May 1, 1928. 1,668,044

H. BURGDORF

METHOD OF MAKING BAGS

Filed April 6, 1927

Fig. 1.

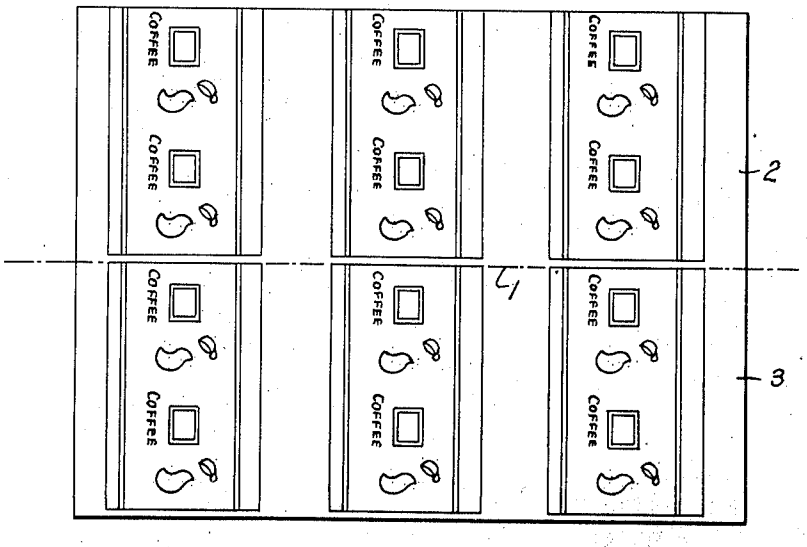


Fig. 4.

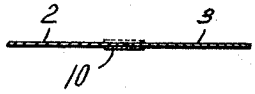
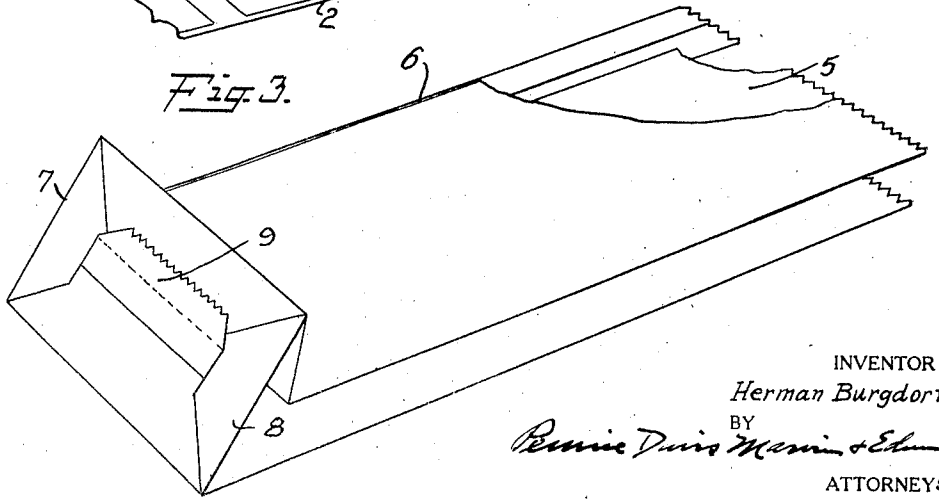


Fig. 2.

Fig. 3.



INVENTOR
Herman Burgdorf
BY
Bruce Davis Mann & Edwards
ATTORNEYS

Patented May 1, 1928. 1,668,044

UNITED STATES PATENT OFFICE.

HERMAN BURGDORF, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE FRANK A. ROLLING COMPANY, INC., OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

METHOD OF MAKING BAGS.

Application filed April 6, 1927. Serial No. 181,377.

The present invention relates to the art of making paper bags from printed stock, and particularly to the making of square bottom bags of the general type commonly lined with glassene paper and used in the merchandising of coffee, and like products.

Square bottom bags are now being made by two distinctly different methods. Bags of the cheaper type printed in one or two colors with a quick drying ink are ordinarily made by running a strip of paper from a roll of stock through a rotary printing press and immediately rewinding the printed stock into a roll. Ultimately the roll of printed stock is passed continuously through a rotary bag machine where the paper is cut to the desired size and shaped, is lined with waxed or grease proofed paper and then is shaped and pasted to form the finished product. Not more than two colors can well be applied in a rotary printing press and the speed at which the paper travels through the press and is rewound into a roll precludes the use of high grade slow drying inks. Such inks would be smudged by the rerolling, and furthermore, would cause successive layers of the paper to stick together. A parting strip of waxed paper can be used to reduce the liability of sticking, but such use of a parting strip, or slip sheet, is troublesome, and does not entirely overcome the tendency towards sticking, and does not prevent smudging. The net result of the procedure above outlined is a bag of dull appearance. Otherwise, the bag is entirely satisfactory. Bags can be made in this way about three times as fast as by the procedure now to be described.

The second recognized way of making square bottom paper bags consists in cutting the paper stock into the form of sheets usually of a size large enough to furnish the stock for several bags. The printing is done on these flat sheets with an ordinary cylinder press, as for instance, a Miehle press. High grade and slow drying inks can be used, as in any ordinary color printing, and there is no difficulty in using as many as a half dozen different colors. After the application of any color the sheets may be stacked one on another, as in ordinary color printing work, and without danger of smudging the ink or sticking the sheets together. Very brilliant effects may be obtained by suitable selection of printing inks of the varnish or slow drying type. But when sheets of paper bearing the printed imprint of a plurality of bags are to be cut into bag blanks and shaped into bags the operation is not an easy one to carry out at high speed.

It is the object of the present invention to combine the good features of the two methods above outlined, or in other words, to do the printing with high grade and slow drying ink while the paper is in the form of flat sheets and then after the ink is dry to join those sheets into a long strip of paper which can be wound up for storage and ultimately can be unwound for passage at high speed through a paper bag making machine of the standard rotary type.

Details of my new method and various advantages thereof will become clear from the following detailed description.

In the accompanying drawings,

Fig. 1 is a diagrammatic representation of a flat sheet of paper bearing the printed imprint for six bags.

Fig. 2 is a perspective diagram showing how a series of such sheets can be cut down the middle along the line 1 to form two half sheets 2 and 3 which are then joined end to end by pasting to form a continuous strip which is then wound up into a roll.

Fig. 3 is a perspective view of a finished square bottom paper bag made from such a continuous pasted strip of stock, and Fig. 4 is a section through a modified form of joint.

The sheet of paper may be of usual dimensions say 33″ by 25″, that being the size readily handled in a printing press of the cylinder type. A sheet of that size will furnish stock enough for six bags. Brilliant inks are used by me and there is no difficulty in printing in as many colors as may be needed. Six color printing with gilded outline, including gold bronze printing, is not difficult, nor do the operations differ in any way from standard multi-color printing with slow drying ink to produce brilliant effects.

The next operation consists in cutting these sheets down the middle and pasting

the half sheets so formed end to end with an overlapped pasted joint about 3/8" wide. Details of the machine for carrying out this operation are not essential to an understanding of the method herein claimed, and the process can be carried out by hand pasting. The long strip of paper thus built up of a succession of half sheets pasted together end to end and with the printed imprints accurately spaced from one another is next wound up into a roll 4 for storage until needed in the bag making machine.

The operation of passing such a continuous strip through a bag making machine of the continuous or high speed type does not differ from standard practice. Accuracy in pasting the half sheets end to end is of importance in synchronizing the printed imprints to the cutting and folding operations of the bag machine, but machines of this type are ordinarily equipped with a localizing device to correct any slight inaccuracy in synchronizing or timing. The bags may be lined with a sheet of glassene paper 5, as shown in Fig. 3, and may be of the square bottom, or side tucked type, as shown in perspective in Fig. 3.

In Fig. 3 the longitudinal seam is at 6. The pasted joint between successive sheets is present in every third bag when the operation is carried out as above described, but this pasted joint lies across the bottom of the bag and is covered up by the folds 7 and 8, excepting that it traverses the tongue 9 by which one fold overlaps the other. Its presence at this place in the bottom of the bag does not detract from the appearance of the bag and from a mechanical standpoint it is a source of strength rather than weakness because of the added thickness of paper and because of the stiffening due to the paste.

Whether any flat sheet of paper stock shall have more or less than six bag imprints made on it in the printing press will, of course, be determined by the size of the press and the size of the bags to be made from the stock, but with a sheet of the dimensions above indicated six coffee bags can be made, each with a holding capacity for one pound of pulverized coffee.

In the commercial manufacture of bags for many customers it is not uncommon to receive individual orders for as few as 5,000 bags. This is not enough to justify the trouble and expense of putting the requisite make-up on a high speed rotary printing press operating in conjunction with a high speed bag machine, for such an order would mean operation of the set-up for only a few minutes and more time would be lost in the "make ready" than in the actual operation of printing and making the bags. But in operating by my improved method these small orders can be printed on the cylinder press without undue expense, and the sheets can then be cut and pasted end to end and wound up in a roll together with many other such small orders. When the time comes for running the strips at high speed through the bag machine these several orders can be separated one from the other. This overcomes in advantageous way one troublesome problem in bag making for customers whose demands are relatively small.

Instead of joining the half sheets directly to one another they may be placed end to end and squarely abutting without overlapping and then joined together by covering the joint with a narrow gummed paper or cloth tape 10, as shown in Fig. 4. The tape may be applied on one side or on both sides of the joint and may be gilded or otherwise ornamented before use, thereby improving somewhat the appearance of the bottom of the finished bag.

I claim:

1. The method of making square bottom paper bags which comprises printing the bag imprint on flat sheets of paper, attaching such printed sheets end to end to form a continuous strip and ultimately passing said strip at high speed through a rotary bag forming machine.

2. The method of making square bottom paper bags which comprises multi-color printing with slow drying inks on flat sheets of paper, attaching such printed sheets end to end to form a continuous strip and ultimately passing said strips at high speed through a rotary bag machine to cut and form the bag therefrom.

3. The method which comprises the printing of bag imprints on flat sheets of paper, cutting such sheets into a plurality of parts, pasting such parts end to end to form a continuous strip, winding said strip into a roll and ultimately feeding said strip from said roll and at high speed through a rotary bag making machine to cut and form square bottom bags from said printed and pasted strip.

In testimony whereof I affix my signature.

HERMAN BURGDORF.