June 26, 1951 V. J. KNOFF 2,557,977

ENSILAGE DISTRIBUTOR

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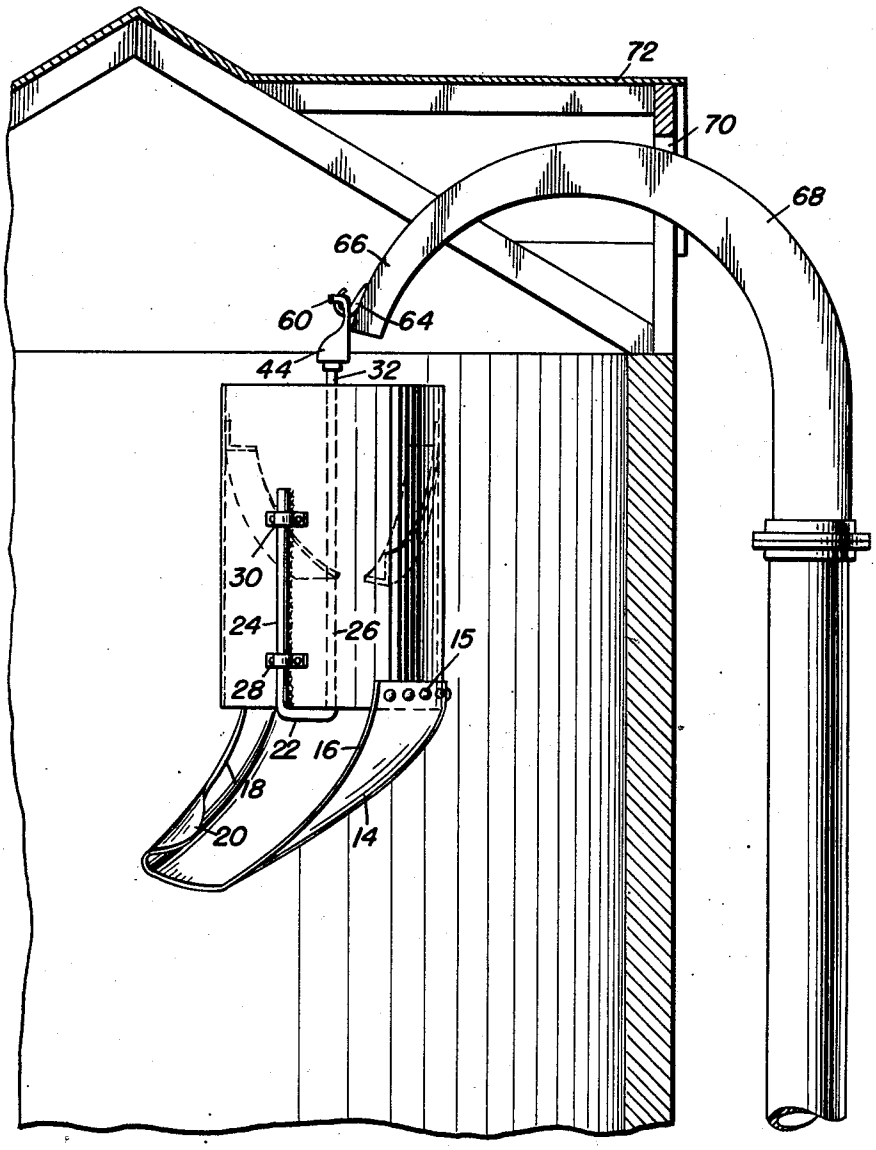


Fig. 1.

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Fig. 2.

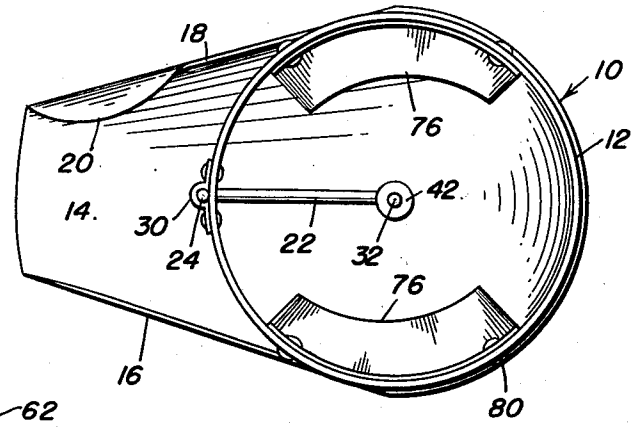


Fig. 4.

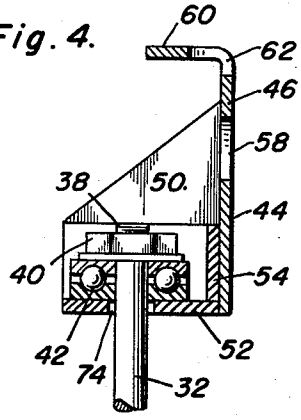


Fig. 3.

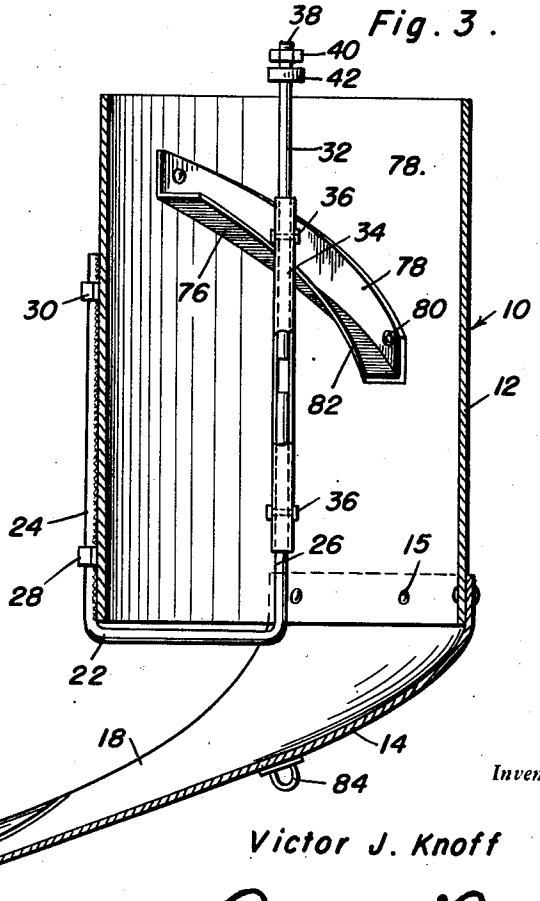
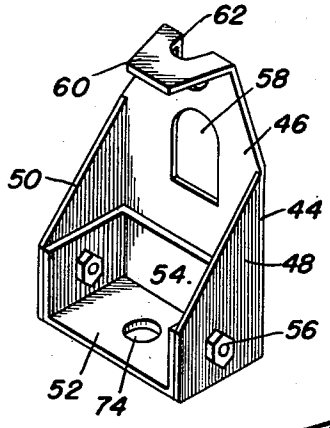


Fig. 5.



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ENSILAGE DISTRIBUTOR

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9 Claims. (Cl. 302—60)

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This invention relates to novel and useful improvements in means for uniformly distributing material into a bin or the like and more particularly relates to an attachment especially adapted for use with the delivery pipe of an ensilage delivery tube or conduit for distributing the ensilage uniformly and evenly in a silo.

The primary object of this invention is to provide a rotatable distributing device, which is adapted to be detachably and rotatably carried by the delivery spout of an ensilage elevator, and which is provided with a vane or pitched blade, whereby the material flowing from the spout will impinge against the blade or vane and cause the rotatable distributor to rotate and correspondingly uniformly distribute the material into the silo.

Another important object of this invention resides in the provision of means for rotatably attaching a material distributor to the depending end or discharge spout of a delivery tube.

Yet another important object of this invention resides in the provision of means for adjustably supporting a distributing device, so that the device may be adjusted in various vertical positions, with relation to the discharge end of the delivery spout or pipe.

A further object of this invention resides in the provision of a supporting frame carried by the delivery spout and rotatably supporting the distributing device below the delivery spout, vanes or pitched blades being secured to the distributing device, whereby rotation is imparted to the same due to the flow of material impinging against the vanes or blades.

These and ancillary objects and structural features of merit are attained by this invention, a preferred embodiment of which is set forth in the following description, and illustrated in the accompanying drawings, wherein:

Figure 1 represents a vertical sectional view through a silo showing an embodiment of the present invention in operative association with the discharge end or spout of the delivery pipe of an ensilage elevator;

Figure 2 is a top plan view of the distributing device per se;

Figure 3 is an enlarged vertical sectional view thereof;

Figure 4 is an enlarged vertical sectional view of the supporting member, illustrating the means provided for rotatably securing the depending hanger bracket thereto; and

Figure 5 is a view in perspective of the supporting member, adapted to be detachably hooked onto the outlet or delivery end of the pipe or spout.

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Referring to the drawings in detail, the numeral 10 generally designates the improved distributor device, which includes a cylindrical casing or hopper 12, formed with an open top and bottom end. A discharge spout 14 is secured by rivets 15, or other conventional fastening means, to the lower or bottom end of the casing. The discharge spout 14 is formed with slanted side walls 16 and 18, a distributing flange 20 extending inwardly and laterally from the upper edge of the side wall 18, as seen in Figures 1 and 3. It can be appreciated that the flange or lip 20 will cause the material gravitating downwardly in the spout to be discharged or spread over a wide substantial area.

The casing 12 is supported by means of a U-shaped rod 22, which is formed with leg sections 24 and 26. The leg section 24 is secured to the outer wall of the casing by means of U-shaped brackets 28 and 30. The leg 26 extends upwardly at the center of the casing and is secured to a rod 32 by means of a connecting sleeve 34. The connecting sleeve 34 is adjustably secured to the complementary ends of the rod 32 and the leg 26 and fastening means 36 is provided for adjustably securing the sleeve or tube in various positions with respect to the rod 32 and the leg 26. The upper end of the rod 32 is externally threaded as at 38 and a locking nut 40 is threadedly engaged thereon. A ball bearing assembly 42 is supported concentrically on the rod and is adapted to space the supporting and locking nut 40 from a supporting member 44. The supporting member 44 is provided for detachably securing the hanger bracket and the casing to the discharge spout of the delivery pipe of an ensilage elevator.

The supporting member 44 is formed with a back wall 46 from which laterally extend opposing side walls 48 and 50. A bottom wall or base portion 52 is secured between the projecting side walls by means of an upright flange 54 which is secured to the side walls by fastening members 56. The back wall of the supporting member is formed with a cut-out portion 58, for a purpose to be described. The upper end of the back wall is bent laterally therefrom to form a small top wall 60. A portion 62 is cut out from the top wall 60 and the upper edge of the rear or back wall 46, so that the supporting member may be easily secured to a hook 64 carried by the downturned discharge end or depending delivery end 66 of a delivery tube 68 for a conventional ensilage elevator. The delivery tube for the fodder

extends through an opening 70 formed in a conventional silo or bin 72.

The rod 32 is adapted for insertion in a centrally disposed aperture or opening 74 formed in the bottom wall 52. The rod is held within the supporting member by means of the locking nut 40, the latter being spaced from the upper face of the bottom wall by means of the bearing assembly or unit 42.

It can now be appreciated that the hanger bracket, casing and appurtenant discharge spout are rotatably suspended from the supporting member and are capable of effecting a rotative movement thereabout. Thus, fodder or similar material issuing from the discharge spout through the casing and onto the delivery spout 14 may be evenly and uniformly distributed around the silo or bin.

Means is provided for rotating the casing and spout, responsive to the flow of the material from the delivery tube 68 and preferably includes vanes or blades 76, which are secured to the inner wall 78 of the casing. The blades or vanes are formed from angle irons 78, having their vertical side walls secured by rivets 80 to the wall of the casing, with the horizontal portion thereof bent inwardly and downwardly as at 82. Thus, the material flowing from the spout will be discharged through the casing and will impinge against the vane or pitched blade and cause a subsequent corresponding rotation of the casing and delivery spout, whereby the material flowing from the delivery spout 14 will be distributed evenly and uniformly throughout the silo or bin.

It can now be appreciated that there is provided a durably and novelly constructed device, which may be easily and conveniently attached to the discharge end of a delivery spout for any type of material and which will, without manual assistance, or operation, effectively and efficiently operate to distribute in a uniform manner the material throughout the bin or silo.

Of course, since other environments and uses of this device will become apparent to those skilled in the art and since other changes may be made without departing from the spirit or the scope of the invention, it is to be understood that certain changes may be effected therein and certain uses may be employed thereof as coming within the spirit of the appended claims.

Having described the invention, what is claimed as new is:

1. The combination with an ensilage delivery conduit having a downturned discharge end, of a distributor associated therewith and including a supporting member carried by the discharge end, a bracket rotatably carried by the supporting member, means for securing the bracket in adjusted positions, a cylindrical casing suspended from said bracket, vanes secured on the inner wall of the casing and a discharge spout radially secured to the lower end thereof and enclosing the same.

2. The combination with an ensilage delivery conduit having a downturned discharge end, of a distributor associated therewith and including a supporting member detachably carried by the discharge end, a hanger bracket rotatably supported by said member, means for adjusting the length of said bracket, an open end cylindrical member secured to said bracket and disposed in axial alignment with the discharge end, a discharge spout encompassing the lower end of the member and extending downwardly and radially therefrom, and vanes secured to the inner wall of the member for rotating said member responsive to the material impinging against the vanes.

3. The combination with an ensilage delivery conduit having a downturned discharge end, of a distributor carried thereby and including a supporting member suspended from said discharge end, a bracket rotatably secured to said member, means for securing said bracket in vertically adjusted positions, a cylindrical member supported by the bracket and disposed below and in alignment with the discharge end of the conduit, vanes secured in a spaced manner to the inner wall of the cylindrical member for rotating the same responsive to the fodder impinging thereagainst and a discharge spout carried by the lower end of the member and radially extending therefrom.

4. The combination of claim 3, wherein said bracket includes a U-shaped section having one leg secured to the outside of the member and the other leg extending centrally and inwardly thereof and a rod extending downwardly from the supporting member, a connecting sleeve adjustably connected between said rod and leg sections.

5. A distributor for fodder for attachment to the depending end of a delivery tube comprising a supporting bracket adapted to be detachably hooked on the tube, a rod like extensible bracket rotatably carried by the supporting member, a cylindrical casing secured to said bracket, vanes affixed to the inner wall of the casing and a discharge spout radially carried by the lower end thereof.

6. A distributor for fodder comprising a supporting member adapted to be detachably hooked on the depending end of a delivery tube, a U-shape adjustable sectional rod rotatably carried by said supporting member, a cylindrical casing carried by said rod and adapted to be supported in alignment with the delivery tube, a discharge spout secured to the lower end of the casing and means secured to the inner wall of the casing for rotating the same upon the discharge of material therethrough.

7. The combination of claim 6, wherein said rod is formed with an enlarged upper end and a bearing assembly is disposed between said end and the supporting member.

8. The combination of claim 6, wherein means is secured to said spout for detachably affixing a weight thereto whereby the rotation of the casing may be selectively controlled.

9. The combination of claim 6, wherein said supporting member includes an angular member having an opening for receiving said rod and a second opening disposed at right angles to the first opening for attaching the member to the end of the delivery tube.

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