May 13, 1941. K. D. GRAVES 2,241,509

BAG FILLING DEVICE

Filed Nov. 22, 1938 2 Sheets-Sheet 1

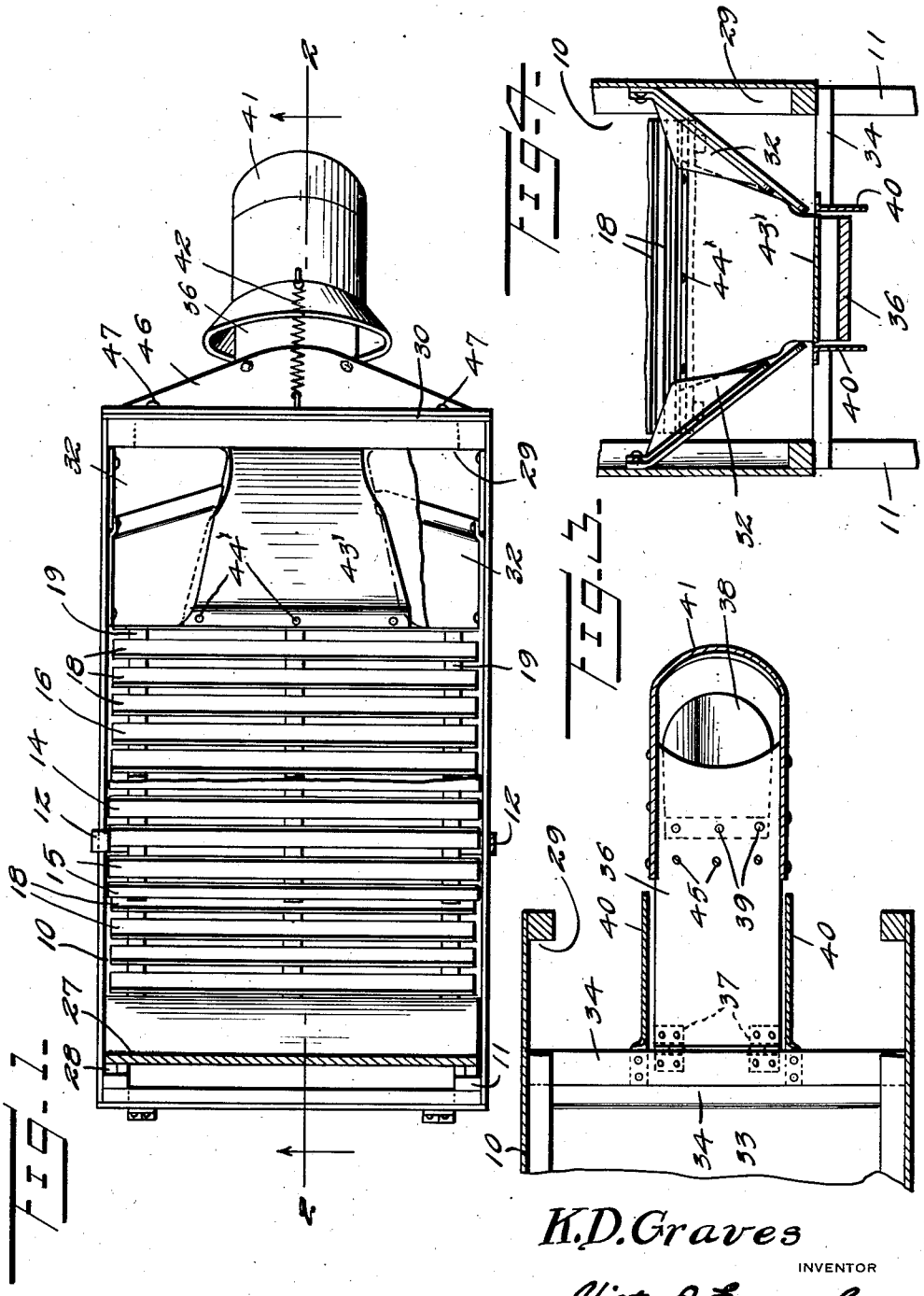


FIG. 1.

FIG. 3.

FIG. 4.

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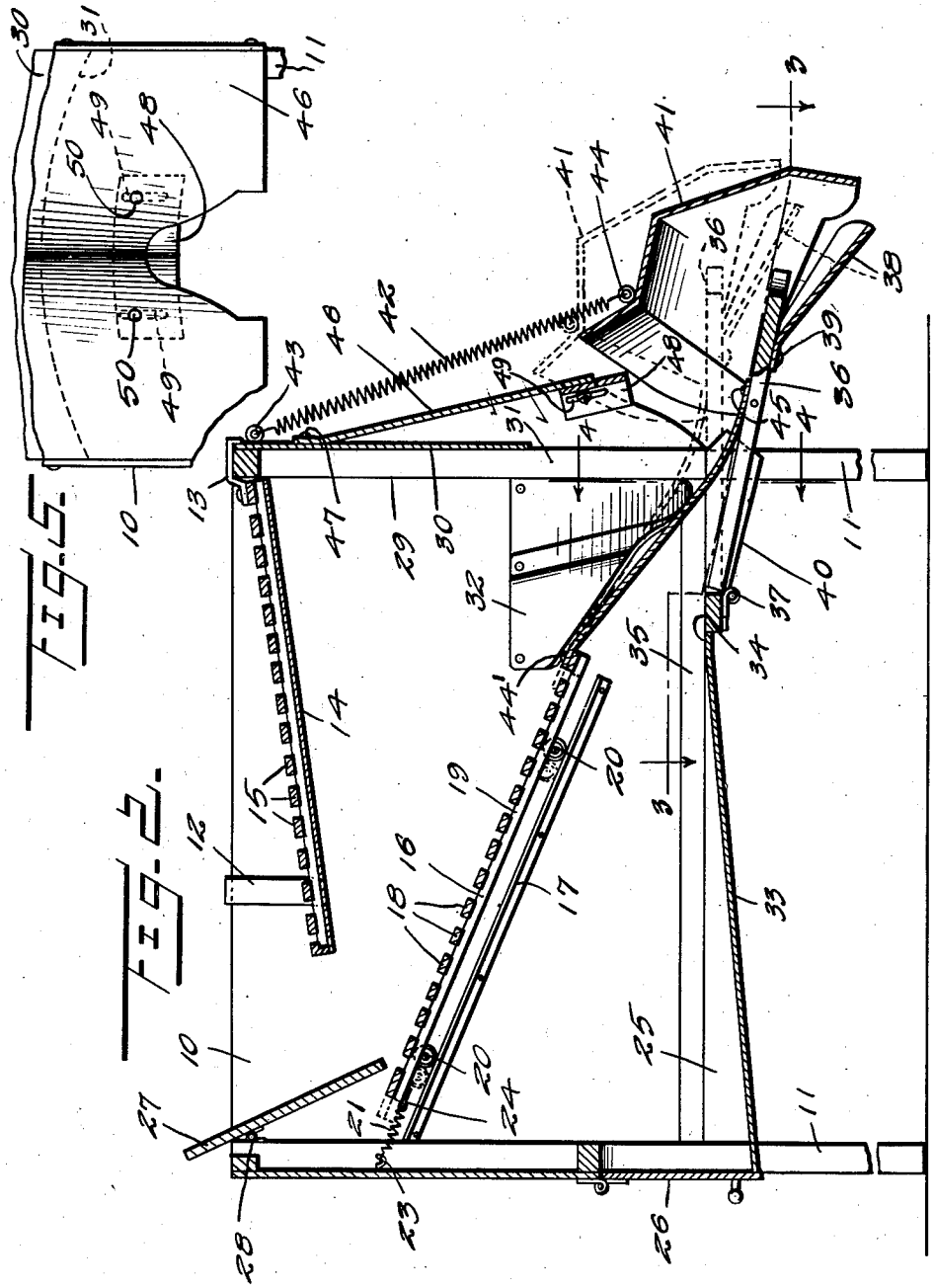


FIG. 2.

FIG. 3.

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BAG FILLING DEVICE

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6 Claims. (Cl. 226—58)

The present invention relates to a bag filling device and more particularly to a device for use in packaging potatoes and other similar products.

The primary object of the invention is to provide a vegetable sacker embodying means for eliminating dirt and dust from entering the sack by conveying the vegetables over a stationary and movable support which tends to dislodge dirt and dust therefrom resulting in the packaging of substantially clean vegetables.

Another object of the invention is to provide a bag filling device which provides for a rapid packaging of the vegetables with a minimum amount of time and effort on the part of the operator, the device operating substantially automatically to convey the vegetables from the source of supply and discharging the same in a bag or sack supported at the discharge end.

The invention will be fully and comprehensively understood from a consideration of the following detailed description when read in connection with the accompanying drawings which form a part of the application.

In the drawings

Figure 1 is a top plan view with parts broken away to illustrate interior parts of the device.

Figure 2 is a longitudinal sectional view taken substantially on line 2—2 of Figure 1.

Figure 3 is a partial sectional view taken substantially on line 3—3 of Figure 2.

Figure 4 is a fragmentary sectional view taken on line 4—4 of Figure 2, and

Figure 5 is a detail view of the chute attaching plate mounted on one end wall of the device.

The herein described invention finds its greatest use in a retail store where vegetables and similar products are sold in relatively small quantities and which are normally packaged in paper bags. At the present time, it is customary for the clerk in the store to package such products by hand resulting in the soiling of the hands and a resultant loss in time in handling the required amount of vegetables to meet the specific sale.

The present invention includes a hopper having a pair of racks angularly positioned therein on which the vegetables to be sacked are deposited. One of the racks is adapted to agitate upon the actuation of the discharge spout movably supported on one end of the device. Agitation of the vegetables removes the dirt and dust accumulated thereon providing for the packaging of vegetables substantially free from dirt, dust and the like. The discharge spout is movable to control the discharge of the vegetables and at the same time actuate the agitating rack.

Referring to the drawings for a more detailed description thereof, the device therein disclosed includes a substantially rectangular shaped hopper 10 supported on leg members 11 attached thereto by any desired means. Supported in angular relation on the upper edge of the hopper walls by means of the clamps 12 and 13 is a rack 14, said rack being formed of a plurality of bars 15 which form a grate-like structure substantially the same width as the hopper and adapted to fit within the walls thereof, as clearly shown in Figure 1 of the drawings. The bars 15 are connected in a manner to be removable from the rack 14, the bottom wall of said rack being substantially solid to form a receptacle for receiving any dirt or dust dislodged from the vegetables placed thereon.

For supporting a second rack 16 at an angle opposite to the rack 14, there is provided a pair of flange bars 17 attached to each side wall of the hopper 10, one of the flanged bars being shown in Figure 2 of the drawings. The rack 16 also comprises a series of spaced bars 18 to form a grate-like construction, said bars being attached to the member 19 on the sides of which are mounted rollers 20 adapted to engage the flanged bar 17 and permit reciprocatory motion of the rack 16. A tension spring 21 attached to the end wall of the hopper at 23 and to the member 19 at 24 returns the rack 16 to normal position. It is to be understood that potatoes or similar vegetables are first deposited on the rack 14 and are fed by gravity on to the rack 16 for discharging through the spout of the hopper. Since the rack 17 is adapted to agitate, dirt, dust or the like remaining on the vegetables will be dislodged and caused to deposit in the compartment 25 disposed beneath said rack 16, a trap door 26 being provided for the cleaning of said compartment.

A plate 27 is hingedly attached to opposed legs 11 as indicated at 28 and extends across the end of the hopper and at an angle thereto for guiding the vegetables discharged from the rack 14 on to the rack 16. Referring to Figure 2 of the drawings it will be noted that said plate 27 is spaced from the rack 16 to permit free movement of the rack 16 during agitation thereof.

The discharge end 29 of the hopper 10 is partially closed from the top toward the bottom by means of the plate 30 suitably attached to said

hopper, the space between the bottom of the hopper and the end of the plate forming a discharge opening 31. An arcuately curved member 32 is attached to the side walls of the hopper and in close proximity to the opening 31 for directing the vegetables discharged from the rack 16 into said opening. It will be noted that the inner end of said member 32 terminates adjacent the end of the rack 16 so that the vegetables can be readily discharged thereon.

The bottom wall 33 of the hopper 10 forms the bottom of the compartment 25 in which dirt, dust and the like from the vegetables is deposited. The bottom wall 33 preferably extends at an angle toward the discharge opening and one end 34 thereof is secured to the frame member 35 and terminates a slight distance beyond the grate 16. A guiding trough 36 is hinged at 37 to the end 34 of the bottom plate 33 and is adapted to direct the vegetables discharged through the opening 31 into the bag or sack supported beneath the lip 38, said lip being fixedly secured at 39 to the free end of the trough 36, the lip forming a part of the hood 41 which entirely surrounds the free end of said trough. To prevent the vegetables contacting the trough 36 from being discharged on either side thereof, there is carried by said trough and on both sides thereof a flange-shaped member 40 best shown in Figure 4 of the drawings.

The hood 41 is especially shaped so as to convey the vegetables discharged through the opening 31 into a bag or sack supported beneath the lip 38. The hood 41 and trough 36 are adapted to swing on the hinge 37 and to return the same to normal position, there is provided a tension spring 42 attached at one end 43 to the plate 30 and the other end 44 to the hood 41. The tension spring 42 returns the hood and trough to normal position when pressure on the hood has been released. The rack 16 is adapted to reciprocate upon movement of the trough and hood, this action being accomplished through the use of a metal strip 43' attached at 44' to the rack 16 and at 45 to the top surface of the trough 36. It can be readily seen that movement of the trough will impart movement to the rack 16 through the plate 43', the tension springs 21 and 42 returning the movable members to their normal position.

It may be desirable to alter the size of the opening 31 to regulate the speed of the vegetables being discharged therethrough and to accomplish this purpose there is provided a plate 46 fixedly attached at 47 to the end plate 30 and diverging at an angle therefrom. The plate 46 is arcuate shaped having a rounded central portion and adjustably supports on the end thereof the plate 48, said plate being slotted at 49 and adjustably held on the plate 46 by the fastening means 50. The plate 48 is movable through the slot 49 and fastening means 50 to adjust the opening 31, it being understood that the plates 46 and 48 are suspended over the opening as clearly shown in the drawings.

In the operation of the device, a bag or sack to be filled is first positioned on the floor or other level surface beneath the lip 38 of the hood 41. A supply of potatoes or other vegetables has previously been supplied to the hopper 10 by deposit on the rack 14 where they are fed by gravity to the rack 16. The hood 41 is pressed downwardly from the dotted line position shown in Figure 2 of the drawings to the full line position which causes the vegetables to be discharged from the rack 16 through the opening 31 and trough 36 into the sack. Should the opening 31 become clogged, pressure on the hood 41 can be released allowing the spring 42 to return the same to normal position and by again depressing the said hood the grate 16 will be actuated to release the vegetables for continuing the packaging operation. As previously indicated, agitation of the rack 16 will help to dislodge dirt from the vegetables thereby presenting a clean packaged product.

Also it will be understood, of course, by those skilled in the art that variations in the hereinabove described device involving the substitution of substantial equivalents for the devices described are intended to be comprehended within the spirit of the present invention and that the invention is capable of extended application and is not confined to the exact showing of the drawings nor to the precise construction described and, therefore, such changes and modifications may be made therein as do not affect the spirit of the invention nor exceed the scope thereof as expressed in the appended claims.

What is claimed as new is:

1. A bag filling device comprising, a receptacle, a pair of racks supported in angular relation in said receptacle, one of said racks being movable to agitate articles in contact therewith, said receptacle having a discharge opening in an end wall thereof, a discharge trough pivotally mounted beneath said opening, means carried by said receptacle for directing articles from one of said racks onto said trough, means operatively connecting said trough with said movable rack for agitating said movable rack upon movement of said trough, and a deflecting hood attached to the free end of said trough for actuating said trough to discharge articles therefrom.

2. A bag filling device comprising, a receptacle, a pair of racks supported in angular relation in said receptacle, one of said racks being movably supported on angularly disposed bars carried on the side walls of said receptacle adapted to agitate articles in contact therewith, said receptacle having a discharge opening in an end wall thereof, a discharge trough pivotally mounted beneath said opening, means operatively connecting said movable rack with said trough for agitating said movable rack upon movement of said discharge trough, and a deflecting hood attached to the free end of said trough.

3. A bag filling device comprising, a receptacle, a pair of racks supported in angular relation in said receptacle, one of said racks being movable to agitate articles in contact therewith, said receptacle having a discharge opening in an end wall thereof, a deflecting plate mounted in close proximity to said opening, a discharge trough pivotally mounted beneath said opening, a deflecting hood attached to said trough, means operatively connecting said movable rack with said trough for agitating said movable rack upon movement of said trough, and a pouring lip forming a part of said hood for directing the articles into a bag supported beneath said lip.

4. A bag filling device comprising a receptacle having side, end and bottom walls, a pair of racks supported in said receptacle, one of said racks being movably supported on angularly disposed bars carried on the side walls of said receptacle and adapted to agitate articles in contact therewith, said receptacle having a discharge opening in one end wall, a discharge trough pivotally mounted to said bottom wall beneath said open-

ing, and means operatively connecting said trough with said movable rack for agitating said rack upon movement of said trough.

5. A bag filling device comprising a receptacle having side, end and bottom walls, a pair of racks supported in angular relation in said receptacle, one of said racks being movably supported on angularly disposed bars carried on the side walls of said receptacle and adapted to agitate articles in contact therewith, said receptacle having a discharge opening in one end wall, a discharge trough pivotally mounted to said bottom wall beneath said opening, means carried by said end wall for adjusting the size of the opening formed therein, means operatively connecting said trough with said movable rack for agitating said rack upon movement of said trough, and a deflecting hood attached to the free end of said trough.

6. A bag filling device comprising a receptacle having side, end and bottom walls, a pair of racks supported in said receptacle, angularly disposed bars attached to opposed side walls of said receptacle, means for movably supporting one of said racks on said bars, said movable rack adapted to agitate articles in contact therewith, said receptacle having a discharge opening in one end wall, a discharge trough pivotally mounted to said bottom wall beneath said opening, a plate attached to said end wall and disposed at an angle relative thereto, means carried by said plate for adjusting the size of the opening formed in said end wall, means operatively connecting said trough with said movable rack for agitating said rack upon movement of said trough, and a deflecting hood carried by said trough and mounted for movement therewith.

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