

No. 675,990.

Patented June 11, 1901.

L. WAY.

STOP VALVE FOR PNEUMATIC TIRES OR THE LIKE.

(Application filed July 6, 1900.)

(No Model.)

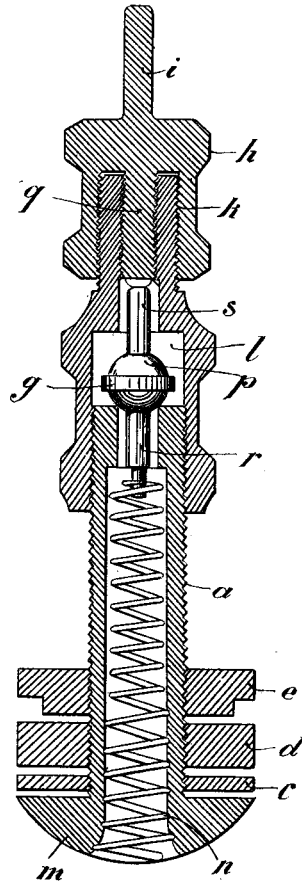


Fig: 1.

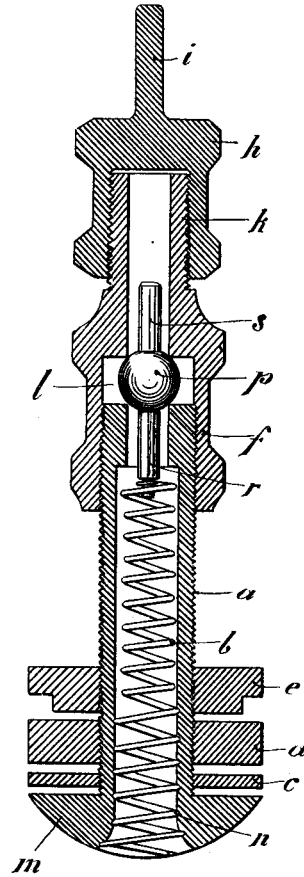


Fig: 2.

Witnesses
Thos. K. Patrick
L. Monte

Inventor
Luigi Way
by Alexander & Co
Attorneys

UNITED STATES PATENT OFFICE.

LUIGI WAY, OF TURIN, ITALY.

STOP-VALVE FOR PNEUMATIC TIRES OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 675,990, dated June 11, 1901.

Application filed July 6, 1900. Serial No. 22,677. (No model.)

To all whom it may concern:

Be it known that I, LUIGI WAY, a subject of the King of Italy, residing at Turin, Italy, have invented a new and useful Improvement in Stop-Valves for Pneumatic Tires or the Like; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a new stop-valve for pneumatic tires and the like in which the confinement of the compressed air is obtained by means of a movable plug-valve with metallic seats with or without packings.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 shows a longitudinal section of the valve-case, plug-valve, and spring according to my invention. Fig. 2 shows another form of the device.

Similar letters of reference indicate corresponding parts in both views.

Referring to Fig. 1, *a* is a metallic tube screw-threaded externally and ending with a mushroom-shaped head *m*. The bore of the tube is contracted at its upper end and widens toward the lower end, where the spiral spring *b* with its lower and enlarged part engages the worm-groove *n*, cut in the walls of the tube itself. The nuts *c d e* on the tube serve to fasten the valve-casing to the pneumatic tire.

f is a coupling-piece screwed tightly on the tube *a*, whereof the inner portion *l* of said piece *f* forms a chamber for the plug-valve *p*, while its upper part *k*, screw-threaded internally and externally, serves to unite the same with the stopper *h*, provided in its interior with a screw-threaded pin *q*.

The valve itself consists in a ball surrounded by a rim *g* to augment its surface and provided with two small rods *r* and *s*, of which the former projects through the contracted bore of the tube at its upper end and bears on the top of the spiral spring *b*, while the latter is adapted to abut against the pin *q* of the stopper *h*. Said stopper is also provided with a tailpiece *i*, which serves when the stopper is taken off to push downward the rod *s* in the tube *k*, so as to unseat the plug-valve *p* and to allow the air to escape from the tire.

This new valve works in the following way: After the device has been secured in the usual way on the tire the stopper *h* is removed and the air is pumped into the tire. The spring normally keeps the valve raised off its lower seat on the upper end of the tube *a*, so as to admit the air to the tire. When the tire is sufficiently inflated and the pump taken off, the plug-valve *p* will be pressed against the upper seat of its chamber by the compressed air inside the tire. By screwing down the stopper *h* the plug-valve is forced against its lower seat, so as to form a perfectly air-tight closure. The stopper *h* serves also to protect the whole device against the road-dust which might otherwise penetrate the valve-chamber *l* and disturb the regular functions of the valve.

The valve-seats on which rests the ball *p* consist of the circular edges of the tube *a* and of the coupling-piece *f*, which notwithstanding their small surface of contact are quite sufficient to keep the valve air-tight.

From this it will be seen that my device works without any packings, which are liable to get worn out and permit the escape of the air. Naturally I do not absolutely exclude the use of packings in my valve without altering in any way its mode of action.

Fig. 2 shows another form of my device. In this the plug-valve *p* is deprived of the rim *g*, which can be omitted without any inconvenience. The chamber *l* is smaller, so that the screwing down of the coupling-piece *f* is sufficient to clamp the ball-valve *p* between its upper and lower seats, as shown. By unscrewing the coupling-piece a little the ball-valve *p*, pushed upward by the spring *b*, leaves its lower seat, while it remains in contact with its upper seat. In this position the valve can work freely under the action of the pump. As in this arrangement the pin *q* of Fig. 1 is not necessary, it is omitted, leaving only the small rod *s*, which serves as a guide to the plug-valve *p*. As for the rest, the device shown in Fig. 2 works in the same way and with the same effects as the one shown in Fig. 1.

The advantages obtained with this new valve are the following: (a) No packing of any kind is necessary, and the mentioning of

the fact that packings might be used, if desired, is only to show that the valve is so constructed that a packing can be used, if desired, and to avoid the possibility of any one else claiming my invention as his own by applying packings on the valve. (b) By the peculiar, easy, and safe method of fixing the spiral spring *b* in the tube *a*, the usual stop-taps, soldering, and contortions of the wire are avoided, rendering at the same time the removal of the spring very easy. (c) The valve can be entirely taken to pieces for repairs. (d) Its construction is easy, and its cost is much inferior to any other similar valve on the market. (e) Being deprived of any packing, no renewing of this latter is

necessary. (f) Its working is simple and easily to be understood.

What I claim is—

A valve for pneumatic tires, consisting of a tubular body having a worm-groove therein, a helical spring having an enlarged portion engaging with said groove, a ball-valve resting on said spring, and a coupling-piece forming a chamber for the valve.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

LUIGI WAY.

Witnesses:

INGRE. LETTERIO LABOCETTO,
A. EGGENSCHWILER.