Oct. 14, 1924. 1,511,971

J. W. HUNTER

AIR PUMP

Filed March 8, 1923

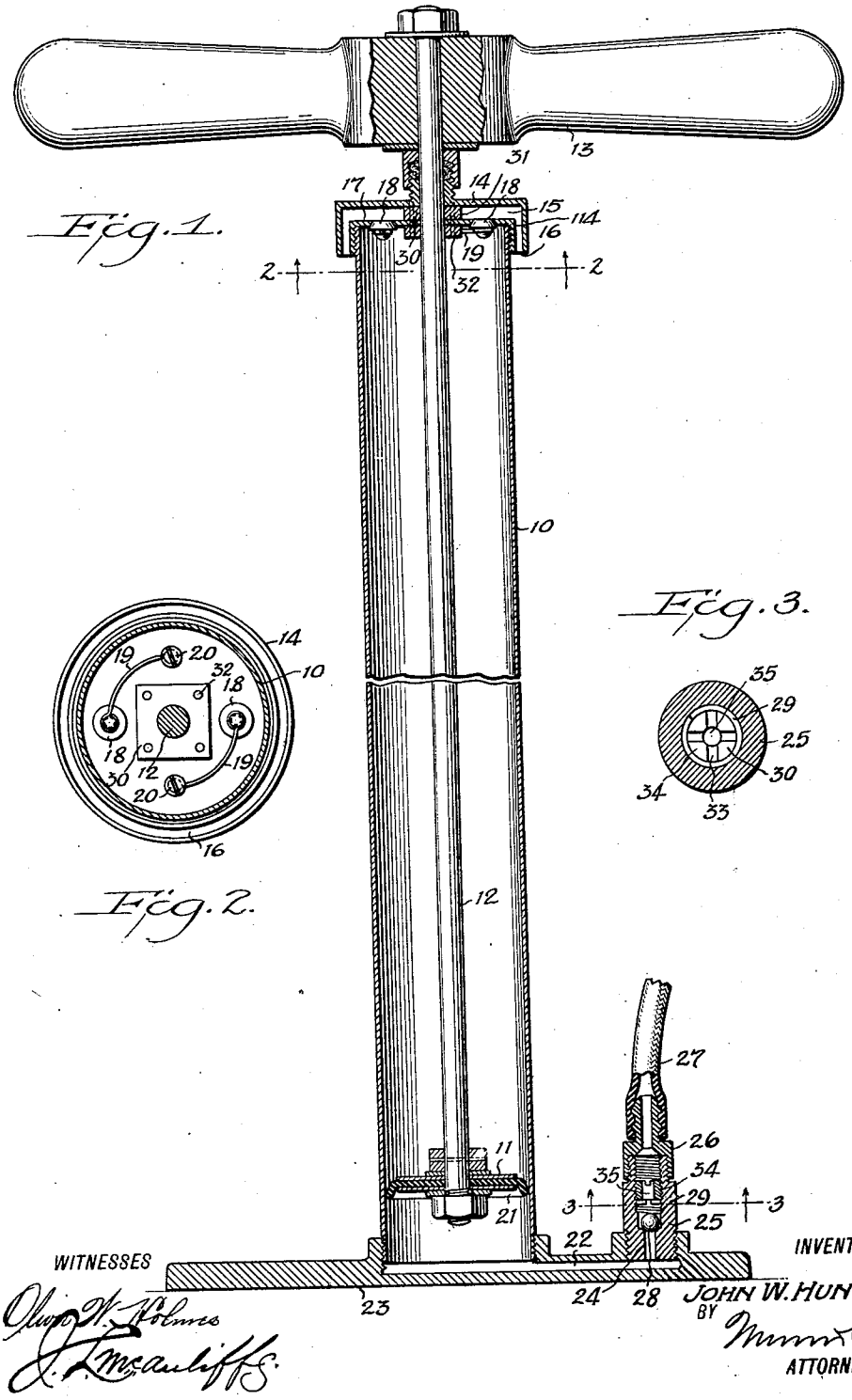


Fig. 1.

Fig. 2.

Fig. 3.

WITNESSES

Olive W. Holmes

L. L. McAuliffe

INVENTOR

JOHN W. HUNTER

BY Munn & Co

ATTORNEYS

Patented Oct. 14, 1924. 1,511,971

UNITED STATES PATENT OFFICE.

JOHN WARWICK HUNTER, OF SYDENHAM, ONTARIO, CANADA.

AIR PUMP.

Application filed March 8, 1923. Serial No. 623,762.

To all whom it may concern:

Be it known that I, JOHN WARWICK HUNTER, a subject of the King of Great Britain, and a resident of Sydenham, in the Province of Ontario and Dominion of Canada, have invented a new and Improved Air Pump, of which the following is a description.

My invention relates to an air pump of the type particularly adapted for use as a tire pump and similar purposes.

The general object of my invention is to provide a pump of the indicated type improved in various particulars more especially with reference to the inlet valves to the pump cylinder, whereby to provide an efficient valve sensitively responsive to the forward stroke of the piston and functioning to close instantly upon the return stroke of the piston.

Reference is to be had to the accompanying drawings forming a part of this specification, it being undestood that the drawings are merely illustrative of one example of the invention.

Figure 1 is a vertical section of the pump embodying my invention;

Figure 2 is a cross section on the line 2—2, Figure 1;

Figure 3 is a cross section on the line 3—3, Figure 1.

In carrying out my invention in accordance with the illustrated example a pump cylinder 10 is provided in which is a piston 11, the piston rod 12 of which extends through the upper end of the cylinder 10 and is provided with a handle 13 for reciprocating the piston. The upper cylinder head is made hollow, being formed of two inverted cups 14 and 114, one within the other and spaced apart to provide an air chamber 15 therebetween. A bracing plate 30 is provided at the under side of the lower cup 114 and a spacing plate 31 is disposed between the cups 14 and 114, the whole being secured together by rivets 32. The sides or flanges of the cups 14, 114 produce an annular air inlet 16.

The lower cup 114 is provided with air inlets controlled by valves 18 which are carried at one end of elongated resilient elements 19, the opposite ends 20 of which are secured by screws or otherwise to the under side of the cup. The valve arrangement results in the valves readily flexing upon the downstroke of the piston 11 for the inlet of air and instantly closing upon the completion of the downstroke.

The air upon the upstroke of the piston 11 passes forwardly about the edge of the flexible piston disk 21 to the front of the piston and from the cylinder 10 in front of the piston 11 the air passes through a lateral passage 22 in the cylinder base 23 to a vertical outlet passage 24 in a nipple 25 screwed into the base 23, said nipple having a cap 26 receiving a hose 27 to conduct the air to any desired point for use. The passage 24 is controlled by a ball valve 28 in chamber 29 below a screw plug 34 in nipple 25. The plug 34 has an axial bore or air passage 35 and the plug 34 has quartering grooves forming air passages 33 in the underside.

I would state in conclusion that while the illustrated example constitutes a practical embodiment of my invention, I do not limit myself strictly to the exact details herein illustrated, since, manifestly, the same can be considerably varied without departure from the spirit of the invention as defined in the appended claims.

Having thus described my invention, I claim:—

1. A pump of the class described comprising a cylinder, a head on said cylinder formed of spaced inverted cups one below the other, said cups forming an air chamber, and an annular air inlet leading to said chamber, and air hole in the lower cup, and valve means controlling said air hole; together with a plunger in said cylinder and a valve controlled discharge outlet from said cylinder.

2. A pump of the class described comprising a cylinder, a head on said cylinder formed of spaced inverted cups, a spacing means between the tops of the cups thereby forming an air chamber between said cups, a plate below the lower cup, rivets fastening said plates and said cups together, the depending sides of the cups forming an air inlet, said lower cup having an air passage from said air chamber to the cylinder, and valve means controlling said air passage; together with a compressing plunger operating in said cylinder.

JOHN WARWICK HUNTER.