

C. B. SANDERS.
PAPER BAG.

APPLICATION FILED SEPT. 8, 1910.

1,029,893.

Patented June 18, 1912.

Fig. 1.

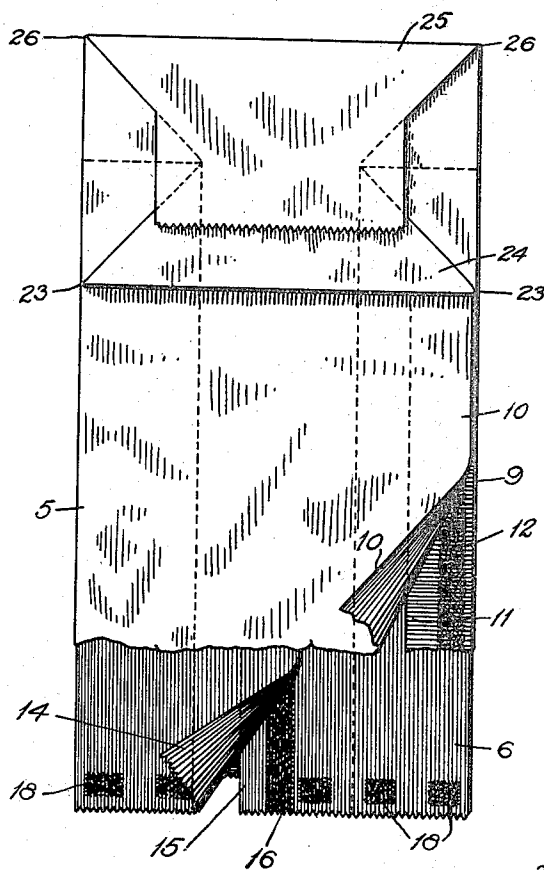


Fig. 2.

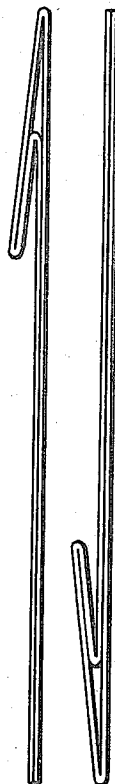


Fig. 3.

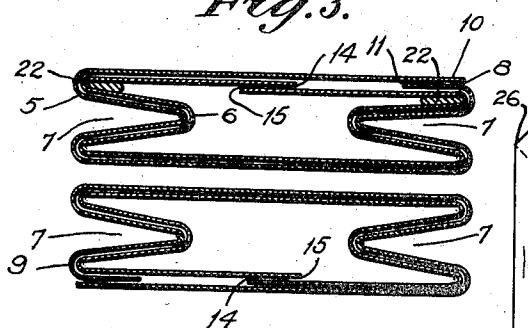
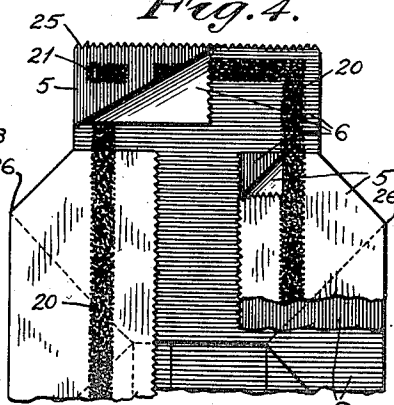


Fig. 4.



Witnesses:

S. L. Grotta

L. Fox

Inventor:

Charles B. Sanders
by W. H. Honies

Atty.

UNITED STATES PATENT OFFICE.

CHARLES B. SANDERS, OF MONTCLAIR, NEW JERSEY, ASSIGNOR TO UNION PAPER BAG MACHINE COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

PAPER BAG.

1,029,893.

Specification of Letters Patent.

Patented June 18, 1912.

Application filed September 8, 1910. Serial No. 581,010.

To all whom it may concern:

Be it known that I, CHARLES B. SANDERS, a citizen of the United States, and resident of Montclair, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Paper Bags, of which the following is a full, clear, and exact specification.

This invention is an improved double or lined paper bag of the general type known in the trade as "duplex" bags. Such bags are made with their inner and outer walls of different materials, for various reasons, the more important of which are to enable the inner and outer walls to be of different strength, thickness, color or penetrability. For example, some of these bags are made with an inner wall or lining of paper which has been paraffined or otherwise made more or less waterproof or air-proof, either to exclude the air, or to confine the flavor or aroma of the goods to be packed in the bags, as for example in the case of tea or coffee, or to prevent the escape of oily or more or less liquid constituents of goods contained within the bag. In such cases, especially where it is desirable to print or ornament the outer sides of the bags, the outer wall or cover is made either of paper which is ornamental in design or color, or which is adapted to take ink or other printing color.

The present invention is intended to make bags of this general type in a form which may be more conveniently printed, folded, bundled, and subsequently filled than has heretofore been possible, on account of the arrangement and relation of the folds, seams and plies heretofore employed in this type of bag.

The seams of the inner and outer body portions have generally been interfolded, making a single, thick, composite seam, which not only makes the subsequent printing of the bag more difficult, but also makes the bags build up more unevenly in thickness when stacked in the bundles in which they are commonly stored and transported. The composite seam also makes the body portion of the bag stiffer to handle when filling the bag, and also prevents free adjustment of the walls of the bag to the weight and displacement of the material with which the bags are filled, it being found preferable for many purposes to leave the inner wall or lining of the body portion of

the bag entirely free from the outer portion, so that either portion can slip, relative to the other at all portions of the body, thus combining their strength to best advantage, without weakening or hampering each other.

It is generally desirable to have the outer body seam as nearly invisible as possible, so as not to detract from their external appearance, especially when finely colored or ornamented paper is employed, in case the bags are to be printed. Moreover, in the latter case, it is desirable to have the outer visible seam as nearly as possible at one edge of the side or face of the bag, so as to enable the bags to be printed on both faces. In cases where the paper is printed in the sheet or web, before being folded into bags, it is desirable thus to have the visible outer seam as nearly as possible in coincidence with the edge of the bags in their folded form, so as to avoid exposing or making prominent any lack of register that may result from the folding operation. On the other hand, it is important also to adapt these bags to be manufactured by modern rapid automatic paper bag making machines, with which it is found sufficiently difficult to manufacture the ordinary single ply bags, particularly those having bellows sides and square bottoms, known as the "S. O. S.", or "improved square" types. These machines must operate very rapidly, in order to be commercially successful; and with such rapidity of operation it becomes important to have the paper tubes or blanks suitably folded and uniformly balanced in their resistance to the bottom folding operation. Where the tube or body seams are all at one side of the center of the width of the blank, this greater thickness offers greater resistance at that side of the blank, tending to lack of uniformity or symmetry in the folding. Moreover, the tube or body seam, being freshly pasted, is more liable to be separated by the folding action when thus placed at one side. Therefore, for the foregoing principal reasons, it is desirable in the case of a double or lined paper bag, especially those having the complex bellows sides and bottom folds alluded to, to make the inner and outer body seams separate, and at different longitudinal positions of the blank, the inner body seam being preferably at or near the center of the blank, and the outer body seam being at or near the edge of

the blank. It is, however, desirable, to unite and interfold the plies which constitute the bottom of the bag, so as to make that bottom as strong as possible. It is also desirable to unite the inner and outer plies or bodies of the bag at or adjacent to their mouth portions, so that when the bag is opened for filling, the lining will go with the adjacent outer portion, thus fully opening the mouth end of the lining with certainty and rapidity.

The object of the present invention is to produce such a bag.

Figure 1 of the drawings is a side view of the bag of the present invention in its flattened form, some of the plies being drawn away and bent over to show more clearly their form and relation. Fig. 2 is an edge view, and Fig. 3 a sectional end view, showing bags like that of Fig. 1 in the reverse relation in which they are stacked, so as to bring the thickened side fold alternately on opposite sides of the pile or bundle, so that the latter will build up uniformly on its two sides and ends. Fig. 4 is a side view of a portion of the bottom of a bag blank in its partly folded condition, illustrating the relation of the plies.

In the embodiment shown in the drawings, the outer bag 5 and the inner bag or lining 6 are folded one within the other in fairly close conformity, although the plies, especially in Fig. 3, are shown to be somewhat separated as well as magnified in thickness, this being for the purpose of showing the two plies or thicknesses and their relation more clearly. The opposite sides of both plies of each bag are bent forwardly to form the side bellows folds 7, characteristic of this type of bag. The body seam 8 of the outer bag or blank 5 is located as near as may be found practicable to one edge 9 of the folded body. In Fig. 1, a portion of the edge 10 of the upper and outer ply is shown to be turned back to show the edge 11 of the inner ply and the line or zone of paste 12. Similarly, a portion of the upper edge 14 of the inner blank or bag 6 is turned back to show its associated opposite edge 15 and the line or zone of paste 16, which unites the edges 14 and 15 to form the body seam of the inner bag or lining 6. The spots of paste 18 are for the purpose of uniting the inner bag or lining with its outer bag or cover at the mouth end of the bag. Thus the outer bag 5 and the inner bag or lining 6 are provided with separate independent tube or body seams, by means of the paste lines 12 and 16, respectively, thus leaving these body portions below the mouth of the bag free to slip relative to each other, as both are expanded by the filling operation. Although the body portions are thus left separate, with freedom for relative movement, the bottom

forming plies of both bags are interfolded and pasted together, as shown in Fig. 4, so as to unite their strength in the formation of a tight and substantial bottom. In this view, various portions of the inner bag or lining 6 are turned back to show that they are folded together in substantial coincidence, being treated as a single ply in the bottom folding operation, and united by lines or zones 20 of paste. These double bags may be manufactured by different machines well-known in the art of making paper bags. A desirable method is to employ separate rolls of paper for the inner and outer bags, drawing them over a tube former, which plaits or folds the paper continuously into tubes one within the other, with bellows sides, as shown in Fig. 3. The leading end of the tube is drawn by means of suitable drawing rolls into the bottom forming mechanism, which engages the blank either from the outside, in the side recesses of the bellows folds 7, or in another and well-known type of machine, by means of bottom folding fingers 22, which enter the front end of the mouth of the blank, and engage with the inner side of the tube at those portions thereof which are to become the turned-back corners 23 of the bag. In either case the blank is folded to the "diamond" form shown in Fig. 4. The bottom paste 20 is then applied, and the end flaps 24 and 25 of the diamond are folded in line with the corners 23 and 26, respectively, to complete the rectangular bottom. The form of these folds and the processes of folding them just referred to are well understood in this art, and need no further description herein. In some instances, particularly when the end flaps are slitted as herein shown, it is desirable to provide for uniformly pasting down the outer ply of the end flaps 24 and 25, particularly of that flap which is folded upon the outside, so as to guard against leaving the outermost ply of the bottom loose in the completed bag. For this purpose, it is desirable to apply paste in spots 21, or any other convenient way, between the inner and outer bags 5 and 6, adjacent to the outer edges of the flap, as shown in Fig. 4. This can generally be most conveniently done in connection with the tube forming operation, by devices similar to those which are employed for applying the paste 16 and 18. After the bags are thus completed and dried they are stacked together, as shown in Fig. 2, the alternate bags being reversed end for end, without turning them over. In this way the body seams 8 of the alternate bags are disposed at opposite sides of the accumulating pile, while the thicker folded bottom plies of the alternate bags are brought to opposite ends of the pile, thus keeping the aggregate thicknesses uniform

in number on the opposite sides and ends of the pile.

The term "loosely disposed" is herein adopted for convenience and brevity in describing the loose or unfastened relation between the body portions of the inner and outer bags.

I claim as my invention:—

1. A double paper bag with bellows sides and a flat bottom, having separate body portions disposed one within the other, and having separate single body seams, one of which is disposed at the approximate center of the width of the bag, and the other of which is disposed adjacent to an edge of the bag, the flaps which form the flat bottom of the bag consisting of the interfolded material of the inner and outer bags.

2. A lined paper bag having the body portion of the lining loosely disposed within the outer bag, and independently pasted by separate and independent body seams, one of which is disposed at the approximate center of the bag, and the other of which is disposed adjacent to the edge of the bag, the flaps forming the flat bottom of the bag being formed of the interfolded plies of the bag and its lining.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses, this 2nd day of September, 1910.

CHARLES B. SANDERS.

Witnesses:

ALLEN E. OSBORN,
JAS. BOYD POTTER.