March 8, 1927. 1,620,245

A. W. TURNER

DEVICE FOR CLOSING THE AIR BLADDERS OF SPORT BALLS OF ANY KIND

Filed Aug. 2, 1926

Fig. 1.

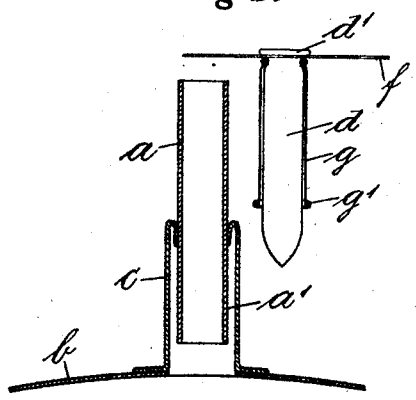


Fig. 2.

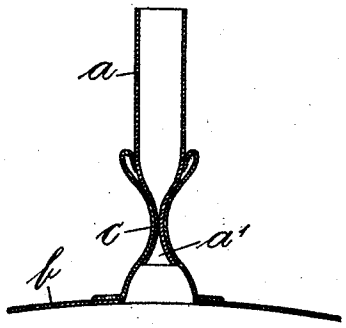


Fig. 3.

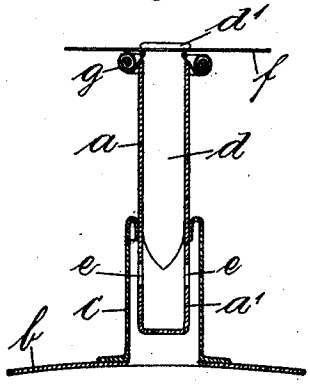
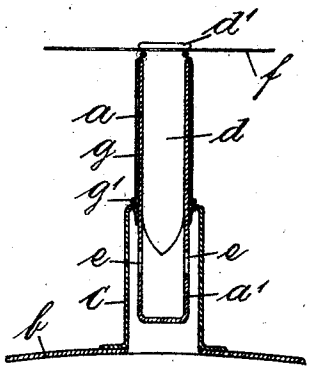


Fig. 4.



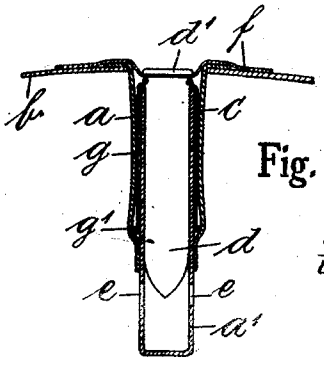


Fig. 5.

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UNITED STATES PATENT OFFICE.

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DEVICE FOR CLOSING THE AIR BLADDERS OF SPORT BALLS OF ANY KIND.

Application filed August 2, 1926, Serial No. 126,566, and in Germany January 2, 1926.

This invention relates to a device for closing the air bladders of sport balls of any kind in which the air tube is closed by means of a stopper and then pressed into the air bladder. The novelty consists in that on the stopper an elastic cap is arranged which if the stopper is in the closing position grips over the air tube. The air tube is rigidly connected with an enlarged projection mounted on the air bladder, an extension of said air tube projecting into this element which if the tube is forced into the air bladder prevents the tube from slipping out of the bladder.

An embodiment of the invention is shown, by way of example, in the accompanying drawing in which:—

Fig. 1 shows the closing device in the open position in vertical cross section.

Fig. 2 is a similar view the tubular air inlet being closed.

Fig. 3 is a similar view the stopper being inserted.

Fig. 4 is a similar view showing the closing device in the closing position and

Fig. 5 shows the closed device sunk in the air bladder.

The air tube a is rigidly connected with an enlarged projection c fixed on the air bladder b. The air tube a and the projection c are made of rubber, same as the air bladder b, and may have a lining of fabric. The joints between air bladder and projection and air tube are preferably reinforced. The air tube is extended in downward direction and the extension a^1 is situated in the projection c if the air tube is pulled out. The extension a^1 of the air tube a is either open at the lower end as shown in Figs. 1 and 2 or closed as shown in Figs. 3 to 5.

The stopper d is made of solid material and has a top plate d^1. A disk f of flexible material and an elastic cap g having a beaded edge g^1 are rigidly connected with the stopper d. The stopper d is tapered at the bottom end so that it can be securely inserted into the air tube a.

The bladder b is inflated in the well known manner. After the bladder has been filled with air the elastic projection c can be strongly compressed with the fingers or with the aid of pincers so that also the extension a^1 of the air tube or the lateral hole e of the same are compressed and no air can escape from the bladder (Fig. 2). The stopper d is then inserted into the upper open end of the air tube a the bead of the elastic cap g being rolled up towards the top end of the stopper d (Fig. 3). If the stopper d has penetrated into the tube to a sufficient depth the cap g is rolled over the top end of tube a the stopper being thus pressed upon its seat until the lower end of the beaded edge g^1 of cap g bears onto the upper edge of the projection c (Fig. 4). The air bladder is thus securely closed and the air tube a together with the projection c is forced into the bladder b. In this position (Fig. 5) the upper portion of the air tube is situated inside the projection e which has been sunk also, the disk f of fabric extending over the circumference of the bladder b. By the pressure of the compressed air in the bladder b the side walls of the projection c are radially pressed against the air tube and bear more or less strongly against the circumference of cap g. In consequence of the resistance from friction which is produced thereby at the point of contact between the projection and the cap the air tube is prevented from being pressed out of the bladder by the pressure of the air.

The disk f of fabric prevents the bladder from moving in the sheath as it is securely mounted between the bladder and the leather sheath and it serves further to facilitate the pulling out of the air tube a from the bladder. To open the closing device the cap g is first rolled up whereupon the stopper d is removed.

Instead of the stopper d a clamp or the like may be used for closing the air tube, said clamp being placed over the upper end of the tube which has previously been folded.

The closing device described and shown may also be used for air cushions.

I claim:—

1. A device for closing the air bladder for sport balls or the like, comprising in combination with the air bladder, a projecting tubular extension of said air bladder, an air tube in said extension of the bladder, said extension and air tube adapted to be telescoped from a position outside the air bladder to a position inside the air bladder, a stopper to be inserted into the upper end of said air tube, and an elastic cap on said stopper adapted to be slipped down over upon said air tube so that when the cylindrical extension and air tube are forced into the filled bladder the cap will lie between said air tube and said extension.

2. A device for closing the air bladder for sport balls or the like, comprising in combination with the air bladder, a projecting cylindrical extension of said air bladder, an air tube secured at a point between its ends in said extension of the bladder, said extension and air tube adapted to be telescoped from a position outside the air bladder to a position inside the air bladder, a stopper to be inserted into the upper end of said air tube, and an elastic cap secured to the outer end of and said stopper adapted to be slipped down over upon the upper end of said air tube so as to lie between the same and the cylindrical extension when said air tube and extension are forced into the filled bladder.

3. A device for closing the air bladder for sport balls or the like, comprising in combination with the air bladder, a projecting tubular extension of said air bladder, an air tube secured in said extension of the bladder, and projecting outwardly beyond the same, a stopper to be inserted into the outer end of said air tube, and an elastic cap on said stopper adapted to be slipped down over the outer side of said air tube.

4. A device for closing the air bladder for sport balls or the like, comprising in combination with the air bladder, a projecting tubular extension of said air bladder, an air tube in said extension of the bladder, said air tube being rigidly connected with the upper edge of said projecting extension of the bladder, a stopper to be inserted into the upper end of said air tube, and an elastic cap secured at its upper end to said stopper and having a beaded lower edge, said cap adapted to be slipped down over upon the cylindrical extension after the insertion of the stopper into said air tube.

5. A device for closing the air bladder for sport balls or the like, comprising in combination with the air bladder, a projecting tubular extension of said air bladder, an air tube in said extension of the bladder, said air tube being rigidly connected at a point intermediate of its length with the upper edge of said projecting extension of the bladder so that the lower portion of the air tube extends into said projecting extension of the bladder when the air tube is pulled out of the bladder for inflating purposes, a stopper to be inserted into the upper end of said air tube, and an elastic cap on said stopper secured at its upper edge to the stopper and adapted to be slipped down over upon the outer side of said air tube so that the extension and air tube are forced into the filled bladder the sleeve will lie between said tubular extension of the air bladder and the air tube.

6. A device for closing the air bladder for sport balls or the like, comprising in combination with the air bladder, a projecting tubular extension of said air bladder, an air tube in said extension of the bladder, said air tube being rigidly connected with the upper edge of said projecting extension of the bladder so that the lower portion of the air tube which is open at the lower end extends into said projecting extension of the bladder when the air tube is pulled out for inflating purposes, a stopper to be inserted into the upper end of said air tube, and an elastic cap secured at its upper end to said stopper and having a beaded lower edge, said cap adapted to be slipped down over said air tube so that when the air tube and tubular extension are forced into the filled bladder the sleeve will lie between the air tube and tubular extension with its beaded edge impinging firmly against the latter.

7. A device for closing the air bladder for sport balls or the like, comprising in combination with the air bladder, a projecting tubular extension of said air bladder, an air tube in said extension of the bladder, said air tube being rigidly connected with the upper edge of said projecting extension of the bladder so that the lower portion of the air tube which is closed at the lower end but has lateral air holes extends into said projecting extension of the bladder when the air tube is pulled out for inflating purposes, a stopper to be inserted into the upper end of said air tube, an elastic cap on said stopper adapted to be slipped down over said air tube so as to lie between the tube and tubular extension of the air bladder when said air tube and extension are forced into the filled bladder, and a disk at the upper end of the stopper.

In testimony whereof I affix my signature.

ALBERT WILHELM TURNER.