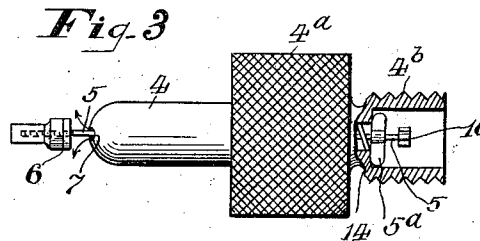
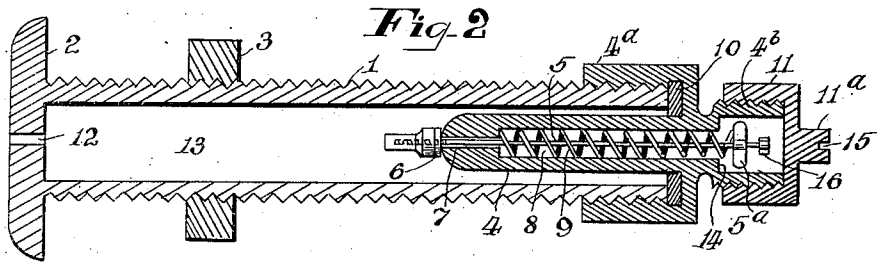
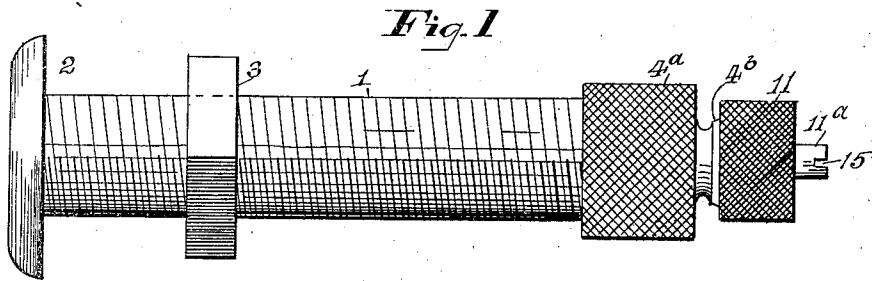


F. M. NEAL.  
AIR VALVE FOR PNEUMATIC TIRES.  
APPLICATION FILED JUNE 15, 1910.

1,012,898.

Patented Dec. 26, 1911.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

FREDERICK M. NEAL, OF BRIDGEPORT, CONNECTICUT.

## AIR-VALVE FOR PNEUMATIC TIRES.

1,012,898.

Specification of Letters Patent.

Patented Dec. 26, 1911.

Application filed June 15, 1910. Serial No. 566,923.

*To all whom it may concern:*

Be it known that I, FREDERICK M. NEAL, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Air-Valves for Pneumatic Tires; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in air valves for pneumatic tires, and it consists in certain details of construction to be more fully set forth in the following specification.

Referring to the drawings: Figure 1 represents the device assembled; Fig. 2 is a central sectional view of Fig. 1; and Fig. 3 is a detail broken view, partly in section, of the valve controller.

Like reference figures indicate like parts throughout the several views.

The exteriorly threaded tube 1 has the usual head portion 2 adapted to be inserted in the interior of a pneumatic tire (not shown), and the usual clamping nut 3 to maintain the tube thereto. The integrally constructed valve controller comprises the elongated valve mounting 4, the interiorly-threaded cap 4<sup>a</sup> and the threaded dust cap end 4<sup>b</sup>.

5 is the valve rod carrying on its inner threaded end the removable valve 6. 7 is a small air passage in the end of the valve mounting through which the valve rod passes, and 8 is a chamber of greater diameter than the passage 7 and adapted to receive the spring 9 located between the inner end of said chamber and the thin wings 5<sup>a</sup> of the valve rod. This spring is adapted to maintain the valve normally against its seat at the exterior of the inner end of the valve mounting, as shown at Fig. 2. The interiorly threaded cap portion of the controller is screwed on to the end of the casing 1 and an air-tight connection between the cap and casing is effected by means of the packing 10.

The dust cap 11 is mounted on the threaded end 4<sup>b</sup> of the controller and it has the projection 11<sup>a</sup> adapted, when the said cap is removed, to engage the end of the valve-rod and force the valve from its seat to partially deflate a tire; but when, as is frequently the case, it is necessary to fully

deflate a tire, this method would occupy too much time, therefore, to quickly and completely exhaust the air from a tire, all that is necessary is to detach the controller entirely from the casing when the air will have free exit through the passage 12 and chamber 13 of the casing.

To inflate a tire, the dust cap is removed and a pump connection attached to the threaded end 4<sup>b</sup> and the pressure of air will force the valve from its seat as shown at Fig. 3. Now, as the spring must necessarily be very light and sensitive, it would be crowded or packed into the bottom of the chamber 8 and thus have a tendency to choke up the narrow passage 7 and obstruct the free passage of air there-through were it not restrained by the wings 5<sup>a</sup> of the rod engaging the shoulder 14 as shown at Fig. 3. These wings are very thin, so as to leave plenty of room for the air to pass and may be formed from the body of the valve rod or secured thereto and at such a position on the rod that will enable the valve to be forced from its seat a distance sufficient to afford a free exit for the air through the opening or port 7 and without choking said port.

The simplicity and utility of the device as above described will be apparent to tire users. It is of frequent occurrence for dirt to lodge on the face of the valve and thus cause a leakage, and it is difficult with some constructions to get at and remove the trouble. Some users of tires inject fluids or semi-fluids into tires to close punctures, which always clog the valve mechanism and thus hinder rapid deflating and inflating; but with the above construction the controller can be instantly removed and the trouble quickly eradicated or a new valve attached without unnecessary delay. To remove the valve all that is necessary is to engage the slotted end 15 of the dust cap with the key 16 at the outer end of the valve rod and thus hold the rod against turning while the valve is screwed or unscrewed from said rod.

Having thus described my invention, what I claim is:

In a valve of the class described, the combination with a tube, and means for attaching the same to a tire, of a valve controller detachably connected to said tube and comprising an elongated valve mounting having an air port in its inner end and an inter-

nal chamber communicating therewith, the  
valve mounting having at its outer end a  
dust-cap extension, a valve rod arranged in  
the chamber of said valve mounting, the  
5 inner end of said rod projecting through  
said air port, and its outer end projecting  
into the dust-cap extension, a removable  
valve screw threaded on the inner projecting  
end of said rod and seating against the ex-  
10 terior of the valve mounting, means for  
limiting the opening movement of said valve,  
a spring associated with the valve rod for  
maintaining said valve normally seated, a

key arranged at the outer extremity of the  
valve rod, and a cap carried by the dust- 15  
cap extension and provided with a slotted  
projection adapted to cooperate with said  
key to hold the valve rod against rotation  
when applying and removing said valve.

In testimony whereof I affix my signature 20  
in presence of two witnesses.

FREDERICK M. NEAL,

Witnesses:

FREDK. H. BECKWITH,  
E. MOSS JACKSON.