Nov. 19, 1929. J. DUVALL 1,736,396

REENFORCING CLOSURE MEANS FOR PAPER BAGS

Filed May 27, 1926

Fig. 1.

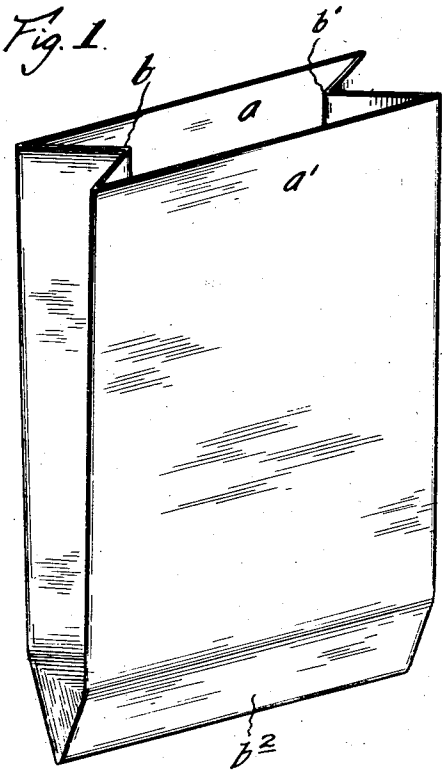


Fig. 2

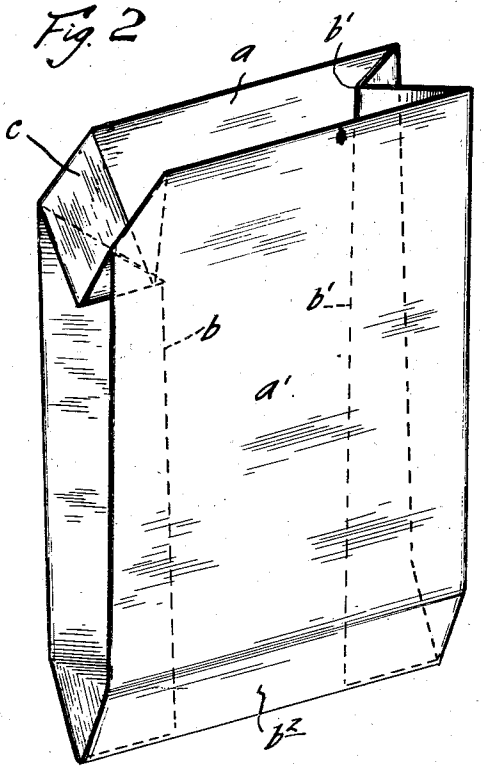


Fig. 3

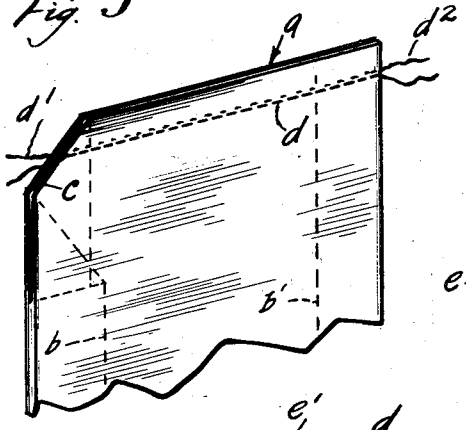


Fig. 4

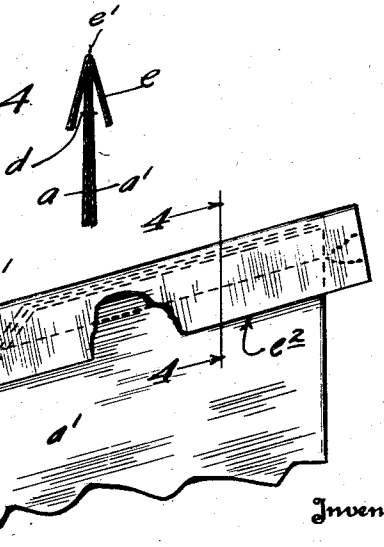


Fig. 5

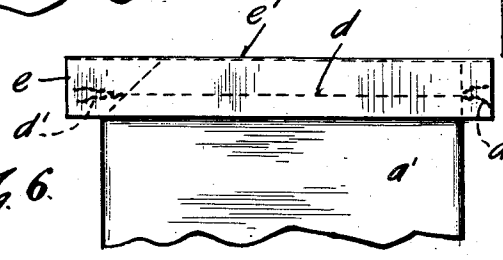


Fig. 6.

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UNITED STATES PATENT OFFICE

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REENFORCING CLOSURE MEANS FOR PAPER BAGS

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My invention relates to the manufacture of paper bags (of the valve type, or otherwise) for carrying cement and other finely powdered material; the sides of the bag being formed with interior folds, and one open end of the bag being closed and sealed by a seam sewed across the bag. To reenforce the wall sides of the bag thru which the stitches are made it is the custom to place over this end of the bag a folded strip of paper, usually crepe tape, and the only seal of such open end of the bag was the compression of the wall-sides of the bag upon each other by the stitched seam sewed across them.

The objectional feature of this closure is the sewing needle makes holes thru the walls of the bag, and, of course, thru the reenforcing strips, thru which the powdered material may sift. Besides, the powdery contents may also sift out between the walls of the bag and the meshes of the stitches. Indeed, such blowing out as it were, of the powdery contents of the bag, as heretofore made, during the handling of the bag, is frequently seen.

Furthermore, the stitches may unravel and thus release the walls and permit the bag to open under pressure of the material contained in it.

Furthermore, the perforation made by the sewing in the bag walls weakened the latter so that they are occasionally torn by the pressure of the material carried in the bag.

The object of my invention is to supplement said reenforcing strips and seam by additional means by which all of the said incidental objectionable features are eliminated.

I attain my object by placing a folded reenforcing closure strip astride the top of the side-walls of the bag after they have been sewn together; and I make my reenforcing closure strip of such width that its lower edge extends a substantial distance below the line of said stitched seam, and of such length that the ends of the strip cover the thread ends of the stitches which extend beyond the lateral edges of the side-walls of the bag; and finally cement the sides of the reenforcing closure strip to the exterior underlying faces of the side-wall and over said thread ends.

Furthermore, the fold of such reenforcing closure strip is drawn tightly down upon the top of the side-walls so that the fold constitutes an auxiliary and efficient closure for any crevice between the side-walls of the bag.

These details of my improved bag are hereinafter more fully described and are illustrated in the accompanying drawings in which,

Fig. 1 illustrates a feature of construction in one type of bag with which my invention is directly concerned, namely, a so-called bellows bag;

Fig. 2 shows the open end of this bag formed to make a valve;

Fig. 3 shows the open end of the bag closed by the stitches of the seam made across the top of the side walls of the bag;

Fig. 4 illustrates diagrammatically that the fold of the reenforcing closure strip is to be drawn tightly over the top of the wall sides, before the sides of the strip are cemented to the exterior sides of the bag walls, in order that said fold will constitute an auxiliary closure for any crevice between the side-walls;

Fig. 5 illustrates the proper placing of my reenforcing closure strip on the open end of the bag, after its side walls have been stitched together; and

Fig. 6 shows, in side elevation, my improved means for closing the open end of the bag completed.

One of the types of paper bag to which my invention may be applied is described in the patent issued to A. M. Bates, January 13, 1925, No. 1,522,485, commonly known as a satchel bottom bellows bag, such type being illustrated by Fig. 1 of my drawings, the same comprising wall-sides a, a', connected by lateral interior folds b, b', one end b^2 being closed by a satchel bottom.

Generally one of the sides of this type of bag is provided at one end with a valve as at c, as illustrated by Fig. 2 of my drawings, and also well known to the art so as not to require further detailed description.

The tops of the side-walls a and a', referring to the open end of the bag are brought together as illustrated by Fig. 3 and are fastened together by a seam of stitches d, as the first step for closing the open end of the bag;

the ends of the threads of the seam being extended beyond the lateral edges of the bag as at d^1 and d^2 in Fig. 3 of my drawings.

A folded strip of tough paper, for example craft tape, e is then placed astride the top edges of the wall sides as illustrated in Fig. 4 of my drawings, taking care to bring the fold e' of the crepe tape e snugly and tightly against the upper edges of the sides a and a', as illustrated by Fig. 4 of my drawings.

The sides of the craft tape,—what I term my reenforcing closure strip—e are then glued to the underlying portions of the exterior faces of the side-walls a and a' thereby providing an efficient seal for any crevice between the side-walls at the open end of the bag, and incidentally causing the glue to enter and fill the perforations made by the needle by which the seam d is produced. When the last mentioned operation has been completed, my finished bag will have the appearance illustrated in Fig. 6 of my drawings. It will be noted that the lower edge e^2 of my reenforcing closure strip e extends below the stitched seam d so that the reenforcing closure strip not only protects the meshes of the seam d but in itself also reenforces the perforated portions of the side-walls a and a', and thus assures that the stitches of the seam cannot unravel, since the thread end of seam is also cemented between the sides of the reenforcing closure strip e at the extended ends of the latter. Thus my reenforcing closure strip e will form an effective supplemental closure for any crevices between the inner faces of the side-walls a and a'; and besides will function as a reenforcing medium for those wall portions perforated by the needle in leaving the seam d, and will also close said perforations with the glue and thus assure that the finely powdered contents of the bag cannot be sifted out.

I claim:

1. A closure means for the open end of a bag-like container designed for powdered material, comprising a line of stitching holding the opposing walls of the open end of the container in contact to prevent bulk leakage of the material, and an imperforate sealing strip secured adhesively to the exterior surface of each wall of the bag to overlie the stitching, whereby to protect the threads of the stitching against wear and at the same time seal the openings in the material of the bag incident to the passage of the thread therethrough in the stitching operation.

2. A closure means for the open end of a bag-like container designed for powdered material, comprising a line of stitching holding the opposing walls of the open end of the container in contact to prevent bulk leakage of the material, and a single imperforate sealing strip adhesively connected to the walls of the bag and overlying the threads of the stitching on both sides of the bag to protect the thread and seal the openings incident to the stitching operation, the sealing strip embracing the ends of the bag beyond the stitching and presenting an unbroken sealing area from the line of stitches on one side of the bag to the line of stitches on the opposite side of the bag.

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