

No. 766,910.

PATENTED AUG. 9, 1904.

J. H. SPRAY.
INFLATION VALVE.
APPLICATION FILED MAY 19, 1903.

NO MODEL.

Fig. 1.

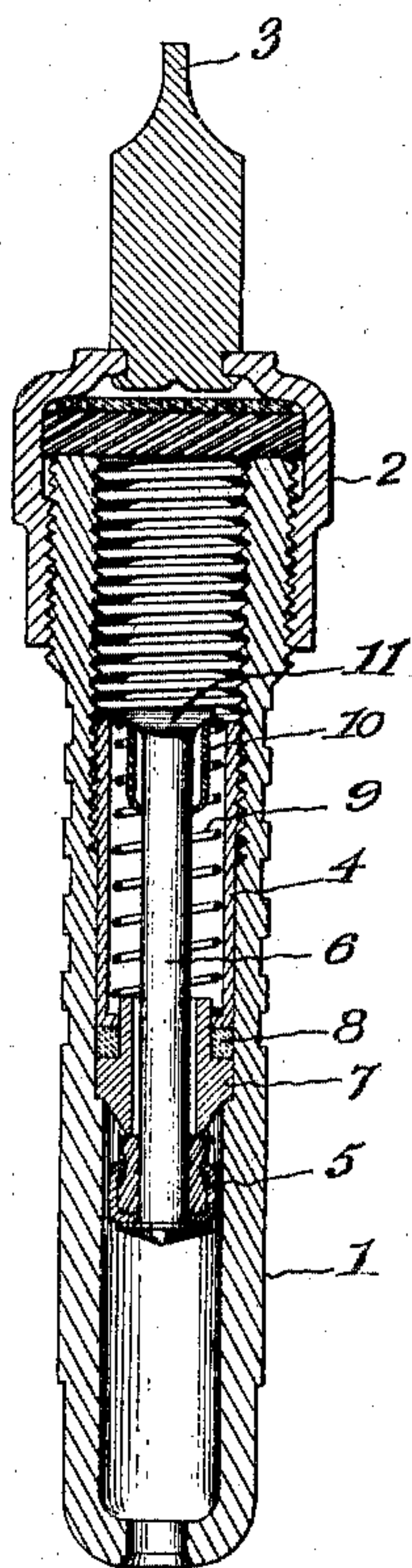
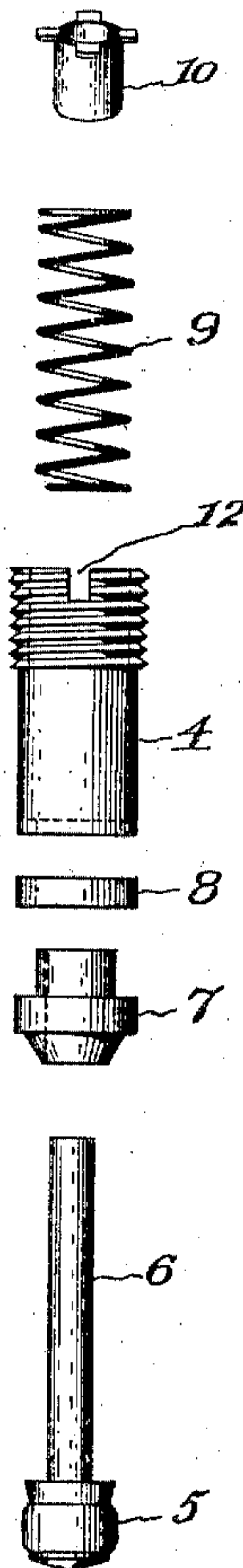


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES H. SPRAY, OF WATERBURY, CONNECTICUT, ASSIGNOR TO SCOVILL MANUFACTURING COMPANY, OF WATERBURY, CONNECTICUT, A CORPORATION OF CONNECTICUT.

INFLATION-VALVE.

SPECIFICATION forming part of Letters Patent No. 766,910, dated August 9, 1904.

Application filed May 19, 1903. Serial No. 157,781. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. SPRAY, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented a certain new and useful Improvement in Inflation-Valves, of which the following is a full, clear, and exact description.

The object of this invention is to provide an inflation-valve or valve of similar construction with a plunger, plunger-carrier, and spring so united as to be capable of being inserted and withdrawn as a whole; and a further object is to insure the proper seating of the valve under spring-pressure.

The invention consists of a plunger-carrier within which the spring is arranged and to both of which the plunger is applied so that the whole may be inserted in and withdrawn from the casing as a unit. The spring draws the valve to its seat instead of pushing it as heretofore, and as a result the valve is seated with entire equality of pressure.

In the accompanying drawings, illustrating the invention, in the two figures of which like parts are similarly designated, Figure 1 is a longitudinal section. Fig. 2 shows in elevation the parts of the invention detached from one another and from the casing.

The casing 1 and the cap 2, having the screw-driver point 3, may be as usual, and the packing in the cap here shown conventionally may also be as usual.

4 is what has hereinbefore been referred to as the "plunger-carrier." The plunger comprises the valve 5 and a stem 6 of any usual or approved construction. A separate valve-seat 7, with an interposed packing-ring 8, is fitted in the end of the plunger-carrier and is held in place by engaging a shoulder on the inside of the casing. The stem of the plunger enters the valve-seat and carrier and projects through a coiled spring 9, arranged in said carrier, and the upper end of this coiled spring is provided with a sleeve 10, somewhat like an eyelet, with the plunger-stem loosely projecting through it and having its upper end 11

flattened out to form an enlargement, so as to make a union between the sleeve, spring, and plunger-stem. The spring 9 is set to act by expansion, and its lower end rests upon a suitable flange at the bottom of the carrier, while its upper end engages the sleeve or eyelet 10, and thereby normally draws the valve to its seat with a practically equally-distributed pressure. The carrier is made as a tube, open at its upper end, flanged at its lower end to receive the valve-seat, and externally screw-threaded to engage an internal screw-thread in the casing to support the connected parts.

The carrier 4 is provided with the usual nick or slot 12 for coöperation with the screw-driver point 3 for running the carrier in and out of the casing 1, and it will be observed that by the arrangement of the spring within the carrier and its connection with the plunger-stem the carrier, spring, plunger, and valve become practically a unit insertible and removable at pleasure as such and without danger of loss of any of the parts.

In prior forms of inflation-valves, where a spring was either arranged loosely in the casing beneath the valve and plunger or connected to them from below, such spring was under compression and its pressure was applied by pushing the valve onto the valve-seat, and the result was that any inequality of pressure upon the valve-plunger was applied with short leverage tending to unequally distribute the pressure upon the valve-seat. On the other hand, in the present arrangement the spring-pressure tending to keep the valve closed is applied at the upper end of the plunger and thence transmitted to the valve under a long leverage, with the result that there is a uniform application of the pressure on the valve.

The sleeve 10, as shown in the detail view, Fig. 2, is made with an interrupted flange or a series of laterally-projecting lugs for engagement with the upper coil of the spring; but the invention is not limited to the employment of this particular form of sleeve, and, indeed, the sleeve may be dispensed with and

the stem of the plunger be constructed for direct engagement with the spring, although the use of the sleeve is preferred.

What I claim is—

5 1. In a valve, a casing, a plunger-carrier constructed as a tube adapted to be secured in said casing, an independent valve-seat fitted in the end of said tube and engaging said casing and thereby held in place, a plunger comprising a valve and a stem mounted in said carrier, a spring arranged in said tube and surrounding said stem, a sleeve engaging said spring and loosely mounted upon said stem, and an enlargement on said stem engaging the sleeve to cause said spring normally to draw
10 15 the valve to its seat.

2. In a valve, a casing, a plunger-carrier constructed as a tube adapted to be detachably fitted in said casing, an independent valve-seat

fitted in the end of said tube, a washer interposed between said valve-seat and the end of the tube, a shoulder on said casing adapted to be engaged by said valve-seat to hold said valve-seat and washer in place, a plunger comprising a valve and a stem mounted in said carrier, a spring arranged in said tube and surrounding said stem, a sleeve engaging the spring and loosely mounted upon the stem, and an enlargement on the stem engaging the sleeve to cause said spring normally to draw
20 25 30 the valve to its seat.

In testimony whereof I have hereunto set my hand this 15th day of May, A. D. 1903.

JAMES H. SPRAY.

Witnesses:

G. F. HODGES,
H. B. RIGGS.