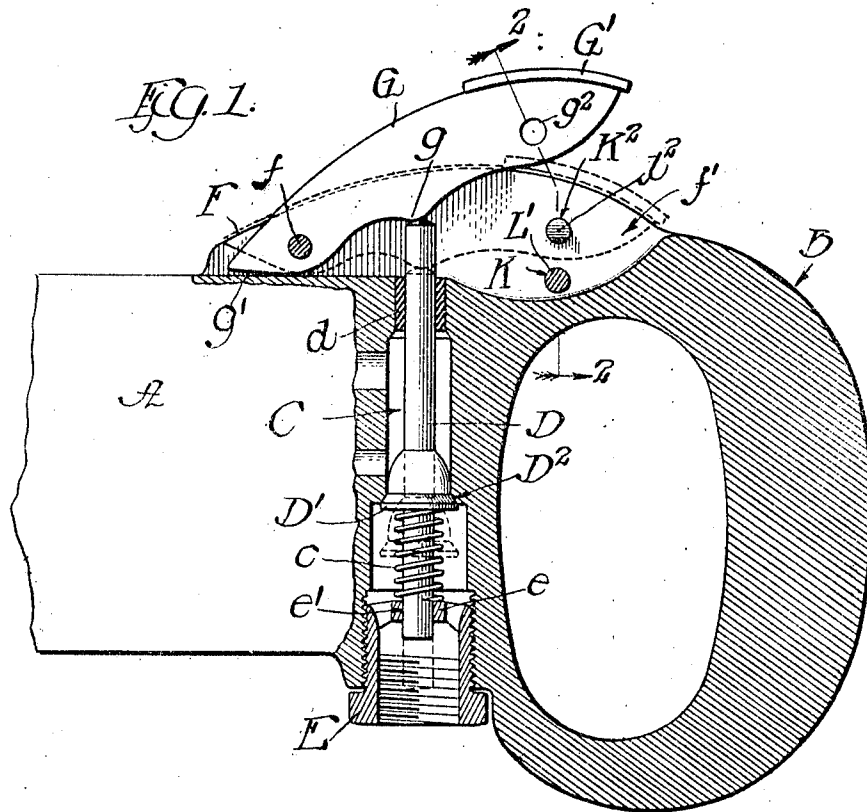


R. A. NORLING.
 AUTOMATIC THROTTLE VALVE LOCKING MECHANISM FOR PNEUMATIC TOOLS.
 APPLICATION FILED MAR. 8, 1910.

1,027,061.

Patented May 21, 1912.



Witnesses:
 J. H. Helander
 L. R. Milner

Inventor:
 Reinhold A. Norling
 by Poole & Brown Attys

UNITED STATES PATENT OFFICE.

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

AUTOMATIC THROTTLE-VALVE-LOCKING MECHANISM FOR PNEUMATIC TOOLS.

1,027,061.

Specification of Letters Patent.

Patented May 21, 1912.

Application filed March 8, 1910. Serial No. 547,978.

To all whom it may concern:

Be it known that I, REINHOLD A. NORLING, a citizen of the United States, and a resident of Aurora, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Automatic Throttle-Valve-Locking Mechanism for 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 hammer or device of that class embracing a barrel or cylinder; a piston or plunger adapted to slide therein, and a controlling valve through which the air or other fluid under pressure is admitted thereto and permitted to escape from the opposite end of the cylinder or barrel to give reciprocatory movement to the plunger therein. Air is supplied to the controlling valve by means of a throttle valve which is so located that it may be readily manipulated by the user of the hammer.

The invention relates to the means for operating the throttle valve and particularly to an automatic locking device which is adapted to lock said means in position to hold the throttle valve in open position.

It consists of the combination of parts hereinafter described and more particularly pointed out in the appended claim.

In the drawings:—Figure 1 is a section through the handle end of a pneumatic hammer, taken on a plane containing the axis of the handle and the axis of the throttle valve chamber. Fig. 2 is a partial section through Fig. 1 on the line 2—2 thereof. Fig. 3 is a similar section with the parts shown in a different position.

In the embodiment of my invention illustrated in the drawings, A indicates the barrel or cylinder of the hammer; B, the handle formed at the inner end thereof, and preferably integral therewith; C, the throttle valve chamber; D, the throttle valve stem; and D¹, the throttle valve disk. The supply end of the throttle valve chamber is provided with an internally screw-threaded aperture into which is screwed a threaded nipple E provided with a fixed ring e in which is formed an aperture e¹ to act as a guide for the outer end of the valve stem.

An apertured collar d located at the other end of the valve chamber C closes that end of said chamber and forms a guide for the inner end of the valve stem. A coiled spring e bears between the ring e and the outer face of the valve disk D¹ to normally retain said valve against its seat D². These parts are of the usual construction and require no further description. The handle B and the barrel A are extended laterally to form parallel longitudinally extending ribs F, F¹ which are separated by a slot or groove f¹.

G indicates an operating lever or trigger which is pivoted at one end within the slot or groove f¹ on a pin f secured to the ribs F, F¹. The valve stem D projects between said ribs and is adapted to be engaged by a rounded projection g formed on the underside of the lever G. Said lever or trigger is provided at its free end with a laterally extending thumb piece G¹. The opposite end of the lever is provided with a heel g¹ adapted to engage against the bottom of the slot f¹ and limit the upward movement of the trigger. It is apparent that by pressing on the thumb piece G¹, the valve D will be depressed and the valve disk D¹ dislodged from its position against its seat D².

The ribs F, F¹ are provided with circular holes or openings K, K¹ arranged in line with each other and the rib F is provided with a second circular opening K² parallel to the common axis of the first two and above them. The side of the rib F is recessed to connect the outer ends of the holes K, K². All of said holes open into the slot f¹. In the holes K, K¹ is located the long member L¹ of the J-shaped rod L and in the hole K² is located the short member L² of said rod. The curved member l of the J-shaped rod lies in the recess connecting the openings K, K².

The long member L¹ of the bent rod L projects beyond the outer face of the rib F². A cap M having a shank m, is secured to the end of said long member and the hole K¹ is enlarged throughout a portion of its length, as indicated at k, to receive the inner end of said shank and also a coiled spring k¹ which bears against the inner end of said shank and normally holds said J-shaped rod with the curved member l lying within the recess k¹. In this position, the beveled end l² of the member L² projects into the slot f¹ and

stands in the path of the lever or trigger G. Said trigger is provided with a hole or opening g^2 which is so located that when the trigger is depressed, the axis of said opening will come into a position in line with the axis of the member L^1 .

The operation of the improved locking device is as follows:—When the lever G is depressed by the operator to open the throttle valve, the projection g on the lower edge of said lever strikes the beveled end of the member L^2 and pushes it out of the way. As soon as the opening g^2 comes into line with the projecting end of the member L^2 , the action of the spring k^1 causes said end to enter the hole g^2 and thus lock the lever against upward movement, as illustrated in Fig. 3, thereby maintaining the throttle valve in open position. When it is desired to close the throttle, the trigger G is released by pressing against the cap M which withdraws the end of the member L^2 from the openings g^2 and permits the trigger to rise and release the throttle valve.

The device described herein is of simple and economical construction and is readily adaptable to any hammer of the kind referred to. It relieves the workman of that muscular strain which is experienced in holding the throttle open by hand or finger pressure, which, owing to the variations of pressure, and the resultant vibration of the valve operating mechanism, in addition to the vibration of the tool as a whole, operates against the continuous use of the hammer by the same workman for long or extended periods of time.

While I have illustrated in the drawings one embodiment of my invention, it is to be understood that I do not limit myself to the details of construction shown and described herein except as pointed out in the appended claims, as it is apparent that said mechanical details may be variously modified with-

out departing from the spirit of my invention.

I claim as my invention:—

In a pneumatic hammer, the combination with a barrel provided with a transversely arranged handle on the inner end thereof and with longitudinal, outwardly extending, parallel ribs located at one end of said handle, a normally closed throttle valve in said barrel for controlling the supply of pressure fluid thereto, said valve being located adjacent to said handle, a stem for said valve arranged transversely of the barrel and projecting outwardly therefrom into the space between said ribs, a hand-controlled lever pivotally mounted between said ribs and adapted to act on said stem to open said valve, said handle being provided with a hole extending transversely through the same and with a second hole extending through one of said ribs, parallel with and outside of the first-named hole, a catch member consisting of a U-shaped rod having rigidly connected long and short legs mounted and adapted to slide in said holes, the shorter leg being located in the outermost hole and being provided with a beveled end which normally projects into the path of said lever; said lever being provided with an opening adapted to be engaged by the beveled end of said shorter leg, and the said longer leg projecting laterally outside of the handle, and a spring adapted for yieldingly holding said catch member in position for engagement of its shorter leg with said lever.

In testimony that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 25th day of February A. D. 1910.

REINHOLD A. NORLING.

Witnesses:

CLARK EAGLETON,
JAMES R. BRADSHAW.