March 7, 1939.  W. H. STARK  2,150,043
MANUFACTURE OF BAG HANDLES AND BAGS COMBINED THERewith
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[Diagram of bag handle and bag]
My invention relates to carrying bags of paper and similar material which are provided with cord handles; such bags being familiarly known as "shoppers". My invention comprises a special type of handle structure; the manner or method of attaching the same to a bag of paper or similar material, and the complete bag furnished with such handle structure.

In my Patent No. 2,075,672, dated March 30, 1937, I have described and claimed the manner and one form of mechanism for making a type of cord handle structure which includes a loop of cord permanently secured to a strip of cardboard or like material which is employed as the means for attaching such handle structures to bags of the type indicated. My present invention relates to a handle structure of the type shown in my prior patent; the manner or method of applying such handle structures to bags of the "shopper" type, and to the completed bags equipped with such handles.

One object of my present invention is to facilitate the attachment of these handle structures to bags of paper and similar material by enclosing or covering the handle-attached cardboard strips within folded ends of the bag walls which are adhesively held to such strips.

And a further object of my invention is to utilize the position of the cord loops with respect to the ends of the strips and the staples or other fastening means holding such looped cord handles to the cardboard strips as the means for effecting proper placement of the handle structures with respect to folded portions of the walls of the bag at the open end of the same.

These and other features of my invention are more fully described hereinafter; reference being had to the accompanying drawings, more or less diagrammatic in character, in which:

Figure 1 is a fragmentary perspective view illustrating one end of a bag of the "shopper" type, to which my improved handle structures are to be applied.

Figure 2 is a view of a handle structure within the scope of my invention; showing the manner in which adhesive is applied to one surface of the strip element forming part of the same.

Figure 3 is a similar view showing the opposite side of the strip element coated with adhesive.

Figure 4 is a fragmentary perspective view of the open end of a paper bag of the type described, showing one manner of applying bag handle elements thereto within the scope of my invention.

Figure 5 is a similar perspective view, illustrating a second stage in the application of bag handle structures in accordance with my present invention.

Figure 6 is a sectional view on the line VI-VI, Fig. 4.

Figure 7 is a sectional view on the line VII-VII, Fig. 5, and

Figure 8 is an enlarged sectional view, fragmentary in character, illustrating a detail of my invention.

In Figure 1, I have shown the open end of a bag, indicated at 1, in a relatively distended condition, with the opposite walls 1a provided with notches 2 disposed in registering relation and having flap portions 3 between the same.

The lines a, a, indicate creases preliminarily formed in the walls adjacent to the open end of the bag a short distance beyond the termination of the notches to define the portions of the ends of the bag walls which will be turned in after the handle structures have been applied thereto and firmly fastened against the strip portions of such handle structures, to which adhesive has been previously applied. For convenience and to facilitate the operation of separating or distending the bag walls for application of the handle structures, one of the flaps 3 lying between the notches 2 may be slightly shorter than the other, as indicated at s in Figs. 1 and 4, though the shortening of the flap is not essential in carrying out my invention.

The handle structure, of the type illustrated in my prior patent before referred to, comprises a strip of heavy paper, cardboard, or like material, indicated at 10, carrying a looped cord, indicated at 11, which has been secured thereto by staples 12, or otherwise; such fastening means being placed centrally through the cord, lengthwise of the same when staples are used, and disposed substantially centrally of the side edges of the strip.

In addition, the straight runs of the looped cord, indicated at 11a, are definitely spaced on the strip in positions equidistant from the ends of the same, with such straight runs the same distance apart on each successive strip so as to exactly register with the preformed notches formed in the ends of the bag walls. When staples are employed as the means for fastening the cord loops to the cardboard strips, each leg passes through the cord—preferably centrally of the same—as indicated in Fig. 8. While it is not essential that the cord-fastening means—staples or other devices—shall occupy a central position with respect to the side edges of the strip, although such position has its advantages, it is desirable that the fastening means, of whatever nature may be em-
ployed, shall occupy the same position in each strip so as to facilitate application to the bag by drawing such fastening device against the end of each notch, in the manner indicated in Figs. 4 and 6. Figs. 2 and 3 illustrate clearly that the cord loops are placed centrally of the strips and that the straight runs are equidistant from the ends of such strips. The surface of the strip upon which the cord lies has had adhesive applied thereto over the area indicated at a, in Fig. 2; a portion of such strip indicated at x having been left blank, while the opposite side of the strip has had adhesive applied over its entire area, as indicated at b, Fig. 3.

By reason of the fact that at least one of the flaps 4, (indicated at 2*) between the notches 2 at the ends of the bag wells may be shorter than the other, the area of the adhesively covered surface between the cord sections stops short of the lower edge of the strip, as indicated at z, Fig. 2, so that when such shorter flap is finally secured in position over such strip there will be no uncovered adhesive. The opposite full length flap will overlie the uncovered portion of the strip of the other handle structure.

In associating my improved handle structures with respect to the bags to which they are to be attached, said bags are presented to the operator who opens the end of the same to the position indicated in Fig. 1; such bag wells having been creased along the lines a, a, and provided with the notches 2. The notches terminate short of the creases 2, and the distance between the ends of such notches and the bag folds or creases 2 may be substantially equal to the space which exists between one leg of the staple or other fastening means holding the looped cord to the strip, and edge of the latter, as clearly indicated in Fig. 6. In whatever relation the fastening elements are placed, they are uniform in all of the handle structures by reason of the fact that such fastening means are applied by mechanical means in exact relation to the side edges of the strips, and when the strips are associated with the ends of the bags, the fastening means are brought into engagement with the ends of the notches. As the latter are of uniform depth and in uniform spaced relation, the uniformly spaced straight runs of the handle loops insure that the handle structures will be uniformly and properly applied to the successive bags.

To the notched and creased ends of the bag a pair of handle structures are applied; such handle structures being of the type illustrated in Figs. 2 and 3, and disposed in my patent before referred to; both surfaces of the strip portions of such handle structures having been coated with a suitable adhesive, as indicated. The adhesive is wet and ready for application to the bag wells and the handle structures will be presented to the operator in such position that a handle structure may be picked up in each hand and with the handle loop of each one outwardly disposed so that they may be applied to the end walls of the bag; the strip portions entering the bag and the handle loops being outside the same opposite the notches and being drawn against the edge of the bag wall so that the fastening devices for the handle loops engage the ends of the notches, as clearly indicated in Fig. 6.

With the open ends of the bags presented in position by the operator (and this might conveniently be done by placing a group of bags between the knees), the ends of the bag walls are separated by grasping the longer flap, and then the operator applies the handle structures to the ends of the bags in such relation that the straight runs of the looped cords pass into the notches and lie along the outer surface of the bag walls while the strip portions which such looped handle cords are attached underlie the portions of the end walls of the bag beyond the creases formed in the same. It is desirable that the distance between the ends of the notches and the creases shall be such that when the ends of the bag are folded over the strip portions of the handle structures, that the upper edge of such strips shall engage the fold, as clearly indicated at y, Fig. 7.

It will be understood that both handle structures are applied simultaneously, and that the next operation will be to fold in the ends of the bag walls at the creased portions between the knees, (the ends of the bags being folded inward to present said strips in engagement with such portions, and then to turn these ends in so as to bring the other surface of the strips against the inner surface of the bag walls below the creased portions, the portions being on the one side of the bags overlying the strips, and after this operation these infolded ends may be pressed together to insure proper contact of the bag wells with the adhesively covered strips to present the bag in the finally handled condition.

While reference is made in the foregoing description to the manner of applying the handle structures and, as illustrated in Figs. 4 and 5, that application of the handle structures is made prior to folding or turning in the ends of the bag walls, it will be understood that these ends may be folded in before the handle structures are applied, in which case the operator introduces the strip portions of the handle structures into the open end of the bag with the handle loops uppermost and with the straight portions of the same in such position as to enter the preformed notches 2 and then draw the strips up to their final position beneath the turned-in portions of the bag wells, after which these turned-in portions are pressed against the strips, adhesively connecting them with the inner surfaces of the walls of the bag on the one side and with the turned-in portions of the bag walls beyond the creases, on the other side.

An important feature of my invention resides in the fact that in the handle structures as performed before application to a bag, the cord-fastening means, preferably in the form of two-pronged elements such as staples, are passed through the centre of the cord runs and are clinched against the opposite side of the strip. Even though other forms of fastening means may be used to secure the handle loops to the strips, such fastening means pass through the central portion of the cord. While I prefer to have the fastening means for the cord loops centrally of the strips with respect to the outside edges of the same, such position may be varied so long as it is the same with each handle structure. This condition is readily brought about by reason of the fact that in the formation of the handle structures the cord will be exactly positioned across the same and the fastening means will be applied in the same position with respect to each strip, uniformly.

It will be understood, of course, that while I have disclosed specific embodiments of my invention, I do not wish to be limited thereto and that various modifications may be made within the spirit and scope of my invention; all of which is believed to be covered by the appended claims.
I claim:

1. The method of assembling prepared handle structures with the open ends of bags of the "shopper" type, each of said handle structures comprising at least one strip element of stiff material and a looped cord having straight runs in spaced relation secured to said strip by fastening means passing through the cord and strip and arranged the same distance from an edge of the latter, which comprises providing the open end walls of such bags with short longitudinal notches in registering position in the opposite walls thereof and in the same spaced relation as the straight runs of the looped cord; transversely creasing the ends of the bag walls below the ends of said notches to provide portions for intertwining; applying adhesive to both surfaces of the handle structures; introducing the strip portions of the handle structures beneath the end portions of the bag walls with the cord portions thereof lying in the preformed notches; the cord-fastening means serving to position the strips with respect to the ends of the bag walls, and thereafter infolding the ends of the bag walls and enclosing the strip portions of the handle structures beneath the same.

2. The method of assembling prepared handle structures with the open ends of bags of the "shopper" type, each of said handle structures comprising a strip of stiff material and a looped cord having straight runs in spaced relation secured to said strip by fastening means passing through the cord and strip and arranged the same distance from an edge of the latter, which comprises notchting the open end walls of such bags in the same spaced relation as the straight runs of the looped cord whereby flaps substantially centrally of said end walls will be provided, one of said flaps being shorter than the other to facilitate detention of the bag walls; transversely creasing the ends of the bag walls below said notches; applying adhesive to both surfaces of the strips; introducing the strip portions of the handle structures beneath the folded end portions of the bag with the cord portions lying in the preformed notches, the cord-fastening means serving to position the strips with respect to the ends of the bag walls, and thereafter infolding the ends of the bag walls with respect to the main body thereof and enclosing the strip portions of the handle structures.

3. The preparation of bags of the "shopper" type with handle members, the method which consists in preforming handle structures with strip elements of stiff material to which looped cords are attached by fastening means passing through the cord and strip; applying adhesive to the surfaces of said strip elements; notching the walls of the bag adjacent to the open end of the same; placing the strip elements of said handle structures internally of the bag with the cord fastening means engaging the ends of the notches, and thereafter infolding the end walls of the bag over said strip elements.

4. In the preparation of bags of the "shopper" type with handle members, the method which consists in preforming handle structures with strip elements of stiff material to which looped cords are attached by fastening means passing through the cord and strip; applying adhesive to the surfaces of said strip elements; notching the walls of the bag adjacent to the open end of the same, said notches providing flaps one of which, longitudinally of the bag, is shorter than the other; placing the strip elements of said handle structures internally of the bag and the looped handle portions externally thereof, the fastening means for the latter engaging the ends of the notches, and thereafter infolding the end walls of the bag and the flaps over said strip elements.

5. A handle device for attachment to paper bags of the "shopper" type having an open end with an infolded rim having a plurality of spaced notches in registering relation in the opposite walls; said handle device comprising a strip of stiff material and a loop-shaped handle of cord having straight runs crossing said strip in the same spaced relation as the notches in the bag walls, means such as staples securing said runs to the strip at points the same distance from an edge of the latter whereby said strip may be positioned by the engagement of the cord-fastening means with the ends of said notches, and means for sealing the strip within said infolded rim.

6. A handle structure for attachment to bags of the "shopper" type, comprising a strip of stiff material, a section of cord arranged in looped form with straight runs in spaced relation extending across the strip, and fastening means for said cord passing through said straight runs and strip centrally of the narrow width of the latter and forming positioning means arranged to engage a portion of the bag walls when such handle structure is applied to the open end of a bag.

7. A handle device for paper and other forms of "shopper" bags, the top of which is open and provided with an internally folded rim the inner portion of which has oppositely disposed spaced notches in registering relation, comprising a strip of relatively stiff material to underlie said infolded rim, and a looped cord having straight runs secured to said strip by fastening means passing centrally through the cord; said strip being held between the bag wall and the infurmed rim by adhesive means and the notches accommodating the straight runs of the cord.

8. A structure such as set forth in claim 7, in which the cord-fastening means engage the ends of the notches with the looped handles inwardly of the turned-in rim, and the upper edge of the strip engages the folded portion of the bag wall.

9. The combination with a bag having its open end provided with an internally folded rim, of a handle structure comprising a strip of stiff material and a looped cord applied thereto with straight runs extending across the strip and spaced equidistantly from the ends of the same; same internally folded rim portions having notches and the straight runs of the handle loops being disposed opposite said notches, and fastening means for said straight runs arranged to engage the ends of said notched portions of the internally folded rim.

10. The method of assembling prepared handle structures with the open ends of bags of the "shopper" type, each of said handle structures comprising a strip of stiff material and a looped cord having straight runs in spaced relation secured to said strip by fastening means passing through the cord and strip and arranged the same distance from a longitudinal edge of the latter, which comprises providing the open ends of walls of such bags with short longitudinal notches in registering position in the opposite walls thereof and in the same spaced relation as the straight runs of the looped cord, creating the walls of the bag on lines transversely thereof below the ends of the notches to facilitate folding of said end walls; applying adhesive to both surfaces of
the strips; introducing the strip portion of the handle structures beneath the end walls of the bag with the straight runs of the cord lying in the preformed notches, the fastening means securing the cord to the strips serving to position the latter, with respect to the ends of the bag walls, and thereafter infolding the ends of the bag walls with respect to the main body thereof and enclosing the strip portions of the handle structures beneath said infolded ends.

11. A handle device for paper and other forms of "shopper" bags having an open top with an infolded rim provided with oppositely disposed spaced notches in registering relation terminating below the fold, comprising a strip of relatively stiff material arranged to underlie said infolded rim, and a looped cord having straight runs secured to said strip by fastening means passing through said straight runs and strip and arranged the same distance from an edge of the latter, said straight runs registering and their fastening means cooperating with the notches and said strip being adhesively held between the bag wall and the infolded rim in engagement with the fold of the latter.

12. The combination with a bag having inturned walls at its open end, of a handle structure comprising a strip of material having a looped cord applied thereto with straight runs extending across the strip and spaced equidistantly from the ends of the same, said inturned wall portions of the bag having notches and the straight runs of the handle loop being disposed opposite said notches, and fastening means for each straight run of the looped cord arranged the same distance from an edge of the strip and adapted to engage the ends of the notches formed in the inturned walls at points beyond the fold of the same.

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