

J. A. SNEE.  
SHOCK PREVENTING MEANS FOR FLUID ACTUATING APPARATUS.  
APPLICATION FILED DEC. 20, 1910.

989,883.

Patented Apr. 18, 1911.

FIG. 1.

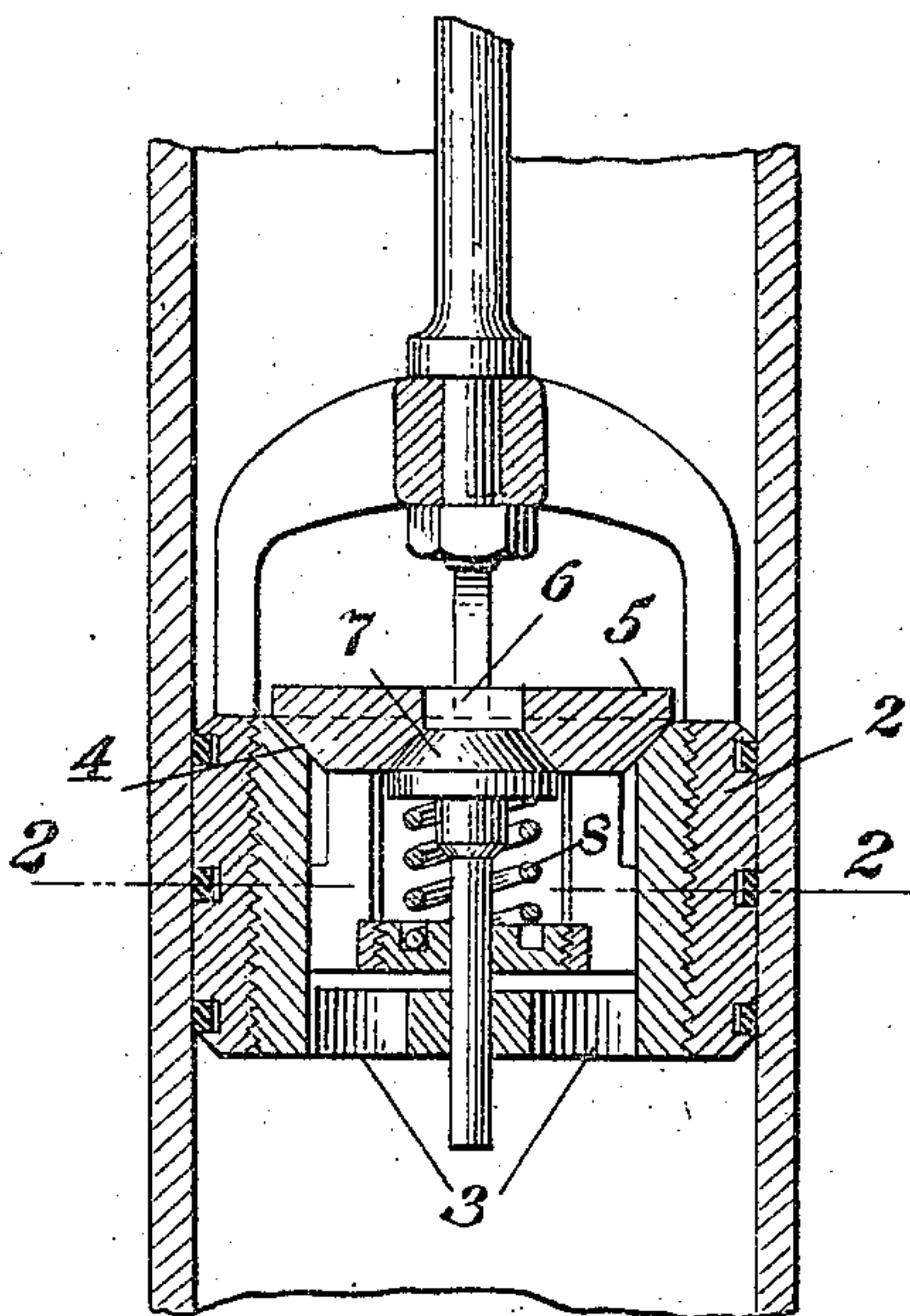
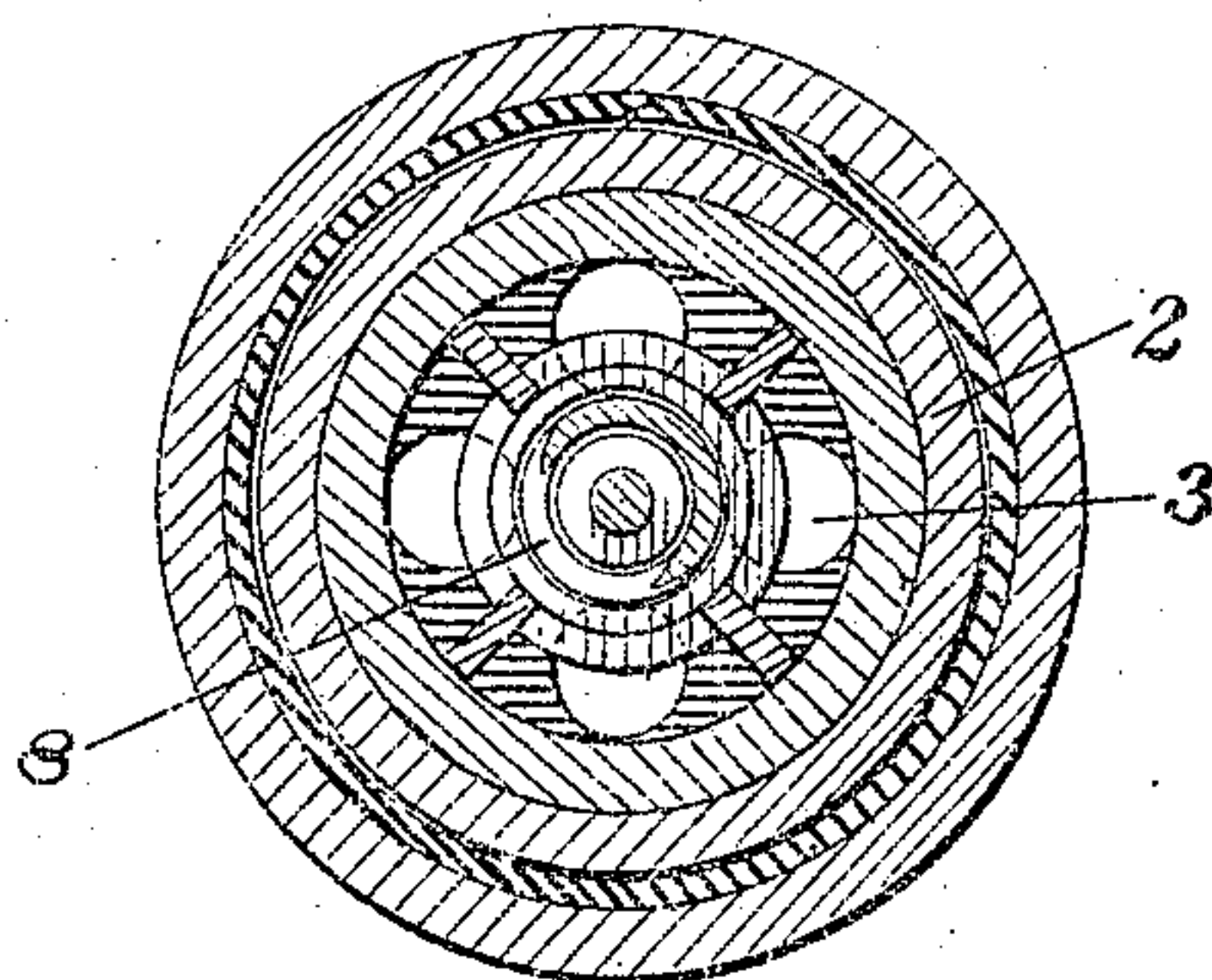


FIG. 2.



WITNESSES

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# UNITED STATES PATENT OFFICE.

JOHN A. SNEE, OF WEST ELIZABETH, PENNSYLVANIA.

SHOCK-PREVENTING MEANS FOR FLUID-ACTUATING APPARATUS.

989,883.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed December 20, 1910. Serial No. 598,331.

*To all whom it may concern:*

Be it known that I, JOHN A. SNEE, a resident of West Elizabeth, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Shock-Preventing Means for Fluid-Actuating Apparatus, of which the following is a specification.

The object of this invention is to provide efficient means for relieving the shock resulting from the excessive high pressure at the beginning of the working stroke of a pump piston. Such shock being created by and incident to the start of the piston on its working stroke, has an immediate and direct effect on the piston. It is therefore desirable to arrange the compensating means as closely as possible to the source of the shock, and hence in the adaptations of the invention here shown I provide for obtaining such relief directly through the piston. An immediate compensating effect is thereby procured which acts instantaneously with the accumulation of the shock force, and hence is more efficient than in those types of apparatus in which the shock must be transmitted through the fluid body to an air chamber before it is relieved.

In the accompanying drawings, Figure 1 is a vertical section of a pump piston constructed in accordance with the invention, and Fig. 2 is a sectional plan on line 2—2 of Fig. 1.

Referring to the drawings, 2 designates a pump piston which in the present adaptation is ported at 3 for the passage of the fluid being operated upon, the upper end of the piston being formed with seat 4 for the downwardly closing induction valve 5. A

port 6 through valve 5 is normally closed by the downwardly opening relief valve 7, the latter being held normally raised and seated by spring 8, which latter is stronger than the normal load or pressure of the fluid of the lifting side of the piston.

In operation, valve 7 opens momentarily at the beginning of the lifting stroke under the then existing abnormal pressure and permits enough fluid to slip past to relieve such pressure, and then closes under the preponderating force of spring 8 and remains closed during the completion of the stroke. On the down or charging stroke valve 5 opens in the usual manner to permit fluid to pass to the lifting side of the piston.

I claim:—

1. The combination of a pump piston having a passage therethrough for the flow of fluid to the lifting side of the piston, a downwardly seating valve for the passage, a bypass for conducting fluid from the lifting side of the piston to its opposite side, and a spring-closed valve for the bypass closing toward the lifting side of the piston.

2. The combination of a pump piston having a passage therethrough for the flow of fluid to the lifting side of the piston, a downwardly seating valve for the passage formed with a bypass for passing fluid through the piston when the valve is closed, and an upwardly seating spring-closed valve for the bypass.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN A. SNEE.

Witnesses:

J. M. NESBIT,

F. E. GAITHER.