May 10, 1932. J. R. MASSENGALE 1,858,099

ROTARY BIN

Filed Dec. 21, 1929 3 Sheets-Sheet 1

Fig. 1.

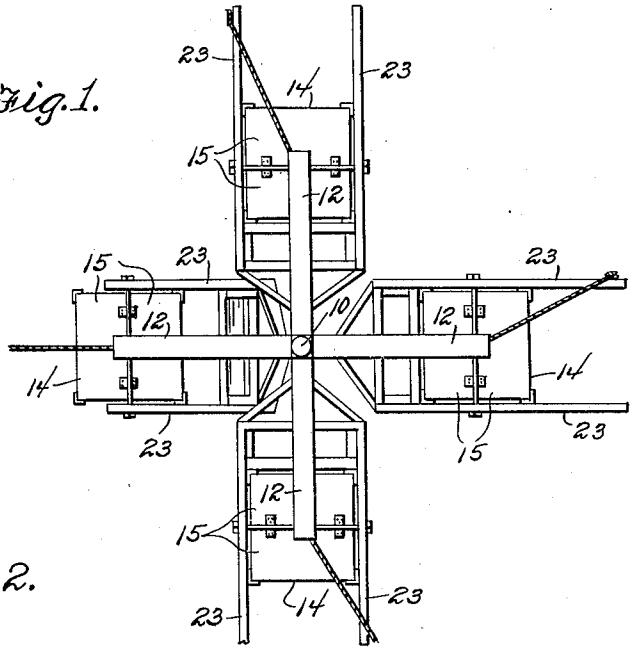
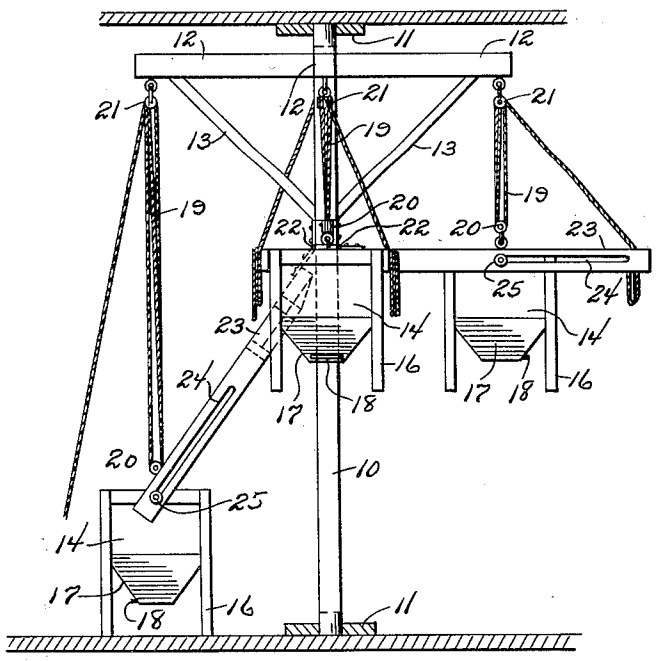


Fig. 2.



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Filed Dec. 21, 1929 3 Sheets-Sheet 2

Fig. 3.

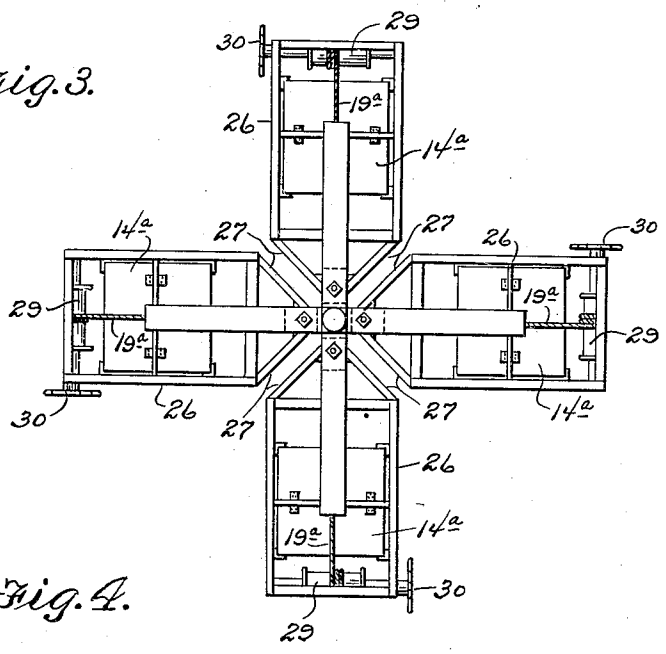
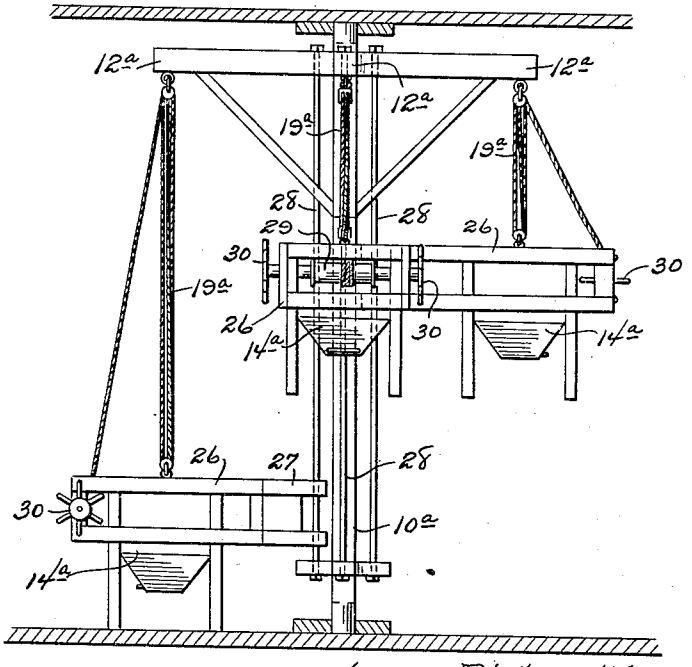


Fig. 4.



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Filed Dec. 21, 1929 3 Sheets-Sheet 3

Fig. 5.

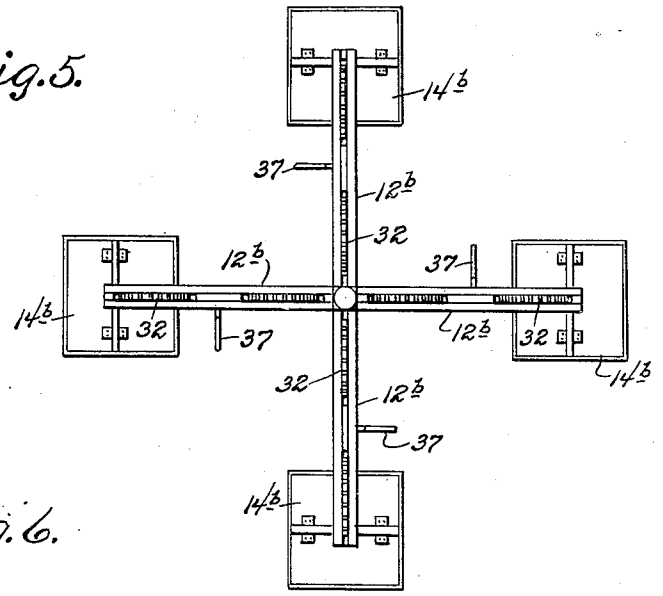
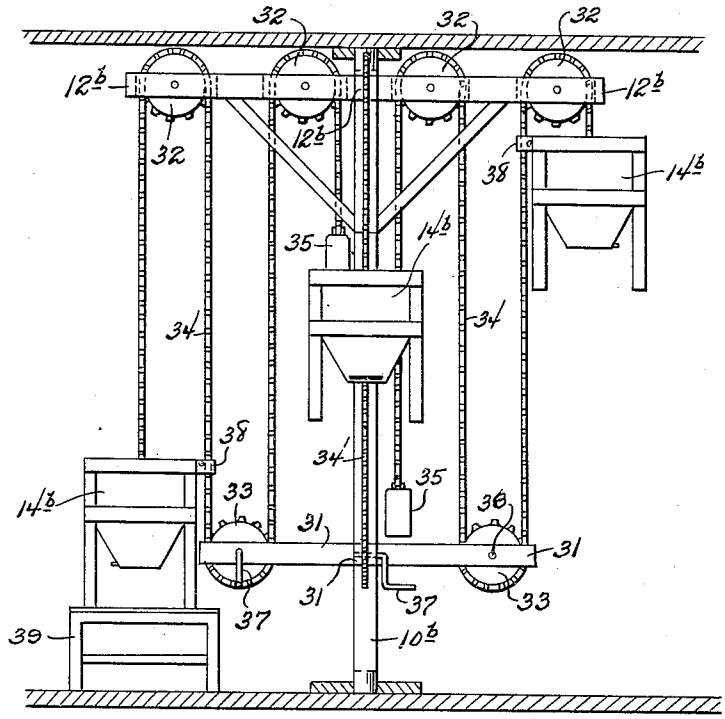


Fig. 6.



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Patented May 10, 1932

1,858,099

UNITED STATES PATENT OFFICE

JAMES RICHARD MASSENGALE, OF EDEN, MISSISSIPPI

ROTARY BIN

Application filed December 21, 1929. Serial No. 415,814.

This invention relates to an apparatus for handling grain, either whole or ground, as well as sugar and like commodities, an object being to provide an apparatus by means of which grain may be fed to a mill in a convenient manner.

Another object of the invention is the provision of an apparatus of the above character which may also be used in stores for sugar, flour and other grains and meals, and maintained in an out-of-the-way position to conserve floor space, and readily moved into position for the removal of its contents.

Another object of the invention is the provision of an apparatus which, in addition to the above and other advantageous features, is simple in construction, easy to operate and may be manufactured at a relatively small cost.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claim.

In the drawings:—

Figure 1 is a top plan view of the invention.

Figure 2 is a side view with parts in section and showing one of the bins in lowered position.

Figure 3 is a top plan view of a slightly different form of the invention.

Figure 4 is a view similar to Figure 2 but showing the form of the invention illustrated in Figure 3.

Figure 5 is a plan view of another form of the invention.

Figure 6 is an elevation with one of the bins lowered and parts in section.

Referring to the drawings in detail and more especially to Figures 1 and 2, the reference character 10 indicates a standard whose upper and lower ends are rotatably mounted in blocks 11 or other suitable bearing devices attached to the ceiling and floor of a room, or to other convenient supporting structure. Extending radially from and rigid with the standard 10 are horizontally disposed arms 12 and these arms may be braced by means of braces 13 which connect them with the standard.

The reference character 14 indicates bins or containers which are open at the top and provided with hinged covers 15 for conveniently filling the bins. The bins are preferably provided with legs 16 which space them from the floor as shown in Figure 2 of the drawings, and the bottoms of these bins are inclined as at 17 and are provided with discharge openings controlled by slides 18. A sack or other suitable container may thus be placed beneath the bin and a portion of all of the contents transferred to the sacks.

The bins are designed to be supported in elevated position for purposes hereinafter explained and are adapted to be lowered and raised. To accomplish this, a cable 19 is passed through a sheave 20 secured to the top of the bin and through sheave 21 at the outer end of one of the arms 12. A bin is connected to each of the arms 12 in this manner so that it may be raised or lowered and may be held in raised position by securing the free end of the cable 21 to a convenient point upon the bin.

Hingedly secured to the standard 22 are spaced arms 23 and the outer ends of these arms are provided with elongated slots 24 to receive pins or pintles 25 which extend from opposite sides of each of the bins. These arms 23 provide guiding means for the bins during their raising and lowering movement and act to prevent independent rotary movement of the bins as the apparatus is rotated through rotation of the standard 10.

The invention may be used for feeding corn or other grain to a mill. One of the bins is lowered to the position shown in Figure 2 of the drawings and the customer's grain is placed within the bin and the toll checked. The bin is then raised by means of the cable 19 and secured in raised position, so that the apparatus may be rotated to bring another bin into position for another customer's grain. This operation is repeated until the first bin has reached a position above the mill, so that the contents of this bin may be fed to the mill. If the hopper of the mill does not accommodate the entire contents of

the bin, the latter may remain in position above the hopper and the mill properly fed until the contents of the bin have all been removed.

In addition, the apparatus may be used in grocery stores as containers for sugar, rice, flour and like commodities. Normally, the bins are elevated so that considerable floor space is saved.

A scale is positioned so that the bins may be raised and lowered and their contents conveniently transferred to the scale. For example, the bin may be lowered directly above the scale and sufficient of the contents of the bin may be transferred into a sack or bag upon the scale until the desired amount has been obtained. The bin may then be raised to its normal position out of the way.

In Figures 3 and 4, the standard 10*a* has extending radially therefrom horizontally disposed arms 12*a*. The standard is rotatably mounted and the arms 12*a* support bins 14*a* by means of cables 19*a*. Theese bins are carried by frames 26 which are provided with extensions or arms 27 having a sliding engagement with guide rods 28 arranged parallel with the standard 10*a*. The frames are thus slidable along the guide rods and hold the bins against horizontal swinging or rotary movement independent of the standard.

In this form of the invention, the free ends of the cables 19*a* are wound upon a roller or drum 29 which is provided with an operating wheel 30 and is carried by the frame 26. By means of the roller 29, the bins may be raised or lowered as previously described.

In Figures 5 and 6, the standard 10*b* is rotatably mounted and carries upper radially extending arms 12*b* and lower radially extending arms 31. The arms 12*b* carry spaced sprockets 32 while the arms 31 carry sprockets 33.

Chains 34 pass around these sprockets and have one of their ends connected with the bins 14*b*, while the opposite ends of the chains have weights 35 connected thereto to act as a counter-balance for the bins. The sprockets 33 are mounted upon the shafts 36 and these shafts have extending therefrom crank arms 37 which provide means for rotating the sprockets and operating the chains to raise and lower the bins. The bins have a sliding connection 38 with the chains so as to stabilize and prevent swinging movement of the bins. A platform 39 may be provided to support the lowered bin at a convenient elevation.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claim.

Having described the invention what is claimed is:

Rotary bins comprising a vertically disposed and rotatably mounted standard, horizontally disposed arms secured to the upper end of the standard, spaced guide rods attached to the arms and the lower portion of the standard and spaced from the latter, rectangular shaped frames arranged radially of the standard and each having a reduced end disposed adjacent the standard, said reduced ends of the frames slidably mounted on the rods, bins carried by the frames, and means for raising and lowering the frames on the guide rods.

In testimony whereof I affix my signature.

JAMES R. MASSENGALE.