

J. V. CRONE.
VALVE CAP.

APPLICATION FILED JUNE 21, 1904.

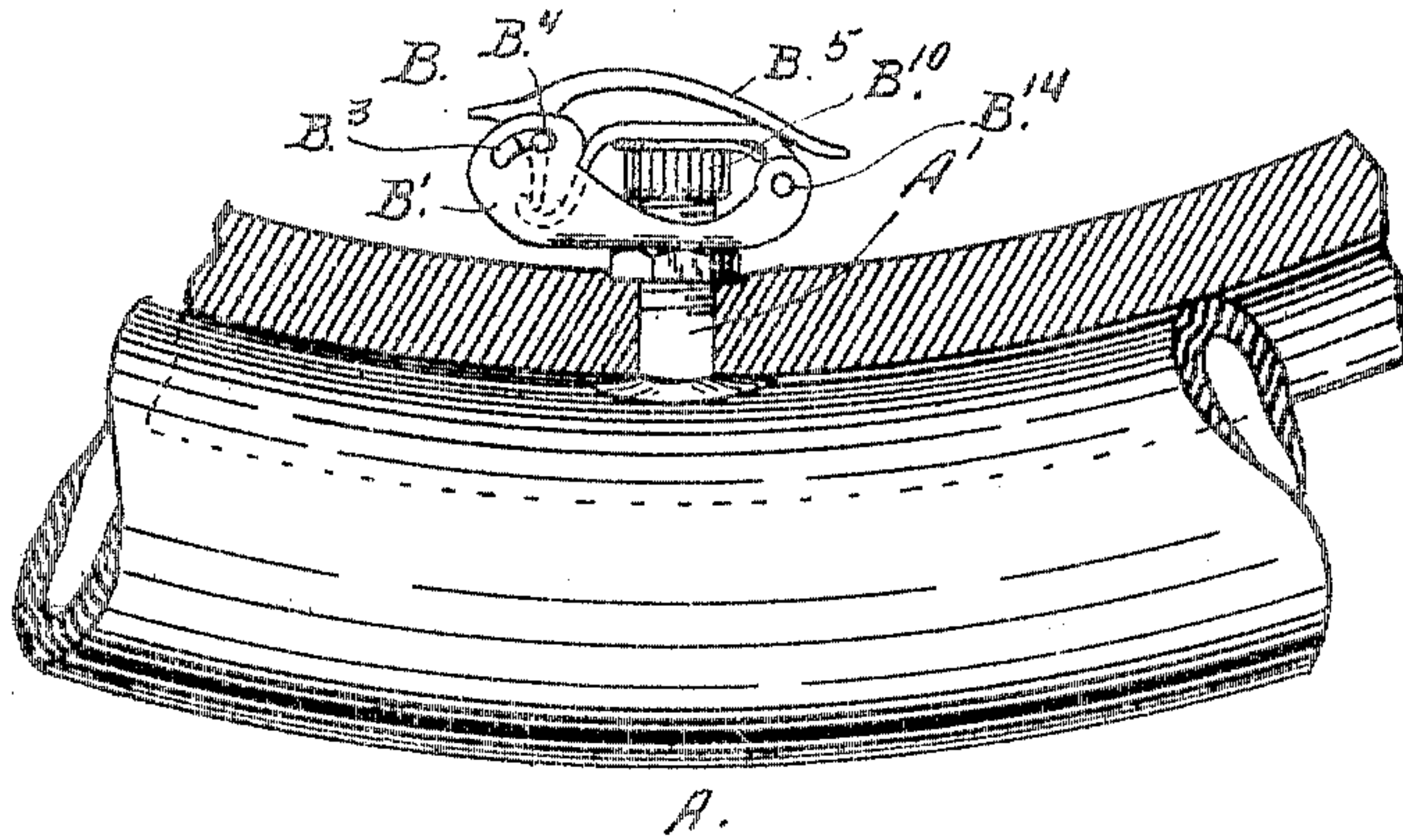


Fig. 1.

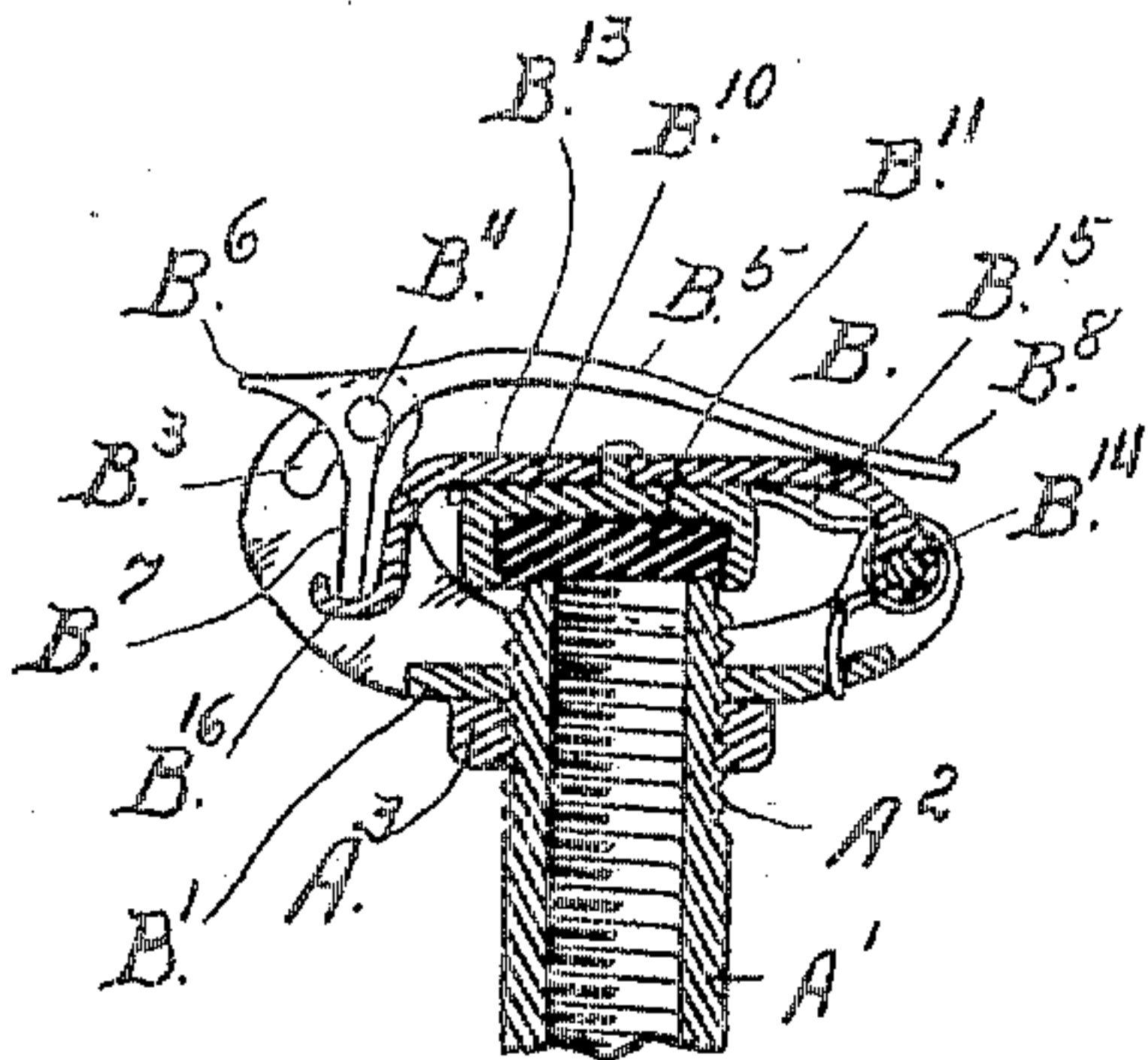


Fig. 2.

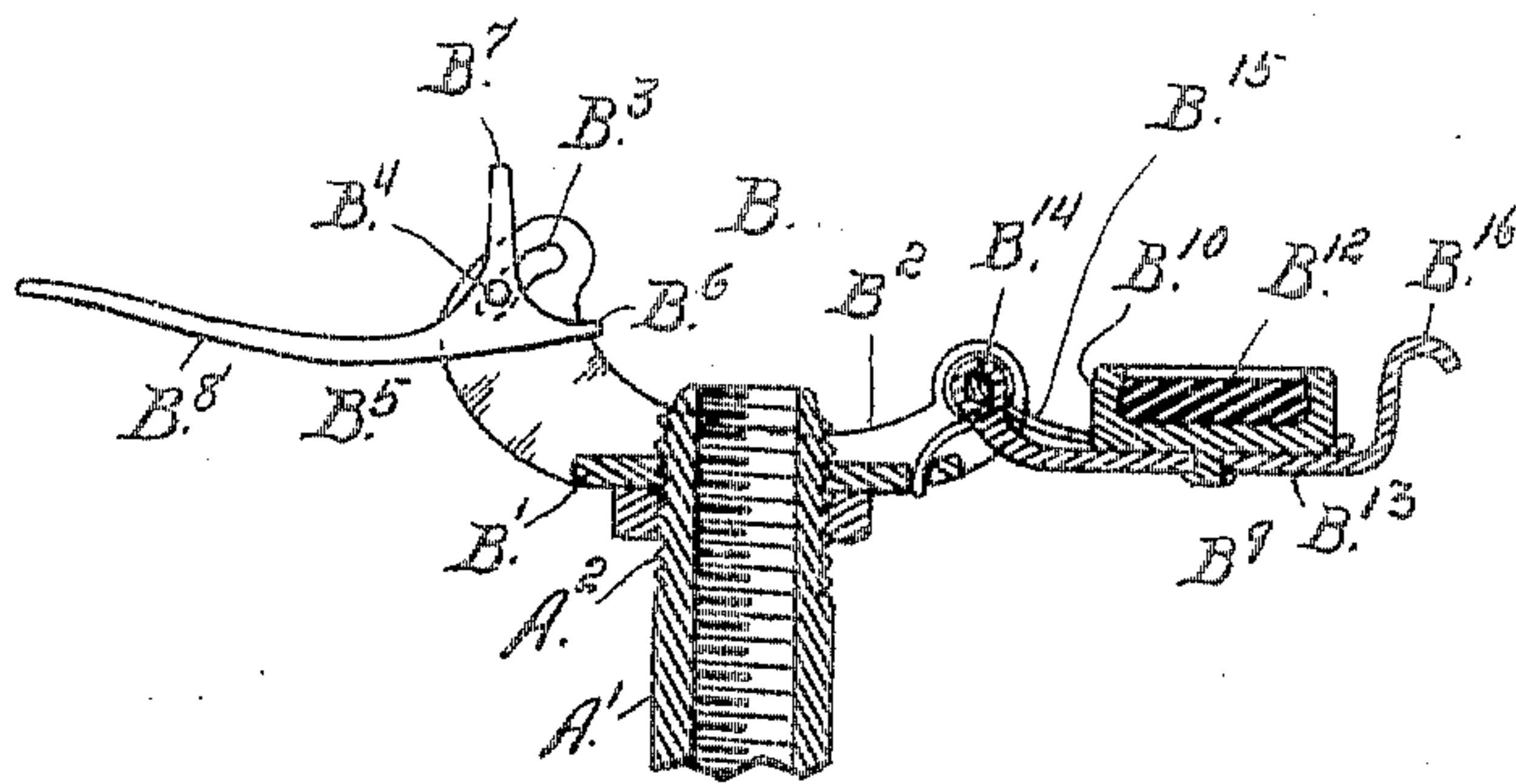


Fig. 3.

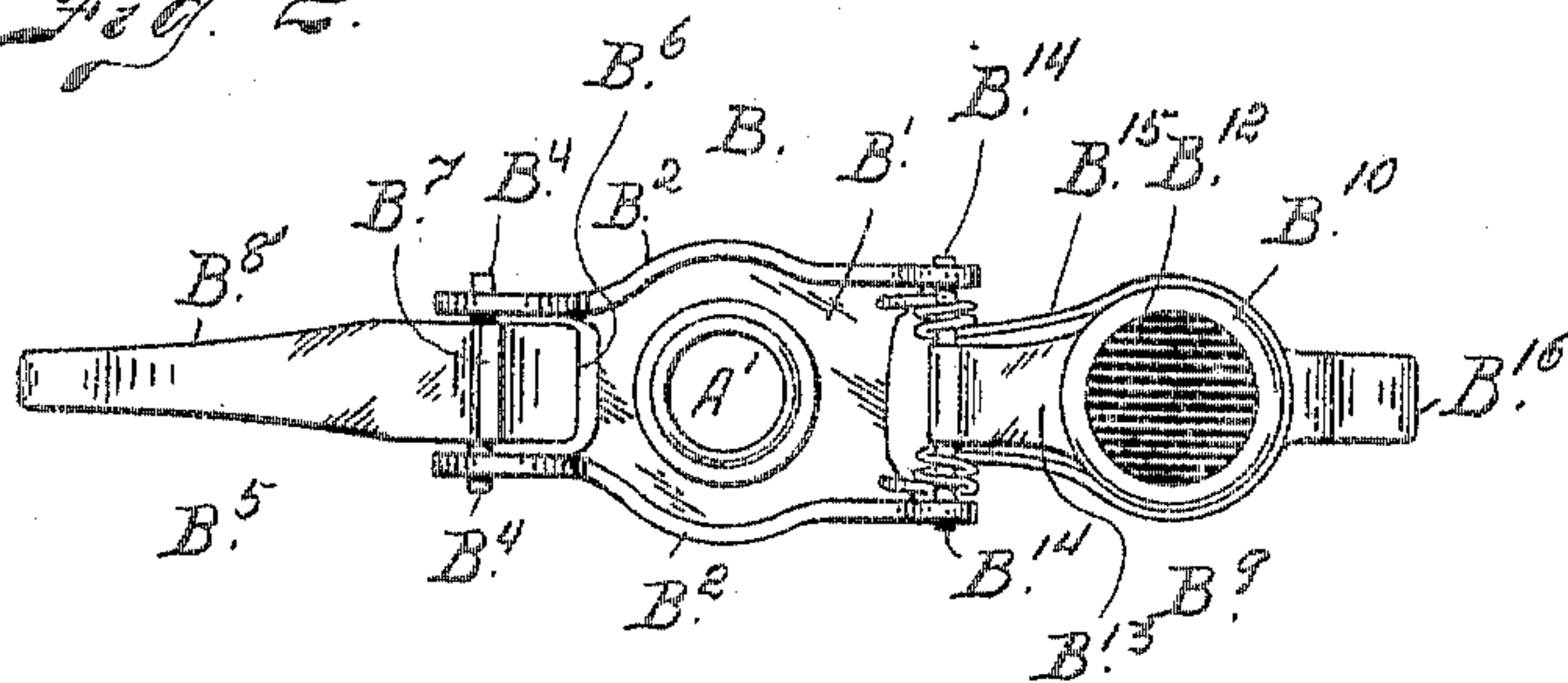


Fig. 4.

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JOHN V. CRONE, OF GREELEY, COLORADO.

VALVE-CAP.

SPECIFICATION forming part of Letters Patent No. 794,082, dated July 4, 1905.

Application filed June 21, 1904. Serial No. 213,497.

To all whom it may concern:

Be it known that I, JOHN V. CRONE, a citizen of the United States, residing at Greeley, in the county of Weld and State of Colorado, have invented certain new and useful Improvements in Valve-Caps; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in valve-caps, and is more especially intended for use in connection with the check-valves of pneumatic tires whether used on bicycles, automobiles, or other velocipedes or vehicles.

My object is to provide a cap adapted to close the opening in the stem of the valve, the said cap being adapted to be applied and removed or opened and closed without the slow process of screwing or unscrewing a cap, as in the old style of cap used in connection with valves of this class.

My improved device consists of a body part adapted to be screwed upon the stem of the valve, and thus secured permanently in place, and two members pivotally connected with the body part, one of the said members consisting of the cap proper, which when released is adapted to be opened by a spring connected therewith, while the other member consists of a locking-lever fulcrumed on the body of the device and adapted to be thrown over the cap, whereby the latter is locked in place. As soon as this lever is raised and the cap released the spring will open the latter automatically.

Having briefly outlined my improved construction and its function, I will proceed to describe the same in detail, reference being made to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a side elevation of my improved device shown applied to the tubular valve-stem of an automatic tire, the rim of the tire being sectionized where the valve-stem passes therethrough. Fig. 2 is a sectional view of the device, the valve-

stem being partly broken away and the parts shown on a larger scale, the cap being closed. Fig. 3 is a similar view showing the open position of the cap. Fig. 4 is a top view of the same.

The same reference characters indicate the same parts in all the views.

Let A designate a tire provided with a valve-stem A', which is of ordinary construction. As shown in the drawings, the upper part of the valve-stem is exteriorly threaded, as shown at A², a lock-nut A³ being threaded thereon and located a suitable distance from the top of the tube to allow my improved device to be applied thereto above the nut, which serves to lock the device in place.

Let B designate my improved device considered in its entirety and composed of a flat part B', provided with a threaded opening adapted to receive the stem A' of the valve-tube. The plate B' is provided with side pieces B², in one extremity of which are formed slots B³, which are entered by projections B⁴, formed on opposite sides of the lever B⁵. This lever is provided with three arms B⁶, B⁷, and B⁸. The arm B⁸ is the manipulating-arm, the arm B⁷ the locking-arm, and the arm B⁶ the part which is engaged by a portion of the cap when the latter is thrown to the closed position. The arms B⁶ and B⁸ are substantially in line with each other, while the arm B⁷ extends approximately at right angles to the direction of the other arms. The cap B⁹ consists of the cap proper, B¹⁰, which is cup-shaped and provided with a packing B¹² of rubber or other suitable material adapted to make a tight joint under pressure between the cap and the outer extremity of the tube. This cap is connected with an arm B¹³, the latter being pivotally attached to the extremities of the parts B² remote from the connection of the lever B⁵. As shown in the drawings, the arm B¹³ is provided with pins B¹⁴, projecting in opposite directions and engaging openings in the adjacent extremities of the parts B². A spring B¹⁵ is passed around the cap proper, and its extremities are coiled around the pins B¹⁴ in such a way as to have a tendency to throw the cap to the open position when it is re-

leased. The arm B¹³ is provided with a projection B¹⁶ remote from its pivoted extremity and adapted to engage the arm B⁶ of the lever during the closing operation of the cap and adapted to be engaged by the arm B⁷ of the lever when the latter is in the locking position. After coiling the spring B¹⁵ around the projections B¹⁴ the extremities of the spring are connected with the part B¹ of the device, as shown in Figs. 2 and 3 of the drawings.

Assuming that the device is open, as shown in Fig. 3 of the drawings, if it is desired to close the same the cap B⁹ is thrown over, so that the packing B¹² covers the top of the tube, and as the cap is thrown into place the part B¹⁶ strikes the part B⁶ and partly raises the arm B⁸ of the lever, which is then thrown over toward the right, whereby its arm B⁷ is made to engage the part B¹⁶, which is hook-shaped. The movement of the lever-arm B⁸ is continued until the arm B⁷ passes what may be termed the "dead-center" position, whereby the tendency of the lever is to hold the cap in place. Now if it is desired to open the cap it is only necessary to lift the arm B⁸, when the spring B¹⁵ will open the cap, as heretofore explained. As the lever B⁸ is thrown to the locking position its projections B⁴ travel in the slots B³ from one extremity of said slots to the other in a manner that will be readily understood. The hook-shaped extremity B¹⁶ of the arm B¹³ acts as a stop to prevent the movement of the lever-arm B⁷. The projections B⁴ then travel forwardly or toward the right, referring to Fig. 2, until they reach the forward extremities of the slots B³. The arm B⁷ has then been thrown past the dead-center position, as heretofore explained.

Having thus described my invention, what I claim is—

1. In a valve-cap, the combination of a body part adapted to be connected with a hollow valve-stem, a spring-actuated cap pivotally connected with the body part and having a tendency to assume the open position, and a locking-lever mounted on the body part and adapted when thrown to the locking position to hold the cap in the closed position, the body part having a curved slot, and the lever having a lateral projection engaging said slot and adapted to travel therein for the purpose set forth.

2. In a device of the class described, the combination of a slotted body part adapted to be connected with a tubular valve-stem, a cap pivotally connected with the body of the device, a spring having a tendency to hold the cap in the open position, a lever having a lateral projection intermediate its extremities, said projection engaging the slot of the body part and traveling therein for the purpose set forth.

3. In a device of the class described, the

combination with a tubular valve-stem, of a body part connected therewith, the body part having slotted ears, a cap connected with the body part, a locking-lever located between the ears of the body part and having projections intermediate its extremities engaging the slots of the said ears.

4. The combination with a tubular stem, of a body part adapted to be secured to the stem and slotted, a cap pivotally connected with the body part opposite the slotted portion, a lever mounted on the body part and having a projection intermediate its extremities engaging the slot of the body part, said lever being adapted to hold the cap in the closed position, the lever and the cap moving in opposite directions during their opening action.

5. The combination with a device to be closed, of a part connected with the open extremity thereof, a cap pivotally connected with the said part and adapted to close the opening in the device, and a locking-lever mounted on the said part on the opposite side of the device from the connection of the cap, the said part being slotted and the lever having a lateral projection to engage the slot, the locking-lever being adapted to hold the cap in the closed position.

6. The combination with a device to be closed, of a body part connected with the device, a cap pivotally mounted on the body part adjacent the device and having a hook remote from its pivoted portion, a lever having projections intermediate its extremities, said projections engaging slots formed in the body part, the said lever being provided with a locking-arm adapted to engage the hook of the cap whereby the latter is locked in the closed position when the manipulating-arm of the lever is thrown to the position above the cap, the projections of the lever traveling in the slots of the body part for the purpose set forth.

7. In a device of the class described, the combination with a device to be closed, of a plate threaded thereon, a nut forming an adjustable stop for the plate, the latter having oppositely-located ears, a cap pivoted to the ears on one side of the plate and having a hook-shaped part opposite the pivot, the other ears being slotted, a triple-armed lever having lateral projections engaging the slots of the said ears, two arms of the lever being located on opposite sides of the projections and occupying positions approximately in alignment with each other, while the other arm occupies a position at right angles or approximately at right angles to the aligned arms, the parts being connected and arranged to coact, substantially as described.

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

JOHN V. CRONE.

Witnesses:

CHAS. E. LITTELL,
G. M. HOUSTON.