March 12, 1957 D. B. BAKER 2,784,749

BAG SUPPORT

Filed March 1, 1954 2 Sheets-Sheet 1

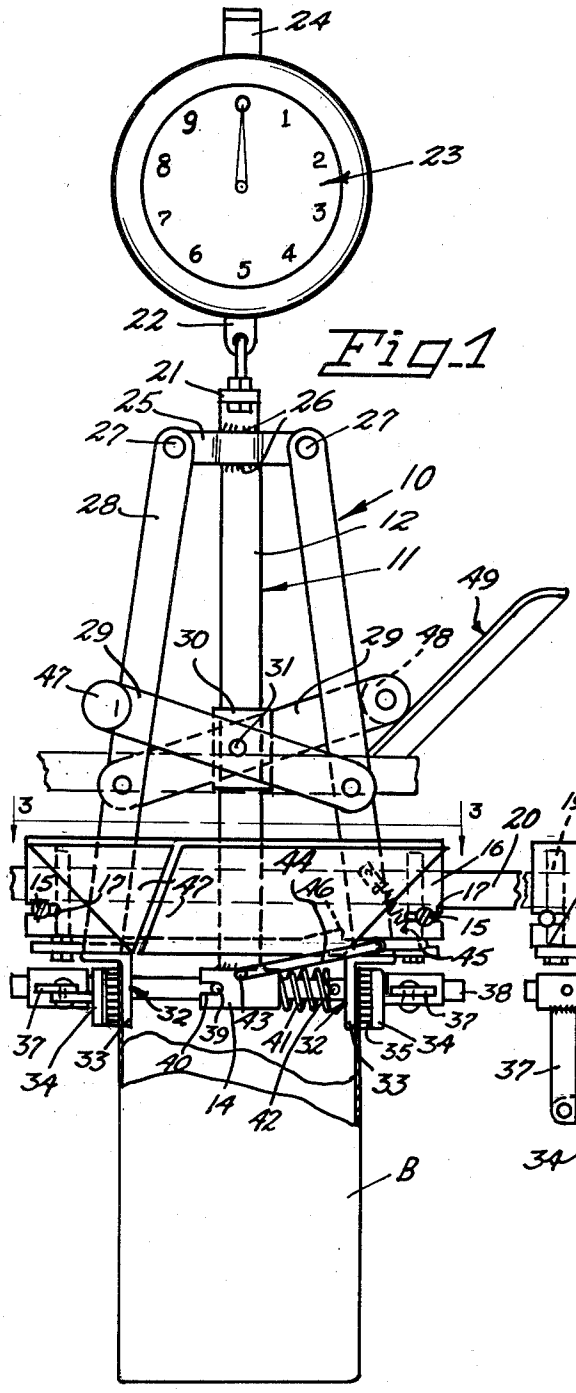


Fig. 1

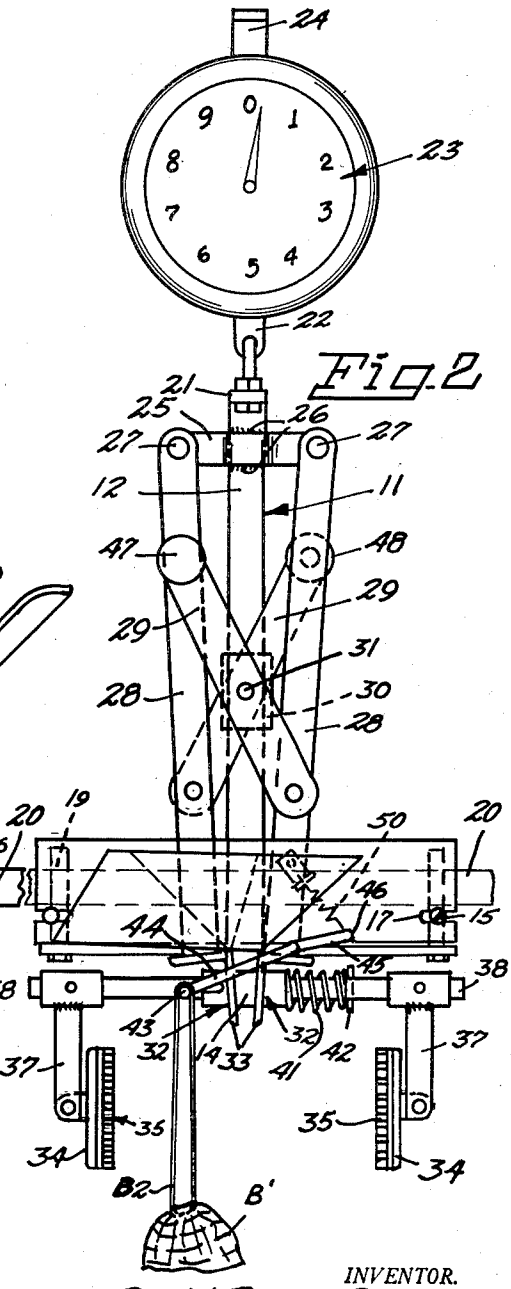


Fig. 2

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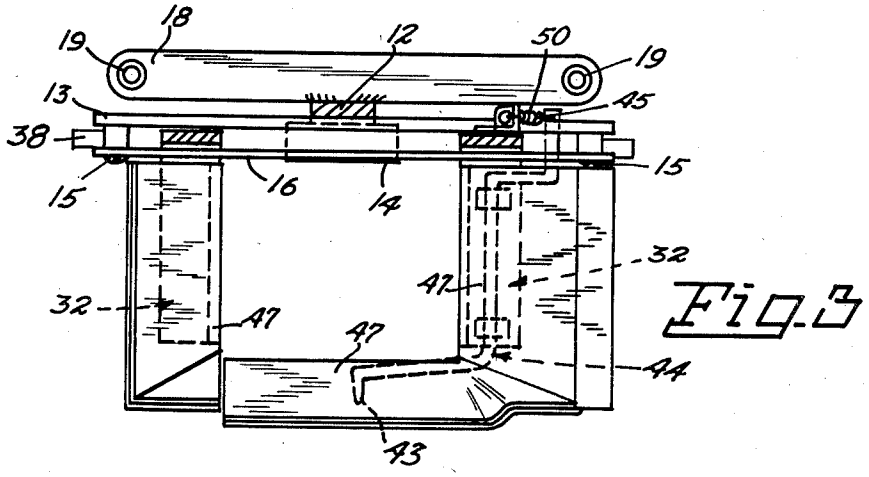


Fig. 3

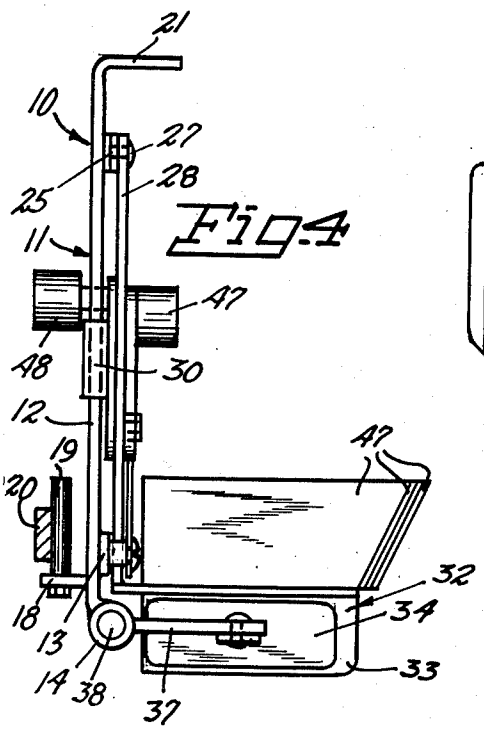


Fig. 4

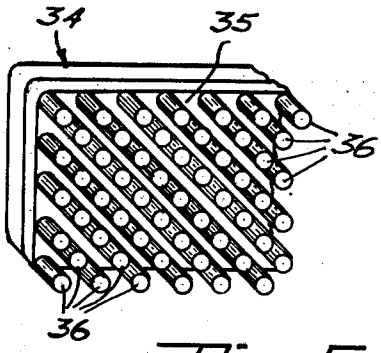


Fig. 5

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United States Patent Office 2,784,749 Patented Mar. 12, 1957

2,784,749

BAG SUPPORT

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Application March 1, 1954, Serial No. 413,317

6 Claims. (Cl. 141—314)

This invention relates to merchandise packaging machines and more particularly to a bag support and is an improvement on my co-pending application filed July 13, 1953, under Serial No. 367,534 for an improved bagging machine.

An object of the invention is to provide a bag support upon which a bag may be quickly and easily placed in position for receiving merchandise to be contained therein.

Another object of the invention is to provide a bag support having means for releasing the bag at a predetermined time or location.

Another object of the invention lies in the provisions of a bag support which is adapted to be supported by a machine and traverse a predetermined path to receive merchandise and guide it into a bag which is weighed and subsequently released from the support.

These and other objects of the invention will become apparent during the course of the following description and drawing wherein a preferred form of the invention is shown. It should be understood however that the drawings and description are illustrative only and are not intended to limit the invention except insofar as it is limited by the claims.

In the drawings:

Figure 1 is a vertical front elevation of the improved bag support showing a bag supported thereby;

Figure 2 is a vertical front elevation of the bag support in its position subsequent to release of an open mesh type bag;

Figure 3 is a horizontal cross section taken at line 3—3 of Figure 1;

Figure 4 is a vertical end elevation; and,

Figure 5 is an isometric view of a stop plate for assisting in holding a bag.

The bag support comprising the subject matter of this invention is one of a number supported on an endless track and adapted to move along a predetermined horizontal path. During the course of travel along the path, each bag support passes by one or more filling devices which are designed to deposit a predetermined quantity of merchandise into the bag so that by the time the individual bag supports reach a previously located point along the path, the bags will weigh substantially the amount intended to be contained in the bag whereupon means is supplied to release the bag from the bag support. The details of the machine adapted to carry the bag supports is sufficiently disclosed in the above identified co-pending application and an explanation thereof is omitted in this work.

Referring now more particularly to the drawings, I have shown the bag support as including a substantially vertical frame indicated in general by the numeral 10. The frame 10 includes a number of elements, but primarily is composed of a substantially inverted T-shaped frame member 11 having a vertical standard 12 to which a cross bar 13 is rigidly secured. The lower end of the

standard 12 is provided with a transversely extending horizontal sleeve 14. Ends of the transverse cross bar 13 are drilled and tapped to receive stud bolts 15 by means of which a transversely disposed plate 16, having grooves 17 extending longitudinally from the marginal edges, is secured and transversely adjustable. The standard 12 is also provided with a rearwardly presented horizontally disposed transversely extending flange 18 provided with upstanding journaled rollers 19 which are adapted to roll upon a support bar 20 on the packaging machine frame (not shown). At its upper end, the standard 12 is provided with a forwardly extending finger 21 which is secured to the weighing arm 22 of a scale 23 normally adjusted to zero when supporting the bag support frame and a bag and provided with a supporting flange 24 at its upper end to be carried by the packaging machine and thus effect movement of the bag support along a predetermined path.

Adjacent to its upper end the standard 12 is provided with a cross bar 25 which is rigidly secured thereto as by welding at 26 and its outer ends are provided with journal pins 27 which pivotally secure the upper ends of a pair of opposed arms 28. The lower ends of the arms 28 extend downwardly intermediate the plate 16 and the cross bar 13 and terminate spaced below the lower edge of the plate 16 a short distance. The arms 28 are thus disposed to move in a common vertical plane transversely of the frame 11 towards and away from each other.

To insure simultaneous movement of the arms 28, I provide a pair of crossed links 29—29 which are pivotally united to each other intermediate their length for relative scissor action and have their lower ends pivotally united one with each arm 28. It is thus seen that scissor movement of the links 29 causes the arms 28 to move toward and away from each other.

To insure this movement of arms 28 being equal on each side of the vertical median line of the frame I provide a collar 30 about the standard 12, the collar being of a dimension permitting its free reciprocation on said standard. The mutual pivot pin 31 of links 29 is secured to the collar. Thus as the links 29 are actuated the collar 30 reciprocates on the standard 12 and maintains the movement of arms 28 in proper relation one with the other.

At their lower ends the arms 28 are provided with forwardly extending angle members 32 which are each secured with one flange disposed in the horizontal position and with the other flange 33 depending in a vertical plane. As indicated in Figures 1 and 4, the bag B is supported by inserting the flanges 33 into the mouth of the bag and, in the case of paper bags, a pair of stop plates 34 are disposed in the path of movement of flanges 33 outwardly and support the bag by means of the pressure applied by the flanges 33 toward the stop plates 34 with the marginal edge portions of the bag mouth intermediate the flanges and stop plates.

The stop plates 34 are each provided with a rubber friction face 35 including multiple nibs or fingers 36 thus providing great frictional engagement with the outer surface of the bag B. The stop plates 34 are supported on normally horizontally extending arms 37 which are secured to a transversely extending shaft 38 extending through the sleeve 14 and maintained against axial rotation by means of a pin 39 carried by the shaft 38 and normally disposed within a slot 40 formed in the sleeve 14. The pin 39 is maintained in the slot 40 by means of spring 41 encircling the shaft 38 and disposed intermediate one end of the sleeve 14 and an anchor pin 42 carried by the shaft. When it is desired to move the stop plates 34 and dispose them in the removed position shown in Figure 2, the shaft 38 is shifted toward the left, compressing spring 41 and removing the pin 39 from the slot 40 whereupon the stop

plates 34 may be lowered by axial rotation of the shaft 38 and disposed the arms 37 in a vertical plane.

It is desired to remove the stop plates 34 when the bag being filled is of the open mesh type as indicated in Figure 2 at B'. The open mesh bag customarily has a draw string B2 and this is disposed to encircle the flanges 33 and hook over the outer hook portion 43 of a lever 44 hinged to the horizontal flange of one element 32 and provided with a spring biased latch 45 at the opposed end. The lower edge of the plate 16 is provided with a notch at 46 disposed to cooperate with the latch 45 as will be hereinafter described.

When the stop plates 34 are disposed out of condition for contact with the flanges 33 (that is during the use of the open mesh type bag) the bag is supported by the outward bias of the flanges 33 disposed within the mouth thereof. This bias is supplied by yieldable means associated with the links 29 which urges the arms 28 to pivot their lower ends outwardly and this means comprises weights 47 and 48 carried by the upper ends of the links 29 whereby gravity tends to pivot the links about their pivot point 31 to spread the lower ends thereof and thus spread the lower ends of the arms 28. One weight 48 is journaled on its link 29 and acts as a roller 48 or cam actuated means for pivoting the links 29. A cam 49 is carried by the support frame of the packaging machine in a position to contact the weight or roller 48 and as the bag support 10 traverses this portion of its path the roller 48 contacts the cam 49 and is actuated upwardly to close the links 29 in a scissor movement and thus draw the lower ends of the arms 28 inwardly releasing the bag B or B' carried by the flanges 33. In the event the open mesh bag B' is used the bag drops and is supported on the draw string B2 by means of the hook 43 and is thence transported through a fastening machine which is not a part of this particular application.

It will be noted that when the arms 28 reach their extreme inward positions the latch 45 engages the notch 46 and maintains the flanges 33 in their closed or indrawn position at which time another bag may be applied to the flanges and the lever 44 may be manually operated to remove the latch 45 from the notch 46 and permit the links 29 to separate the flanges 33 and thus support a subsequent bag. Spring means 50 maintains the latch 45 in the notch 46 and the position of notch 46 may be adjusted by means of loosening the stud bolts and adjusting the plate 16 transversely of the frame 10.

The angle members 32 are provided with upwardly flared lips 47 which act as guides to insure passage of the merchandise into the bag and between the angles 32 and the bag B. It will be understood that use of other types of bags is contemplated, such as the polyethylene bag or other plastic as well as paper or open mesh and this invention is specifically designed to utilize all of the known types of bagging materials.

It is contemplated depositing the paper or polyethylene bags B on a suitable conveyor at the point of release thereof from the bag support, but since this is not required for an understanding of the present invention, it has not been shown on the drawing.

Having thus described my invention, I claim:

1. In a packaging machine, a bag support comprising an inverted substantially T-shaped frame; said frame being movable along a predetermined path; a cross bar fixed to said frame adjacent to its upper end; arms pivotally secured to the outer ends of said cross bar for movement in a common vertical plane; links pivotally united to each other intermediate their lengths for relative scissor action; the corresponding ends of said links being pivotally connected to said arms intermediate their lengths whereby scissor movement of said links effects simultaneous movement of the lower ends of said arms toward and away from each other about their pivots; said links having yieldable means urging the lower ends to the normal extreme spaced apart position and cam operated means for shifting the lower ends inwardly; automatic latch means securing said arms with their lower ends in the inward position and manually releasable to effect return of the arms to their normal position; depending flanges on the lower ends of said arms for entering the mouth of a bag and frictionally supporting same; and a cam secured relative to the path of movement and disposed to engage said cam operated means and actuate said links, whereby the flanges are shifted inwardly to release a bag supported thereby.

2. The invention as defined in claim 1 and including a pair of stop plates having friction faces covered by multiple nibs and carried by the frame outwardly of said flanges and disposed to stop outward movement thereof whereby the marginal edge portions of the mouth of a bag may be frictionally supported intermediate said flanges and said stop plates; said stop plates being selectively movable into and out of cooperating relation with flanges.

3. The invention as defined in claim 2 wherein the stop plates are mounted for selective vertical tilting movement to effect removal of the stop plates from cooperating engagement with said flanges whereby a bag may be supported on said flanges by means of its outward bias actuated by said link urging means.

4. The invention as defined in claim 1 wherein the flanges are provided with upstanding outwardly flared lips constructed and arranged to guide movement of a material being packaged intermediate said flanges and thus into a bag supported thereby.

5. The invention as defined in claim 1 wherein the means yieldably urging the lower ends of the links comprises weights carried by the upper ends of said links.

6. The invention as defined in claim 1 wherein the links are pivotally united to each other by means of a pin, said pin being carried by a sleeve encircling said standard for slidable movement longitudinally thereof, for accurately positioning said arms.

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