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J. J. NEUMAN

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BAG HOLDING DEVICE

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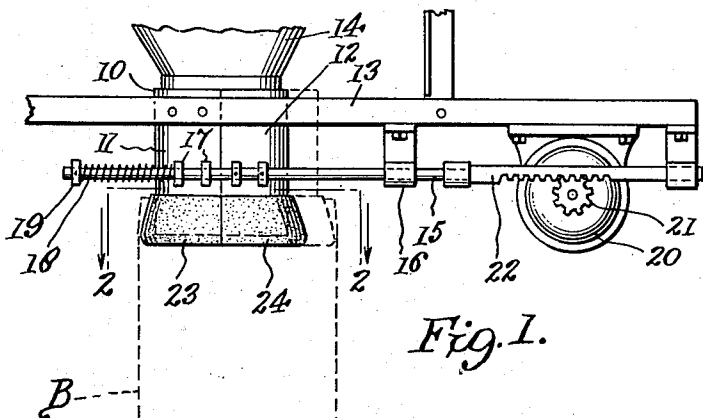


Fig. 2.

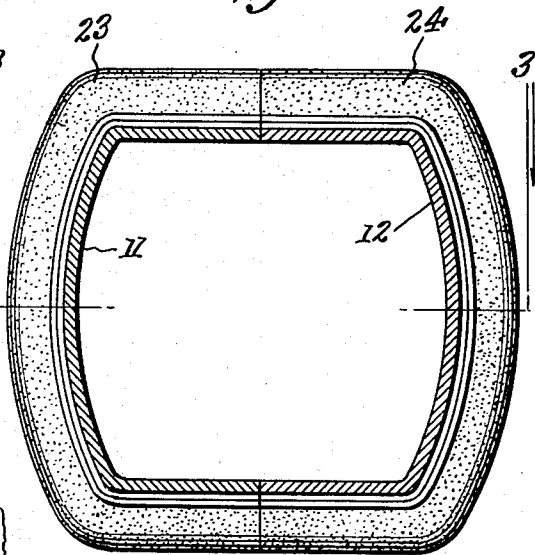


Fig. 3.

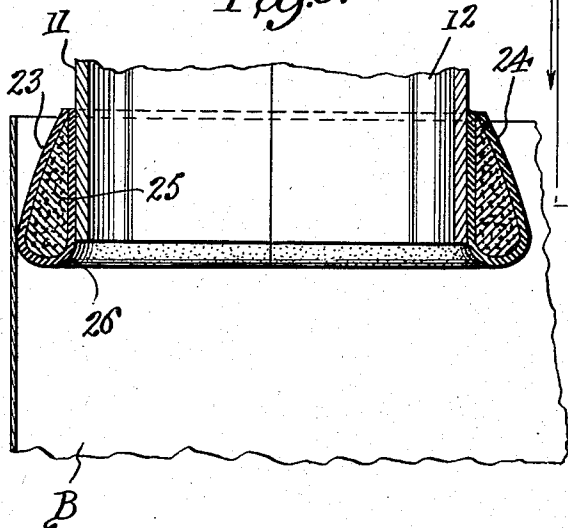
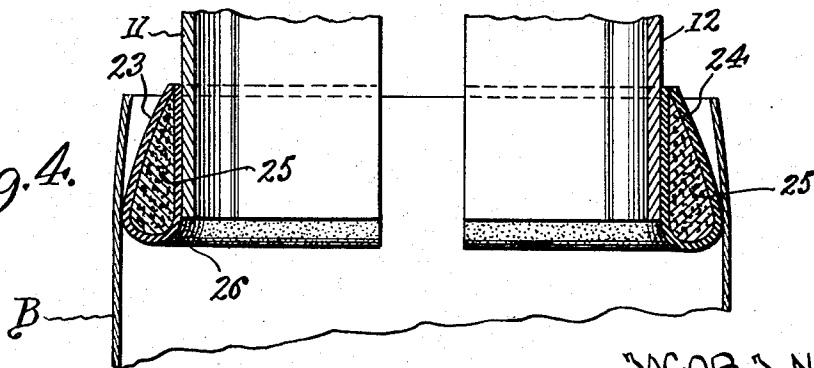


Fig. 4.



By

Inventor
JACOB J. NEUMAN
C. P. Jaepel
Attorney

UNITED STATES PATENT OFFICE

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BAG HOLDING DEVICE

Jacob J. Neuman, South Salem, N. Y.

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4 Claims. (Cl. 248—99)

This invention relates to bag holding devices, and is an improvement over the bag holding means embodied in my Patent No. 1,823,283, for Bag filling apparatus, which issued on September 15, 1931.

An object of this invention is to provide in a bag filling machine, means for holding the mouth of the bag open with the material of the bag under tension in a manner whereby the material of the bag will not be so strained as to tear the material of the bag or otherwise injure the bag.

Another object of this invention is to provide an improved bag holding means for holding the mouth of the bag open, so that the bag may be engaged at a point spaced downwardly from the mouth thereof in a manner to tightly hold the bag on the filling machine, so that the bag may be filled to capacity and may, during the filling operation, be agitated without having the bag become loosened during the agitating process.

A further object of this invention is to provide a yieldable or cushioning bag holding member which is adapted to engage interiorly of the bag below the mouth thereof, so as to hold the mouth of the bag open while at the same time supporting the bag for filling and agitating without causing injury to the bag during either or both of these operations.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawing, wherein like symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a fragmentary side element of a portion of the bag filling machine embodied in my above mentioned patent having a bag holding means, constructed according to the preferred embodiment of this invention, mounted thereon.

Figure 2 is an enlarged sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a vertical section taken on the line 3—3 of Figure 2.

Figure 4 is a view similar to Figure 3 showing the bag in applied position on the holder.

Referring to the drawing, the numeral 10 designates generally a split sleeve comprising a fixed sleeve member 11 secured to a support 13 and a movable sleeve member 12 which coacts with the fixed sleeve 11 in forming a tubular channel or conduit through which the material passes from a hopper structure 14 disposed thereabove.

This structure is embodied in my patent above identified and for a complete description of this

structure, reference is made to this patent. It is sufficient to state that the movable sleeve member 12 is secured to a sleeve operating bar 15 slidably engaging a guide 16 secured to the frame member 13 and also slidably engaging guide lugs 17 secured to the fixed sleeve member 11. In practice, there are two of these operating bars 15, one on each side of the sleeve member 10. A spring 18 is disposed about the rod 15, and at one end engages against a guide lug 17 and at the other end engages against a stop collar 19 secured to the rod 15. The rod 15 is moved under the action of a power member 20, which has a pinion 21 meshing with a rack bar 22. When the power member 20 is actuated, the rack bar 22 will be moved so as to spread the sleeve member 10 apart by moving the movable member 12 away from the fixed member 11, and to thereby expand the mouth of a bag B, which is adapted to be engaged with the lower end portions of the two members 11 and 12.

In bag filling machines of this type, the lower end portions of the holding members 11 and 12 usually engage the bag at the upper end or mouth thereof, so as to place the upper portion of the bag under a strain, and as the bag filling machine described in my above mentioned patent also includes a means for agitating the bag B during the filling operation, and after the bag has been filled, it is desirable that means be provided at the lower portions of the members 11 and 12 to permit tensioning of the bag at a point below the weakest portion of the bag, namely, at the mouth. In order to do this, I have provided a yieldable beading comprising two yieldable bodies 23 and 24. The body 23 is secured to the lower portion of the fixed member 11 and comprises a cushioning member 25, which may be constructed in the form of sponge rubber or other yieldable material which has a relatively high degree of yieldability. Disposed about this inner member or body 25 is a cover 26 which may be formed of rubber or the like.

As shown in Figures 3 and 4, the bag holding members 23 and 24 have enlarged lower portions in the form of a beading or the like, and taper in an upward and inward direction with the inner side secured flat against the outside of the bag holding and supporting member 10.

The two members 23 and 24 are of similar construction, and by providing an upwardly reduced portion to the members 23 and 24 when the holder 10 is expanded under the action of the slide bars 15, the mouth or upper end portion of the bag B will be slightly contracted as shown in Figure 4,

whereas the body of the bag below the mouth will be slightly expanded so as to prevent the bag B from withdrawing from the holder 10 while the holder is in expanded condition. By the use of the yieldable beading 23 and 24, the bag B will not only be held in open position so as to permit the complete filling thereof, but the bag may be agitated during the filling operation and after the bag has been completely filled, so that the contents will be more compact than if merely placed in the bag without being agitated.

In the use of this bag holder, the beading comprising the two members 23 and 24 is attached in any suitable manner to the holder 10, one portion 23 thereof being secured in a fixed position to the lower portion of the sleeve member 11, and the other portion 24 being secured in a fixed position to the movable holder 12. The mouth of the bag B is disposed about the holder 10 when it is initially contracted and then the power member 20 is set in motion to expand the holder 10 by moving the bar 15 and carrying the movable member 12 therewith.

When the bag has been completely expanded, the power member 20 is cut off as explained in my above mentioned patent and the bag B is then filled and agitated, during which operations the beading 23 and 24 will prevent movement of the bag relative to the holder 10 and the contractibility of the material of which the beading 23 and 24 is constructed will permit placing of the bag B under a tension without tearing or otherwise injuring the body of the bag, particularly at the mouth thereof.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims:—

What is claimed is:—

1. A bag holder, comprising separable holding members for insertion in the mouth of a bag, and cushion elements carried upon the lower ends

of said members for projection into the mouth of the bag, each of said cushion elements comprising an outer flexible covering and an inner sponge rubber body part, said cushion elements having increasing cross section from top to bottom adapted to frictionally engage against the inner wall of a bag and conform to inequalities in the same when stretched.

2. A bag holder, comprising separable holding members for insertion in the mouth of a bag, and cushion elements secured to the outer sides of said members for direct contact with the inner wall of the bag, said cushion elements having enlarged beaded lower ends of compressible material adapted for direct contact with the inner wall of the bag below the mouth edge thereof and adapted to conform to the said wall of the bag under pressure of the holding members for yieldingly supporting the bag in open position.

3. A bag holder, comprising separable holding members for insertion in the mouth of a bag, and cushion elements carried on the outer sides and lower ends of said holding members, each of said cushion elements comprising a body part of sponge rubber and a flexible covering therefor, and said cushion elements increasing in cross sectional area from the upper to the lower ends thereof for stretching the bag at a point below the mouth edge thereof and adapted to conform to inequalities in the bag to distribute the friction contact surfaces between the cushion elements and the bag over a relatively large area.

4. A bag holder, comprising separable holding members for insertion in the mouth of a bag, compressible cushion elements carried on the outer sides and lower end portions of said holding members, said cushion elements adapted to extend below the mouth edge of the bag and having a cross-sectional area increasing from top to bottom of the elements to yieldably and frictionally contact and conform to the inner walls of the bag and decrease the tendency to shear when said bag is agitated.

JACOB J. NEUMAN.