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BAG OPENING AND FILLING DEVICE

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FIG 1

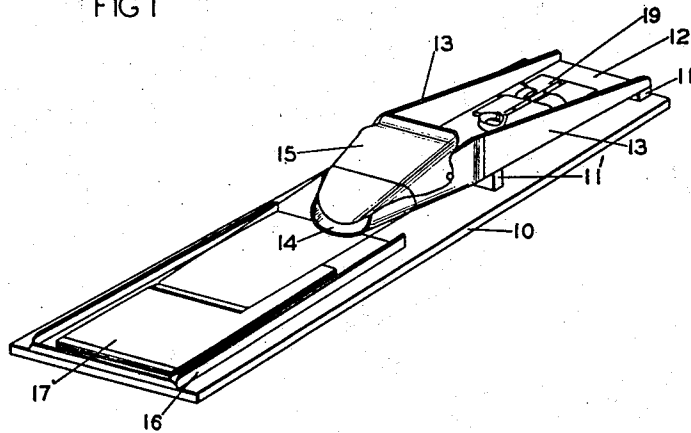


FIG 2

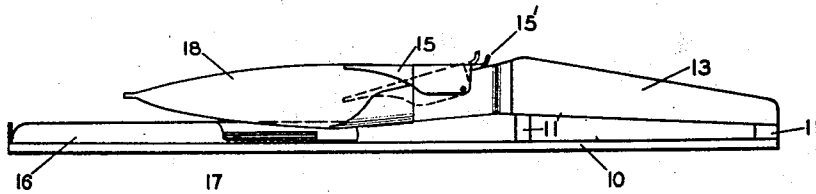
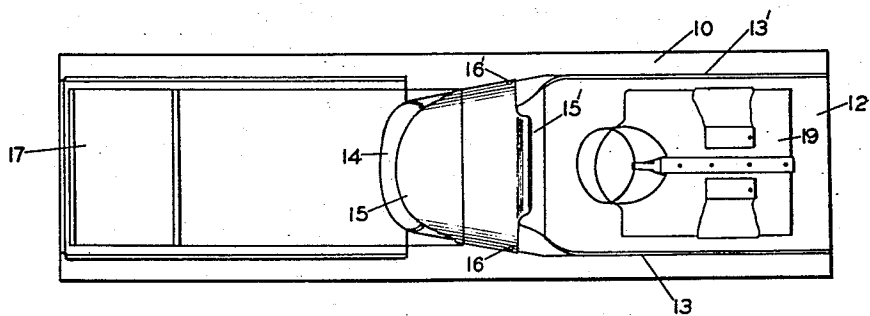


FIG 3



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BAG OPENING AND FILLING DEVICE

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2 Claims. (Cl. 53—384)

This invention relates to a bag opening and filling device, and more particularly to such a device which is particularly adapted for use in wrapping men's shirts.

Various devices have been used by laundries for wrapping and protecting men's shirts which have been freshly laundered, and the practice is now becoming widespread to enclose the freshly laundered shirts in cellophane bags. Heretofore, when this work was done entirely by hand and without the aid of a machine, the work was time consuming and laborious. Various machines have been designed to aid in opening the bags and placing the shirts therein, but such prior art devices have not been entirely satisfactory for the reason that they were complicated and expensive to manufacture, and many bags were ruptured by their use so that much waste occurred.

An object of my invention is to provide a bag opening and filling device which is provided with rigid sides and a positively limited upward opening.

Another object of my invention is to provide a bag opening and filling device which is particularly adapted for use in wrapping men's shirts.

Another object of my invention is to provide a bag opening and filling device which is simple in construction, inexpensive to manufacture and efficient in operation.

Other and further objects and advantages of my invention will become apparent from the following description taken in connection with the accompanying drawings in which like characters of reference designate corresponding parts throughout the several views, and wherein:

Fig. 1 is a perspective view of the bag opening and filling device according to my invention.

Fig. 2 is a side elevation, partly in cross-section, of the device shown in Fig. 1.

Fig. 3 is a top plan view of the device shown in Fig. 1.

Referring now in detail to the embodiment chosen for purpose of illustration, an elongated base 10 is provided on its upper surface with supports 11, 11' upon which is fixed a substantially horizontal feeding trough 12 which is provided with upstanding side walls 13, 13'. The entrance end of the feeding trough 12 is positioned substantially over one end of the base 10, and the trough is of such length that the discharge end thereof is positioned substantially over the longitudinal center of the base 10, the trough 12 being spaced above the base 10 by means of the supports 11, 11', as best seen in Fig. 2.

The upstanding sides, or guide rails, 13, 13', are upright for a little more than half the length of the trough 12 from the entrance end thereof, and then the side walls of the trough commence to roll inwardly to form a converging discharge spout 14 which is open at the top thereof except where covered by the rolled side walls 13, 13', and where covered by a top opening member 15 which is pivotally connected at 16, 16' to the side walls 13, 13', respectively. The discharge spout 14 is substantially elliptical, and the top opening member 15 terminates a little forward of the terminal end of the dis-

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charge spout 14, as best seen in Fig. 3, and the contour of the member 15 substantially complements the contour of the converging discharge spout 14 so as to fit down over the side walls 13, 13', as shown. It will be observed that the top opening cover member 15 is pivotally connected to the trough 12 adjacent the forward extremity of the member 15 so that the upward swinging movement of the discharge end of the top opening member 15 is positively limited by the forward edge of the member 15 striking against the side walls 13, 13', as best seen in Fig. 2. In the fully open position shown in full lines in Fig. 2, it will be observed that the bottom of the trough 12 and the top of the member 15 are substantially parallel, these two members diverging slightly in this position in a direction opposite the convergence of the trough 12, for a purpose to be explained more fully hereinafter. The forward edge of the member 15 is turned upwardly slightly at 15' to provide a lip for use in the operation of the device.

At the end of the base 10 opposite the entrance end of the trough 12, there is provided a storage receptacle 16 for holding a supply of bags 17 to be filled. A bag held in open position on the machine is shown at 18, and a shirt to be placed in the open bag 18 is indicated at 19.

In the operation of my device, a supply of bags to be filled is placed in the receptacle 16, and the bags are taken one at a time and placed about the discharge spout 14 with the top opening member 15 in the lowered position shown in broken lines in Fig. 2. Thereafter, pressure is applied by the hand to the lip 15' to tilt the top opening member 15 upwardly to the position shown in full lines in Fig. 2, whereupon the bag 18 is distended and firmly held open and in place on the discharge spout. The slightly diverging position of the member 15 with relation to the bottom of the trough 12, as seen in Fig. 2, aids in holding the distended bag 18 firmly in place on the discharge spout. Also, it will be noted that the upward movement of the member 15 is positively limited by the forward end of the member 15 striking against the side walls 13, 13' so that there is no danger of the member 15 opening too wide and thereby rupturing the bag 18. Each machine, of course, is proportioned in accordance with the size of bag to be used, and it has been found that bags made of cellophane, and the like, have a certain amount of resiliency so that they can be stretched to fit tightly about the discharge spout 14 when pulled in a vertical direction by the upwardly opening member 15, and experience has shown that a pull in this direction can be greater than a sidewise pull which quickly ruptures these bags. According to my invention, it will be observed that the pull in distending the bag is in a vertical direction, rather than in a sidewise direction, inasmuch as the sides 13, 13' are fixed in position.

As soon as the bag has been opened about the spout 14, a shirt placed in the filling trough 12 can be forced by hand into the converging discharge spout 14, and the side edges of the shirt will be rolled downwardly and slightly tucked under by the converging side walls 13, 13', and by reason of the fact that the floor of the trough 12 is inclined downwardly toward the discharge spout 14 from a point about where the side walls 13, 13' commence to roll inwardly. This construction is very important, inasmuch as shirts from a laundry are customarily provided with cardboard stiffening devices (not shown) which must be constricted slightly by the converging discharge spout in order to slip quickly and easily into the distended bag 18. Because the side walls 13, 13' are fixed in position, the force exerted in rolling the edges of the shirt and the enclosed cardboard stiffener is expended against the fixed side walls in my device, rather than against the side walls of the bag as in prior art devices in which the side walls

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of the filling spout are movably mounted for use in opening the bag into which the shirt is to be put. Such prior art constructions often cause rupture of the bag by reason of the pressure exerted on the side walls of the bag when the shirt is forced through the discharge spout. Also, it will be observed that my device is especially designed to prevent damage to the collar of the shirt, the collar being the most important part and being often provided with special cardboard reinforcing. The prior art devices have resulted in a stripping of this collar reinforcement from the shirt, but my device provides an upturned lip 15 which guides the collar beneath the flat top opening member 15 which really protects the collar and assures a smooth sliding fit of the shirt into the bag 18.

After the shirt has been inserted into the distended bag 18, pressure on the lip 15 is removed and the member 15 drops down to the position shown in broken lines in Fig. 2 as soon as the filled bag is removed from the discharge spout 14.

It will be obvious to those skilled in the art that many modifications and changes can be made in the embodiment shown and described without departing from the scope of my invention as defined in the following claims.

I claim:

1. In a bag opening and filling device, a feeding trough having a substantially flat bottom and upstanding side walls, the rear end portions of said side walls converging toward each other and being rolled inwardly over said bottom to constitute a converging discharge spout at the rear end of said feeding trough, said discharge spout being open at the top and substantially elliptical in cross-section, a top opening member having a contour complementing the contour of said discharge spout and pivotally connected thereto at each side thereof, said top opening member extending rearwardly into substantially coterminal relation with said spout and having a forward portion arranged for engagement with said side walls to limit upward opening movement of said top opening member so that said top opening member and the bottom of the discharge spout diverge slightly toward their rearward ends when the top opening member is in fully open position, and an upturned lip on the forward edge of said top opening member to which pressure may be applied to cause said discharge spout and said top opening member to exert

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a substantially vertical distending pull on a bag when an end thereof is placed about said discharge spout and said top opening member.

2. In a bag opening and filling device, a base, a feeding trough supported in a substantially horizontal position above said base, said feeding trough having a substantially flat bottom and upstanding side walls, the rear portions of said side walls converging toward each other and being of arcuate form and rolled inwardly over said bottom the rear end portions of said side walls converging to form a converging discharge spout extending lineally from said feeding trough, said bottom extending slightly downwardly in said discharge spout from a point where said sides commence to roll inwardly, said discharge spout being open at the top and substantially elliptical in cross-section, a top opening member having a contour complementing the contour of said discharge spout and pivotally connected thereto at each side thereof, said top opening member extending rearwardly into substantial coterminal relation with said discharge spout, said top opening member having a forward portion arranged for engagement with said side walls to limit upward opening movement of the terminal end of said top opening member so that said top opening member and the bottom of said discharge spout diverge slightly toward said terminal end when said top opening member is in fully open position, a receptacle on said base for bags to be filled, said receptacle being aligned with said feeding trough and said discharge spout, said receptacle being positioned mainly beyond said discharge spout and having an end lying therebeneath, and an upturned lip on the forward edge of said top opening member to which pressure may be applied to cause said discharge spout and said top opening member to exert a substantially vertical distending pull on a bag when an end thereof is placed about said discharge spout and said top opening member.

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