R. N. BRESSLER.

INFLATING VALVE.

APPLICATION FILED MAR. 5, 1919.

1,381,700. Patented June 14, 1921.

Fig. 1.

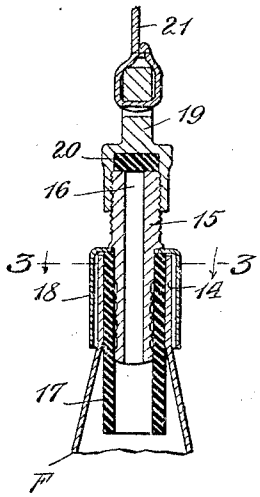


Fig. 2.

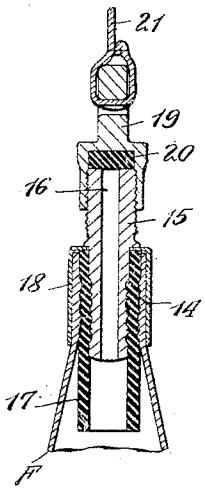


Fig. 3.

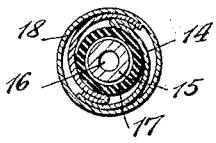


Fig. 4.

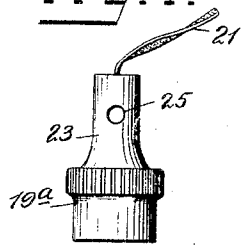


Fig. 5.

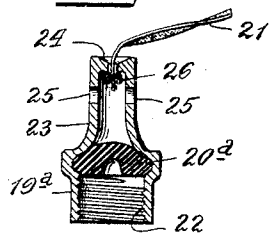
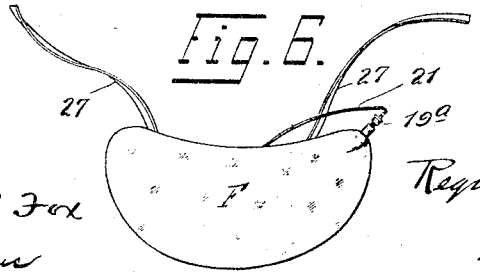


Fig. 6.



WITNESSES:

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REGINA N. BRESSLER, OF NEW YORK, N. Y.

INFLATING-VALVE.

1,381,700. Specification of Letters Patent. **Patented June 14, 1921.**

Application filed March 5, 1919. Serial No. 280,779.

To all whom it may concern:

Be it known that I, REGINA N. BRESSLER, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Inflating-Valves, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This application is in part a division of my application, Serial No. 64,421, filed December 1, 1915, for swimming devices, with the addition of improvements upon the structure disclosed in said application in respect to the valve cap and means for attaching it to the bag, or swimming device.

The invention relates to inflating devices, or valves, especially suitable for inflatable floats of swimming devices, but which may also be used in other inflatable containers.

Among the objects of the invention are, to provide a simple and easily operated valve adapted for the purpose indicated and for analogous uses, means associated with the valve for securing it in operative position in a novel and effective way, means for retaining air pressure temporarily, in a convenient way, while the valve is being closed, and means for connecting the valve cap to the float or bag with which the inflating device is used.

Other objects and advantages of the invention are sufficiently explained hereafter.

To attain the foregoing and other objects, and to incorporate structural and operative advantages sufficiently pointed out hereafter, the invention comprises a combination of parts of which the accompanying drawing shows one representative embodiment. After considering this embodiment, it will be understood that the structure may be varied within the principles of the invention, and I do not limit myself to details except as claimed.

Figure 1 is a longitudinal section of the valve in place in the neck of an air bag.

Fig. 2 is a longitudinal section showing the valve secured in position by compressing the ferrule.

Fig. 3 is a transverse section at 3—3 of Fig. 1.

Fig. 4 is a side elevation of a modified form of valve cap with its attaching cord.

Fig. 5 is a longitudinal section of the same.

Fig. 6 is a side view of one form of inflatable bag with my valve in place, showing also a cord connecting the valve cap with the bag.

The floats of swimming devices with which my valve is especially designed to be used, are usually in the form of bags made of textile fabric which is preferably not treated to make it air-tight, but which when wet contains air as securely as is desired for the purpose, as understood by persons familiar with that art, and as explained in my application above mentioned. Such bags are usually formed with a neck 14 of moderate diameter to receive the valve, and the valve and its associated parts are especially devised to be secured in a satisfactory way to such a neck when formed of textile fabric of the character above described, although the valve is also well adapted to be secured to suitably formed necks of bags or air containers composed of other material, such as rubber or rubberized or otherwise treated fabric.

The valve comprises a tubular body or nipple 15 having an air passage 16 through which air may be supplied to the interior of the swimming device float F, or inflatable member; and 17 designates a collapsible and resilient tube or sleeve of india rubber or other suitable flexible and elastic material, the outer end of which surrounds the lower or inner end of the nipple, said tube extending beyond the end of the nipple and into the interior of the inflatable member, as shown.

In providing the valve device and securing it in place as above explained, the nipple and collapsible tube are assembled and placed within the neck 14, and a ferrule 18 is placed over the neck as shown in Figs. 1 and 3. This ferrule is made from a suitable metal or other material which may be readily compressed to reduce the diameter thereof, and after the parts have been assembled as above, the ferrule is compressed by a suitable mechanism or device whereby its diameter is reduced to such an extent that the neck 14 is forced against the outside of the tube 17, and the upper end of said tube forced against the inner roughened end of the nipple 15; thus securing a binding en-

gagement between the several parts and holding the nipple, tube and ferrule in place, as will be understood; the various elements assuming the condition shown in Fig. 2 after the nipple has been fully compressed.

The tube 17 not only serves as a packing between the ferrule and neck 14 and the nipple 15, but the inner projecting end of this tube serves to protect the adjacent portions of the float member by preventing their drawing directly against the end of the nipple, and also serves as a means whereby the escape of air through the nipple may be temporarily prevented.

The outer end of the nipple is closed by a removable cap 19 in threaded engagement therewith and provided with a packing 20 so that when the cap is screwed into place the escape of air from the inflatable member will be prevented. In order to prevent the cap 19 from being lost, it may be connected to the swimming device F by means of a flexible tape or other cord 21 which will not interfere with the screwing of the cap on to or off from the end of the nipple, but will effectually prevent its loss when detached from the nipple.

To inflate a float to which the valve is attached as above described, its valve cap 19 is removed and air is supplied to the float through the nipple by blowing in from the mouth or otherwise. After the float member has been sufficiently inflated, or between breaths, the escape of air is temporarily prevented by collapsing or flattening the inwardly extending end of the tube 17, this being readily accomplished by pressing the adjacent portions of the wall of the inflatable member inward as by pressure of the thumb and finger, such pressure being transmitted through the walls and to the end of the tube to collapse the same. The escape of air from the inflatable member may thus be readily prevented until the closing cap is screwed on to the end of the nipple, after which the tube may be released and escape of air will be prevented by the cap.

An improved form of valve cap 19^a, which is preferred in some cases, is shown in Figs. 4, 5 and 6. This cap is usually of stamped or pressed sheet metal and contains the usual packing 20^a and is interiorly threaded at 22 to engage the valve stem. The cap also has a tubular extension 23, the end of which is pressed in to form an annular shoulder 24, and having an end opening of reduced diameter as compared to the bore of the tubular extension. The valve cap stem also has at least one hole 25 in its wall located somewhat below the shoulder 24, and usually there are two of these holes oppositely located, as shown, so that they can be conveniently formed in the valve cap stem by drilling straight through it. With this form of valve cap, the attaching cord 21 may be secured to the cap by passing one of its ends through the hole in the upper end of the valve cap past the shoulder 24 and out through either of the holes 25. A knot 26 is then tied in the end of the cord and the cord pulled back, so that the knot passes through the hole 25 and engages underneath the shoulder 24 and thus forms an attachment of the cap to the cord. The other end of the cord is connected to the float F of the swimming device at 27. The described construction not only provides a very cheap and satisfactory means for connecting the removable valve cap with the bag, but it provides in effect a swivel connection between the cord and the cap, so that undue twisting of the cord is avoided when the valve cap is rotated in attaching and detaching it.

What is claimed is:

1. A valve for inflatable bags, comprising a tubular body, a sleeve of compressible material surrounding a part of the length of the body and adapted to fit within the neck of the air bag, clamping means adapted to extend about the neck of the bag upon said sleeve to force the neck against the sleeve and the sleeve against the body and secure the body, sleeve and neck together, and means for opening and closing the valve.

2. In a valve for inflatable bags, the combination with the neck of an air bag, of a tubular body located within the neck of the bag, a sleeve of flexible and compressible material surrounding a part of the body within the neck of the bag and extending beyond the inner end of the body, means for holding the neck of the bag clamped against the sleeve and the sleeve against the tubular body with the free end of the sleeve extending within the bag, and means for closing the passage through the tubular body.

3. In a valve for inflatable bags, the combination with the neck of an air bag consisting of textile fabric, of a tubular nipple located within the neck, a rubber sleeve between the nipple and the adjacent part of the neck, a ferrule compressed upon the outside of the neck and clamping the neck and sleeve against the nipple, and a cap for the outer end of the nipple.

4. In a valve for inflatable bags, the combination with the neck of an air bag consisting of textile fabric, of a tubular nipple located within the neck, a rubber sleeve between the nipple and the adjacent part of the neck, said sleeve extending inward considerably beyond the end of the nipple, a ferrule compressed upon the outside of the neck and clamping the neck and sleeve against the nipple, and a detachable cap for the outer end of the nipple.

5. The combination with an inflatable bag and a valve stem secured thereto, of a de-

tachable cap for the stem, said cap comprising a tubular extension terminating in a portion of reduced diameter, said extension also having a hole passing laterally through its wall, and a cord passing through the end of said extension and having a knot located below said reduced portion of the extension, the lateral hole in said extension being adapted to permit said knot to pass through it, one end of said cord being connected to said bag.

6. A screw cap for closing the end of a valve stem, having a threaded portion, a tubular extension, a shoulder between the threaded portion and the tubular extension, and packing seated on said shoulder, the extension having an end opening for an attaching cord to pass through and a side opening large enough to permit the passage of a knot on the end of the attaching cord.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

REGINA N. BRESSLER.

Witnesses:
ETHEL JOHNES,
D. M. SMITH.