

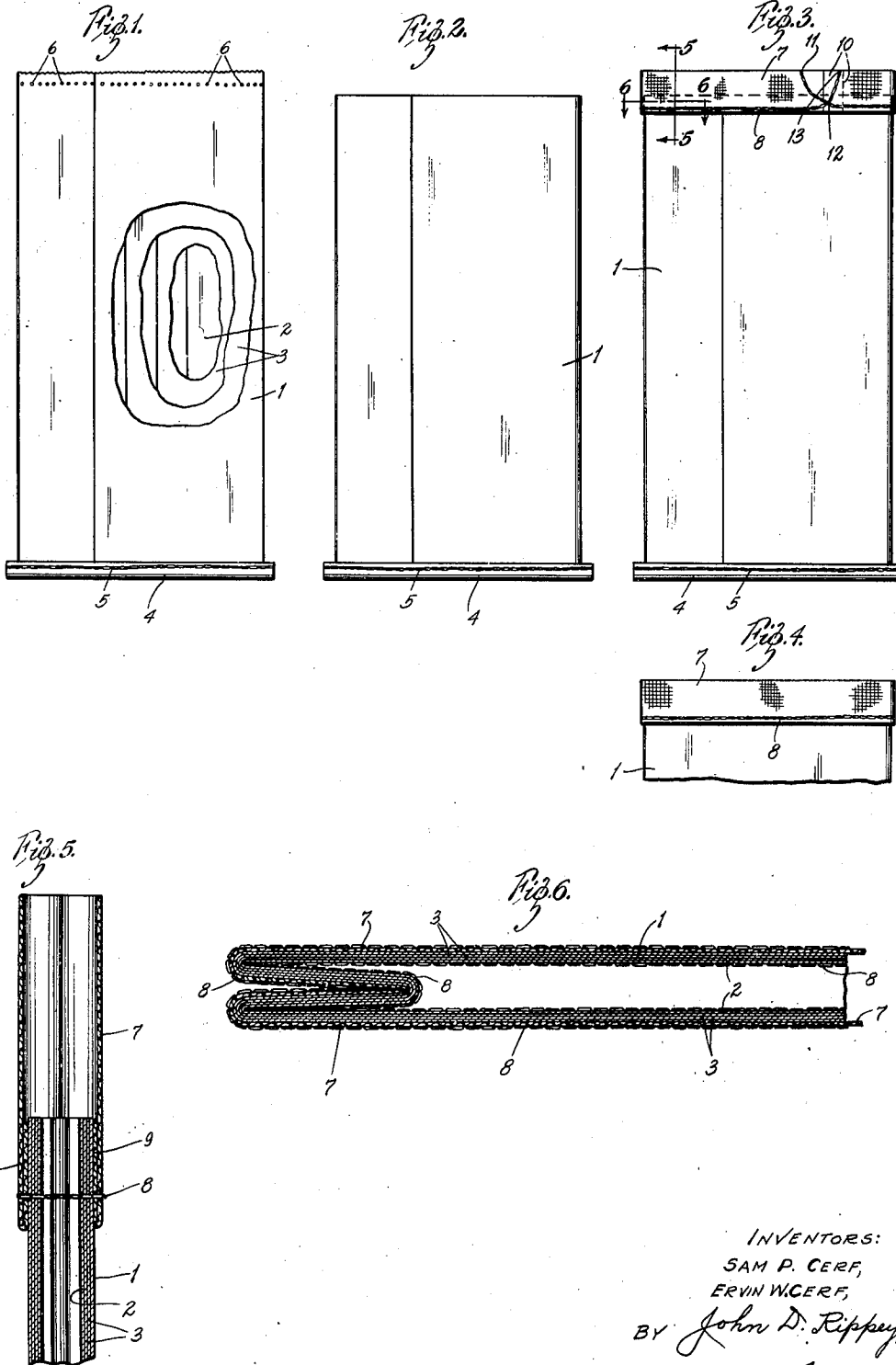
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BAG

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1 Claim. (Cl. 229—55)

This invention relates to bags; and has special reference to bags composed of main enclosing walls, and strengthening closure devices attached to said walls adjacent to the open ends of the bags and cooperating with said walls to provide bags having many advantages.

An object of the invention is to provide a bag having enclosing walls attached along their bottom and vertical side edges and cooperating to form an enclosure having an open top, in combination with a substantially inelastic strip surrounding, covering, and attached to the margins of said walls and extending beyond the ends thereof at the open end of the bag, and cooperating with said walls to form a bag having a datum capacity, to constitute an attachable closure for the bag to retain the contents therein, and to strengthen and reinforce the walls of the bag at and around the open end thereof.

Another object of the invention is to provide a device attached to and projecting beyond the open end of a used bag composed of paper or the like, having an initial datum capacity, and from which a marginal portion of the enclosing walls of paper or the like had been severed and removed, in order to restore the bag to its said initial datum capacity, strengthen and reinforce said walls of the used bag around the open end, and form an attachable closure device whereby the open end of the used bag may be closed to prevent loss of or access to the contents.

Other objects will be apparent from the following description, reference being made to the annexed drawing, in which—

Fig. 1 is a side elevation of a bag having a definite predetermined capacity, after an original closure device has been detached therefrom.

Fig. 2 is a side elevation of the same bag after the margins of the walls at the open end of the bag have been cut away along a line below the line of attachment of the original closure device and the capacity of the bag substantially reduced.

Fig. 3 is a side elevation of the bag of Fig. 2 having our invention in connection therewith.

Fig. 4 is a side elevation of the open end of the bag opposite from that shown in Fig. 3.

Fig. 5 is a considerably enlarged sectional view on the line 5—5 of Fig. 3.

Fig. 6 is a similarly enlarged view on the line 6—6 of Fig. 3.

The bag in which the present invention is embodied and for which it is specially adapted includes two or more bags nested one within the other and each composed of a sheet of material, such as paper, having its vertical margins over-

lapping and attached together. The sheets of paper or other material are preferably of equal vertical length so that, when their respective margins are overlapped and adhesively or otherwise attached together, they form tubular bag sections of equal vertical length and of only slightly graduated diameters so that they may be nested one within the other in multiply arrangement without buckling, creasing or folding the inner bag sections. The overlapping marginal edges of the respective plies or sheets are disaligned from each other and are located at different circumferential positions about the completed bag. Preferably, the wall plies or sheets are attached together at spaced points so as to prevent relative displacement of said plies or sheets and cause them to reinforce and strengthen each other. The bottom of the bag is closed by a strip of material folded to enclose and attached to all of the plies.

As shown, the bag in which the invention is embodied comprises an outer ply or sheet 1 having its vertical margins overlapping and glued or cemented together throughout their length; an inner ply or sheet 2 having its vertical margins overlapping and glued or cemented together throughout their length; and a pair of interposed plies or sheets 3 having their vertical margins overlapping and glued or cemented together throughout their lengths. The wall plies or sheets 1, 2 and 3 are adhesively secured together at spaced intervals to prevent relative displacement and to reinforce and strengthen each other. The closure 4 for the bottom of the bag is in the form of a strip of material folded to enclose the nested tubular sheets between opposite sides of said strip 4 and to receive a line of stitches 5 passing through opposite folded portions of the strip 4 and all of the interposed bag forming wall plies or sheets 1, 2 and 3.

This provides a bag of predetermined datum capacity. After the bag has been filled, the open ends of all the plies or sheets 1, 2 and 3 may be attached together by any appropriate closure device such as a duplicate of the strip 4. After the closure device has been detached from the bag to permit removal of the contents, perforations 6 remain through all of the plies or sheets 1, 2 and 3 near the open end of the bag from which the stitches 5 had been taken. After the closure devices have been detached and the contents removed from bags that have been filled and used, it has been found impracticable to reuse the bags because the holes 6 weakened the margins of the plies or sheets 1, 2 and 3 to such

an extent that other closure devices could not satisfactorily be attached to the bags having the same datum amount of contents as first enclosed by the bags. In such attempts, if the closure devices, such as the closure devices 4, were attached to the bags below the line of stitch holes 6, the capacities of the respective bags were substantially reduced and the bags could not be filled with the same datum amount of contents as they originally contained. If the closure devices, such as the closure devices 4, were attached to the margins of the bags upwardly beyond the stitch holes 6, another departure from datum capacity resulted, and a part of the contents of the bags might leak through said holes. The holes 6 also constituted an unsatisfactory line of weakness along which the bags might tear. If such closure devices were attached to the margins of the bags by stitches running along or adjacent to the holes 6, the bags were weakened because of the formation of additional stitch holes for the new line of attaching stitches, because it was found impossible to extend the stitches through the previously formed holes 6. Then, too, in such cases, the bags did not constitute appropriate measures for determining whether they contain the same datum amount of contents as the original bags contained. The contents of the refilled bags varied too much from the required amount.

Our present invention overcomes these difficulties and objections and provides an inelastic closure strip attached to and projecting beyond the open end of the paper bag irrespective of whether the bag had been used before or not, and functioning for the purposes of forming the bag with its original datum capacity, strengthening and reinforcing the walls of the bag around the open end and also forming an attaching device whereby the open end of the bag might be held closed to prevent loss of or access to the contents.

Fig. 1 shows a used bag from which the original closure strip had been removed to expose the line of holes 6 which extend through all of the plies or sheets 1, 2 and 3 throughout their circumferential length and substantially below the upper ends of said plies or sheets. In Fig. 2, the walls of the used bag have been severed immediately below the line of stitch holes 6 to detach a strip from said walls and the capacity of the bag had been diminished below the datum amount to that extent. In Fig. 3, the bag of Fig. 2 is equipped with our present invention, consisting of an inelastic textile closure strip 7 secured to all of the open end margins of the plies or sheets 1, 2 and 3 by a line of stitches 8.

As shown in Fig. 5, the strip 7 of inelastic textile material has its lower margin 9 folded inwardly and interposed between the outer ply 1 and the outer portion of the strip 7. This provides a double thickness of the ply strip 7 entirely around the bag. Then, a line of stitches 8 is formed through the strip 7, through the folded margin 9 of said strip, and through all of the plies or sheets 1, 2 and 3 entirely around the open upper end of the bag. That is, the stitches 8

leave the end of the bag open and do not pass through or fasten together opposed plies or sheets 1, 2 and 3. The strip 7, the folded margin 9 of said strip, and the stitches 8 cooperate to reinforce and strengthen the open end of the bag, while said strip 7 extends beyond the severed end of the bag proper and constitutes an addition to or extension of the bag walls to restore the bag to its initial datum capacity.

The strip 7 extends far enough beyond the end of the bag to receive one or more lines of stitches for permanently closing the bag after it has been filled.

As shown in Fig. 3, the ends 10 of the strip 7 and its folded margin 9 overlap at a point disaligned from the overlapping margins of any of the plies or sheets 1, 2 and 3. The line of stitches 8 begins at a point 11 at the upper edge of one end portion of the strip 7, runs downwardly across the overlapping ends 10 to a point 12, then continues in an approximately straight line entirely around the bag and throughout the length of the strip 7 to a point adjacent to the point 12, and then extends upwardly across the overlapped ends 10 of said strip 7 to termination at 13. Thus, the strip 7 is securely fastened to the open end of the bag and functions for all of its intended purposes.

We are aware that the strip 7 of inelastic strengthening and reinforcing material may be used initially in connection with new bags for an attaching closure device in substitution for the analog of the strip 4. Or, the strip 7 may be used to recondition, strengthen and reinforce the walls of used bags, and also to restore them to their initial datum capacity when said datum capacity has been diminished by removal of portions of the walls thereof.

We claim:

Means for restoring to an initial datum capacity a used bag composed of walls of paper or the like and having an open end from which a strip of said walls around said open ends is detached and said initial datum capacity thereby diminished by the content capacity of said strip, for strengthening and reinforcing said walls around said open end and from which said strip is detached, and for providing a closure device for said open end of the bag, comprising a substantially inelastic strip of pliable textile material having its lower margin folded to provide a portion of double-ply thickness enclosing and contacting with the outer surface of said walls around said open end and extending beyond the ends of said walls approximately the same distance to which said detached strip extended, thereby cooperating with said walls to form a bag having the same datum capacity as the initial datum capacity of said bag before said first named strip was detached from said walls, and a line of stitches passing through said double-ply thickness of said textile strip and through said walls of said bag and securing said parts together to form a bag having the same datum capacity as the initial datum capacity of said bag.

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