

J. REANEY, JR. & J. A. McANULTY.

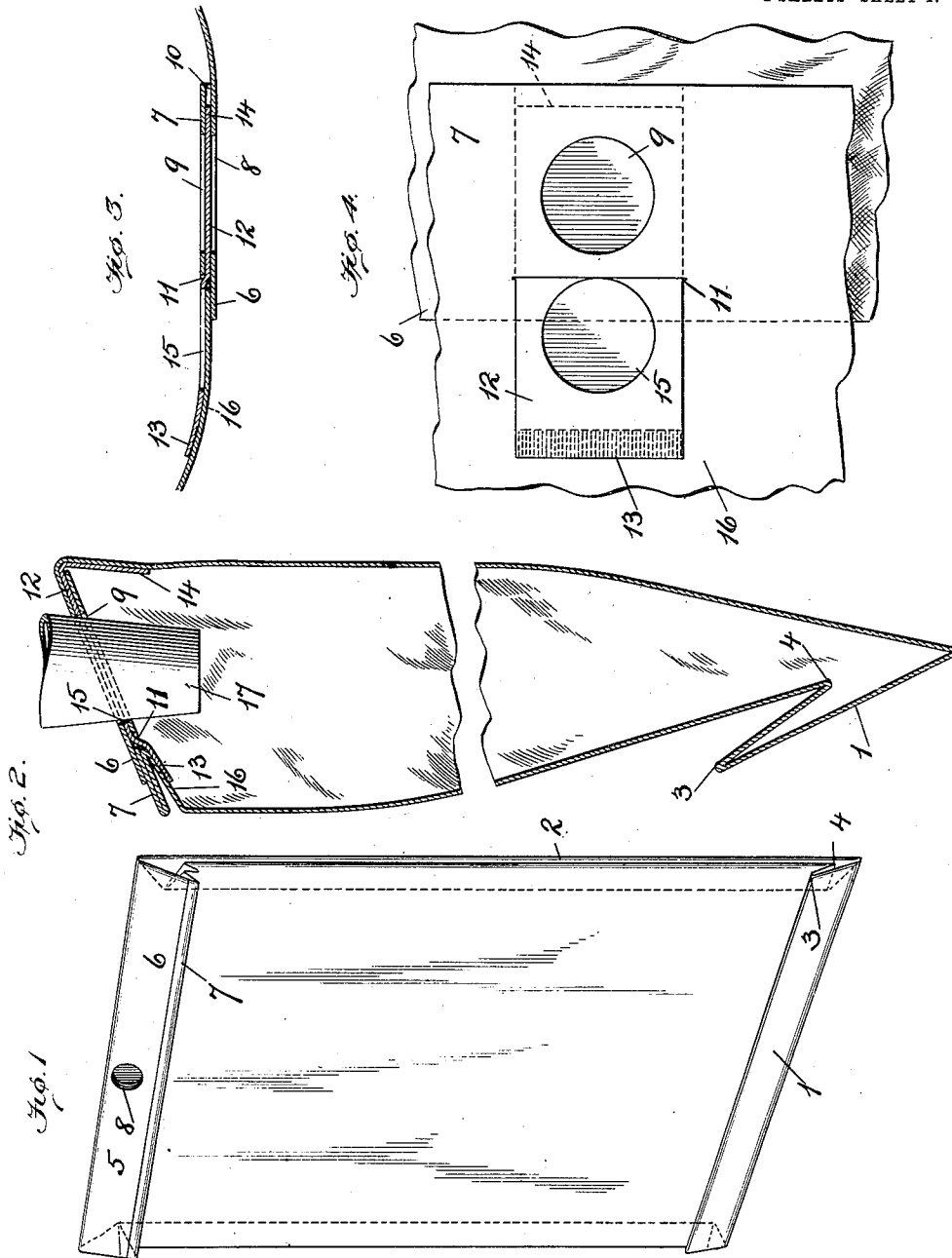
VALVED BAG.

APPLICATION FILED MAY 20, 1908.

931,888.

Patented Aug. 24, 1909.

2 SHEETS—SHEET 1.



Witnesses

Edwin L. Bradford
G. Ferdinand Vogt.

By

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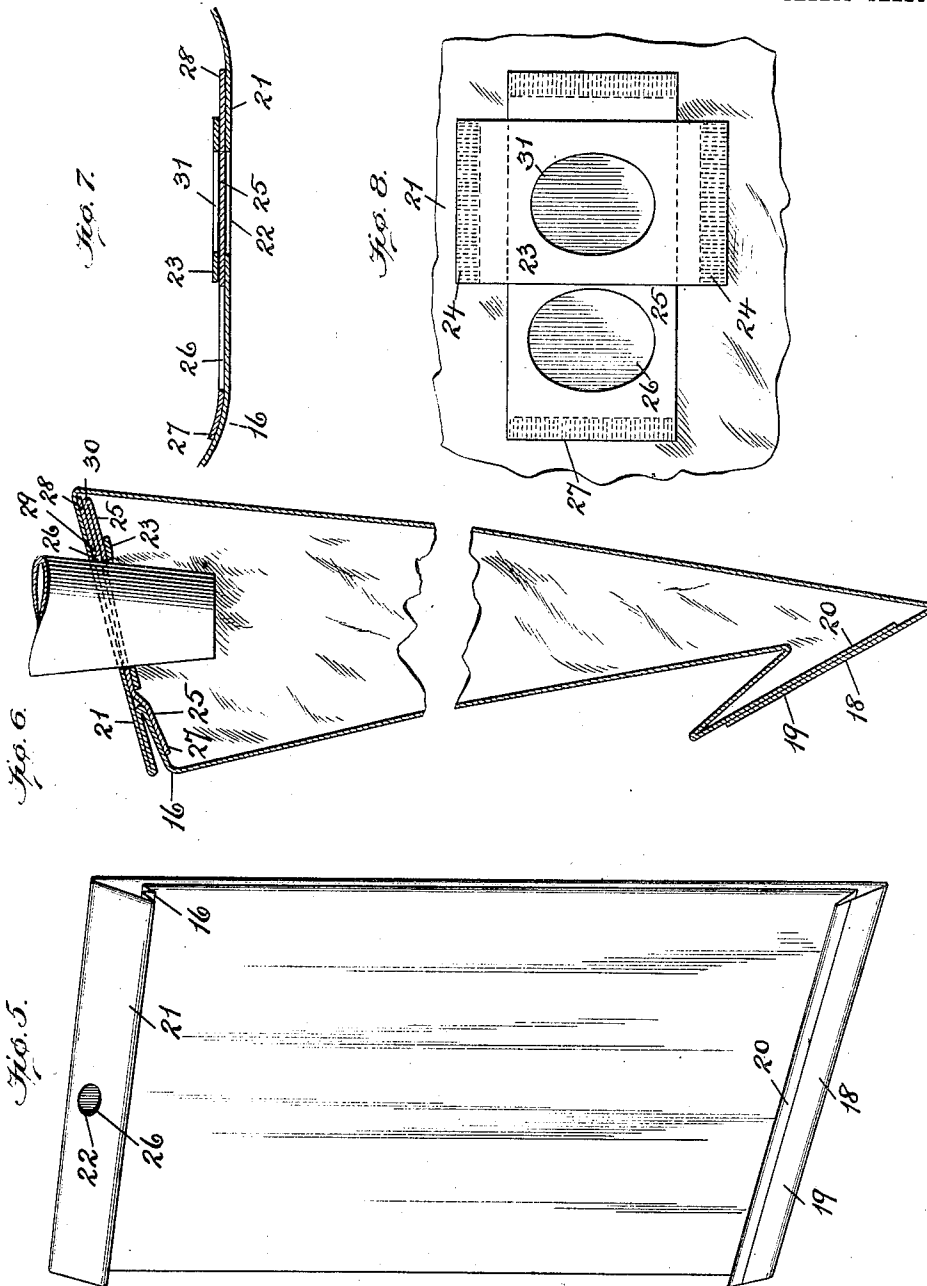
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UNITED STATES PATENT OFFICE.

JAMES REANEY, JR., OF SHERWOOD, AND JOHN A. McANULTY, OF BALTIMORE, MARYLAND.

VALVED BAG.

931,888.

Specification of Letters Patent. Patented Aug. 24, 1909.

Application filed May 20, 1908. Serial No. 433,818.

To all whom it may concern:

Be it known that we, JAMES REANEY, JR., and JOHN A. McANULTY, both citizens of the United States, residing, respectively, at Sherwood, in the county of Baltimore and State of Maryland, and Baltimore city, State of Maryland, have invented certain new and useful Improvements in Valved Bags, of which the following is a specification.

10 This invention relates to improvements in valved bags or sacks and has particular reference to devices of this character which are filled by means of a nozzle that is inserted in a small valved opening.

15 The present invention has for its object to improve the construction of the valve structure which closes the filling opening, and to provide a valve that will automatically operate to close said opening after the filling nozzle has been withdrawn from the bag.

20 Another object is to provide a slide valve that will be automatically operated by the separation of the bag walls to effect a closure of the filling opening.

25 Another object of the invention is to provide an inside valve for the filling openings of the bag that will operate to close the bag opening by the action of the material deposited in the bag.

30 We are aware that it has heretofore been proposed to provide slide valves for the filling openings of bags, but such prior structures differ from ours in that they are formed to operate between the folds or bends of the end of the bag and further that in such prior devices the slide is not automatically operated.

35 By means of our invention the valve may be located at any convenient portion of a bag irrespective of folds and bends and may be provided in the mere overlapped edges where no folds are present.

The invention is illustrated in the accompanying drawings, in which,—

40 Figure 1, shows an exterior perspective view of a complete bag constructed in accordance with our invention. Fig. 2, illustrates a vertical section through the bag and valved opening with a filling nozzle inserted therein and in readiness for filling. Fig. 3, shows a cross-section through the bag and valve structure. Fig. 4, shows an inverted plan view of the bag and valve structure,—the latter being closed. Fig. 5, shows a perspective exterior view of a modified form of bag embodying the features of our invention.

Fig. 6, shows a vertical sectional view through the bag,—the filling opening having a nozzle entered therein and the bag being ready for filling. Fig. 7 shows a cross-section through the bag and valve of the modified form, and Fig. 8, shows an inverted plan view of the valve employed in the bag of the modified form.

The bag may be formed of any suitable material and the lower end, 1, and opposite parallel sides, 2, may vary and differ materially from the construction shown, but in the present instance the said end is provided with creases, 3, and, 4, while the opposite longitudinal sides, 2, are merely folded or turned inwardly to enable the bag to be readily crushed flat for storage or shipment when empty.

The end, 5, of the bag is formed by the overlapping of the edges, 6, and, 7, of the bag wall both of which are provided with filling openings, 8, and, 9. These overlapped edges are secured together crosswise of the bag either by fastening or stitching but at one point and adjacent the filling openings said overlapped edges are left free and disconnected, as shown in an exaggerated manner at 10, Fig. 3. The particular shape of the filling openings, 8, and, 9, is immaterial but in the form shown in Figs. 1 to 4 we prefer that the same shall be circular in form. A slit, 11, is provided in the inner edge, 7, and this slit in the present instance extends in a direction crosswise of the bag and adjacent to or at one side of the filling opening, 9. The slide valve, 12, which may be formed of any suitable material, preferably of a flexible character, has one end, 13, secured to the wall of the bag of which the inner edge or flap, 7, is a part, while the opposite end, 14, of said valve is passed through the slit, 11, and between the unsecured portion of the overlapped edges or flaps, 6, and, 7,—the extreme free end, 14, of the valve projecting beyond the edge of flap, 7, as seen in Fig. 2. A perforation, 15, is provided in the valve adjacent the attached end, 13, thereof, which when the bag is in the normal condition ready for filling will register with the filling openings, 8, and, 9, in the overlapped edges or flaps. It will thus be seen that the valve, 12, has one end attached to a movable wall of the bag, said wall being provided with a fold, 16, to which the end of the valve is attached, and that portion of the valve that enters the slit, 11, has its opposite longitudinal edges

held close against the inner surface of the outside flap so that the contents of the bag cannot work beneath the valve at either of its longitudinal side edges.

5 When the bag is in readiness for use the valve will have a position so that its perforation, 15, will register with the filling openings, 8, and, 9, of the overlapped edges, 6, and, 7, of the bag and a filling nozzle, 17, 10 may be inserted through said registered openings to convey material into the bag. As the material falls into the bag and is deposited at the end, 1, thereof the walls will spread a part or bulge and this tendency in- 15 creases as the filling operation progresses. When the bag has received the predetermined quantity of material the filling nozzle, 17, is withdrawn and immediately thereafter the internal pressure of the material will 20 cause the wall to which the end, 13, of the valve is attached to straighten out and in doing so draw the slide valve, 12, laterally between the overlapped edges and thus move the valve opening, 15, out of register with the 25 filling openings, 8, and, 9, and effect a closure of the said openings. By holding the opposite longitudinal edges of the valve against the outer flap and securing the perforated end, 13, while the free end is held between 30 the flaps the valve will lie close around the filling openings of the bag and prevent the material from escaping by working beneath the valve. After the valve has thus automatically closed, the bag may be turned over 35 on its side or up-side-down, so as to apply a constant outward pressure of the material in the bag against the valve to maintain it in close contact with the bag wall around the filling opening.

40 The bag and valve structure illustrated in Figs. 5 to 8 inclusive is very similar in construction and operation to the valve heretofore described and differs therefrom mainly in the manner of holding the valve in position. 45 In this construction the lower end, 18, is formed by the mere overlapping of the flaps, 19, and, 20, which may be pasted, stitched or secured together in any suitable manner. The flat end, 21, of the bag is 50 formed integrally with the sides or body and is free of exterior folds, while adjacent said end the side wall has the fold, 16, as in the bag shown in Figs. 1 to 4. The filling opening, 22, in the flat end may be formed by 55 cutting out a portion of the material and making a circular or other shaped opening but in the form shown in Figs. 5 to 8 said opening has an elliptical shape. On the inner surface of the flat end, 21, we preferably provide a guide or keeper, 23, which in 60 the present instance has the form of a strip of flexible material. This guide or keeper has its opposite ends, 24, attached to the inner surface of the flat end, 21, but between 65 said attached ends it is free and disconnected.

A flexible valve, 25, passes freely beneath the guide or keeper and is provided with a perforation, 26, which, when the valve is in the normal filling position, will register with the filling opening, 22, in the flat end, 21, 70 and permit the passage of material into the bag. In the present instance the valve is formed from a sheet of suitable flexible material and has a rectangular shape and the perforation or opening, 26, has position 75 nearer one end than the other. This valve is slipped beneath the central loose portion of the guide or keeper, 23, and the end, 27, thereof which is nearest the perforation, 26, is secured to the movable wall of the bag. 80 By reference to Fig. 6 it will be seen that as therein shown the end, 27, of the valve may be attached to the fold, 16, in the side wall while the opposite end, 28, of said valve 85 which is at the opposite side of the perforation, 26, may be provided with double folds, 29, and, 30, merely for the purpose of shortening said end by doubling and thereby enabling it to be laid flat against the inner surface of the flat end, 21. The extreme 90 edge of this end, 28, of the valve lies flat against the flat end, 21, of the bag and is secured thereto in any suitable manner, preferably by pasting. It will thus be seen that the valve shown in Figs. 5 to 8 inclusive has 95 its end attached to a movable wall of the bag while the perforated portion between its opposite ends is free.

The guide or keeper, 23, may vary in width and the same may consist of a mere 100 narrow strip of flexible material or have sufficient width to extend over or cover the greater portion of the imperforate end of the valve, 25, as seen in Fig. 8. In this latter 105 form the keeper is also provided with an opening, 31, which registers with the filling opening, 22, in the flat end of the bag and the valve slides between the keeper and the flat bag end when its perforated portion is 110 moved out of register with the openings, 22, and, 31. The operation of this latter form of valve is precisely like that of the valve shown in Figs. 1 to 4,—the spreading-apart 115 of the bag walls serving to draw the valve from beneath the keeper and straighten it out flat against the flat end, 21, and present its imperforate portion at the point between the openings, 22, and, 31, in the bag end and 120 keeper respectively, thus effectively closing said opening and preventing the escape of the material.

It will be noted that in the bag shown in Figs. 1 to 4 inclusive the lapped walls of the bag form a double thickness or double 125 wall at that point and that the slide valve has position on the inside of the bag and is not accessible for operation from the exterior. It will also be noted that one end of the slide valve is attached to the bag wall on the inside of the bag and that the valve 130

passes through a slit in the underlapping wall and operates between the two walls at the double-thick portion.

Having thus described our invention what we claim and desire to secure by Letters Patent is,—

1. A collapsed bag having movable walls with a filling opening therein, a slide valve movable over said opening, and connections between the valve and one of the movable walls to operate the slide valve by the separation of the walls.

2. A bag having a filling opening and a slide valve also having an opening which normally registers with the bag opening,—said valve being operated from one side by the action of the material deposited in the bag.

3. A bag having a filling opening, a slide valve adjacent said filling opening and having an opening that normally registers with the filling opening,—said valve also having an imperforate portion at one side of its opening and a connection between the valve and the bag for operating the valve.

4. A bag having a filling opening, a slide valve exposed to the interior of the bag and having an opening that normally registers with the bag opening and connections between the valve and the interior of the bag for operating the valve.

5. A collapsed bag having a filling opening at one end thereof and a crease in its wall adjacent said end, a slide valve on the inside of the bag adjacent said opening and connections between the said valve and one of the collapsed walls of the bag to automatically operate the valve.

6. A collapsed bag having a filling opening in one of its walls and a slide valve on the inner side of the wall at said opening and said valve having one end connected to a collapsed wall of the bag structure, and means on the inner side of the bag and between the connected end of the valve and the filling opening thereof for guiding said valve when it is drawn by the separation of the bag walls.

7. A collapsed bag having a filling opening and a slide valve on the inside of the bag

around said opening and having a perforated portion and an imperforate portion,—said valve being attached to the collapsed bag wall adjacent the perforated portion and means for holding the valve against the inner surface of the bag whereby the separation of the valve walls will operate the valve.

8. A collapsed bag having a filling opening and a crease in its side wall, a slide valve having one end attached to the collapsed side wall adjacent said crease and its other end extending beyond the filling opening of the bag, and means interposed between the crease and the filling opening for guiding the valve as it is drawn upon the separation of the bag walls.

9. A collapsed bag having a double-walled portion in one of its collapsed walls with a filling opening in each wall portion, and a valve between said wall portions and means for connecting the valve with the collapsed walls of the bag whereby to automatically operate the valve by the separation of the walls.

10. A bag having a double-walled portion with a filling opening in each wall and a slide valve having one end secured to the inside of the bag wall and its other end projecting between said double-walled portion whereby the expansion of the bag will automatically operate the valve.

11. A collapsed bag having two perforated walls one of which underlaps the other and is exposed to the interior of the bag said underlapping wall being provided with a slit adjacent its perforation, and a slide valve projecting from the inside of the bag through said slit and connected with the collapsed wall of the bag whereby the separation of the bag walls will cause the valve to operate between the two perforated walls.

In testimony whereof we affix our signatures in presence of two witnesses.

JAMES REANEY, JR.
JOHN A. McANULTY.

Witnesses:

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CHAS. B. MANN.