Closure for Paper Bags

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The invention relates to a closure for paper bags, especially those adapted to receive cement. Closures are known wherein a string and so forth is sewn, by means of which the closure can be torn open.

The novelty now resides therein that the string is inserted at the gum point of the bag closure so that the work of sewing in the tearing open string is omitted. A further feature of the invention resides therein that one end of the string is used for strengthening the edge of the filling opening of the bag. The bag part resting on the valve opening is thus strengthened and the breaking away is also avoided with certainty when the bags are filled particularly heavily. Instead of a string there may be applied a wire, or any suitable article appropriate for tearing open the bag.

According to the invention there is mounted on the usual and known machines for the production of cement paper bags an auxiliary device by means of which the insertion of the tearing open string can be effected during the production of the bag closure. The insertion of the tearing open string is thus effected simultaneously with the formation of the closure. The period of time necessary for the production of a bag is not prolonged.

In the drawings the device is shown diagrammatically as well as the bag closure:

30 Fig. 1 shows a bag end (upper part) in elevation.

35 Figs. 3 to 5 are sections on the lines III—III, IV—IV and V—V of Fig. 2.

40 Fig. 7 shows the device for the succeeding operation.

45 Fig. 10 shows diagrammatically the auxiliary device for supplying and cutting the tearing string.

A paper bag sleeve 1 shown in Fig. 1 is provided at its upper closure part 2 with a tearing string 3 of which the end 4 hangs out freely. By pulling this end it is possible to open the filled bag easily and rapidly. As shown in the enlarged Fig. 2 the string 3, which lies on the flap 5 formed by the wall of the bag, is bent into loop form 6; the latter just above the filling point F so as to effectively strengthen the bag when suspended on the filling nozzle. The flap 5 is connected by a gummed strip, applied to a flap 6, to the latter whilst the tearing string 3, is gummed in at the same time. Over the flaps 5, 6 there is also gummed as a closure a cover strip 9. The method of operation for connecting the parts already mentioned will be further illustrated in Figs. 6 to 10.

For forming the bag sleeve 1 there is advanced a tubular, multi-layer paper structure on the completing machine and suitably cut and folded for the production of the flaps 5 to 9.

Prepared in this way the sleeve 11 moves under a gum delivery device and gummed strip 1 is applied to the flap 8. By the device 12, 13, 14 (Fig. 7) the flap 9 is folded through 180° and at the same time provision is made in the auxiliary device for the supply of the string 3, so that the latter is placed directly on the upper side of the flap 5 (Fig. 8). The flap 8 is now also folded through 180° in the folding device 15, 16 (Fig. 9) and gummed to the flap 5 and the string 3.

The supply of the tearing string is also shown diagrammatically in elevation in Fig. 10. The string 3 located in a device 18 on a supply roller 19 is unwound by a conveying body 20 for a sufficient length and supplied to the bag completing machine. At the end thereof it is cut off by a cutter 21 which is driven by an eccentric 22 through levers 23.

What I wish to claim is:

1. Paper bag, provided at one end with an inlet opening and with flaps arranged over one another and gummed together, a string with a freely exposed end piece adapted to be easily gripped by hand being interposed between the said flaps, the end of the string near the inlet opening of the bag being bent into loop form, a portion of the loop lying parallel and adjacent to the edge of the opening so as to strengthen the edges near said inlet opening.

2. A paper bag having flaps at one end lying one over the other, one of said flaps having a gummed strip, a string lying longitudinally between said flaps and secured in place by the flaps when they are gummed together, one end of said string being exposed, said bag adjacent one end of the flaps having an inlet opening and the other end of said string being bent into loop form adjacent said flap-end so as to strengthen the edges near said inlet opening, a portion of the loop lying parallel and adjacent to the edge of the opening.
3. A paper bag having flaps at one end lying over the other, one of said flaps having a gummed strip, a string lying longitudinally between said flaps and secured in place by the flaps when they are gummed together, one end of said string being exposed, said bag adjacent one end of the flaps having an inlet opening and the other end of said string being bent into loop form adjacent said flap-end, so as to strengthen the edges near said inlet opening, a portion of the gum on the gummed strip overlying said portion of the loop to gum the same to the flaps.

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