Dec. 31, 1963 R. J. WILLIAMS ETAL 3,116,009

BAGS

Filed Aug. 28, 1961

FIG. 1.

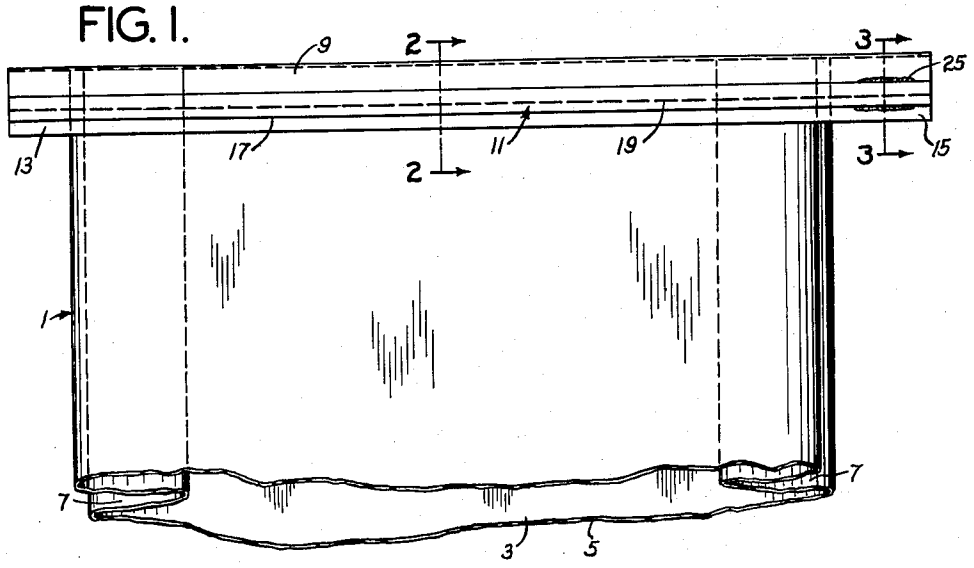


FIG. 2.

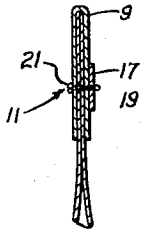


FIG. 3.

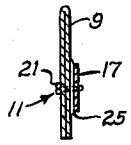
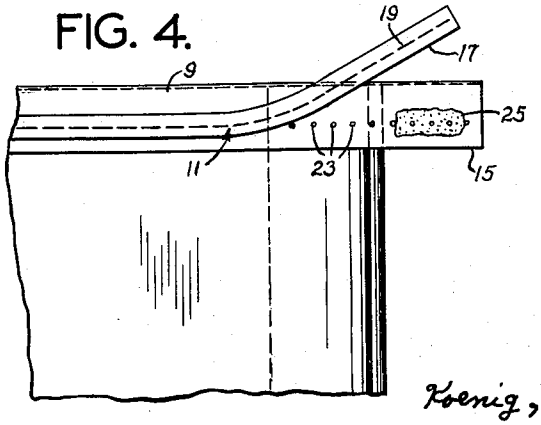


FIG. 4.



Russell J. Williams,
August F. Ottinger,
Inventors.
Koenig, Pope, Senniger and Powers,
Attorneys.

United States Patent Office 3,116,009 Patented Dec. 31, 1963

3,116,009
BAGS

Russell J. Williams, Clayton, and August F. Ottinger, St. Louis, Mo., assignors to Bemis Bro. Bag Company, St. Louis, Mo., a corporation of Missouri

Filed Aug. 28, 1961, Ser. No. 134,491
2 Claims. (Cl. 229—66)

This invention relates to bags, and more particularly to unravelable stitch type closures for bags.

Among the several objects of the invention may be noted the provision of an unravelable stitch type closure construction for bags, and particularly for multiwall paper bags, which, while being easily opened when desired, is a strong closure, adapted to withstand strains resulting from dropping or other rough handling of the bag. Other objects and features will be in part apparent and in part pointed out hereinafter.

The invention accordingly comprises the constructions hereinafter described, the scope of the invention being indicated in the following claims.

In the accompanying drawings, in which one of various possible embodiments of the invention is illustrated,

FIG. 1 is a view in elevation of one end of a bag having a closure of this invention, showing the needle side;

FIG. 2 is an enlarged section taken on line 2—2 of FIG. 1;

FIG. 3 is an enlarged section taken on line 3—3 of FIG. 1; and

FIG. 4 is a view showing the unraveling of the thread.

Corresponding reference characters indicate corresponding parts throughout the several views of the drawings.

Referring to the drawings, a multiwall paper bag having an end closure of this invention is indicated at 1. For simplicity, the bag is shown as a two-ply bag, the inner ply being designated 3 and the outer ply 5. It will be understood that a multiwall bag usually will have two or more plies. As shown, the bag is a gusseted bag, the gussets being indicated at 7. The closure includes a paper tape 9 folded around the end of the bag. A line of stitching indicated at 11 is driven through the tape and through the walls of the bag securing together the walls adjacent the end of the bag. The length of the tape 9 is greater than the width of the bag, and the tape has end portions 13 and 15 which extend past the side edges of the bag. The stitching 11 extends completely throughout the length of the tape and, as shown, is driven through a narrow paper ribbon 17 constituting a so-called filler tape located on the side of the bag which is referred to as the needle side, this side being the side which faced the needle of the sewing machine employed for stitching. Filler tape 17 extends throughout the length of closure tape 9.

In accordance with this invention, the stitching at 11 is of a single thread readily unravelable chain stitch type. The single thread used for this stitching is designated 19. As will be understood by those conversant with the art, the stitching is formed by feeding the bag with the tape 9 folded around the end of the bag through a sewing machine having a needle which drives loops 21 of the thread 19 through the bag, thereby forming needle holes 23 in the bag (see FIG. 4), the loops extending from the needle side of the tape 9 through the needle holes to the other side of the tape, each loop being laid over on the said other side and extending through the preceding loop 21. Reference may be made to United States Patent 2,978,164 for a detailed illustration of this type of stitching, which is unraveled with ease by taking hold of that end of the thread which is at the trailing end of the stitching in relation to the passage of the bag through the sewing machine, this being the end of the thread at that end of the stitching in the direction in which the loops are laid over (the right end of the stitching as illustrated in FIG. 1 of the drawings herein). It will be understood that unraveling proceeds by successively pulling out the loops 21, the pulling out of each loop freeing the next loop so that it may be pulled out.

In accordance with this invention, filler tape 17 is releasably secured to the end portion 15 of closure tape 9 (the end from which unraveling of the thread 17 progresses) by means of adhesive (paste, for example) as indicated at 25. As shown, adhesive 25 is a spot application preferably located some distance from the end of filler tape 17 so that the free end portion of filler tape 17 in effect becomes a tab for easy grasping, but in no event wholly inward of the right side edge of the bag as viewed in FIG. 1.

The spot of adhesive secures the end of the filler tape 17 and hence the end of the thread 19 from which unraveling progresses to the closure tape 9 and hence anchors the end of the thread 19 to prevent unraveling, such as might occur in the absence of such anchoring, even under severe strains such as may occur due to dropping or other rough handling of the bag.

To open the bag, it is simply necessary to grasp the free end portion of filler tape 17 and pull it to separate this filler tape from the closure tape 9. As shown in FIG. 4, the filler tape 17 readily comes away from the closure tape carrying with it the thread 19 which pulls out of the needle holes 23 in the closure tape and bag walls. The filler tape 17 has sufficient strength to resist breaking when so pulled to unravel the thread.

While filler tape 17 is described as a paper tape, it should be understood that tapes of other materials may be used and it is also possible that a textile cord may be utilized as a filler member. It will also be understood that the application of adhesive may be more extensive than the spot as shown in the drawings, the critical factor being that there is an application of adhesive at least under the end portion of the filler tape which lies outward of the side edge of the bag. With such anchorage at a point outward of the side edge of the bag, the anchor is not subject to severe strains such as come on the portion of the stitching extending from one side edge of the bag to the other when the bag is dropped. With the anchor so located, it is insured that there will be no unraveling of the stitching inward past the side edge of the bag such as would open up the bag and cause loss of its contents. At the same time, it is an easy matter to separate the filler tape 17 when it is desired to open the bag.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As various changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

We claim:

1. A bag having at least one end closure constituted by a closure tape folded around the respective end of the bag, a filler tape located on one side and extending throughout the length of said closure tape, a line of stitching driven through said filler tape, said closure tape and the walls of the bag and securing together the walls adjacent the end of the bag, the respective lengths of said closure tape and said filler tape being greater than the width of the bag and end portions of said closure tape and said filler tape extending past the side edges of the

bag, the stitching extending completely throughout the length of said filler tape and closure tape, the stitching being of a single thread readily unravelable chain stitch type which is unravelable by pulling one end of the thread from one end of the closure tape, and adhesive between the filler tape and the closure tape releasably anchoring the filler tape to the closure tape adjacent said one end of the closure tape and outward of the adjacent side edge of the bag, said adhesive being applied as a spot spaced inward from said one end of the closure tape to provide a free end portion of the filler tape readily available for grasping, said stitching being unravelable by grasping and pulling said free end portion of the filler tape.

2. A bag having at least one end closure constituted by a closure tape folded around the respective end of the bag, an elongate narrow flexible filler member located on one side and extending throughout the length of said closure tape, a line of stitching driven through said filler member, said closure tape and the walls of the bag and securing together the walls adjacent the end of the bag, the respective lengths of said closure tape and said filler member being greater than the width of the bag and end

portions of said closure tape and said filler member extending past the side edges of the bag, the stitching extending completely throughout the length of said filler member and closure tape, the stitching being of a single thread readily unravelable chain stitch type which is unravelable by pulling one end of the thread from one end of the closure tape, and adhesive between the filler member and the closure tape releasably anchoring the filler member to the closure tape adjacent said one end of the closure tape and outward of the adjacent side edge of the bag, said adhesive being applied as a spot spaced inward from said one end of the closure tape to provide a free end portion of the filler member readily available for grasping, said stitching being unravelable by grasping and pulling said free end portion of the filler member.

References Cited in the file of this patent

UNITED STATES PATENTS

2,120,629	Schunemann	June 14, 1938
2,962,205	McFarland	Nov. 29, 1960
2,978,164	Williams	Apr. 4, 1961