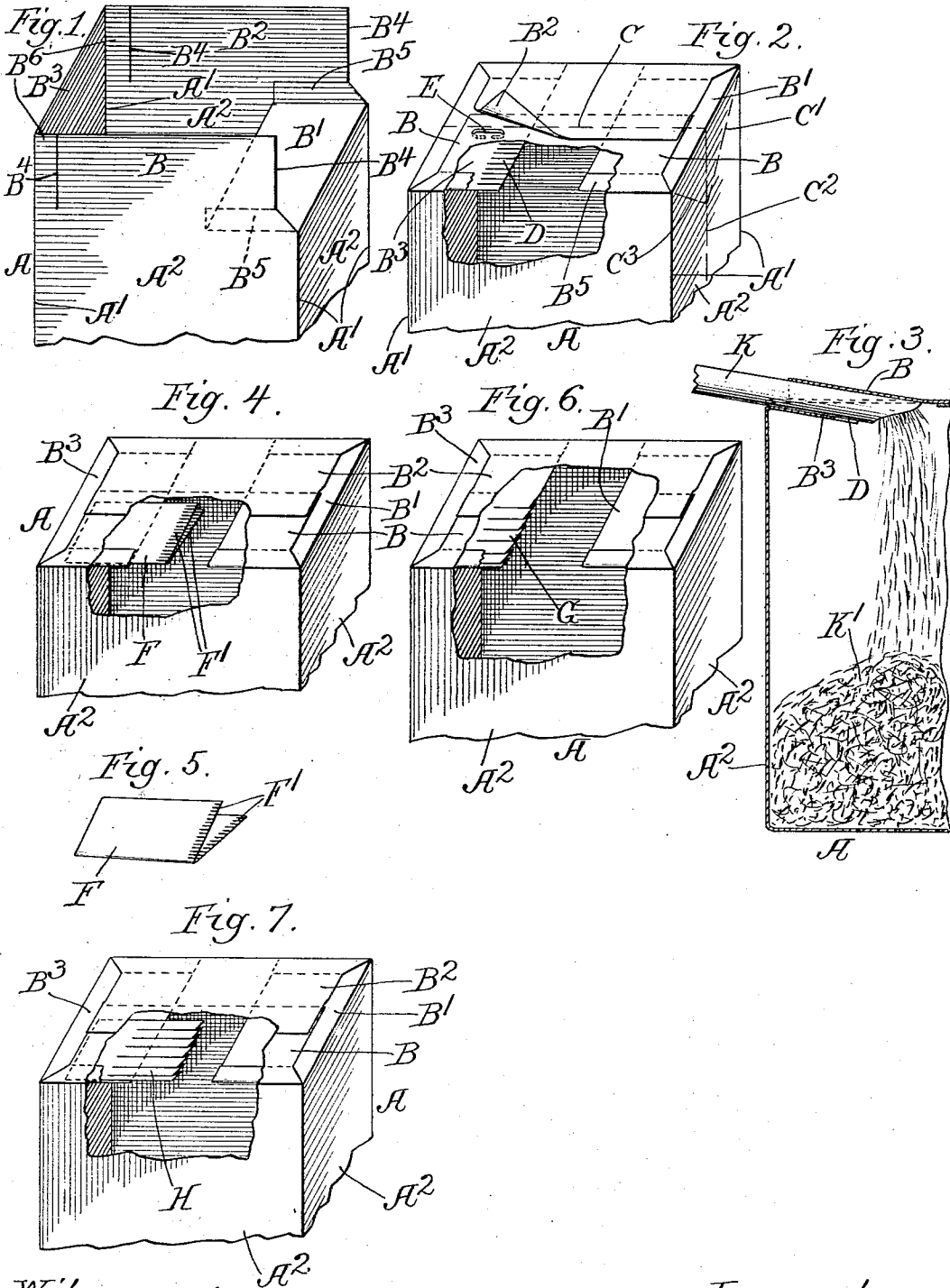


921,664.

Patented May 18, 1909



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ADELMER M. BATES, OF CLEVELAND, OHIO, ASSIGNOR TO BATES VALVE BAG COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF WEST VIRGINIA.

VALVE-BAG.

No. 921,664.

Specification of Letters Patent.

Patented May 18, 1909.

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To all whom it may concern:

Be it known that I, ADELMER M. BATES, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Valve-Bags, of which the following is a specification.

My invention relates to valve bags and has for its object to provide new and improved constructions in devices of that class.

The invention contemplates receptacles of that character which are provided with openings for filling purposes, these openings being controlled by valves. The bag may be said to consist generally of a bag body, a closure, a filling opening and a valve. These parts may be formed of a single piece of material properly folded and secured together, or the several elements may comprise different pieces of material suitably brought together. The bag may be of any desired material, such as cloth, paper, or other fabric. For purposes of illustration I have shown a bag having a "satchel bottom" end closure, but my invention is susceptible of application to other types of receptacle. A bag of this character is ordinarily formed of a single sheet of material formed into a tube, a part of which is folded over to form the closure.

The invention is illustrated in the accompanying drawings, wherein—

Figure 1 represents in perspective a bag with the end closure partially made, Fig. 2 is a perspective view of the closure complete with parts broken away to show other parts of the structure; Fig. 3, a section through a bag of this character in process of filling; Fig. 4, a perspective view of a modification; Fig. 5, a detail of the bag of Fig. 4; Fig. 6, a view similar to Fig. 4 of another modification, and Fig. 7, a similar view of another modification.

Like characters of reference indicate like parts in all the drawings.

The bag body has been designated by the letter A. It will ordinarily, though not necessarily, consist of a blank of material such as paper, folded along the lines A' so as to form a plurality of sides. Associated with each of the sides is a flap or end closure which, in this case, is represented as integral with the side. The bag is here shown as a four sided bag, the sides being represented by the letters A². The flaps are indicated by the

letters B, B¹, B² and B³. Preferably these flaps are slitted on the lines B⁴. Opposite pairs of flaps, as for example B¹, B³, are then folded down, the flap B¹ carrying with it the parts B⁵ B⁵. The parts B⁵, B⁶ will, therefore, lie against the flaps B, B². In Fig. 1 I have shown the flap B¹ and its associated parts in this position. The flaps B, B² will then be folded down upon the first mentioned flaps and the elements of the closure thus formed may be secured together in any desired manner. The other end of the bag, it will be understood, may be closed in this manner or in any desired way. When packed for shipment, the bags will ordinarily be folded flat as, for example, on the lines C, C¹, C² and C³ shown in Fig. 2.

D represents the slitted edge of the flaps.

I prefer to locate the filling opening between the elements of the end closure. This may conveniently be done by omitting to paste down or otherwise secure together the superimposed material forming these folds. For convenience the filling opening will be located at this place although it may not be essential under all conditions. Ordinarily the bag will be filled by means of a tube which is inserted through this filling opening. In Fig. 3 I have shown a bag in process of being filled, K representing a tube and K¹ the material which enters the bag therethrough.

The valve may be formed by the material of the end closure, the elements of this closure serving thus to control said filling opening. A valve so constructed, it will be seen, will be automatically closed by the material within the bag if sufficient in amount. If the bag is filled through the instrumentality of a tube as shown in Fig. 3, when the filling is complete the tube will be withdrawn and the material will pack up against the under side of the valve and so effect the closure of the filling opening.

In Fig. 2 I have shown a valve which is thus formed from the elements of the end closure, the valve in this case being composed of a lower wall formed by the material of the flap B³ and an upper wall formed by the material of the flap B. The valve, it will be understood, may be located anywhere between the superimposed elements of the closure. Preferably I locate it at the corner of the bag.

The elements of the end closure are secured one upon another in any desired manner, for

example, by pasting, the paste being omitted, of course, at the place where it is desired to have the filling opening. It has been found by experience to be a very difficult matter to accomplish this superficial securing together of the elements of the closure securely and still get a filling opening of uniform size. It is important in some cases that the filling openings should be uniform and particularly that they should not be made too large, as this might result in a leaky bag. I, therefore, prefer to secure the elements of the closure together in such a way as to effectually define the extent of the filling opening. To this end I use a fastening device E which is shown in Fig. 2 as a staple, clamping together the folds B and B³. The valve will be defined on the other side by the edge of the bag. Preferably the fastening device E is located under one of the folds of the closure. For example, I have shown it as in position to be covered by the flap B², the corner of this flap being shown turned up in Fig. 2 to illustrate the position of the fastening device. The valve, when under sufficient pressure from the material within the bag, will effectually close the filling opening and prevent the escape of the material. In certain cases, however, it may be desirable to have further means for hindering the escape of the material through the filling opening. To accomplish this end I construct the valve or the parts which perform the function of a valve, in such a way so that by their peculiar conformation they will entangle, impede or obstruct the material coming in contact with them.

In Fig. 2, for example, I have shown the under wall of the valve as provided with a number of marginal slits D forming, in effect, a fringe on the inner edge of the valve. It will be understood that with the handling of the bag the part of the valve so treated will be entangled with the material and the parts themselves so engaged one with another that the escape of material will be very effectually hindered.

In Fig. 4, I have shown a somewhat modified form of valve. In this case the valve is made of a separate piece of material F secured between the elements of the end closure. This valve will preferably extend beyond the lower element of the closure so as to form a long valve or filling duct leading into the interior of the bag. This valve piece F I have shown as folded so as to form upper and lower valve elements. The edges of the extension piece F may be fringed as at F¹ to insure complete closure of the filling opening.

In Fig. 6 I have shown another modified structure. In this instance, for purposes of illustration merely, I have shown the valve as composed of the superimposed elements of the end closure, the inner one of these elements, forming the inner wall of the valve,

being plaited or crimped as shown at G. The material, it will be understood, will pack up or down at the case may be, upon this crimped portion of the valve, doubling or folding the material of this part of the valve upon itself.

In Fig. 7 I have shown a similar treatment of one of the valve elements, this part consisting, in this case, of a crimped extension piece H which is represented as secured to the inner element of the closure.

The bag may be made of different materials, as for example the bag may be made of paper and the inwardly extending or fringed valve portion may be of cloth. The valve portion is, broadly speaking, provided with a variable or expanding edge. That is with an edge capable of assuming a somewhat irregular position or a position different from that which it would assume if it consisted of the edge of a single piece of material. The fringed edge and the crimped edge are but illustrations of the idea. Such an expanding or variable edge will readily cling around the tube in the case of stiff or heavy material to prevent the escape of material, while the bag is being filled, and it will also more perfectly seat against the opposed face when the tube is withdrawn to give the valve effect. This is particularly true in the case of heavy or smooth or glazed material and where the valve opening is of considerable width.

I claim:

1. In a valve bag, the combination of a bag body with a folded closure, the superimposed parts forming the closure being superficially secured together in such manner as to form a receptacle closed except for a filling opening, and a fastening device extending through the fabric of the bag to define the filling opening.

2. In a valve bag, the combination of a bag body with a folded end closure, and a valve formed by superimposed material at one end of said bag, said valve defined at one side by the corner of the bag and at the other by a fastening device.

3. In a valve bag, the combination of a bag body with a folded end closure, the superimposed elements of said closure being pasted together, a valve formed by said elements, and a fastening device extending through said superimposed elements to define such valve.

4. In a valve bag, the combination of a bag body of paper, with a folded end closure, the superimposed elements of said closure being pasted together, a valve formed by said elements, and a metallic fastening device to secure such superimposed elements together.

5. In a valve bag, the combination of a bag body having superimposed satchel shaped end portions with a longitudinally folded valve forming extension piece between and

extending inwardly beyond such superimposed parts.

6. In a valve bag, the combination of a bag body having superimposed satchel
5 shaped end portions with a longitudinally folded valve forming extension piece between and extending inwardly beyond such

superimposed parts, the ends of such extension piece slit or fringed.

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