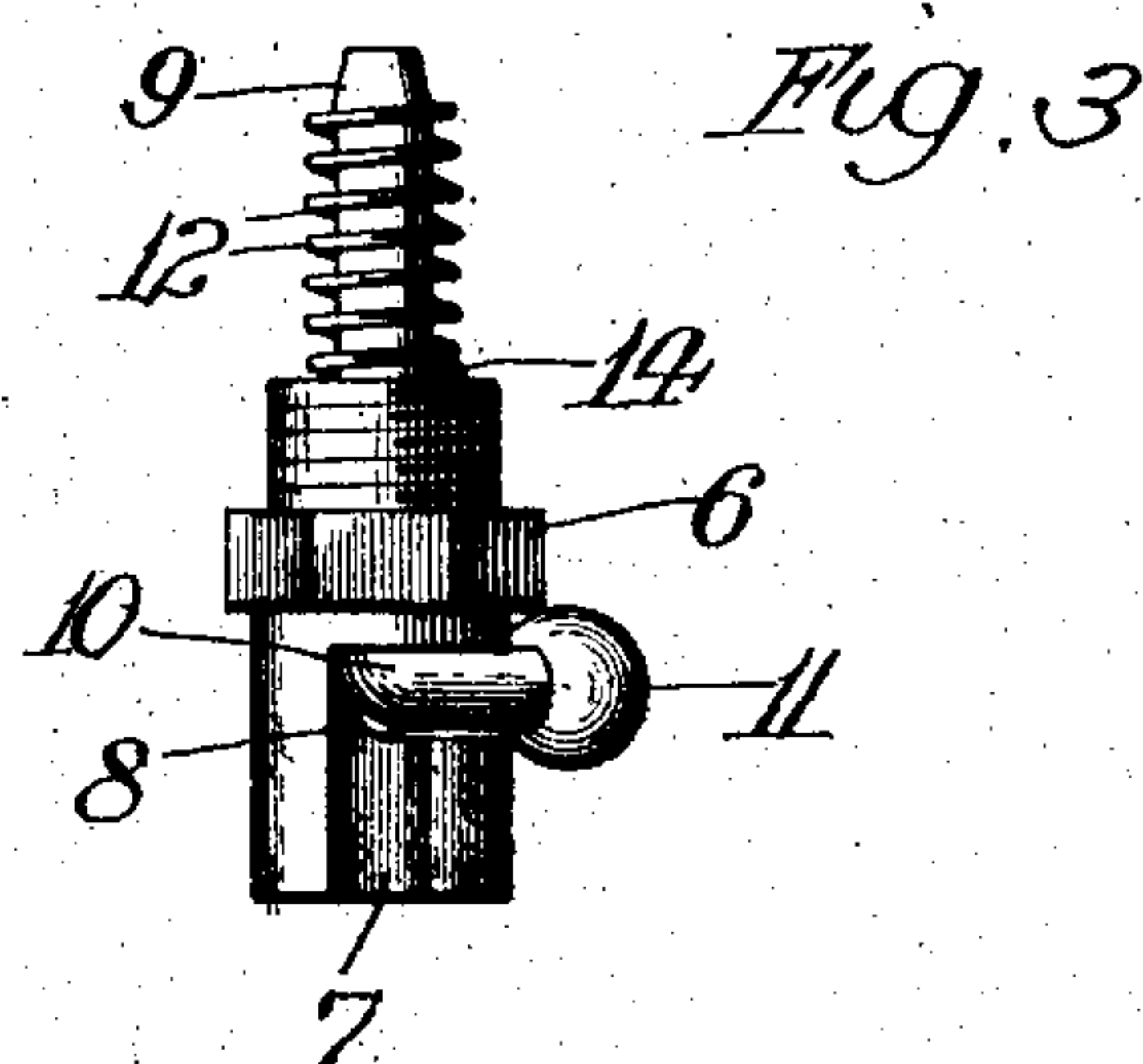
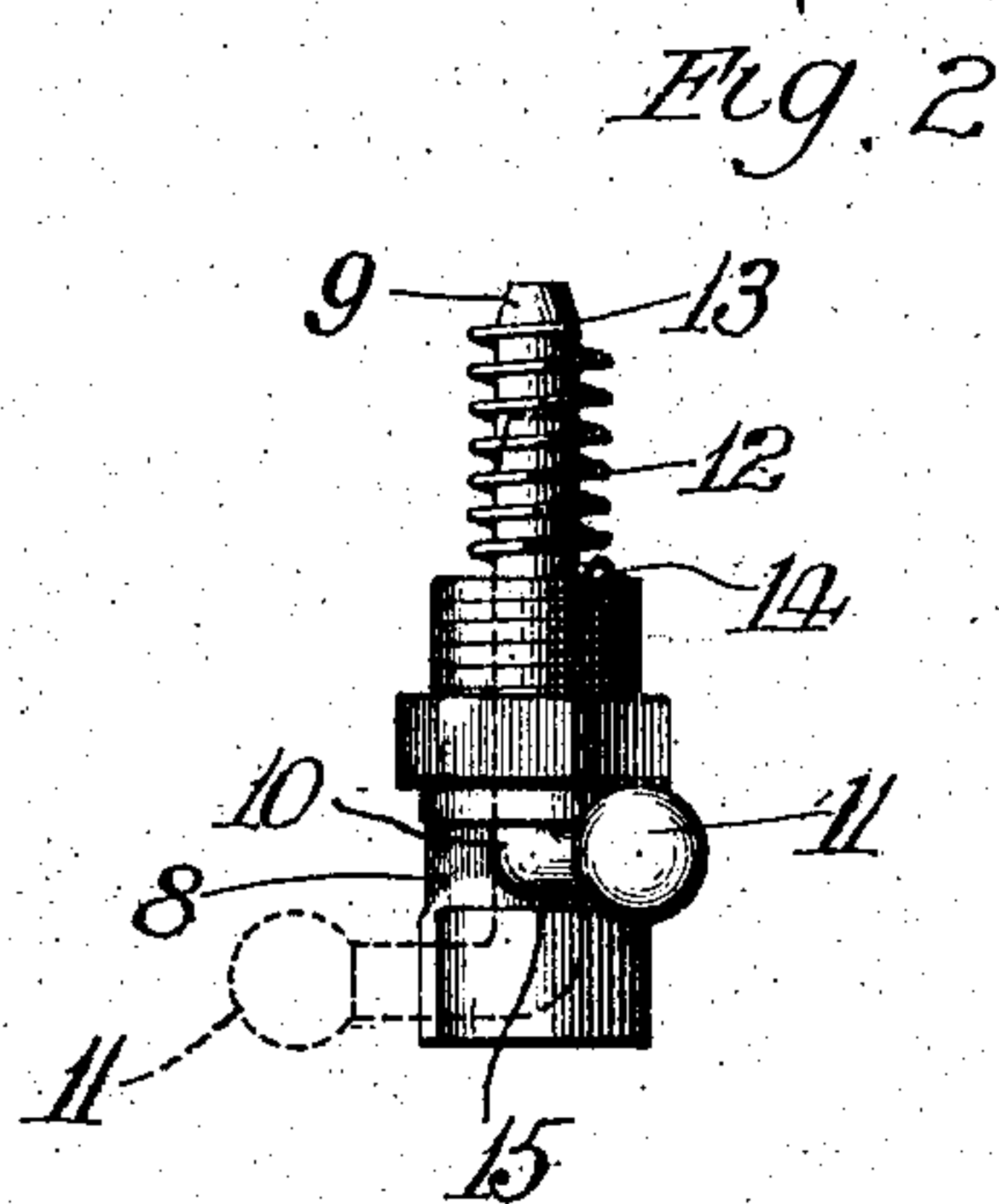
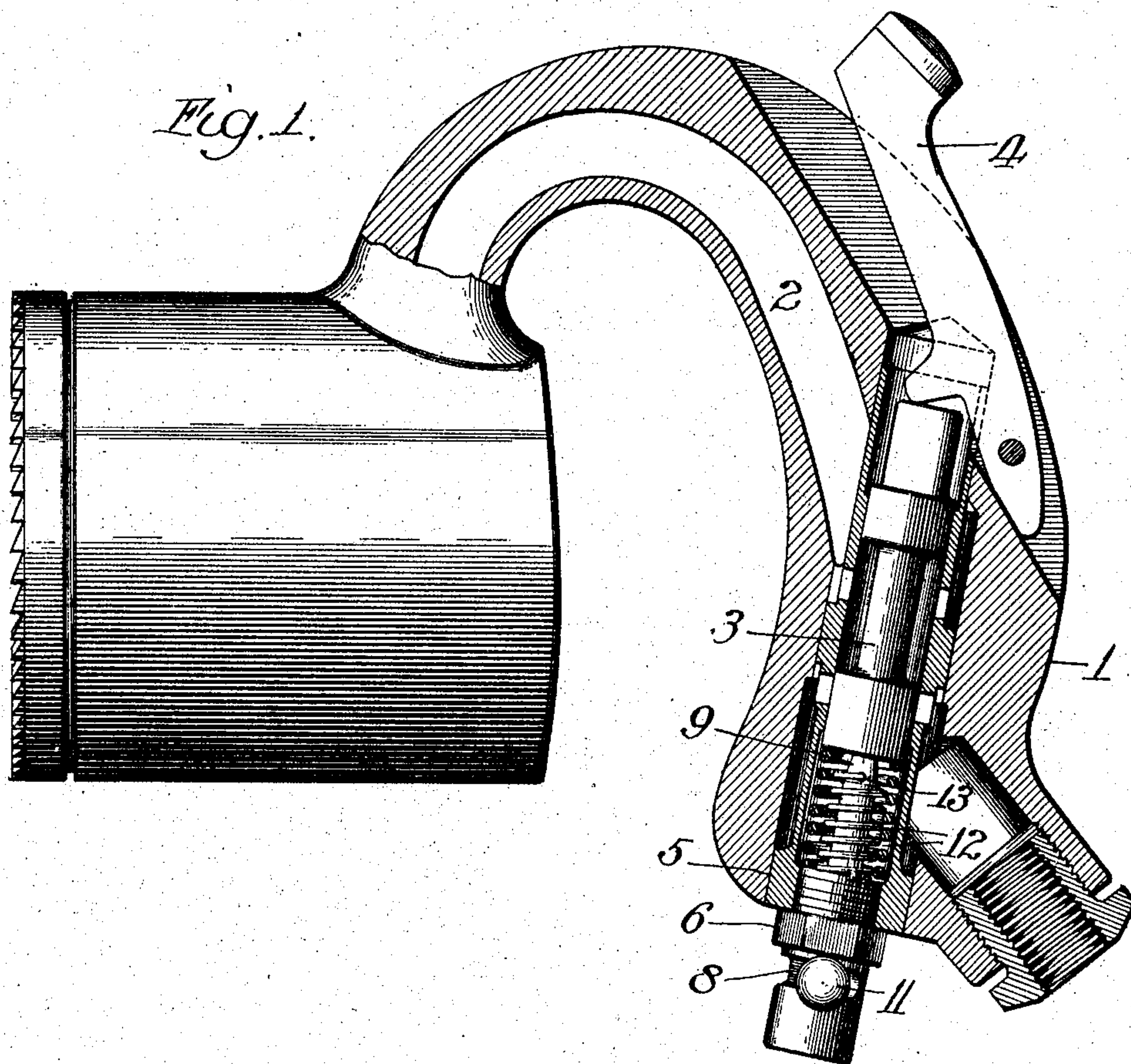


No. 781,276.

PATENTED JAN. 31, 1905.

W. O. DUNTLEY.  
PNEUMATIC HAMMER.  
APPLICATION FILED FEB. 21, 1903.



Witnesses:  
*Lute S. Alter,*  
*Harold Barrett,*

Inventor:  
*William O. Duntley*  
*By Rector & Kibben*  
*His Attys*



# UNITED STATES PATENT OFFICE.

WILLIAM O. DUNTLEY, OF CHICAGO, ILLINOIS, ASSIGNOR TO CHICAGO PNEUMATIC TOOL COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW JERSEY.

## PNEUMATIC HAMMER.

SPECIFICATION forming part of Letters Patent No. 781,276, dated January 31, 1905.

Application filed February 21, 1903. Serial No. 144,449.

*To all whom it may concern:*

Be it known that I, WILLIAM O. DUNTLEY, residing at Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Pneumatic Hammers, of which the following is a specification.

My invention has relation to pneumatic hammers; and the object thereof is to provide simple and efficient means for normally locking the throttle-valve of a pneumatic hammer in its closed position, to the end that the admission of air-pressure to the operating parts of the hammer is wholly under control of the operator, who is enabled to unlock the throttle-valve by a positive movement when the tool is pressed to the work or at any other time, whereby the accidental admission of air-pressure is prevented and the use of automatic throttle-valves dispensed with.

My invention is useful in pneumatic hammers of varied character and construction and can be embodied therein without any considerable alteration. However, for convenience I have herein illustrated my invention as working in connection with the throttle-valve of the well-known Boyer hammer.

In the drawings, Figure 1 is a section of the handle of a Boyer hammer and showing the head-piece in elevation, and Figs. 2 and 3 different elevations of my automatic lock.

In the present instance—that is, in the Boyer construction which is here illustrated—the grasping-handle 1 is provided with the inlet-passage 2 for admitting the live air to the operating parts of the hammer. This passage is governed by the throttle-valve 3, which is manually operated by the throttle-valve lever 4. The throttle-valve works within a bushing 5, having various ports governed by such valve in a manner so well understood as not to require any description. The lower end of this bushing is usually internally screw-threaded and closed by an ordinary plug, which, however, is removed when my attachment or device is employed.

My automatic lock comprises in the present instance a body portion or plug 6, which is somewhat similar to the ordinary plug above

mentioned, but provided with a central bore and also an extension. This plug 6 is arranged to screw into the lower end of the bushing. The plug 6 is provided with a longitudinal slot 7, formed in said plug extension and extending from one side and upwardly to a point slightly beyond the center, so as to form a continuation of the bore in the body portion of such plug. A transverse slot 8 extends diametrically across the plug and through and at right angles to the other slot 7. A bolt or pin 9, arranged to slide in the bore of the plug and also within the slots, is bent at right angles at its lower end to form a portion 10, and preferably provided at its extreme end with a finger-piece or knob 11. A coiled spring 12 surrounds the pin and is secured to the upper end thereof at 13 in any suitable manner and also to the plug at 14. The spring is so arranged or attached with respect to the pin and plug as to normally hold the pin not only in its elevated position by the stress of compression of the spring, but also in the end of the cross or transverse slot 8 by the torsional stress thereof.

The bolt or pin 9 is of such length as to come in contact with the lower end of the throttle-valve when the latter is in normal or closed position, as shown in the drawings, or at least to interfere with the opening movements thereof, with the result that the throttle-valve cannot be depressed, inasmuch as at this time the lower end 10 of the pin is in the slot 8, whose lower edge 15 prevents downward movement of such pin. When the tool is pressed to the work or if at any other time it is desired to open the throttle-valve, the operator holds the hammer in one hand, as usual, and with the other hand swings the pin out of the slot 8 by rotating such pin against the tension of its spring 12. The bent portion 10 of the pin now registers with the other slot, 7, and pressure applied by the operator to the throttle-valve lever 4 will depress and open the throttle-valve and also depress the pin to the position indicated by dotted lines in Fig. 2. When the pressure on the lever 4 is removed, the throttle-valve will return to normal position,



and at the same time the spring 12 will raise the pin and cause it to flip laterally into the cross-slot just as soon as it is reached. The lock is thus restored to normal position in an automatic manner without the aid of the operator. The throttle-valve is now again locked and cannot be opened until unlocked by the positive act of the operator.

Various mechanical changes might be made in the construction shown without departing from the spirit and scope of my invention, and, moreover, I contemplate using my invention wherever applicable.

While it is preferred to retain the usual throttle-valve spring when my automatic lock is employed, yet it is evident that the same may be dispensed with and the spring coöperating with the lock made of sufficient strength to also serve as the means for returning the throttle-valve to normal or closed position.

I claim—

1. In a pneumatic hammer having a throttle-valve, means arranged in axial alinement with the valve for normally locking the same in its normally closed position.

2. In a pneumatic hammer having a throttle-valve, means arranged in axial alinement with the valve to normally lock the same in closed position and to be automatically restored to locking position after being unlocked and after the throttle-valve is closed.

3. In a pneumatic hammer having a throttle-valve, a lock coöperating with one end thereof to lock the same in its normally closed position, and automatic means for restoring said lock to locking position whenever the valve returns to closed position.

4. In a pneumatic hammer having a throttle-valve, manually-operated means arranged axially of the valve for locking the same in its normally closed position.

5. In a pneumatic hammer having a reciprocating throttle-valve, means arranged axially of and in the path of the valve to normally prevent its opening movement but adapted to be removed from interference with such valve.

6. In a pneumatic hammer having a reciprocating throttle-valve, a locking pin or bolt arranged in the path of one end of the valve to normally prevent its opening movement.

7. In a pneumatic hammer having a reciprocating throttle-valve, a sliding pin or bolt normally held projected adjacent one end of the valve to prevent opening movement thereof.

8. In a pneumatic hammer having a reciprocating throttle-valve, a pin or bolt inwardly pressed into proximity to the valve and arranged in alinement therewith and means for normally holding said pin in its inward position to prevent opening movement of the valve.

9. In a pneumatic hammer having a reciprocating throttle-valve, a pin or bolt inwardly spring-pressed adjacent one end of the

valve and means for normally locking said pin against outward movement.

10. In a pneumatic hammer having a reciprocating throttle-valve, a plug arranged adjacent the valve, and a retractable pin or bolt extending through said plug and into proximity to the valve, and means for normally holding the pin or bolt in its inward position to prevent opening movement of the valve.

11. In a pneumatic hammer having a reciprocating throttle-valve, a plug arranged adjacent the valve and having a longitudinal and a transverse slot and an inwardly-spring-pressed bent pin received by the longitudinal slot and extending through the plug into proximity to the valve, the outer end of said pin being arranged to enter said transverse slot and thereby prevent outward movement of the pin or bolt.

12. In a pneumatic hammer having a grasping-handle and reciprocating throttle-valve therein, a pin or bolt mounted to slide in said handle and normally projected inwardly toward said valve, and means coöperating with such pin to normally lock it against outward movement.

13. In a pneumatic hammer having a grasping-handle and a reciprocating throttle-valve therein, a pin or bolt mounted to slide in said handle and normally projected inwardly toward said valve, a spring for pressing the pin inwardly, and means coöperating with such pin to normally lock it against outward movement.

14. In a pneumatic hammer having a grasping-handle and a reciprocating throttle-valve therein, a plug secured to the handle and having a longitudinal bore and also a longitudinal and a transverse slot communicating with each other, a spring-pressed pin arranged to slide in said bore and projected inwardly toward the valve, said pin having an angled portion normally held in the transverse slot whereby the pin is held against outward movement until swung to register with the longitudinal slot.

15. In a pneumatic hammer having a grasping-handle and a reciprocating throttle-valve therein, a plug 6 screwing into the handle and having a central bore and also the communicating slots 7 and 8, and a normally inwardly pressed pin or bolt 9 arranged to slide in said bore and having a bent portion or angled extension 10 arranged to move in the slot 8.

16. In a pneumatic hammer having a grasping-handle and a reciprocating throttle-valve therein, a plug 6 screwing into the handle adjacent the valve and having a central bore and also the communicating slots 7 and 8, a pin or bolt 9 arranged to slide in said bore and having a bent or angled portion 10 normally positioned in the slot 8, whereby the pin is locked in inward position, and a coiled spring 12 surrounding the pin and secured at one end to the pin and at its other end to the plug

whereby such spring exerts a torsional stress to throw the bent end of the pin into slot 8 and also exerts an expanding stress to normally project the pin inwardly toward the valve to prevent its opening movement.

17. In a pneumatic hammer, in combination with its manually-operated throttle-valve of the piston type, means arranged in axial alignment with and adjacent one end of the valve and adapted to lock such valve in its closed position.

18. In a pneumatic hammer, in combination

with its grasping-handle and manually-operated throttle-valve therein, an inwardly-spring-pressed pin inserted in the end of the handle and normally held against reciprocation, said pin being arranged in the path of movement of the throttle-valve to prevent opening thereof.

WILLIAM O. DUNTLEY.

Witnesses:

S. E. HIBBEN,

LOUIS B. ERWIN.