

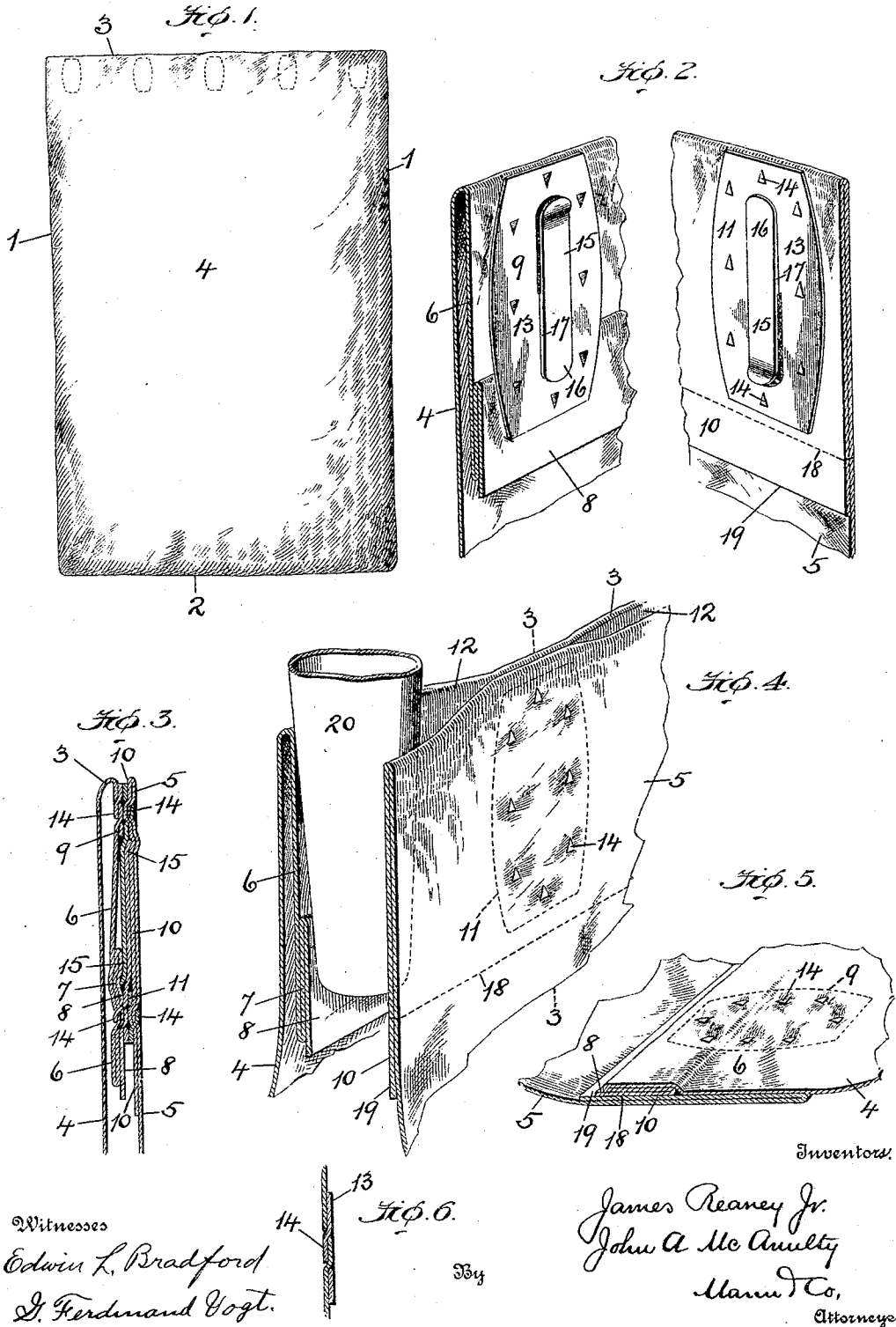
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BAG.

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931,886.

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UNITED STATES PATENT OFFICE.

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

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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 and State of Maryland, have invented certain new and useful Improvements in Bags, of which the following is a specification.

10 This invention relates to improvements in valved bags or sacks and has particular reference to bags or sacks which may be filled after the bag has been closed and which are complete in themselves in that all necessary 15 fastening devices for closing them are attached to and form part of the bag.

Prior to our present invention bags have been constructed in such a manner as to provide a small valved filling opening therein 20 prior to or during the operation of stitching or pasting the walls of the bag together. In such devices the bag is then filled by means of a suitable nozzle which is inserted through the valved opening and after filling, the bag 25 is usually upset or turned up-side-down so as to cause the weight of the contents to press the walls of the valve together and thus effect a seal of the valved opening therein.

Some of the valved bags heretofore used 30 are left open at one end and prior to the filling operation said end is drawn together and tied by strings. This method is objectionable for the reason that the bag must be made long to enable the material thereof to be gathered together and tied and a waste or 35 excessive amount of material is required. Another objection to this method is that in opening the bag the strings or ties are cut and destroyed and the bag itself is often 40 punctured or cut during this operation and must be repaired before they can be used again.

Our invention therefore has among its objects to provide a construction of valved bag 45 that will permit the bag to be filled after having been closed and then readily opened to permit the discharge of the contents without liability or injury to the bag.

Another object of the invention is to provide 50 an improved bag or sack by means of which the filling and discharging operations may take place at the same point in the bag without rupturing the bag or stitching, thereby enabling a repeated filling and discharging 55 to be carried on without injury to the bag.

A further object of our invention is to provide a bag or sack of such construction that the filling valved-opening may form a part of the discharge opening.

Another object of the invention is to provide an improved bag or sack having a discharge opening with a filling opening that forms a part of the discharge opening, while a further object is to provide a bag with a discharge opening with a plurality of fastening 60 devices for securing said opening with a valved opening between the fastening devices.

A further object of the invention is to provide a bag that is complete in itself in that the devices employed to enable the filling and discharging operation may form a permanent part of the bag, and another object is to provide an improved construction fastening device for bags which may be readily 75 attached to the bag walls and which when secured together will form a tight closure to prevent the escape of the inclosed contents even though the latter may be of a fine pulverized character. 80

Another object is to provide a bag which is symmetrical at both ends and free of projection such as are present in tied bags, thus enabling the filled bags to be piled or 85 stacked uniformly in a minimum of space.

Bags of the character herein referred to are particularly useful for receiving and holding granular or powdered materials such for example as lime, cement, salt, sugar, flour, 90 grain or any material that may be filled into the bag through a nozzle or spout.

With these and other objects in view the accompanying drawing illustrates one form of bag structure for carrying the invention 95 into practical effect, it being understood however that the invention is not to be restricted to the particular construction therein shown as the same is capable of modification in many particulars. 100

In the drawing, Figure 1, illustrates an outside view of the bag or sack in the flat unfilled condition,—the walls however being secured together and the bag being ready for the filling operation. Fig. 2, shows perspective 105 views of a separated two part mechanical fastener employed in the present instance, to secure the two confronting walls of the filling and discharge opening. Fig. 3, illustrates a vertical sectional view through 110 the detachably connected portions of the bag and the fastening devices,—the section

being taken on the line 3—3 of Fig. 4. Fig. 4, shows a perspective view of the detachably connected walls of the bag and also shows the valved filling opening between the fastenings with a filling tube inserted therein to direct the material through the valve. Fig. 5, illustrates a perspective view of the closed end of the bag and the position it assumes after the bag has been filled and the same reversed so that the weight of the contents may effect a closing of the valve parts, and Fig. 6, shows a vertical section through a portion of a fastener plate and bag wall to illustrate the engagement between a tang and the bag material.

Referring to the drawing it should be understood that the particular construction or formation of the bag proper is entirely immaterial, and the material employed in such construction is equally unimportant but it is preferred to form the same from a suitable fabric that will best withstand the rough usage to which bags or sacks are commonly subjected. In some instances as is common, the bag may be formed from a piece of folded fabric stitched along one longitudinal side and across one end.

As far as the present invention is concerned it may be understood that the two longitudinal sides, 1, and one end, 2, thereof, are permanently closed in any suitable way. The other end, 3, however, is to be opened, partly closed, or fully closed by the action of the side walls, 4, and, 5. The wall, 4, adjacent the filling and discharge opening is provided with an inturned fold, 6, having at its inner end a double fold, 7, and, 8, which is a continuation of the fabric after the inturned fold has been formed. These folds are mainly free and independent of each other except at intervals wherever a fastening member, 9, is located, they are tacked or secured together by said fastening, as shown in Fig. 2. It will thus be seen that the wall, 4, of the bag or sack is provided within its opening with folded flaps which lie within the folded marginal edge of the opening. The wall, 5, of the bag is also provided at its opening with an inturned fold or flap, 10. This fold or flap, 10, like the folds, 6, and, 7, extends cross-wise within the bag between the longitudinal sides, 1. Fastening members, 11, are also provided at the inner side of the bag wall, 5,—said fasteners being attached to the inturned fold or flap, 10, at spaced apart intervals.

The particular form and construction of mechanical fastening device is immaterial so far as the broad idea of the invention is concerned, and while the form shown makes a very effective fastener and will form the subject of several of the appended claims, it should be understood that the invention is not to be restricted in this respect.

In carrying out our invention we provide a

plurality of fastener members, 9, and, 11, at or adjacent the folds of the two side walls, 4, and, 5, of the bag or sack. These fastenings are spaced apart so as to provide filling apertures, 12, between them, any one or more of which may be utilized during the filling operation. The fastener members, 9, and, 11, are of a like construction and comprise in the present instance a flat-metallic plate, 13, having a plurality of integrally-formed engaging tangs, 14, punched from one side thereof, and a centrally-disposed tongue or finger, 15, pressed outwardly from the surface of the plate. In the formation of these tongues the root portion, 16, which comprises about one-half of the length of the tongue is connected with the flat plate by means of a wall, 17, which serves to provide a recess at the inner side of the tongue. The end portions of said tongues however are entirely severed from the plates so that when two plates are brought together with the free ends of the tongues confronting each other the tongue of one plate may enter the recess beneath the tongue of the other plate and thus lock the two plates together.

By reference to Figs. 2, 4 and 5 it will be seen that a row of stitches, 18, is preferably made through the fold, 10, and also the wall, 5, and that said stitching has position between the inner edge, 19, of the fold and the edges of the plates, 11, thus leaving the fold free at its extreme inner edge.

In the operation of filling bags constructed in accordance with our invention, the metallic plates or fastener members on the opposite confronting walls of the bag are first interlocked so as to close the end of the bag, as clearly shown in Figs. 3 and 4 of the drawing. As the bag is empty at this time and in a limp, pliable condition, the spaces intervening between the interlocked fasteners may be readily sprung apart so as to form one or more filling apertures, 12, as seen in Fig. 4. The bag may then be placed so as to receive one or more filling nozzles, 20,—the latter being readily inserted in the apertures, 12, between the folds, 8, and, 10, on the two confronting walls, and the material thus directed by the nozzles will enter the previously secured bag. It will therefore be seen that our invention contemplates providing a bag with a detachable fastening at the discharge opening and having a valve structure at said opening so as to permit the filling of the bag through the valve structure at the discharge opening.

After the bag has been filled and the nozzle withdrawn, the bag will be reversed or turned up-side-down at which time the folds, 6, 7, and, 8, being free from the wall, 4, will assume a horizontal position on top of the fold, 10, while the contents of the bag will hold said folds close together as shown in Fig. 5. It will also be seen that when the

bag is filled and reversed the engaged metal plates, 9, and, 11, have a flat horizontal position between the folds on the two walls of the bag and that said plates being rigid will serve to keep the closed end of the bag flat while the outward pressure of the material or bag contents will serve to maintain the plates in the interlocked condition.

When it is desired to discharge the contents, the bag is turned with the detachably-secured end uppermost so as to relieve the fasteners from the strain and weight of the material and the fasteners may then be quickly disengaged by moving the two sets of plates in opposite longitudinal directions whereupon the walls will be separated.

It will thus be seen that the construction of the fastening devices is such as to permit the bag to be easily opened or closed by hand and that when once engaged the pressure of the material on the bag walls will prevent the accidental disengagement of the fasteners even though the bag may be only partly filled.

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

1. A bag having its sides and one end permanently closed and the remaining end provided with detachable fastenings and said detachably-fastened end having a valve structure that is movable independently of the fastenings and which is held closed by the pressure of the bag contents.
2. A bag having its opposite walls at one end connected by a plurality of detachable fastenings and also having a valved filling opening between the secured fastenings.
3. A bag having a single opening through which the contents may be entered or discharged, detachable spaced-apart fastenings permanently secured to the bag adjacent said opening and a flexible valve structure permanently attached to the wall of the bag at said opening and being movable between the attached fastenings.
4. A bag having its sides and one end closed and at the opposite end the walls of the bag lapping each other and having a movable valve structure and spaced apart detachable fastenings secured to the lapped walls of the bag but leaving said walls and the valve structure between the fastenings free to be moved.
5. A bag having a combined filling and discharge opening; a flexible valve structure at said opening and securing devices perma-

nently attached to the bag adjacent to said valve structure for temporarily closing said opening but leaving the valve structure free to be opened for filling purposes.

6. A bag having a combined filling and discharge opening; flaps turned inwardly from the confronting walls of the bag at said opening and together forming a separable valve structure, and mechanical devices carried by the walls of the bag for holding the valve flaps together.

7. A bag having a combined filling and discharge opening; a flexible valve structure within said opening, and a plurality of spaced apart interlocking devices attached to the bag walls between the ends of the opening thereof but leaving the flexible valve structure free between said devices.

8. A bag having a combined filling and discharge opening; interlocking plates attached to the bag at opposite sides of said opening, and a separable flexible valve structure on the inside of the bag opening between adjacent interlocked plates.

9. A bag having an opening; an intumed flap at one side of said opening forming a valve structure; a securing member attached to said intumed valve flap at one side of the opening and a coacting securing member attached to the bag at the opposite side of said opening.

10. A bag having an opening; a flap extending inwardly from the wall of the bag at one side of said opening and having its edge free; a securing member attached to said flap, and another securing member attached to the bag wall opposite said flap to engage the member on said flap.

11. A bag having an opening with a valve structure at said opening,—said structure comprising intumed flaps at opposite sides of the opening; spaced apart securing devices attached to said flaps, and one of said flaps and the securing devices attached thereto being movable independently of the wall with which it is connected.

12. A bag having a combined filling and discharge opening with a separable valve flap at said opening and plates carried by the valve flaps and having interlocking fingers.

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

JAMES REANEY, JR.
JOHN A. McANULTY.

Witnesses:

G. FERDINAND VOGT,
CHARLES B. MANN, JR.