July 14, 1964 W. W. WINDLE ETAL 3,140,735

HORIZONTAL BAGGING MACHINE AND LIFT

Filed Jan. 19, 1962 2 Sheets-Sheet 1

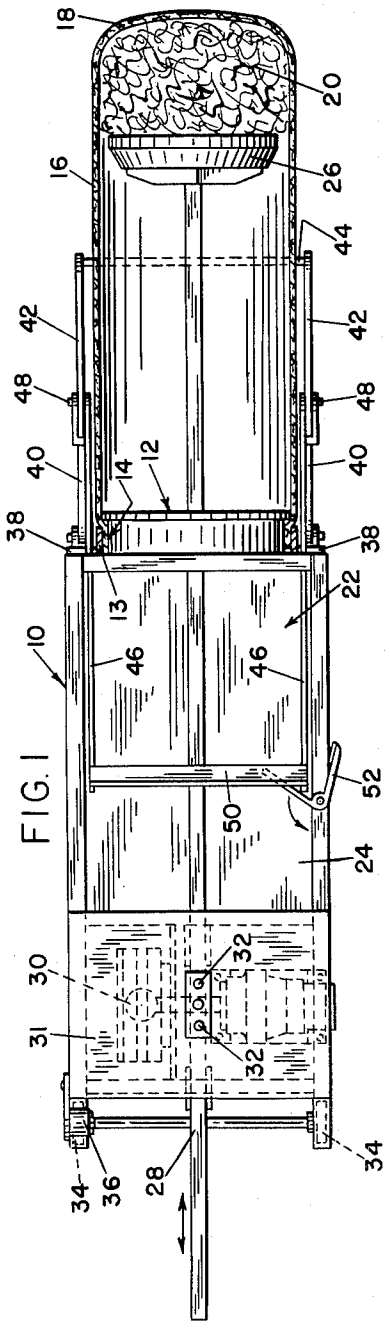

FIG. 1

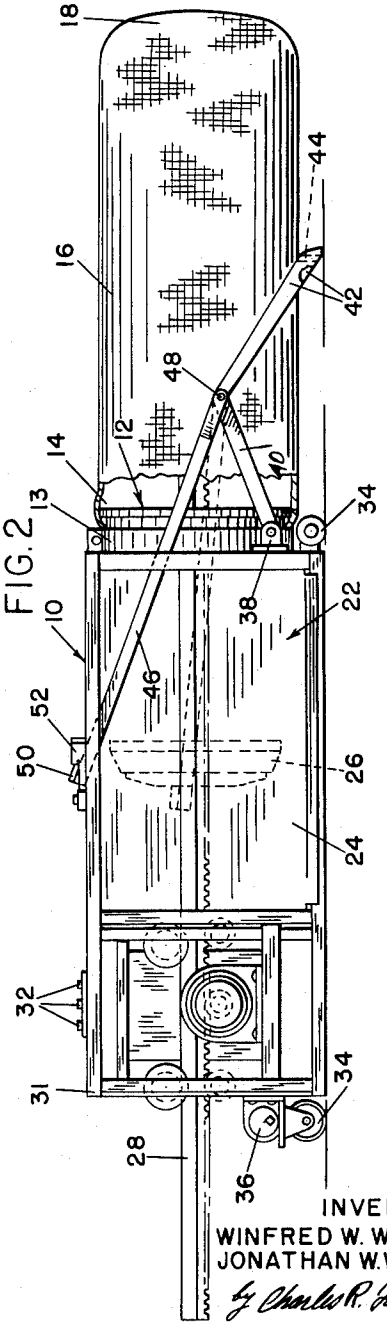

FIG. 2

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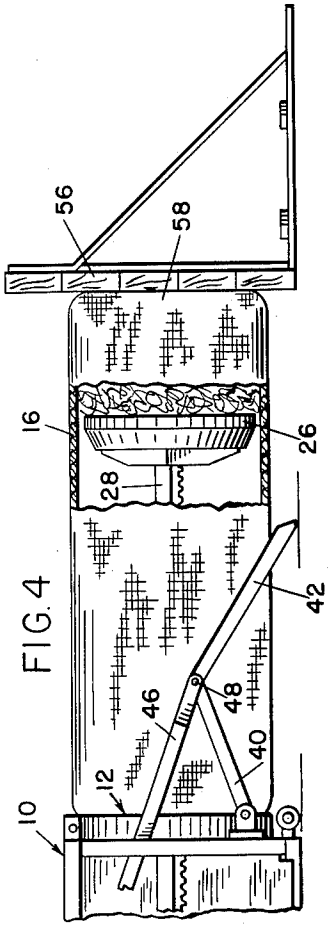

FIG. 4

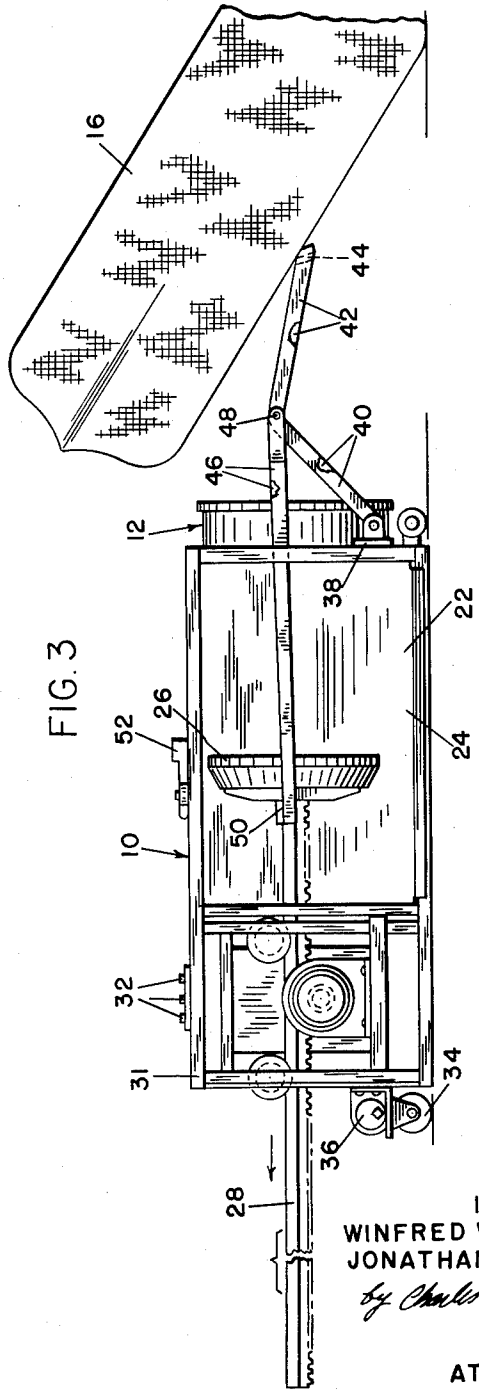

FIG. 3

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HORIZONTAL BAGGING MACHINE AND LIFT

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6 Claims. (Cl. 141—73)

This invention relates to a new and improved horizontal automatic bagging machine provided with an automatically acting lift which raises the filled bag at the open end thereof to clear it from the machine to a position where it can be closed as for instance by sewing the open end very easily without the necessity of any manual lifting on the part of the operator, and the filled closed bag can be then transported or stored as desired.

Other objects of the invention reside in the provision of a portable horizontal bagging machine comprising a frame including a reciprocal plunger stuffing the bag from its open end with repetitive strokes of equal pressure so that the bag contents are compressed equally from end-to-end of the bag in combination with lifting means as aforesaid, the open end of the bag being secured about a bag-receiving collar or the like, it being merely necessary for the operator to disengage the open end of the bag from this collar and to actuate a releasing latch to cause the lifting mechanism to then operate so that the operator can close the bag as by sewing the same.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

FIG. 1 is a plan view of the machine, parts being in section;

FIG. 2 is a view in side elevation showing the lifting mechanism held in immobile condition, parts being broken away;

FIG. 3 is a view similar to FIG. 2 but showing the lifting mechanism in actuated condition; and

FIG. 4 is a view on a reduced scale illustrating the machine utilizing the novel back stop.

In order to carry out the invention, a framework of any desired or convenient construction is provided and this is generally indicated by the reference numeral **10**. This framework is rectangular and is provided at one end thereof with a generally circular collar or the like generally indicated at **12**. This collar may also be provided with a bag clamp or the like **13** and receives the open end **14** of a bag **16** having a closed end at **18**.

The neck of the bag is held in position on the ring **12** by clamp **13** and when first applied to this ring, the bag will slump limply on the floor in extension of the framework. As the bag becomes filled as by the "stuff" **20**, it assumes its more or less cylindrical shape.

The framework forms a convenient hopper or the like generally indicated in the area **22**, and if desired having a sheet metal bottom member as at **24** in FIG. 3. The material to be stuffed into the bag is conveniently deposited as for instance on the sheet metal bottom **24** between the reciprocations of a plunger plate or bell **26**.

When the plunger or bell is fully retracted, the material to be bagged is positioned in any way desired in the area at **22** and the plunger is actuated by a reciprocating ram **28** to gradually fill the bag by merely pushing the "stuff" through the ring or collar **12** by repetitive strokes.

Any desired or conventional means may be utilized for reciprocating the ram **28** but one of the characteristics of such means resides in the provision of a pressure-relief valve **30** which is in contact with respect to the ram **28** so that when the pressure on the material **20** reaches a predetermined point, the apparatus is reversed to retract the ram, so that all the stuff in the bag, regardless of how many strokes it takes to bag the material completely, is compressed to substantially the same degree even though the subsequent strokes are shorter and shorter as the bag becomes filled.

Friction wheels or racks may be utilized as the motive power and the pressure control and reciprocating devices for the same are not shown as such are well known in the art. In any event, the motive power and control apparatus for the ram is all conveniently housed in a part of the framework which is indicated at **31** and convenient control buttons **32** are provided to initiate and to stop at any time the action of the ram if this becomes necessary or desirable.

Wheels **34** may be raised by eccentrics **36** to locate the frame in position on a floor where it is stable; or on the other hand, the eccentrics can be actuated to relatively lower wheels **34** so that the entire device may be wheeled to another part of the factory or elsewhere as may be desired or convenient, thus allowing the bagging to be done most conveniently.

A pair of brackets **38** are provided, one at each side of the forward portion of the frame member **10** adjacent the collar **12**. Each of these brackets pivotally mounts a lever **40** and each lever **40** includes a downwardly and inclined portion **42** integrally associated therewith. The ends of the portions **42** are connected by a cross bar **44** and intermediate the ends of the levers there are actuating links **46** pivoted as at **48**. These links extend into the framework **10** to a position approximately intermediate of the framework where the links **46** are connected by a cross member **50**.

Conveniently located there is a simple latch member **52** which serves to hold the cross member **50** up and in out-of-the-way of the mechanism of the machine as shown in FIG. 2 and the machine operates as above described as long as the latch **52** holds the links **46** and cross member **50** up out of the way.

However, when the bag has been filled, the operator disconnects clamp **13** and then merely turns the latch **52** and allows the cross member **50** and links **46** to drop in back of the bell **26** whereupon the final retraction of the bell by the ram **28** retracts the links **46**, and in so doing serves to pivot the levers **40** upwardly in a counter-clockwise direction as shown in FIG. 3. This action positions the open end of the bag in elevated location as seen in FIG. 3, whereupon it can be easily closed by sewing or other desired means by the operator. As soon as the closed bag is removed, the latch is used to again engage the member **50**, and a new empty bag is positioned to be filled as before.

The closing of the bag per se is of course an old and well known operation but with the construction of the present invention the closing can be accomplished quickly and easily without any manual effort on the part of the operator in dragging the bag to one side or lifting it to the position described.

Referring now to FIG. 4, the general machine is illustrated as before and the various parts are given the same reference numerals as for instance the framework **10**, the ram **28** and the plate **26**, and the bag is illustrated at **16** having its open end mounted on the bag holding collar **12**. The pressure or force of the plunger plate or bell **26** may be high and it has been found that it is an improvement to provide a back stop such as that indicated at **56** to take up or absorb some of the pressure and to act as one member of a vice for compressing the material in the bag, the other member of the vice being of course the plunger **26**.

The back stop **56** may assume any form desired and is preferably adjustable on the floor, and may be provided with any convenient or conventional means for securing it to the floor in desired position. The back stop

56 of course is of a size and shape to in general cover and support the closed end of the bag which is indicated at 58.

Of course the stop can be used with the bagging apparatus whether the lifting mechanism is utilized or not, and the lifting mechanism has been omitted from FIG. 4 merely in the interests of clarity of illustration.

Having thus described our invention and the advantages thereof, we do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what we claim is:

1. A bagging machine comprising a generally horizontal framework, a horizontal reciprocating ram therein, means to reciprocate the ram, vertical means at one end of the framework for receiving the open neck of a horizontal bag to be filled, a plunger plate on the ram for entering and filling the bag, and means for lifting the open end of the bag after the same has been filled and removed from said bag neck receiving means, said lifting means being mounted on said framework and including a movable member engaging the bag intermediate the ends of the bag and at the under side thereof and means to lift the movable member.

2. The bagging machine of claim 1 wherein said movable member comprises a lever pivoted adjacent one end thereof to the framework, means on said lever extending under a bag in position to be filled, the means to lift the movable member including a link connected to said lever intermediate the ends thereof and extending to a position to be selectively engaged or disengaged with respect to said plunger plate.

3. The bagging machine of claim 1 wherein said movable member comprises a lever pivoted adjacent one end thereof to the framework, means on said lever extending

under the bag, said movable member lifting means comprising a link connected to said lever intermediate the ends thereof and extending to a position to be selectively engaged or disengaged with respect to said plunger plate, and means for holding said link in out-of-the-way position with respect to said plunger plate so as to maintain the lifting means selectively inoperative.

4. A bagging machine comprising a generally horizontal framework, a horizontal reciprocating ram therein, means to reciprocate the ram, means at one end of the framework for receiving the open neck of a bag to be filled, a plunger plate on the ram for entering and filling the bag, and means for lifting the open end of the bag after the same has been filled, said lifting means being mounted on said framework, and means associated with said lifting means for engagement with said ram for operating the lifting means.

5. The bagging machine of claim 4 in which said bag-lifting means comprises a member movably mounted on said frame and an actuating means therefor, said actuating means being selectively engageable and disengageable with respect to said ram.

6. The bagging machine of claim 4 wherein said lifting means comprises a lever mounted in pivotal relationship with respect to said framework, a link connected to said lever and adapted to lift the same, and means on said lever engaging the bag at the under side thereof.

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