

No. 808,857.

PATENTED JAN. 2, 1906.

A. K. MILLER.
PUMP.

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Fig. 1.

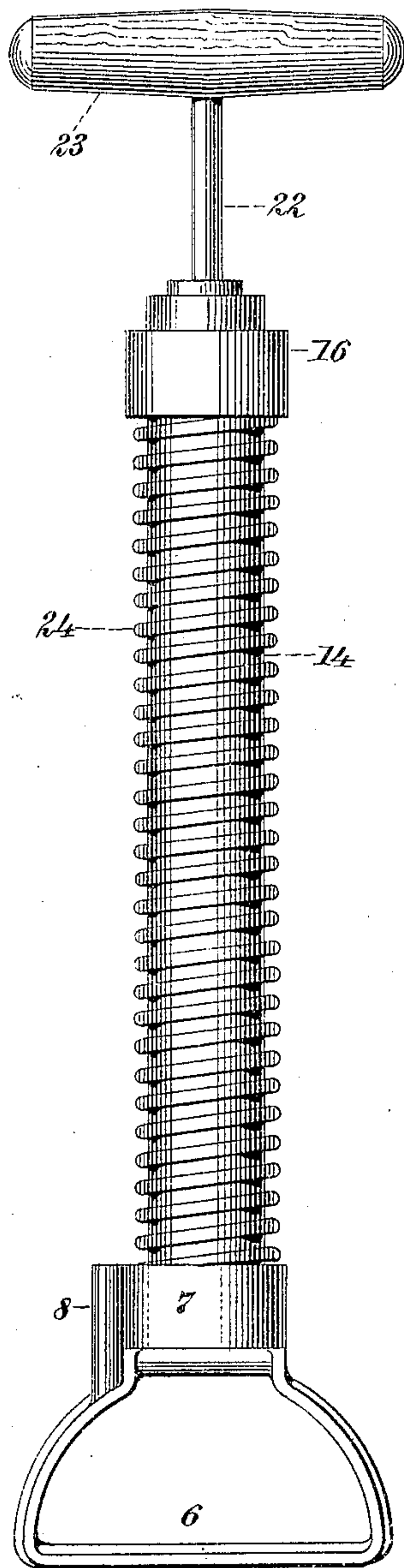
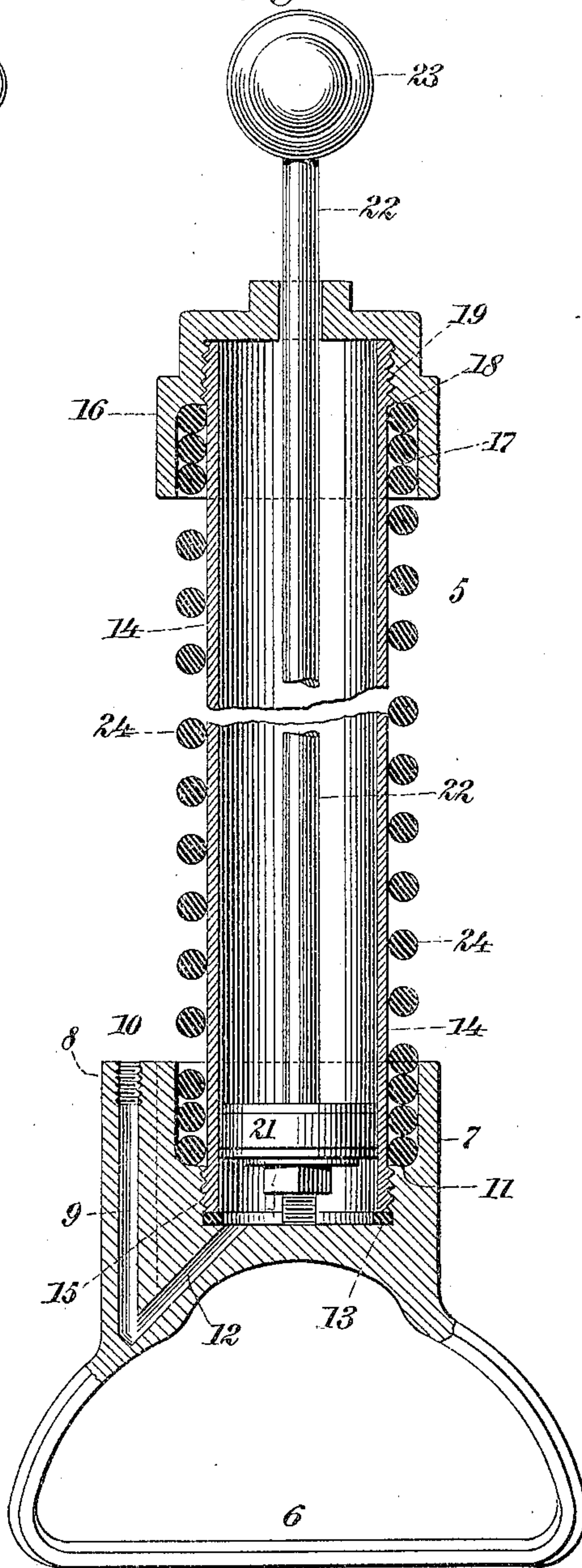


Fig. 2.



WITNESSES:

Gustave Dieterich.

Edwin H. Dieterich.

INVENTOR

Arthur K. Miller

BY

Shelby & Hasbrouck
his ATTORNEYS.

UNITED STATES PATENT OFFICE.

ARTHUR K. MILLER, OF PEEKSKILL, NEW YORK.

PUMP.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ARTHUR K. MILLER, a citizen of the United States, residing at Peekskill, Westchester county, and State of New York, have invented certain new and useful Improvements in Pumps, of which the following is a full, clear, and exact specification.

My invention relates to improvements in apparatus for compressing fluids; and the same has for its object more particularly to provide a simple, efficient, and reliable pump for use in connection with inflatable tires and different other forms of containers adapted to hold fluids under pressure.

Further, said invention has for its object to reduce the cost of manufacture, to so improve the construction of the pump as to render the same more rigid and less subject to injury or strain at the junction of its parts, and to provide a pump which may be easily set together or taken apart in order to permit of the cleaning of its parts or the making of repairs therein.

To the attainment of these objects above set forth, my invention consists in the novel details of construction, and in the combination, connection, and arrangement of parts hereinafter more fully described and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, wherein like numerals of reference indicate like parts, Figure 1 is a side view illustrating a pump constructed according to and embodying my said invention. Fig. 2 is a central vertical section of the same, on an enlarged scale and partly broken out.

In said drawings, 5 denotes a foot-pump comprising a stirrup or foot-piece 6, forming a support or base for a socket 7, having a projecting portion 8 at one side thereof provided with a bore 9, terminating in a screw-threaded portion 10 at its upper end. The interior of the socket 7 is stepped, so as to form a shoulder or abutment 11 about midway of its height, thus forming an opening of two different diameters, the diameter of the upper portion being materially wider than that of the lower portion, which latter is further provided with screw-threads.

12 denotes a diagonal bore extending from the base of the socket 7 and connecting with the lower end of the bore 9 in the projecting portion 8 of the socket.

Within the socket 7 and disposed upon its base is a resilient annular washer or packing

13, and 14 denotes a cylinder-section, which is open at both ends and provided upon its outer surface at said ends with screw-threads. Said cylinder 14 is provided at its ends with enlarged portions 15, as shown at Fig. 2, or the same may be provided with a short inwardly-projecting flange. The lower end of said cylinder 14 is adapted to be screwed into the screw-threaded portion of the socket 7 until its lower edge is firmly seated upon the packing 13. 16 denotes a cap for closing the upper end of said cylinder 14, said cap being provided upon its under side with a stepped socket 17, having a shoulder 18 therein and screw-threads 19 upon the narrower portion thereof above said shoulder 18. The upper end of the cylinder 14 is adapted for securement to said cap 16 by screwing the upper end thereof into the screw-threaded portion of said cap.

21 denotes a piston arranged within the cylinder 14, having a rod 22, which extends through the cap 16 and is provided at its upper end with a handle 23.

24 denotes a volute spring which is disposed about the cylinder 14 to protect said cylinder against fracture or injury by pressure produced therein and against injury thereto from without, such as denting the same, and thereby preventing the proper operation of the piston 21 therein. Said spring 24 has its lower end disposed in the socket 7 and bearing upon the shoulder 11 therein and completely filling the space above said shoulder intermediate the inner wall of the socket and the outer wall of the cylinder 14, the upper end of said spring being similarly held in the socket of the cap 16.

It is to be noted that in the construction illustrated and described the cylinder 14 is held firmly attached to the socket in the stirrup 6 by the engagement of its threaded lower end with the thread portion of the socket and all possible swaying or oscillation of the upper portion of said cylinder prevented by the introduction of the lower end of the spring 24 in the space provided in the wider portion of the socket which is adapted to receive the end of said spring 24, and which the spring fits snugly and completely fills.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A pump comprising a casing open at its ends, a piston and rod, a support for said casing having a socket therein and adapted for

securement to the lower end of said casing, and having an annular recess at its upper edge, a cap adapted for securement to the upper end of said casing having an annular recess at its lower edge, and a volute spring disposed about said casing and having its ends bearing against and confined by the recesses in said cap and socket, substantially as specified.

2. A pump comprising a casing open at its ends, a piston and rod, a support for said casing having a socket therein and adapted for securement to said casing; a shoulder in said socket above the lower end of said casing, a cap adapted for securement to the upper end of said casing, a shoulder in said socket below the upper edge of said casing, and a volute spring disposed about said cylinder and having its ends confined within the sockets of said support and cap and bearing against the shoulders therein, substantially as specified.

3. A pump comprising a casing open at its ends, screw-threads upon said casing at its ends, a piston and rod, a support for said casing having a socket therein consisting of a screw-threaded portion adapted to engage the threaded end of said casing, and a larger unthreaded portion adjoining the same, an annular packing in the base of said socket, a cap having a socket in its under side consisting of a screw-threaded portion adapted to engage the threaded upper end of said casing, and an unthreaded larger portion adjoining the same, and a volute spring disposed about and encompassing said casing, having its ends disposed within the larger opposing portions of the sockets in the cap and support, and bearing upon the shoulders therein, substantially as specified.

4. A pump comprising a casing open at its ends, screw-threads upon the outer surface of said casing at the ends thereof, a piston and rod, a support for said casing having a socket therein comprising a screw-threaded portion adapted to engage the screw-threads

at the lower end of the casing, a larger portion adjoining said screw-threaded portion, and a shoulder intermediate said socket portions, an annular packing disposed in the base of the threaded portion of said socket, a cap having a socket in its under side comprising a screw-threaded portion adapted to engage the threaded upper end of the casing, and a larger portion adjoining said threaded portion, a shoulder provided intermediate said socket portions, and a volute spring disposed under compression about said cylinder and having its ends confined by said enlarged socket portions of said cap and support and bearing against the shoulders thereon, substantially as specified.

5. A pump comprising a casing open at its ends, screw-threads upon the outer surface of said casing at its ends an outlet-port for said casing, a piston and rod, a support for said casing having a socket therein comprising a threaded portion of substantially the diameter of the casing, adapted to engage the threaded lower end thereof, and a smooth portion of greater diameter than said casing adjoining said threaded portion, an annular packing disposed in the base of the threaded portion, a cap having a socket therein comprising a threaded portion of substantially the diameter of the casing, adapted to engage the screw-threaded upper end thereof, and a smooth portion of greater diameter than said casing adjoining said threaded portion, and a volute spring disposed about said casing having its ends confined by the sockets in said support and cap, and bearing against the portion intermediate the smooth and threaded portions thereof, substantially as specified.

Signed at the city of New York, in the county and State of New York, this 6th day of April, 1905.

ARTHUR K. MILLER.

Witnesses:

C. A. DIETERICH,
LOUIS B. HASBROUCK.