No. 616,610. Patented Dec. 27, 1898.

R. L. GIBSON.

VALVE FOR PNEUMATIC TIRES.

(Application filed Mar. 18, 1898.)

(No Model.)

fig. 1.

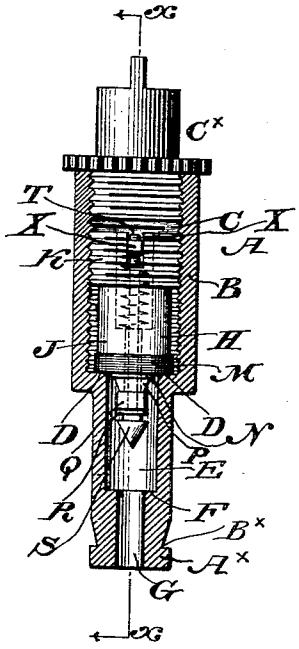


fig. 2.

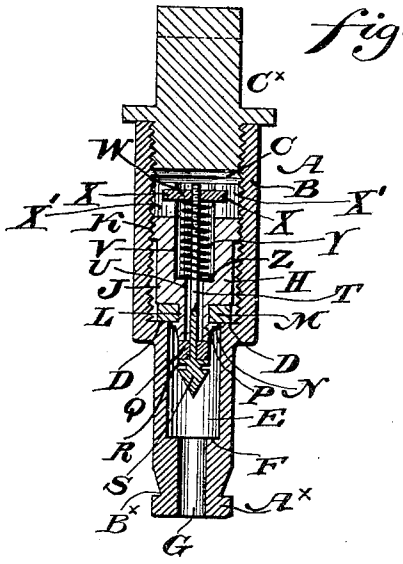


fig. 3.

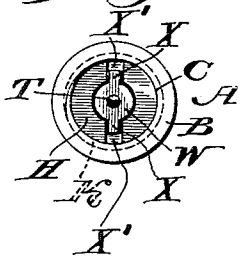


fig. 4.

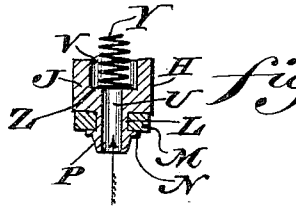


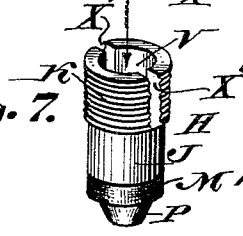
fig. 5.



fig. 6.



fig. 7.



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VALVE FOR PNEUMATIC TIRES.

SPECIFICATION forming part of Letters Patent No. 616,610, dated December 27, 1898.

Application filed March 18, 1898. Serial No. 674,298. (No model.)

To all whom it may concern:

Be it known that I, ROBERT L. GIBSON, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Valves for Pneumatic Tires, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of an improved construction of valve for pneumatic or bicycle tires, the novel features of which will be hereinafter fully set forth, and particularly pointed out in the claims.

Figure 1 represents a longitudinal sectional view of a valve for pneumatic tires embodying my invention, a portion of the valve being shown in elevation. Fig. 2 represents a longitudinal sectional view on line *x x*, Fig. 1. Fig. 3 represents a plan view of Fig. 2 with the cap or closure for the valve-casing removed. Fig. 4 represents a sectional view of the lower portion of the valve-plug and valve-seat, showing the manner of assembling the parts. Fig. 5 represents an elevation of the valve and valve-stem employed, the same being shown in the act of being inserted into the plug seen in Fig. 4. Fig. 6 represents a perspective view of a nut employed in detached position. Fig. 7 represents a perspective view of a hollow plug employed, to which the nut seen in Fig. 6 is applicable.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates a valve for a pneumatic tire, the same consisting of a casing B, which is provided with the chamber or cavity C, which is internally threaded and engaged at its outer portion by the cap or closure $C^{\times}$.

D designates a shoulder or seat located at the lower portion of the chamber C, from which shoulder extends the passage E of reduced diameter, the latter terminating at the shoulder F and having a bore G of still lesser diameter extending therethrough.

H designates a hollow plug normally contained within the valve-casing, said plug having a body portion J, which is of less diameter than the chamber C, the upper portion of said body being provided with screw-threads K, which engage the internal threads of the casing B.

L designates a reduced neck attached to the body J, around which is located the washer or gasket M, which is held in position against said body by means of the shoulder N, from which extends the projection P, the extremity of which latter serves as a valve-seat for the valve Q, which is supported upon the shoulder R of the stem T, the latter being provided with the conical or similarly-shaped head S.

U designates a passage leading from the chamber V of the plug H through the neck L and projection P and having located therein the valve-stem T.

W designates a nut which has a suitable body portion and wings X projecting therefrom, said wings being adapted to engage the walls of the recess X′, located in the upper portion of the plug H, said nut being engaged by the threaded extremity of the stem T. The valve Q is held against its seat by means of the spring Y, which is located in the cup or chamber V of the plug H, one end of said spring bearing upon the shoulder Z or bottom of said chamber, while its other extremity is in contact with the nut W, whereby the valve Q is always normally held against its seat. The lower portion $A^{\times}$ of the valve-casing is provided with a recess $B^{\times}$ for engagement with a tire.

The operation is as follows: The lower portion $A^{\times}$ of the valve-casing is inserted through the rim of the wheel (not shown) and after removing the closure $C^{\times}$ and making the proper connection from the air-pump to the casing B, it being evident that air under pressure will be forced into the chamber C, and thence through the chamber V and passage U against the valve Q, and when the air-pressure is increased sufficiently to overcome the tension of the spring Y the air will pass into the chamber E, and thence through the passage G to the tire. When the desired pressure in the tire has been reached, the connection to the pump can be uncoupled, and the back pressure in the tire and chamber E will automatically seat the valve Q in the

manner indicated in Figs. 1 and 2, said back pressure being assisted by the tension of the spring Y, as is evident.

The manner of assembling the parts, it is thought, will be apparent from Figs. 3 to 7, inclusive, the stem T being inserted in the plug H and the nut W being caused to engage therewith by rotation of said stem, said nut being prevented from rotation by means of the wings X, which latter serve as guides during the reciprocal motion of the stem T and the valve Q, which occurs during the act of inflating the tire. The plug H is next inserted into the casing A and screwed into place until a tight joint is effected by the contact of the gasket M with the shoulder D.

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

1. In a valve for pneumatic tires, a casing having a chamber therein, a plug seated in said chamber and having a longitudinal passage therethrough, a valve-stem located in said passage, a valve at the inner end of said stem, adapted to seat against the inner end of said plug, means located above said plug for causing said valve to normally remain seated and a nut on the outer end of said stem, said nut being held against turning by said plug.

2. In a valve for pneumatic tires, a casing having a chamber therein, a plug seated in said chamber and having a longitudinal passage therethrough, a valve-stem extended through said passage, a valve at the inner end of said stem, a head attached to said stem and having a gasket thereon, said gasket serving as a valve, a packing device intermediate said plug and casing, a nut on the outer end of said stem, said nut being held against turning by said plug, and a spring intermediate said nut and plug.

3. In a valve for pneumatic tires, a casing having a chamber therein, a hollow plug seated in said chamber, an opening leading from said hollow plug into a chamber in the lower portion of said casing, a valve, a stem projecting upwardly through a passage in said plug, a nut on said stem, said nut being held from turning by said plug and a spring located in the cavity in said plug and bearing against said nut.

4. In a valve for pneumatic tires, a casing provided with internal screw-threads, a closure therefor, a plug having a cavity therein located in the said casing, a passage through said plug, a washer held between the lower portion of said plug, and a shoulder in said casing, a valve-stem located in said passage, a valve carried by said stem and provided with a suitable seat, a nut engaging the threaded portion of said stem, a spring located in the cavity in said plug and bearing against said nut, the latter having wings adapted to engage recesses in the walls of said plug.

5. In a valve for pneumatic tires, a casing having a chamber therein, a hollow plug seated in said chamber, a passage through said plug, the lower portion of the latter, having a gasket adjacent thereto, said gasket being seated on a shoulder in said casing, a valve-stem located in said passage, and carrying a valve, a nut engaging an end of said stem, a spring intermediate said nut and seated in said plug, means for preventing said nut from turning and a passage leading from a chamber below said valve through the casing of the latter.

6. In a valve for pneumatic tires, a casing, having a chamber therein, a plug seated in said chamber, and having a longitudinal passage therethrough, a valve-stem located in said passage, a valve at the inner end of said stem, adapted to seat against the inner end of said plug, means located above said plug for causing said valve to normally remain seated, a nut on the outer end of said stem, said nut being held against turning by said plug, and a closure for the outer portion of said casing.

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