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2,989,277

BAG HOLDER

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2 Sheets-Sheet 1

FIG. 1

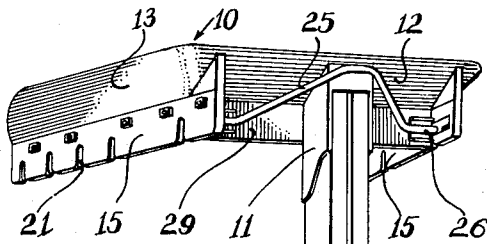
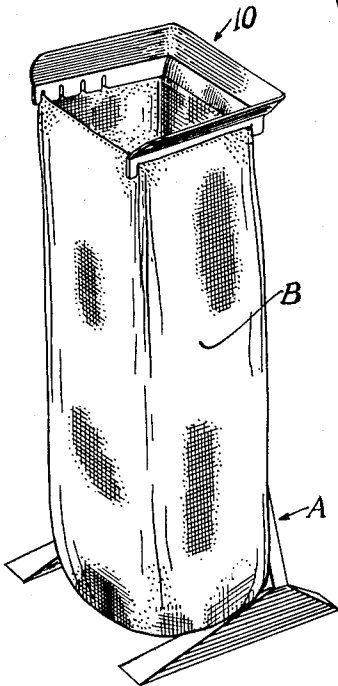


FIG. 2

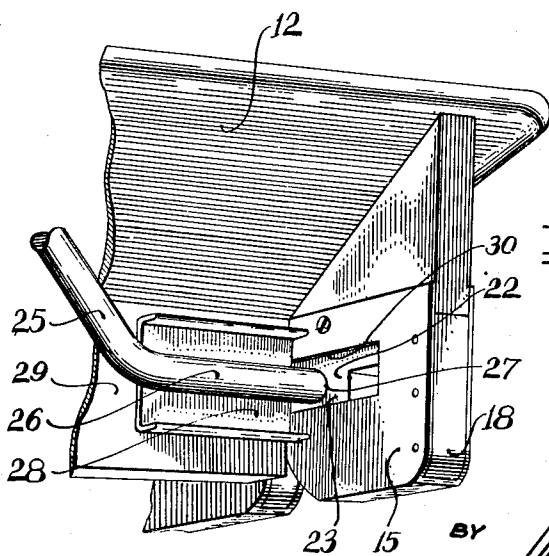
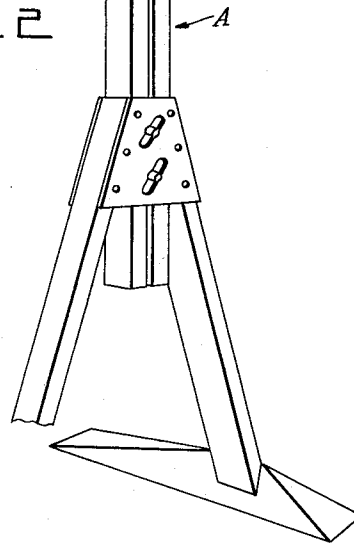


FIG. 4

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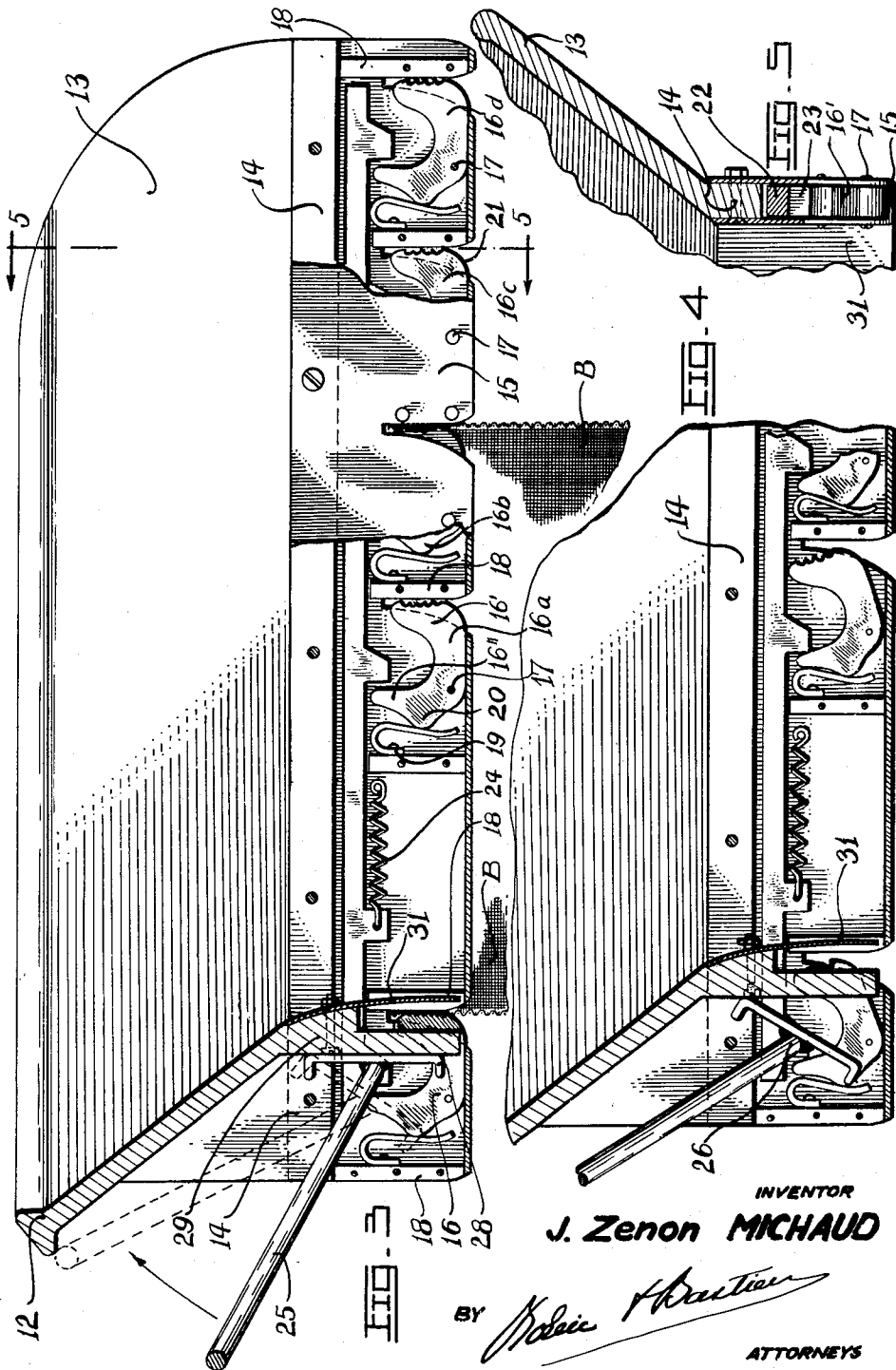
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2 Sheets-Sheet 2



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BAG HOLDER

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6 Claims. (Cl. 248—101)

The present invention relates to a bag holder adapted to hold a bag open for filling by stretching the mouth into a generally rectangular shape, and holding it at the four corners of the rectangle.

The general object of the invention is to provide means for gripping the mouth of the bag at four remote points, and means for releasing the grip simultaneously at all the four points, when the bag has been filled. A further object of the invention is to provide a bag holder which can hold bags of several different standard sizes, such as 25, 50, 75 and 100 lb. bags.

A still further object of the invention is the provision of a bag holder which is of simple, economical construction so that it may be available to a small producer as well as to large concerns.

A still further object of the invention is a bag holder in which it is easy to place and remove the bag. If any one of the members which grip the bag is stuck, it is easy to reach it by hand and to release it, independently of the other gripping members.

Another object of the invention consists in providing a bag holder which is light, easy to carry, and space saving, which makes it usable on all occasions.

Still another object of the invention lies in providing a bag holder with a partly covered mechanism, which protects this mechanism from dirt and wear.

A still further object of the invention resides in providing a bag holder which has a smooth surface with no projections which may retard, damage, or be damaged by the material with which the bag is being filled.

A further object of the invention is to provide a bag holder in which the impact of the material filling the bag will result in an even more secure gripping.

A further object of the invention is a bag holder which may be attached to and supported by a weighing device, to indicate the weight of the material in the bag.

A further object of the invention is a bag holder in which the portion gripping the mouth of the bag is cantilevered, and supported only on one side, so that it is very easy to remove the bag once it is full.

The invention will now be described with reference to one embodiment thereof, illustrated in the drawings, in which:

FIG. 1 is a front and side perspective view of a bag holder with a bag in position to be filled;

FIG. 2 is a rear perspective view of the bag holder, without the bag;

FIG. 3 is a vertical section in a plane parallel to that of the gripping members, and to one side of the centre, with part of a wall of the U-shaped channel removed, and with the gripping members in bag holding position;

FIG. 4 is a partial view corresponding to that of FIG. 3, with the gripping members in bag releasing position;

FIG. 5 is a partial section on line 5—5 of FIG. 3; and

FIG. 6 is an enlarged perspective view of a detail of FIG. 2, showing part of the bag releasing mechanism.

In all the figures like elements are indicated by like characters throughout.

With reference to the drawing, the bag holder comprises a stand A of any suitable construction, and preferably of variable height, which supports a frame 10 consisting of an adapter 11 supported by the stand, of a transverse portion 12, and of two slightly divergent cantilevered portion 13 extending from the ends of said transverse portion, on the same side thereof. In the embodi-

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ment illustrated the frame 10 is made of a thick metal plate, which is downwardly inclined inwardly, in the form of a funnel; at the lower edge of the two cantilevered portions 13 of frame 10 are flanges 14 to which are attached by bolts and nuts, channels 15, U-shaped in cross section and closed at the bottom; in these channels is contained the gripping mechanism and part of the releasing mechanism.

The gripping mechanism, one side of which is shown in detail in FIGS. 3 and 4, the other side being identically constructed, comprises gripping members 16, 16a, 16b, 16c and 16d; gripping member 16 is disposed adjacent the portion 12 of frame 10, while gripping members 16a to 16d are disposed along the U-channel 15, and at suitable distances from member 16, so that bags B of respectively 25, 50, 75 and 100 lbs. standard size may be attached to them with their mouths stretched open.

All the gripping members are similar in construction, and each comprises a bag gripping portion 16', and an upwardly extending arm 16'', the purpose of which will be explained later. Each gripping member is pivotally attached to the sides of the channel 15 by means of rivets 17. Each gripping portion 16' faces a block 18, and is urged against the block by a leaf spring 19 engaging a boss 20 of the gripping members, the bag being held between portion 16' and block 18. In the embodiment illustrated, the leaf springs 19 which serve to urge gripping members 16b, 16c, and 16d, are attached to the blocks 18 of the adjacent gripping members, while separate blocks are provided facing gripping members 16d and 16, and separate blocks are also provided for the leaf springs 19 which urge gripping members 16a and 16. To provide suitable spacing for gripping bags of different standard sizes, if the above construction is used, the gripping members may be made of different length or the blocks may be made of different thickness.

Slots 21 are made in the U-channel at the points where the blocks 18 are adjacent the gripping portions 16' of the gripping members, so that the bag may be inserted therein. Slots 21 are enlarged at the bottom to provide a space where the finger may be inserted if the gripping members are stuck.

The mechanism for releasing the bag once it is filled comprises on each side a bar 22 disposed above the gripping members, and sliding in the restricted space between the top of blocks 18. The bar 22 is provided with fingers 23, each finger 23 being adapted to engage one of the arms 16'' of the gripping members upon longitudinal rearward movement of the bar 22, as shown in FIG. 4, thus turning the gripping members about rivets 17 against the action of springs 19, and causing them to release the bag. The fingers 23 are disposed at equal distance along bar 22 as the arms 16'' along the U-channel 15, so that the four corners of the bag B are released simultaneously.

A tension spring 24 attached to bar 22 and to channel 15 urges each bar 22 into a position in which the fingers 23 do not engage the arms 16''. A tripping rod 25 of U-shape has its two ends 26 freely engaged by holes 27 near the end of each bar 22, thus being pivotally attached to each bar 22, as shown in FIG. 6; each end 26 of tripping rod 25 is provided with a lever 28 rigidly attached thereto, which engages the outer face of a flange 29 at the lower end of the portion 12 of frame 10, so that upward or downward movement of the tripping rod 25 will pull bars 22 rearwards on both sides of the bag holder, against the action of springs 24, to release the bag. A slot 30 is provided on the inner wall of each channel 15 to allow passage of the ends 26 of rod 25.

It is noted that the portion 12 of frame 10 extends downwardly in a guard 31 which defines a channel with the lower portion of flange 29. Slots 21 of gripping

members 16 are disposed along said channel, so that the rim of the mouth of the bag is positioned inside the channel; in this way, the material with which the bag is being filled will not have a tendency to slip out between the rim of the bag and the frame.

It will be seen from the above description that the present invention makes it possible to construct a bag holder which can fully replace a man holding the bag to be filled, and which holds the bag even more firmly and steadily than a man could, while releasing it just as easily.

To ensure maximum lightness and strength, the upper funnel frame 10 is preferably made of cast aluminum, the gripping members of steel, and the stand of wood, with steel fittings. To provide greater rigidity, the upper edge of frame 10 is enlarged as shown in FIGURES 3 and 5.

The bag gripping surface of gripping portion 16' is preferably rough or cross-ribbed, to avoid slipping.

It will be understood that the above embodiment of the invention has been illustrated and described by way of example, and several modifications may be made, within the spirit and scope of the appended claims.

What I claim is:

1. A bag holder comprising a generally rectangular frame, a pair of pivotally mounted gripping members disposed adjacent two corners of said frame, a plurality of other pairs of gripping members spacedly disposed along two sides of said frame, each other pair forming with said first pair a quadrilateral whose perimeter is generally equal to the perimeter of the mouth of a bag of standard size, a block adjacent each gripping member, a spring urging each gripping member against the block adjacent thereto, two bars slidably mounted on said two sides of said frame, fingers on said bars adapted to engage said gripping members, and rotate them out of contact with said blocks upon longitudinal displacement of said

bars, and means for displacing said two bars simultaneously.

2. A bag holder as claimed in claim 1, said means for displacing said two bars simultaneously comprising a tripping rod formed as a U-shaped member whose free ends are pivotally connected to the ends of said bars, and lever arms attached to said tripping rod, and engaging said frame.

3. A bag holder as claimed in claim 2, said lever arms being provided on both sides of said tripping rod, so that either upward or downward rotation of said tripping rod about its pivotal points will result in longitudinal displacement of said bars.

4. A bag holder as claimed in claim 1, further including springs urging said bars into a position where said fingers do not engage said gripping members.

5. A bag holder as claimed in claim 4, said spring urging said bar being a tensional coil spring.

6. A bag holder comprising a first pair of gripping members and at least one other pair of gripping members; each other pair forming with said first pair a quadrilateral whose perimeter is generally equal to the perimeter to the mouth of a bag of standard size; rigid elements adjacent said gripping members; springs urging said members against said rigid elements; two bars slidably mounted on two sides of said quadrilateral; fingers on said bars adapted to engage said gripping members and rotate them out of contact with said rigid elements upon longitudinal displacement of said bars and means for displacing said two bars simultaneously.

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