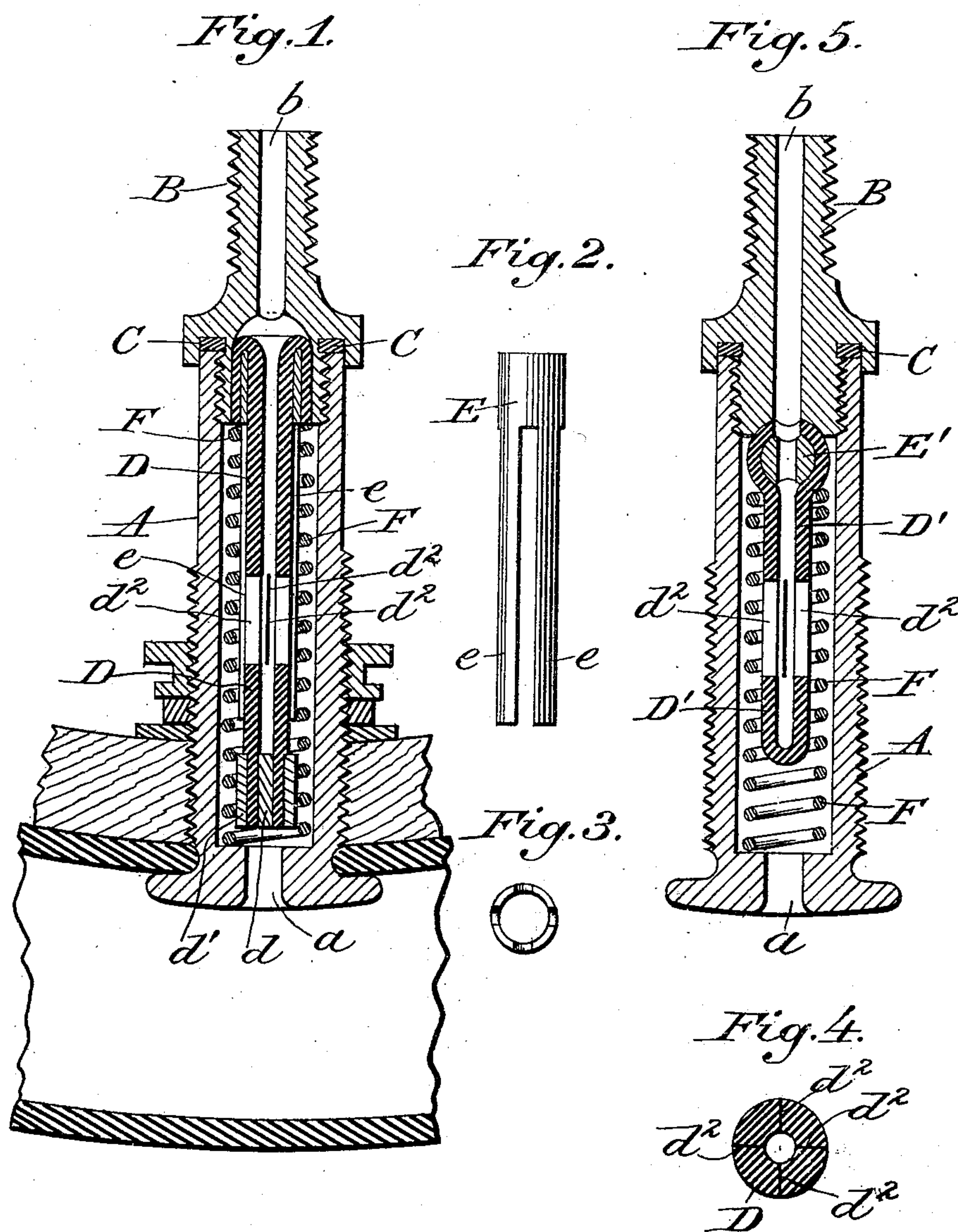


(No Model.)

J. MOHS.
VALVE FOR PNEUMATIC TIRES.

No. 606,069.

Patented June 21, 1898.



Witnesses
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UNITED STATES PATENT OFFICE.

JULIUS MOHS, OF BRANDENBURG-ON-THE-HAVEL, GERMANY.

VALVE FOR PNEUMATIC TIRES.

SPECIFICATION forming part of Letters Patent No. 606,069, dated June 21, 1898.

Application filed August 16, 1897. Serial No. 648,453. (No model.)

To all whom it may concern:

Be it known that I, JULIUS MOHS, a citizen of the Empire of Germany, residing at Brandenburg-on-the-Havel, in the Empire of Germany, have invented certain new and useful Improvements in 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 valve mechanism, and particularly to a valve mechanism for pneumatic tires.

The objects of my invention are to provide a simple and efficient valve mechanism in which the valve proper may be readily removed or inserted and when worn out may be replaced at a small cost and without especial skill.

With these objects and some others in view, which will be obvious to those skilled in the art, my invention consists in the features, details of construction, and combination of parts which will first be described in connection with the accompanying drawings and then particularly pointed out in the claims.

In the drawings, Figure 1 is a longitudinal central section through a valve mechanism embodying my invention; Fig. 2, a detail elevation of the external slotted sleeve; Fig. 3, an end elevation of the same; Fig. 4, a transverse section of the elastic tube, and Fig. 5 a longitudinal section of a modified construction embodying my invention.

Referring to Figs. 1 to 4 of the drawings, A is a valve-casing, which in the form shown is arranged to be connected to a pneumatic tire in the usual way, the outer end of this casing being provided with a nipple B, screw-threaded into the casing, as shown, a packing-washer C being inserted between the two parts in order to form an air-tight joint. The nipple is provided with an air-inlet *b*, which ends at the inner end of the nipple in a cup-shaped enlargement.

D is a tube of elastic material, preferably india-rubber, closed at its inner end in any suitable manner, as by a plug *d*, inserted within the lower end of the tube and held in place by a collar *d'* on the exterior of the lower end of said tube. The tube D is provided intermediate its ends with a series of slots *d*², ar-

ranged in a zone and adapted to allow the escape of air from the interior of the tube to its exterior.

Suitable means independent of the tube are employed for producing an enlargement at the upper end of the tube, thus avoiding the necessity of specially constructing the tube with an integral enlargement. In Fig. 1 I have shown said enlargement produced by placing an external ring E around the tube and then turning the end of the elastic tube inside out or backward on itself outside the said ring. Furthermore, the said ring E is preferably provided with a series of elastic projections or tongues *e*, extending in contact with the exterior of the tube and between the slots *d*². That end of the tube which is provided with the enlargement is inserted into the cup-shaped recess in the nipple, being preferably held against the nipple in a yielding manner by a spiral spring F, bearing against the enlarged portion of the tube and against the bottom of the interior of the casing. This spring may be omitted, if desired, in the construction shown in Fig. 1, as the cup-shaped recess in the nipple is deep enough to allow the entire enlarged portion of the tube to enter it, the tube thus being held by friction, owing to the elasticity of the enlarged portion of the tube.

Instead of producing the enlargement on the end of the tube D by the means shown in Fig. 1 I may employ other means—for instance, such as shown in Fig. 5, wherein the tube D' has its outer end distended by a perforate body E' of larger diameter than the interior of the tube and inserted within it. The perforate body in the present instance is made in the form of a ball having a hole through its axis. In this construction the cup-shaped recess in the inner end of the nipple may be made shallow, if desired.

The operation of the device is as follows: Compressed air being forced through the nipple B, the tube D or D' becomes inflated, thus causing the slits *d*² to open, whereby the air can escape to the interior of the casing A and thence to the interior of the tire, an opening *a* being provided at the inner end of the casing for this purpose. The tongues or perforations *e* being elastic are spread apart when the tube D is inflated. When the supply of

compressed air is stopped, the tube D or D', owing to its elasticity, returns to its normal condition, being assisted in this by the tongues *e* when these are employed, thereby closing 5 the slits and preventing the escape of the air which has entered the tire. The pressure of this air holds the slits tightly closed. The tongues *e*, resting in close contact with the tube D in its normal condition, serve to prevent 10 the air in the tire from forcing inward one side of the tube more than the other, which if it occurred might cause some of the slits to open and allow the escape of air.

When the valve formed by the tube D or 15 D' becomes useless from wear, it may readily be removed by taking off the nipple B, the tube being projected by the spring F from the casing, whereby it may easily be grasped and withdrawn, its attached parts separated, 20 a new tube connected to said parts, and the whole replaced, the nipple being then screwed into the casing.

The construction shown in Fig. 1 is especially adapted for bicycle use, since an ordinary rubber tubing can be used for the tube 25 D, which tubing can usually be readily obtained on the market, thereby avoiding the necessity of sending to a factory for the tube, as is necessary in those forms which require 30 a special construction of the tube itself.

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

1. In a valve mechanism, the combination, 35 with a valve-casing and a nipple secured therein, of an elastic valve-tube, and a spring engaging the valve-tube at its end adjacent the nipple and arranged to hold said tube against the nipple, substantially as described.

2. In a valve mechanism, the combination, 40 with an elastic tube closed at one end and provided intermediate its ends with a series of slits, of an external ring surrounding the tube and provided with yielding prolongations extending between the slits in the tube, 45 substantially as described.

3. In a valve mechanism, the combination with a valve-casing, and a nipple secured therein, of an elastic tube and means independent of the tube for forming an enlargement 50 on one end of the tube, and a spring engaging the enlargement and arranged to hold the tube in close contact with the nipple.

4. In a valve mechanism, the combination with a valve-casing, and a nipple secured 55 therein and provided with a cup-shaped recess at the inner end, of an elastic tube and means independent of the tube for forming an enlargement at one end of the tube, said enlarged end being in close contact with the 60 nipple and entering the cup-shaped recess.

5. In a valve mechanism, the combination with a valve-casing, and a nipple secured therein, of an elastic tube closed at one end and provided intermediate its ends with a series 65 of slits, an external ring surrounding the tube and provided with yielding prolongations extending between the slits in the tube, and a spring engaging the tube at its end adjacent to the nipple and arranged to hold said 70 tube against the nipple.

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

JULIUS MOHS.

Witnesses:

WM. HAUPT,
HENRY HASPER.