

July 6, 1937.

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2,086,416

BAG HOLDER FOR WEIGHING SCALES

Filed Sept. 28, 1934

2 Sheets-Sheet 1

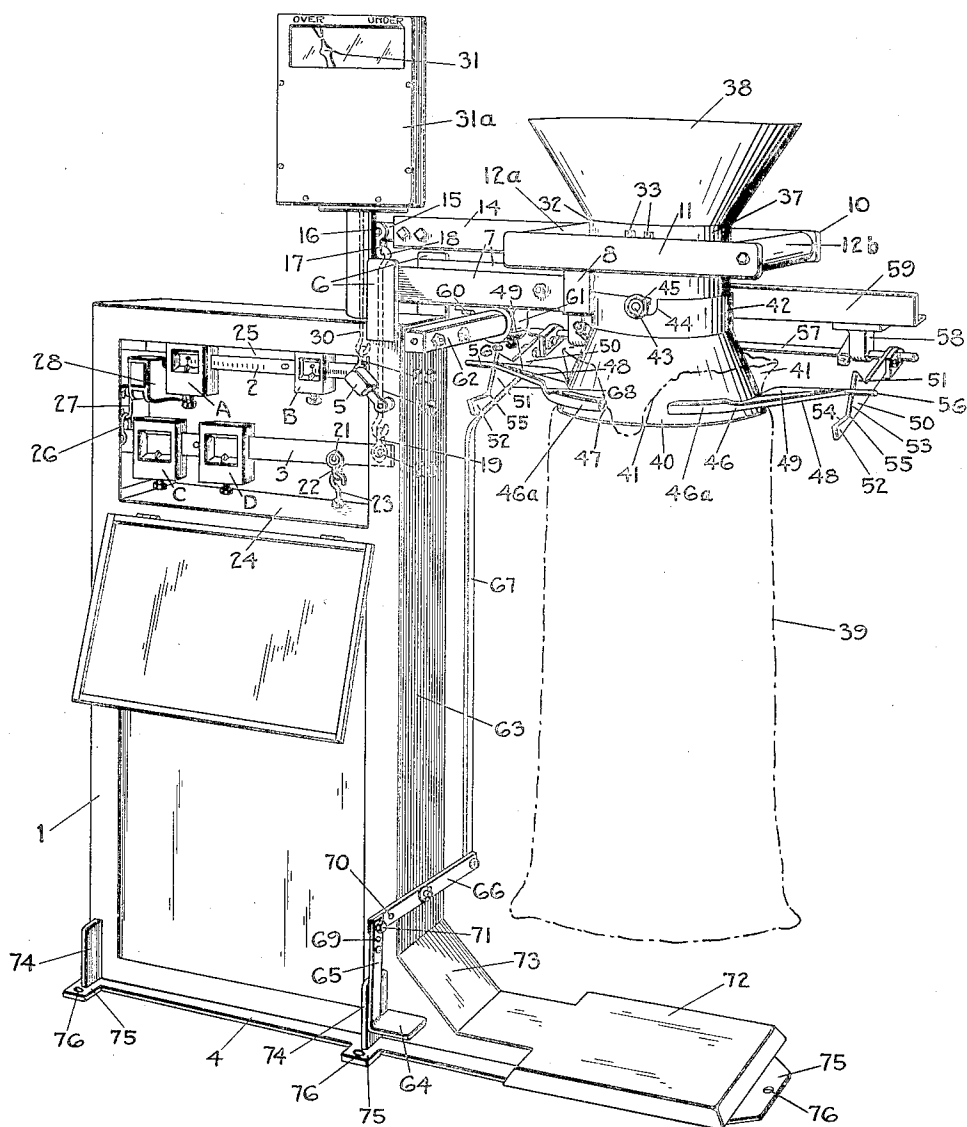


Fig. 1.

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Fig. 2.

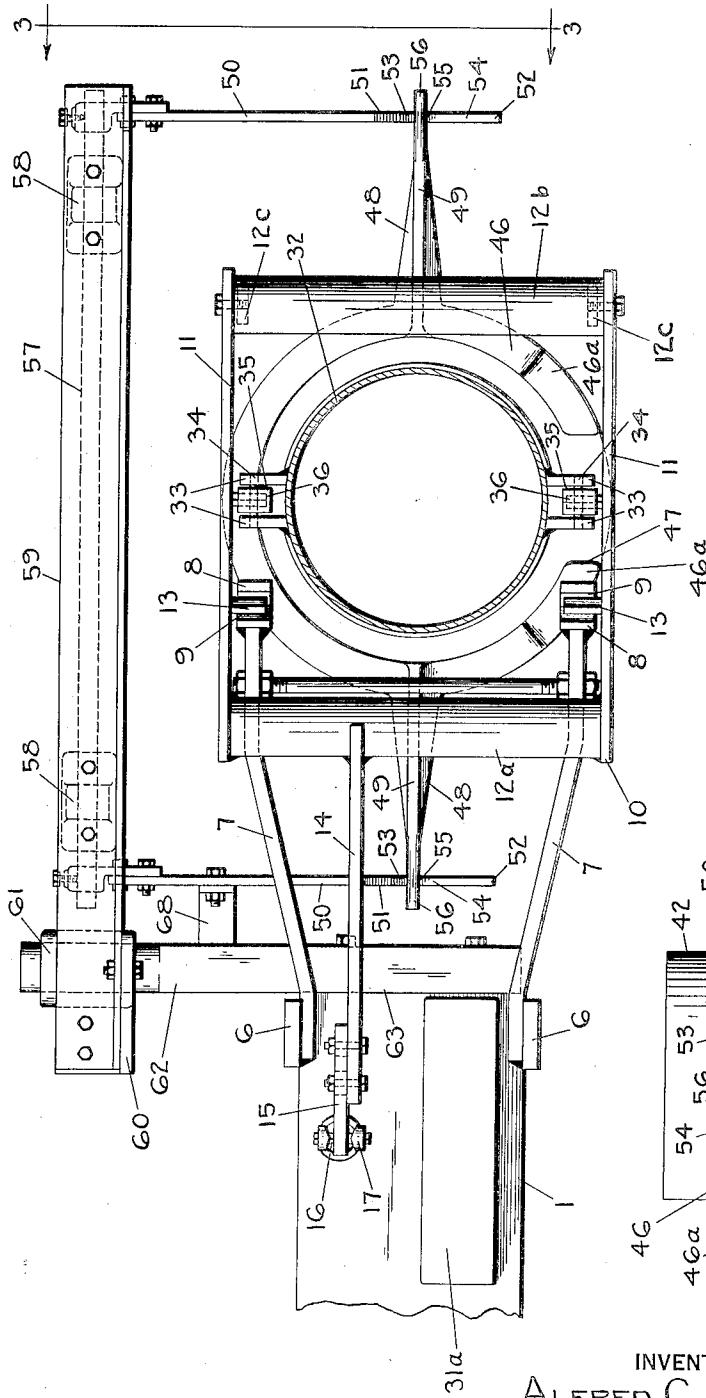
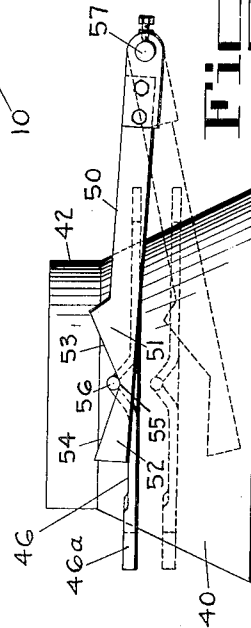


Fig. 3.



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2,086,416

BAG HOLDER FOR WEIGHING SCALES

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Application September 28, 1934, Serial No. 745,881

4 Claims. (Cl. 242-101)

This invention relates to improvements in bag holders, and more particularly to bag holders which are adapted to cooperate with weighing scales.

5 A primary object of the invention is to provide a simple and efficient bag holder, which is operatively connected to a scale and is adapted to be quickly adjusted to receive and hold a bag and easily and rapidly operated.

10 Another object is to provide a movable bag clamping ring under gravitational control for holding the bag securely on the bag holder while being filled and weighed.

Another object is to provide actuating means 15 for lowering and raising the bag clamping ring in securing a bag on the bag holder and releasing it therefrom.

Another object is to provide pedal operated control means adapted to operate the clamping ring actuating means, whereby the clamping ring 20 may be easily raised to release the bag when the filled bag has reached the predetermined weight, as well as lowered in order to secure the bag in position on the bag holder.

Another object is to provide the bag holder 25 with attaching means to permit ready attachment of the mouth of the bag to the bag holder.

Still another object is to provide means for guiding to the platform any bags that may drop 30 offside from the bag holder, when released therefrom.

In order that the nature of the invention may be fully understood, I have shown a preferred embodiment of the invention in the accompanying drawings, in which,—

35 Figure 1 is an isometric view of a preferred form of my invention, showing particularly the bag holder with the bag clamping ring and its operating arms in their operative position and illustrated as applied to a scale.

40 Figure 2 is a top plan view of the apparatus shown in Fig. 1, partly in section, on the line 2-2 of Fig. 1, showing the bag holder in its supporting frame and the bag clamping ring with its operating arms and associated mechanism in its 45 operative position.

Figure 3 is a fragmentary view on the line 3-3 of Fig. 2, showing the bag holder with the bag clamping ring and the operating arms in their raised or inoperative position, as well as 50 their relative operative and lowered position in dotted outline.

In the drawings 1 designates a frame structure embodied in the form shown in a beam 55 housing or cabinet in the upper part of which a

weigh beam 2 and balance beam 3 are mounted, the cabinet 1 being attached to a base plate 4. The weigh beam 2 is provided with a trig or beam lock 5 together with graduations indicating pounds and ounces respectively. The beam 3 provides a combined balance for balancing the 5 dead load of the scale operating parts and the tare weight of the bag being weighed. Extending upwardly from the housing 1 are two spaced upright posts 6, to which are secured longitudinally extending spaced arms 7, carrying on their free ends spaced upright supports 8 provided with opposed bearing blocks 9. Pivotally 10 mounted on the upright supports 8 is a rectangular frame 10, consisting of spaced side plates 11 and tubular connecting members 12a and 12b attached to the side plates, the member 12b being detachable and secured by cap screws to cross-plates 12c fastened inside the member 12b. 15 On the inner side of the side plates 11 (Fig. 2) there are mounted therein transverse opposed knife-edge pivots 13, which are seated in the bearing blocks 9 carried by the upright supports 8. An extension arm 14 serving as a lever is welded to the inner end of the connecting member 12a of the frame 10 and is operatively connected 25 to the weighing mechanism by means of an auxiliary arm 15 bolted thereto and carrying at its free end a transverse knife-edge pivot 16, upon which is mounted a clevis 17, having connected thereto the upper end of a connecting link 18 likewise connected at its lower end to a clevis 19 mounted on a knife-edge pivot 20 carried at the inner end of the balance beam 3. The balance beam 3 is angularly disposed and is 30 fulcrumed on a knife-edge pivot 21 carrying a clevis 22, which is connected to a hook 23 fixedly mounted in the shelf 24 of the beam chamber 25 and forming a fulcrum for the beam 3. The inner end of the balance beam 3 is likewise provided with a knife-edge pivot connected by a 40 clevis 26 to a link 27, pivotally mounted on the inner end of the weigh beam 2, which is fulcrumed on a knife-edge pivot (not shown) in the butt end of the weigh beam 2, while the beam fulcrum pivot is mounted in a bracket 28 attached to the rear wall of the beam chamber 25. 45 The outer end of the weigh beam 2 is likewise provided with a knife-edge pivot seated in a clevis 29, connected to a depending rod 30 cooperating with mechanism actuating an over and under weight indicator 31 in the housing 31a, whereby the balance of the load may be readily noted and varied accordingly so as to obtain the desired quantity of material in the bag. 55

By this arrangement a movement initiated by the frame 10 carrying the load and its lever arm 14 is readily transmitted by means of the pivotally connected link 18 to the balance beam 3 and hence to the weigh beam 2 and the over and under indicator 31. The weigh beam 2 is provided with two poises, A for units and B for the ounces, so as to set off the predetermined load of the bag, while the balance beam 3 is likewise provided with two poises, C and D, for balancing the dead load and the tare weight of the bags.

Centrally mounted within the frame 10 is a bag support 32 (Fig. 1) provided with lateral spaced lugs 33 (Fig. 2) carrying fixed pins 34 on which self-aligning opposed bearing blocks 35 are pivotally mounted. Opposed, transverse knife-edge pivots 36, secured in the center of the side plates 11, extend inwardly and are seated in the under side of the bearing blocks 35, whereby the bag support 32 is pivotally mounted in the frame 10. The bag support 32 consists of an annular central section 37, from which extends upwardly a cone shaped inlet funnel 38, adapted to be located immediately below the discharge spout of the hopper (not shown) and serving as a guide for grain or other material passing therethrough to the central section 37 and hence into the bag 39 below, as well as providing a suitable receptacle for the accumulation of material before it settles or is compacted in the bag 39.

Extending downwardly from the annular central section 37 is an outwardly flaring bag holding bell 40 (Figs. 1 and 3), over which the mouth 41 of the bag is placed. The bell 40 is provided with an upper annular collar 42, which is detachably mounted on the central section 37 by means of opposed bayonet joints comprising radial opposed screw studs 43 attached to the central section 37 and engaging L-shaped slots 44 in the collar 42 of the bell 40, while lock nuts 45 mounted on the screw studs 43 serve to lock the bag holding bell 40 in position on the central section 37. By employing this detachable means bells of varying diameters may be used so as to accommodate bags of different sizes.

In order to hold the mouth 41 of the bag securely on the bell 40 a movable bag clamping ring 46 (Figs. 1 and 3) is loosely mounted on the bell 40 and in operation is adapted to be dropped down under the influence of gravity upon the mouth of the bag previously placed over the bell 40 and press it snugly upon the bell, thus holding the bag in suspension thereon while it is being filled and weighed.

The clamping ring 46 is a split ring having an opening 47 on the front side and is provided with opposed lateral, heavy flanges 48 reinforced and strengthened by reinforcing ribs 49, which flanges and ribs add to the weight of the ring and its effectiveness in securely holding the bag on the bell. The clamping ring 46 is also provided with enlarged reinforcing ends 48a so as to balance the ring and prevent it from tilting and keeping it even on the mouth of the bag.

The clamping ring 46, which is shown in its lowered or operative position in Figs. 1 and 2 and in its raised or inoperative position in Fig. 3, is operated by a lifting mechanism. This mechanism comprises two spaced lifting arms 50, each arm provided near its end with upwardly extending notched guide members 51 and 52 having their upper edges 53 and 54 inclined and converging into a pocket 55 formed there-

between. The clamping ring flanges 48 are provided with laterally extending lugs 56, which are adapted to be engaged by the pockets 55 in both raising and lowering the bag clamping ring, while the inclined upper edges 53 and 54 of the guide members 51 and 52 respectively serve to guide the lugs 56 into the pockets 55, particularly if the bag clamping ring should for any reason be twisted laterally as, for example, when applying or releasing the bag from the bell 40. Thus the guide members 51 and fingers 52 serve as cams in guiding the lugs 56 to their proper position in the pockets 55 under the conditions noted above.

The mechanism for operating the lifting arms 50 (Figs. 1 and 2) comprises a horizontal rod 57 pivotally mounted in the spaced brackets 58 depending from an angle bar 59 disposed in back of the bag support 32 and secured to the flange 60 of a bracket 61 mounted on the free end of a rearwardly extending supporting bar 62 bolted to the upper end of the inner side wall 63 of the beam cabinet 1. The bag clamping ring 46 is operated by a foot-treadle 64 (Fig. 1), which has a vertical arm 65 attached to a cross-lever 66 pivotally mounted on the lower end of the inner side wall 63, the cross-lever 66 being in turn pivotally connected to a vertical rod 67 having a laterally inclined extension 68 pivotally connected to the inner lifting arm 50. The foot-treadle 64 is provided with means for adjusting its position vertically and laterally comprising a series of co-operating spaced openings 69 and 70 in the ends of the pedal arm 65 and cross-lever 66 respectively, while in the openings selected 69 and 70 a bolt 71 is inserted and the parts thus joined together in their operative position. Extending laterally from the inner side wall 63 of the beam cabinet 1 and mounted on the base plate 4 is a bag receiving platform 72 on which the filled bags are dropped after weighing, an inclined end portion 73 extending from the lower end of the side wall 63 is adapted to guide to the platform 72 any bags that may fall offside. The beam cabinet 1 is held in position on the base plate 4 between spaced retaining lugs 74, while attaching lugs 75 extend from the sides and ends of the base plate 4 and are provided with openings 76, through which lag screws may be inserted to fasten the apparatus to the floor.

In operation, the beam poises A and B are set for the exact weight of material to be loaded in each bag, after which the operator presses the foot-treadle 64, which movement through the intervening mechanism described causes the bag clamping ring 46 to be raised (Fig. 3) and permits the operator to place the mouth of the bag around the bell 40 (Fig. 1). The operator then releases the foot-treadle 64, thereby permitting the clamping ring 46 to drop down and press the bag firmly on the bell 40 (Fig. 1) without the necessity of tucking the bag on the bell. The hopper gate (not shown) is then opened and the material allowed to flow freely through the inlet funnel 38 and bell 40 into the bag. When the predetermined quantity of material has been poured into the bag, as indicated by the over and under indicator 31, the operator presses the foot-treadle 64, thereby actuating the lifting arms 50 and raising the clamping ring 46 from the bag, thereby releasing the filled bag and permitting it to drop upon the receiving platform 72. Thus the entire operation of filling 75

and weighing a number of bags is quickly and efficiently performed.

While the preferred embodiment of the invention herein shown and described is well adapted to fulfill the objects of the invention, it is to be understood that it is not intended to confine the invention to the precise form of construction herein disclosed, for it is susceptible of modification in various forms, all coming within the scope of the invention.

I claim:

1. In a device of the character described, bag holding means comprising a frame structure, a bag support pivotally mounted in the said frame, a pivotally mounted bag clamping ring disposed on the said bag support, provided with laterally extending, opposed lugs and adapted to drop under the influence of gravity so as to engage and hold a bag securely on the said bag support, pivoted spaced lifting means provided with notched portions engaging the said lateral lugs, for guiding the said clamping ring to the proper position to hold the bag on the bag support and to subsequently raise the clamping ring therefrom, and means adapted to raise and lower the said lifting means.

2. In a device of the character described, bag holding means comprising a frame structure, a pivotally mounted bag support having an outwardly flaring bag holding bell, a split bag clamping ring loosely mounted on the said bell and provided with laterally extending lugs, and means for lowering the bag clamping ring to hold a bag on the bell and subsequently raising the ring to free it from the bag including spaced lifting arms pivotally mounted and provided with notched guide members having inclined, converging upper edges forming a pocket therebetween and adapted to engage the said lateral

lugs of the clamping ring in guiding the lugs into and from the said pockets.

3. In a device of the character described, bag holding means comprising a frame structure, a pivotally mounted bag support having an outwardly flaring bag holding bell, a bag clamping ring loosely mounted on the said bell and provided with laterally extending lugs, means for lowering and raising the said clamping ring including spaced pivotally mounted lifting arms having notched portions adapted to engage the said lugs, and means for operating the said lifting arms comprising a horizontally disposed rod, having the said lifting arms secured thereon, and pivotally mounted in fixed spaced brackets attached to the said frame and under control of pedal actuated mechanism.

4. In a device of the character described, bag holding means comprising a frame structure, a pivotally mounted bag support having an outwardly flaring bag holding bell, a bag clamping ring loosely mounted on the said bell and provided with laterally extending lugs, means for lowering and raising the said clamping ring including spaced pivotally mounted lifting arms having notched portions adapted to engage the said lugs, means for operating the said lifting arms comprising a horizontally disposed rod, having the said lifting arms secured thereon, and pivotally mounted in fixed spaced brackets, and means for actuating the said lifting arms including a vertically disposed rod mounted on the said frame pivotally connected at its upper end to the inner lifting arm and having its lower end pivotally connected to a cross arm carrying a foot-treadle adjustably mounted vertically and horizontally thereon.

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