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J. JOHANSSON

2,490,966

VALVE BAG

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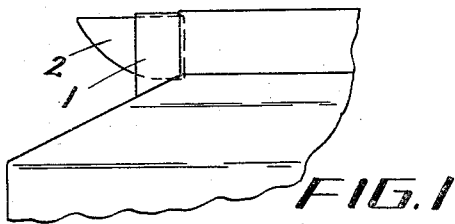


FIG. 1

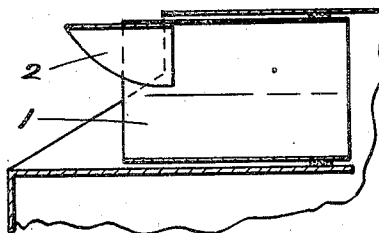


FIG. 2

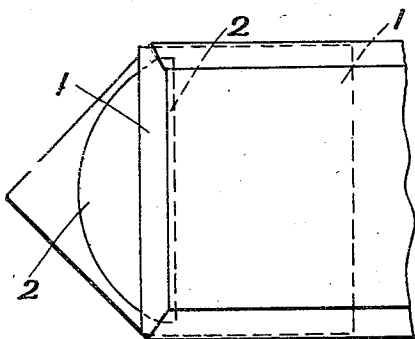


FIG. 3

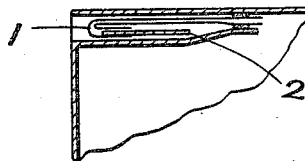


FIG. 4

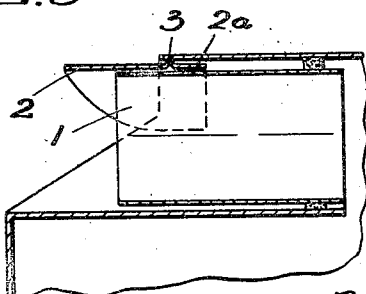


FIG. 5

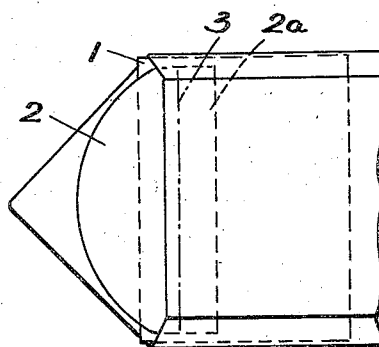


FIG. 6

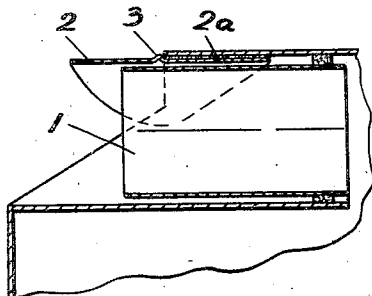


FIG. 7

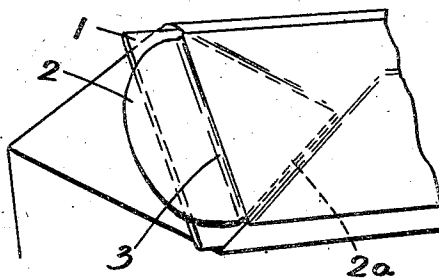


FIG. 8

Witness:  
J. Johansson  
By E. F. Wendt atty

## UNITED STATES PATENT OFFICE

2,490,966

## VALVE BAG

John Johnsson, Saffle, Sweden, assignor to Billeruds Aktiebolag, Saffle, Sweden, a corporation of Sweden

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4 Claims. (Cl. 229—62.5)

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The present invention relates to such valve bags, usually constructed as multi-ply paper bags, as are provided with a tube attached in the valve formed by folding in a corner of the bag. The bag is filled through this tube, which is then sealed at its outer end. The invention has for its object to enable the valve tube to be sealed in a single operation both readily and effectively after the bag is filled. Further objects and advantages of the invention will become apparent from the following description of some different embodiments of the device, reference being had to the accompanying drawings, in which

Fig. 1 is a side view of the valve corner of the bag, the valve being in the condition suitable for filling the bag, and

Fig. 2 is a longitudinal section through the valve in the same condition.

Fig. 3 shows the valve corner of the bag seen from above.

Fig. 4 is a longitudinal section through the bag valve after filling of the bag and sealing of the valve tube.

Figs. 5 and 6 show another embodiment of the device in the same manner as Figs. 2 and 3, while

Figs. 7 and 8 show a third embodiment thereof as seen in section through the valve corner of the bag and obliquely from above, respectively.

In the valve formed by folding in a corner of the bag in the manner usual in valve bags there is attached by means of adhesion or in any other suitable manner a sleeve or tube 1 of relatively pliable material such as paper, preferably creased paper, or the like. According to the invention the outer end of the tube 1 projects but a short distance from the valve and is provided with a tongue 2 of relatively stiff material, such as pasteboard or the like, approximately in the form of a segment of a circle and attached to the top portion or wall of the tube by means of adhesion or in any other way. The extension of this tongue in the transverse direction of the valve is somewhat less than the width of the tube attached in the valve in the normal flattened condition thereof. In the embodiment shown in Figs. 1 to 4, the tongue 2 with its straight base edge extending in the transverse direction of the valve is a short distance inside the outer end of the tube 1, in other words, approximately at or just inside the outer edge of the top wall of the valve.

When the bag is to be threaded on to the filler tube of the valve bag filling machine by means of the valve, the bag is taken by the valve with one hand so that the valve is subjected to pressure by the hand from both sides of the bag. By

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means of this pressure applied at the tongue 2, this tongue bulges and expands the valve opening, as shown in Figs. 1 and 2, whereby the threading on of the valve of the bag to the filler tube is facilitated. After the bag has been filled and removed from the filler tube the outer end of the tube 1 is sealed by folding in the tongue 2 into the valve opening or rather into the pocket or so-called blind valve that is formed in a manner known in and per se between the bottom of the valve opening and the lower portion or wall of the valve tube 1 attached by means of adhesion or in any other manner to the bottom of the valve opening only with its inner end. This folding in of the tongue 2 is readily executed in a single operation in which the outer end of the tube 1 is doubled about the straight base edge of the tongue and the tube 1 is effectively retained in this sealed condition by the tongue 2 folded into the blind valve. When folded in, in the manner stated, into the blind valve, the tongue 2 is in a well protected position, in which the tongue and the sealed outer end of the tube will not easily be inadvertently damaged in the handling of the filled bag. The reason why, in the embodiment according to Figs. 1 to 4, the tongue 2 is glued to the inside of the top portion or wall of the tube 1, is that the glued portion would be subjected to too great strain and would come loose too easily on folding in of the tongue into the blind valve, if, in this embodiment thereof, the tongue were instead glued to the outside of the tube 1.

The two embodiments according to Figs. 5 and 6 and Figs. 7 and 8 differ from the embodiment according to Figs. 1 to 4 by the tongue 2 being provided with a base flap 2a separated from the tongue proper 2 by means of a folding line 3. As a result of the tongue 2 being provided with this base flap 2a defined by means of the folding line it may be glued or possibly otherwise attached by means of this flap not only to the inside of the top portion or wall of the tube 1 but also to the outside thereof as shown in Figs. 5 and 6, or internally in the valve opening proper to the upper wall thereof, as shown in Figs. 7 and 8, or externally to the last-mentioned wall. In the latter cases, it may be advantageous to give the base flap 2a triangular form, as shown in Fig. 8, in order that it may be glued to the triangular portion of the upper wall of the valve where the number of the paper layers forming this wall, when using a certain method of folding in constructing the valve, will be reduced, and consequently, the wall in question thinner

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than in other places, so that the thickening of the said wall of the valve caused by gluing the flap 2a thereto will not be very conspicuous. When, in any one of the embodiments shown in Figs. 5, 6, 7 and 8 on folding of the outer end portion of the tube 1, the tongue 2 is folded in between the bottom of the valve opening and the lower portion or wall of the tube 1 forming the blind valve, this folding is effected about the folding line 3, which thus replaces the rear edge of the tongue in the embodiment according to Figs. 1 to 4, while the base flap 2a situated inside the folding line 3 serves as a means of attachment for the tongue or for strengthening the attachment thereof, whereby greater liberty of choice is obtained as to the place of attaching the tongue.

What I claim and desire to secure by Letters Patent is:

1. In a valve bag of the character described having its valve formed by folding in a corner of the bag, a tube of relatively pliable and bendable material attached in said valve and projecting a short distance therefrom, said tube forming with the bottom of said valve a blind valve, and a tongue of relatively stiff material resistant to bending and approximately in the form of a segment of a circle, said tongue being attached adjacent the top side of said valve and adjacent the outer end thereof whereby said tongue may be folded downwardly into said blind valve and the projecting outer end of said tube may be doubled and thus sealed by the folding in of said tongue into said blind valve after the bag has been filled through said tube.

2. In a valve bag as claimed in claim 1, said tongue having a base flap separated from the tongue itself by means of a folding line about which said tongue may be folded downwardly into said blind valve, said flap being so attached adjacent the outer end of the valve adjacent the top

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side thereof so that the folding line of said tongue extends transversely of said tube near the outer end of said valve.

3. In a valve bag of the character described having its valve formed by folding in a corner of the bag, a tube of relatively pliable and bendable material attached in said valve and projecting a short distance therefrom, said tube forming with the bottom of said valve a blind valve, a tongue of relatively stiff material resistant to bending and approximately in the form of a segment of a circle, extending transversely of said valve and having a length slightly less than the width of said tube when in normal flattened condition, said tongue being attached to said tube adjacent the top side at the outer end thereof whereby said tongue may be folded downwardly into said blind valve and the projecting outer end of said tube will be doubled and thus sealed by the folding of the said tongue into said blind valve after the bag has been filled through said tube.

4. In a valve bag as claimed in claim 3, said tongue having a base flap separated from the tongue itself by means of a folding line about which said tongue may be folded into said blind valve, said flap being so attached to said tube adjacent the top side thereof that the folding line of said tongue extends transversely of the tube near the outer end of the valve.

JOHN JOHNSON.

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