

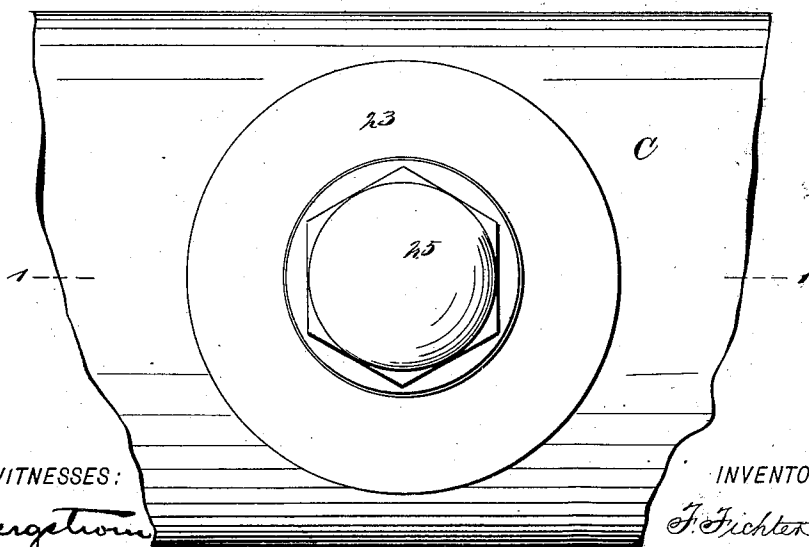
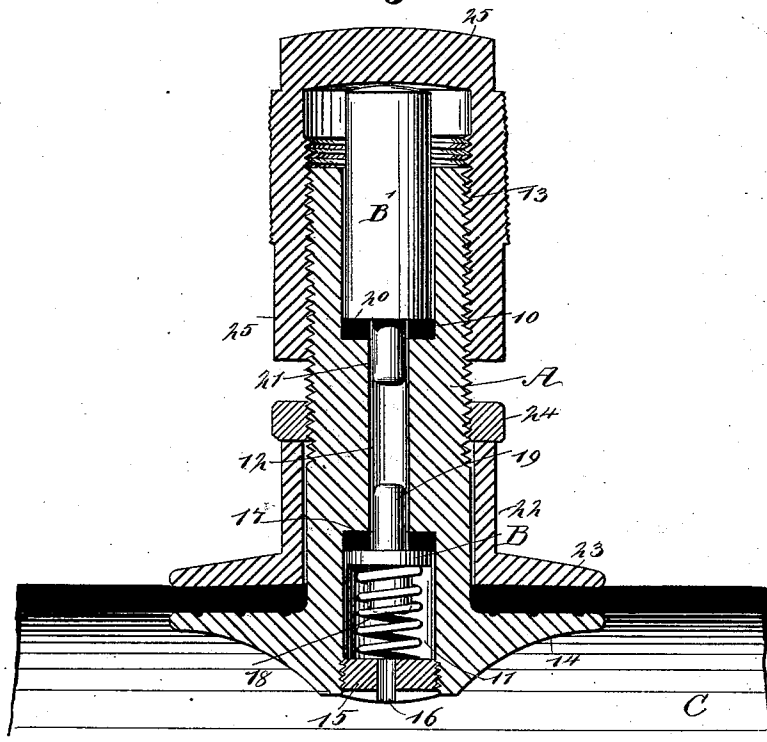
(No Model.)

F. FICHTER.  
VALVE.

No. 509,211.

Patented Nov. 21, 1893.

Fig. 1



WITNESSES:

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C. Sedgwick

INVENTOR

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ATTORNEYS.

Fig. 2

# UNITED STATES PATENT OFFICE.

FREDRICK FICHTER, OF ROCKAWAY, NEW JERSEY.

## VALVE.

SPECIFICATION forming part of Letters Patent No. 509,211, dated November 21, 1893.

Application filed April 29, 1893. Serial No. 472,363. (No model.)

### *To all whom it may concern:*

Be it known that I, FREDRICK FICHTER, of Rockaway, in the county of Morris and State of New Jersey, have invented a new and useful Valve for Inflated Cushions, Pneumatic Tires, and Like Articles, of which the following is a full, clear, and exact description.

My invention relates to an improvement in valves, and has for its object to provide a valve especially adapted for use in connection with inflated cushions, pneumatic tires and articles of similar construction.

A further object of the invention is to provide a valve which will be exceedingly simple and durable in its construction, and which will also be capable of convenient and ready application.

Another object of the invention is to provide such a valve with double cushions, and likewise to provide a means whereby within one casing two valves will be made to act in conjunction, both valves being employed when the article to which they are applied is inflated, one of them being removed when inflation is to take place.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a central vertical section through the improved valve, illustrating its application to a pneumatic tire, the said section being taken practically on the line 1—1 of Fig. 2; and Fig. 2 is an outer face view of the valve, and likewise illustrates a portion of the tire to which the valve is attached.

In carrying out the invention a tubular body A, is employed, which body is provided with an upper interior chamber 10, a lower interior chamber 11 and a central chamber 12 of less diameter than the upper and lower chambers, serving to connect the two. The upper and lower chambers are ordinarily made of the same diameter, but their diameters may vary if in practice it is found desirable. The exterior of the tubular body or casing is provided with an exterior thread 13,

extending preferably from a point below its center to its upper or outer end, but the thread may be made to terminate at any desired point.

At the lower end of the body or casing a clamping head 14, is produced, which clamping head is integral with the casing or body, and the lower chamber 11 of the body is continued through the head. The upper or outer face of the clamping head 14, is preferably made flat, and may be provided with a series of grooves or channels, as shown in Fig. 1. The wall of the chamber 11 at its lower end is threaded to receive a block 15, which serves to cap the lower end of the said chamber, but the block 15, is provided with a central opening 16, extending through it from face to face, and the outer face of the block may be fitted with a slot to receive a screw driver or like tool. A valve B, is located in the lower chamber 11, and the valve is normally held against a cushion 17, located at the upper end of the chamber 11, by means of a spring 18 or its equivalent, the spring having a bearing against the under face of the valve, and likewise against the block 15. The valve B, is provided with a stem 19, which extends upward into the channel 12, and serves as a guide for the valve.

Within the upper chamber 10 a second valve B', is located. This second valve is quite long,—in fact fills the entire chamber, and it is made somewhat longer than the chamber in order that its upper portion may be projected beyond the upper edge of the body or casing. The upper valve B', rests normally upon a cushion 20, located in the bottom of the chamber 10, and the valve B', is provided with a guide stem 21, extending downward within the channel or chamber 12. The upper face of the valve B', is ordinarily made rounding or cylindrical, and it may be given any desired contour. A sleeve 22, is loosely mounted upon the body of the casing, and the sleeve is provided at its lower end with an integral clamping head 23, which is preferably made substantially a counterpart of the lower clamping head 14; but instead of the upper face of the clamping head 13 being straight its lower face is made straight. The two clamping heads are held in engagement with opposite sides of the article to be

clamped, by means of a lock nut 24, which is screwed upon the outer surface of the body or casing to a firm engagement with the upper edge of the sleeve 22. The construction of the entire valve is completed by the addition of a cap 25, which cap is secured upon the upper portion of the body or casing; and the inner upper surface of the cap rests upon the upper surface of the upper valve B'.

10 If for example it is desired to attach the valve to a pneumatic tire C, an aperture of suitable size is made in the tire, and the clamping head 14 of the valve casing is introduced into the tire through the aperture, and the upper face of the clamp is made to engage with the inner surface of the tire; the lock nut is then screwed downward until the outer clamp 23 engages firmly with the outer face of the tire, as shown in Fig. 1. In this manner the valve is firmly secured to the tire. If the tire is to be inflated the upper valve B', is removed after the upper cap 25, has been taken off. The nozzle of the air pump employed is introduced into the central chamber or channel 12, and the pressure of the air forced into the said channel or chamber will force downward the lower valve B, and permit the air to enter the tire through the lower opening 16 in the lower cap of the casing. After the tire has been fully inflated and the pump is withdrawn the valve will automatically seat itself through the medium of the spring 18, and will serve effectually as a check, preventing the egress of the air; but in order that there will not be any escape of air in the event the lower valve B should not properly work, the upper valve B' is placed in its chamber and the cap is screwed upon the casing until the upper valve is pressed downward by the cap upon its cushion 20. In this manner a perfect valve is constructed, capable of being conveniently employed for the introduction of air into the pneumatic tire, or a cushion to be inflated, and when the valve is closed an escape of air through the valve is rendered impossible.

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

50 1. In a valve for the purpose described, a valve casing provided with chambers at its ends extending through its ends, and a channel between the chambers, and independent valves located in each chamber, the valve in the upper chamber extending beyond the casing, cushioned seats for the valves, and a cap removably located upon the casing and exerting pressure upon the upper or outer valve, as and for the purpose set forth.

60 2. In a valve of the character described, a casing provided with a chamber at each end, the inner chamber being closed at the inner end of the casing by an apertured cap, a

spring-controlled valve located in the inner chamber, a second valve located in the upper or outer chamber and extending beyond the corresponding end of the casing, cushions against which the valves seat, and a removable cap located upon the upper or outer end of the casing and exerting downward or inward pressure upon the outer valve, as and for the purpose set forth.

3. In a valve of the character described, the combination, with a casing provided with a chamber in its inner end and likewise one at its outer end, a spring-controlled valve located within the inner chamber and having guided movement in the inner chamber, and a gravity valve located in the outer chamber, having likewise guided movement in the casing, both of the valves being provided with cushioned seats, of a cap removably located upon the casing and having bearing upon the outer valve, exerting inward pressure thereon, as and for the purpose set forth.

4. In a valve for the purpose set forth, the combination, with a casing provided with a chamber at its lower end, a cap normally closing said chamber and provided with an aperture extending through it, the said casing being likewise provided with a clamping head at its inner end and a chamber at its outer end, of a spring-pressed valve located within the inner chamber, a gravity valve located within the outer chamber, a sleeve loosely mounted upon the casing and provided with a clamping head opposed to that upon the casing, a lock nut engaging with the sleeve of the outer clamping head, and a cap removably located upon the casing and having bearing against the outer valve, as and for the purpose set forth.

5. A valve attachment comprising a valve casing having a through bore or passage, and communicating valve chambers, the inner end of the inner chamber being closed by an adjustable block or plug, a valve in such inner chamber, a spring abutting at one end against said valve, and at its opposite end against said adjustable plug and a second valve in the other valve chamber at the outer end of the casing, substantially as described.

6. A valve attachment comprising a casing having communicating chambers at its ends, and extending through both ends, forming a through passage or bore in the casing, an outwardly closing valve in the inner chamber, an independent inwardly closing valve in the outer chamber, and a removable cap exerting pressure on the latter valve, substantially as described.

FREDRICK FICHTER.

Witnesses:

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JOHN D. TIGAR.