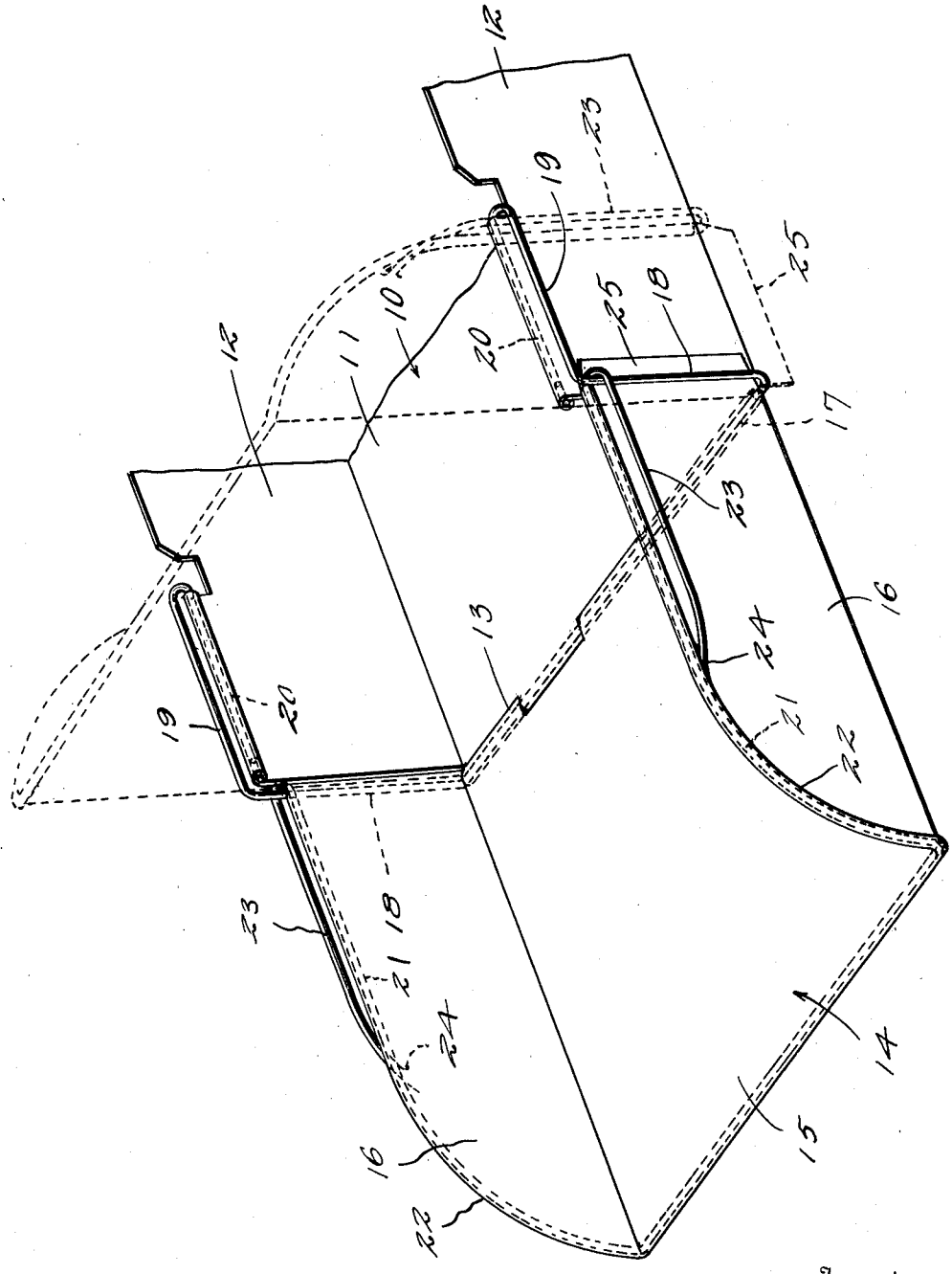
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EMPTYING CHUTE OR GATE

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EMPTYING CHUTE OR GATE

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3 Claims. (Cl. 193—4)

This invention relates to troughs or bins, and more particularly to a gate or closure for use in connection with a trough or bin to control the discharge of material therefrom.

An object of this invention is to provide a closure or gate which can be attached to a trough or bin construction which is so constructed that when it is swung into open position, the closure or gate operates as an extension of the trough, or where it is attached directly to the bin, operates as a trough in itself to permit the discharge of material from the bin.

Another object of this invention is to provide an improved mounting means for a gate or closure whereby the gate will be readily held in either closed or open position.

A further object of this invention is to provide an improved means for constructing a gate and for mounting the gate or closure on a chute or bin so that the gate or closure will be readily maintained in open or closed position.

The above and various other objects and advantages of this invention will in part be described and in part be understood from the following detailed description of the present preferred embodiment, the same being illustrated in the accompanying drawing wherein there is disclosed a detail perspective view partly broken away of a device constructed according to the preferred embodiment of this invention and showing in dotted line the gate or closure in closed position.

Referring to the drawing wherein like numerals of reference designate corresponding parts throughout the several views, the numeral 10 designates generally a trough or chute provided with a bottom wall 11 and vertical side walls 12. This trough 10 may be secured to or formed with a chute or the like, which may be attached to a suitable bin or other receptacle for holding of articles such as fruit, grain or the like.

In order to provide means not only for the extension of the trough or chute 10, but also to close the open forward end of this trough 10, I have provided a closure or gate, generally designated at 14, which comprises a bottom wall 15 and side walls 16. This gate or closure 14 is hingedly secured, as at 13, to the forward end of the chute or trough 10, and the sides 16 of this gate or closure 14 overlap the side walls 12 of the chute 10.

A pintle 17 extends across the confronting ends of the bottom members 11 and 15, and this pintle 17 is bent upwardly, as at 18, in a position spaced outwardly from the two side walls 12 and 16. The extension 18 is bent rearwardly, as at 19, along the side wall 12 and in spaced parallel relation thereto, and terminates in a further extension 20 disposed in a parallel relation to the upper extension 19. The upper edge of the side wall 12 is rolled or bent about the extension 20 so that this extension 20 operates to reinforce the forward end of the chute 10, and in addition thereto, prevents lateral movement of the pintle 17.

A rod or wire 21 is rolled beneath the edge portion 22 of the side walls 16 and also the front edge of the bottom 15 and acts as a reinforcing means for the edges of the side walls 16 and also the bottom 15. This reinforcing wire or rod 21 at the rear end thereof is bent or reverted, as at 23, in a direction parallel to the side wall 16 and in spaced relation thereto. The free ends of the extensions 23 are secured, as at 24, by means of soldering or the like, to the side walls 16. These extensions 23 are looped about the upward extension 18 so that the looped portion of this extension 23 operates as a stop to limit the downward swinging movement of the chute or gate member 14. The overlapping portion 25 of the side walls 16 also acts to resiliently hold the side walls 16 into contact with the side walls 12. These extensions 23 also act to resiliently hold the gate or closure 14 in closed position when it is swung upwardly, as shown in dotted lines in the drawing.

In the use and operation of the device herein disclosed, the trough section 10 may be secured or attached to a bin or to a chute or trough. When it is desired to permit the material in the bin or member to which the trough 10 is attached to pass outwardly therefrom, the gate or closure member 14 is lowered, as shown in full lines in the drawing. When the desired quantity of material has been withdrawn from the bin, the gate or closure 14 is swung upwardly, as shown in dotted line in the drawing, thereby closing the open end of the trough 10. In this position, the resilient bars or extensions 23 will engage the longitudinally extending extensions 19 of the fixed trough section 10, and thereby maintain the closure 14 in closed position.

It is, of course, understood that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:—

1. A device as described comprising a fixed trough, a gate, means for hingedly mounting the gate on an end of the trough, and means engaging within the barrel of the hinge and engaging the gate to hold the gate in closed or open position.

2. A device as described comprising a trough having an open end, a closure for the open end of the trough, hinged means for engaging the trough and the closure to hingedly mount the closure on an end of the trough, said hinge means including a pintle engaging the abutting ends of the trough and the closure, L-shaped extensions formed with each end of the pintle and positioned in outwardly spaced relation to the side walls of the trough, a reverted extension formed with one leg of the L-shaped extension, a loop formed with the side walls of the trough and engaging the reverted extension, and an elongated looped member carried by each side wall of the closure and engaging about the L-shaped pintle extension to hold the closure in either open or closed position.

3. A device as described comprising a substantially U-shaped trough having an open end, a substantially U-shaped closure engaging the open end of the trough, the side walls of the closure overlapping the side walls of the trough, means for hingedly securing the closure to the trough, and means for holding the closure in either open or closed position, said hinge means including a pintle engaging the confronting ends of the trough and the closure, an L-shaped extension carried by each end of the pintle and extending upwardly and rearwardly in spaced relation to the fixed trough, a reverted extension formed with one leg of the L-shaped extension and extending forwardly, a loop formed with the side wall of the trough and engaging about the reverted extension to hold the L-shaped extension against movement relative to the side wall of the trough, a reinforcing member engaging the edge of the closure and a forwardly extending member formed with the reinforcing means and engaging about the L-shaped pintle extension to resiliently hold the closure in either open or closed position.

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