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GUIDE FOR MATERIAL DISPENSER

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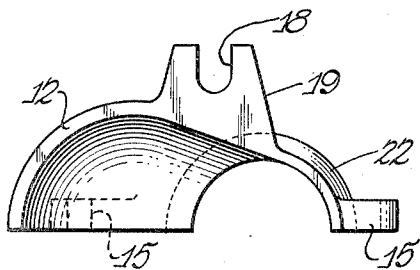


FIG. 3

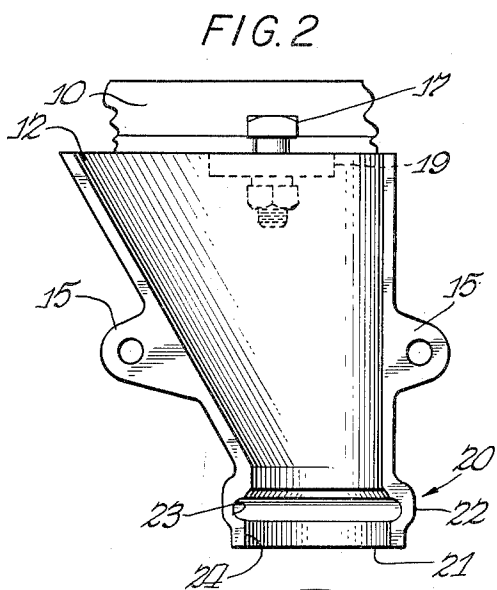


FIG. 2

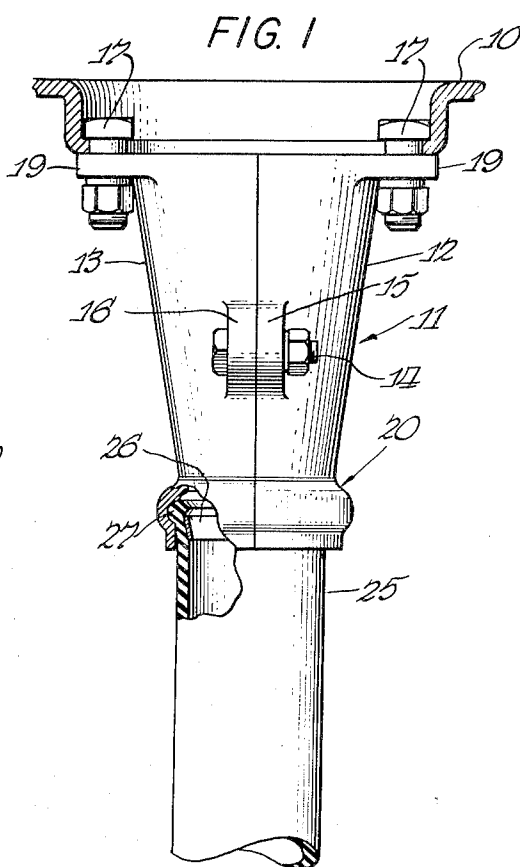


FIG. 1

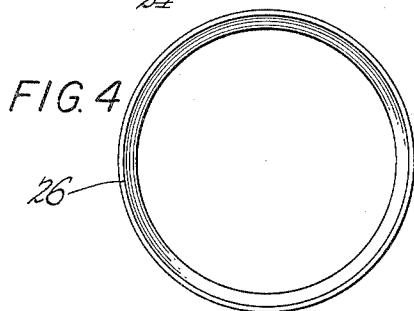


FIG. 5

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GUIDE FOR MATERIAL DISPENSER

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5 Claims. (Cl. 193—25)

This invention relates to agricultural implements and particularly to material dispensers. More specifically, the invention concerns a novel spout and guide tube assembly for a material dispenser for conducting the dispensed material from a receptacle to the ground.

The invention is particularly concerned with fertilizer distributors and has for an important object the provision of a novel spout and tube assembly for receiving fertilizer from the hopper and guiding it to the soil.

Another object of the invention is the provision of an improved method and means for assembling delivery mechanism for fertilizer and the like received from a hopper and guiding it to the ground to be deposited thereon.

A further object of the invention is the provision of a novel spout and guide tube assembly wherein the assembly of the unit is facilitated by the division of the spout into separable parts.

Other objects and advantages of the invention will become clear from the following detailed description when read in conjunction with the accompanying drawings, wherein:

Figure 1 is an elevation, partly in section, of a metal spout and flexible tube assembly according to this invention and with a part broken away to show the interior construction;

Figure 2 is a view in side elevation of one of the parts of the receiving spout;

Figure 3 is a plan view of a portion of the structure shown in Figure 2;

Figure 4 is a plan view of the clamping ring by which the flexible tube is connected to the metal receiving spout; and

Figure 5 is a side elevation of the clamping ring.

Referring to the drawings, and particularly Figure 1, it will be noted that the spout and tube assembly of this invention is connected to the bottom of a hopper 10 and comprises a receiving spout 11 separable into two generally semicircular parts 12 and 13. These parts are brought together and connected by a pair of bolts 14, only one of which is shown, receivable in registering openings provided in adjacent ears 15 and 16 provided on opposite sides of the parts 12 and 13.

The receiving spout 11 is open at the top and registers with a corresponding opening in the bottom of the hopper 10. The spout is secured to the hopper bottom by bolts 17 receivable in openings in the hopper bottom and in registering slots 18 provided in lugs 19 projecting laterally from each of the parts 12 and 13.

It will be noted that the spout 11 is somewhat conical in shape and is restricted at its lower end with a clamping portion 20 having a discharge outlet 21. The clamping portion 20 is provided with an exterior rib 22 and an internal annular groove 23. The portion of the spout below the groove 23 is somewhat larger in inner diameter than that portion above the groove, as indicated in Figures 1 and 2. The internal diameter of the outlet portion 24 is substantially equal to the external diameter

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of the flexible tube 25, the upper end of which is attachable, as shown in Figure 1, to the clamping or lower portion 20 of the spout 11.

The flexible tube 25 is preferably of rubber and the spout 11 is preferably of metal. The rubber tube 25 receives material from the spout 11 and guides it to the earth-penetrating implements, not shown, which form the furrow into which the fertilizer is to be discharged.

The parts are easily assembled by separating the portions 12 and 13 of the receiving spout and placing them together over the upper end of the tube 25 into which has been inserted a frusto-conical clamping ring 26 preferably of metal with the upper larger diameter thereof in alignment with the groove 23 in the clamping portion 20 of the spout 11. Upon bolting the spout parts together, the upper edge of the insert 26, being of greater diameter than the internal diameter of the rubber tube 25, presses the upper end of the tube into the groove 23 forming an annular rib 27 received in the groove 20 and firmly holding the rubber tube to the spout. The inner diameter of the smaller end of the ring 26 is substantially equal to the inner diameter of the tube 25 and forms a continuation therewith of the inner surface of the spout 11 so that fertilizer flows therethrough unimpeded.

From the foregoing description it should be clear that a novel fertilizer receiver and guide tube assembly has been devised, which is economical to make, durable and efficient in operation. The invention has been described in its preferred embodiment and modifications may be made therein without departing from the spirit of the invention or the scope of the appended claims.

What is claimed is:

1. In guide mechanism for use with the supply hoppers of fertilizer distributors and the like, in combination, a rigid tubular receiving spout having an annular groove formed in the interior surface thereof adjacent its lower end, a cylindrical tube of deformable material having its upper end receivable in the lower end of the spout and conforming to the shape thereof, a frusto-conical non-deformable clamping ring insertable in the upper end of said tube, the outer diameter of the large end of said ring being greater than the inner diameter of the tube to form an annular rib on the tube receivable in the groove in said spout to prevent displacement of the tube from the spout.

2. The invention set forth in claim 1, wherein the portion of the spout below the groove has an internal diameter greater than that portion immediately above the groove to receive the tube, and wherein the internal diameter of the tube is substantially equal to the internal diameter of that portion of the spout immediately above the groove.

3. The invention set forth in claim 2, wherein the spout and the clamping ring are made of metal and the tube is made of rubber.

4. In guide mechanism for use with the supply hoppers of fertilizer distributors and the like, in combination, a tubular receiving spout comprising a pair of separable semicircular portions made of rigid material having an annular groove formed in the interior surface thereof adjacent its lower end, the inner periphery of the spout below said groove being offset radially outwardly to provide an outlet of larger internal diameter than the part of the spout above the groove, a cylindrical tube of deformable material having its upper end receivable in the lower end of the spout with the upper edge of the tube adjacent said groove, a frusto-conical non-deformable annular member insertable in the upper end of said tube with its edge of larger diameter adjacent the groove, and means for securing the parts of the spout together to press the upper end of the tube

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into the groove with the inner peripheral surface of the tube forming substantially a continuation of the inner peripheral surface of the main body of the spout.

5. The invention set forth in claim 4, wherein the internal diameter of the small end of the annular member is substantially equal to the internal diameter of the deformable tube.

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