J. DIERKS.

STOCK FEEDER.

APPLICATION FILED NOV. 27, 1914.

1,179,351.

Patented Apr. 11, 1916.

2 SHEETS—SHEET 1.

Fig. 2.

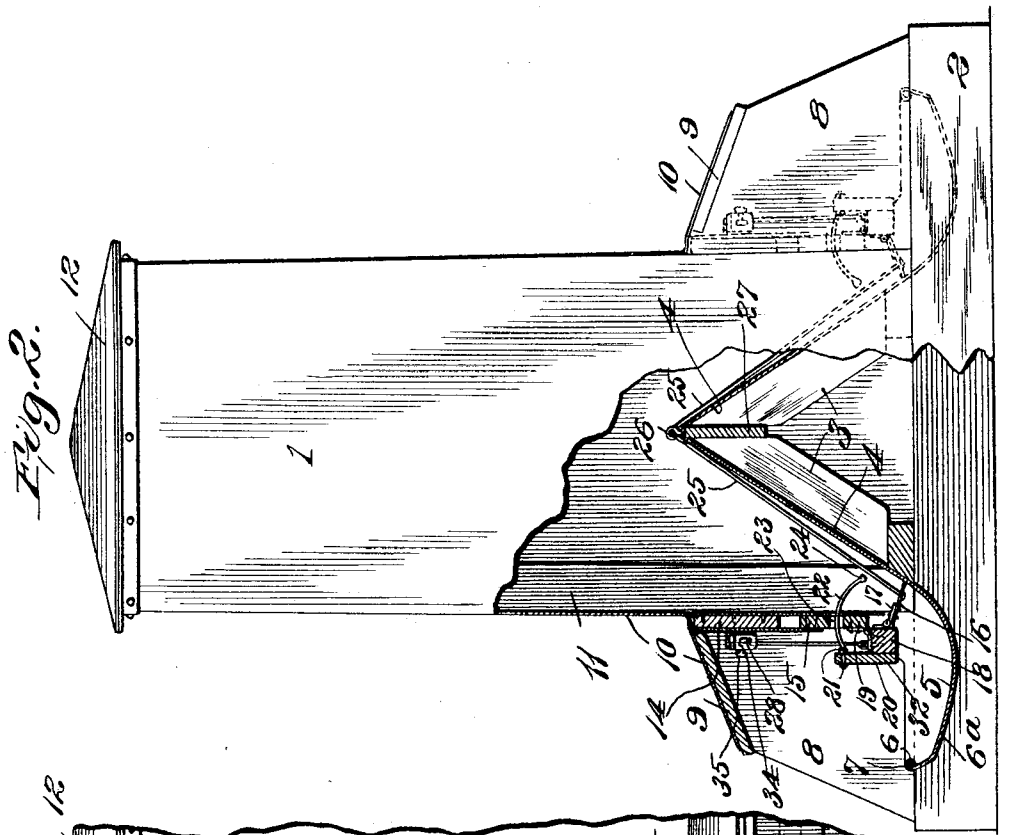
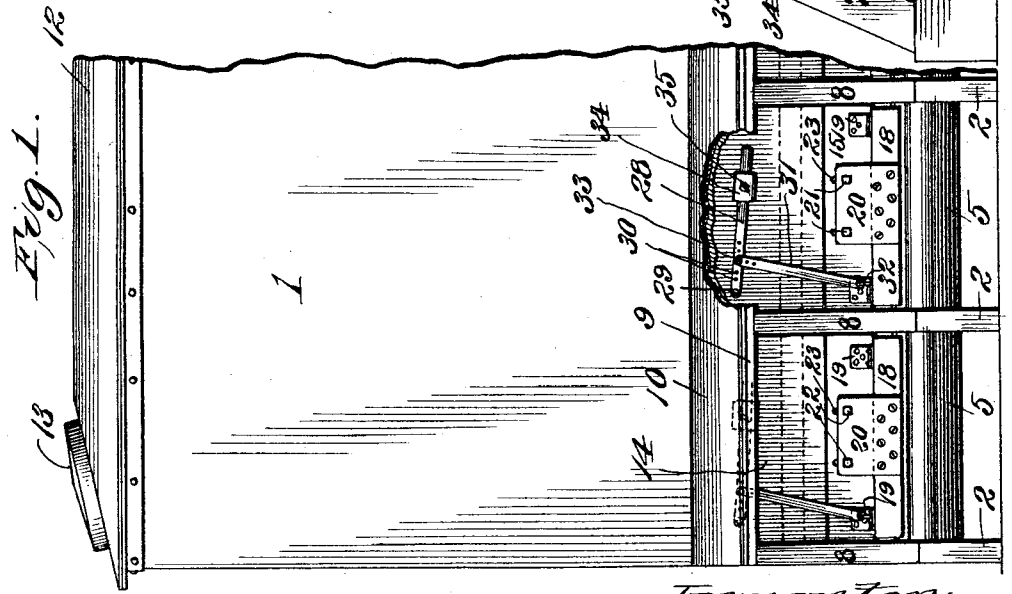


Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 3.

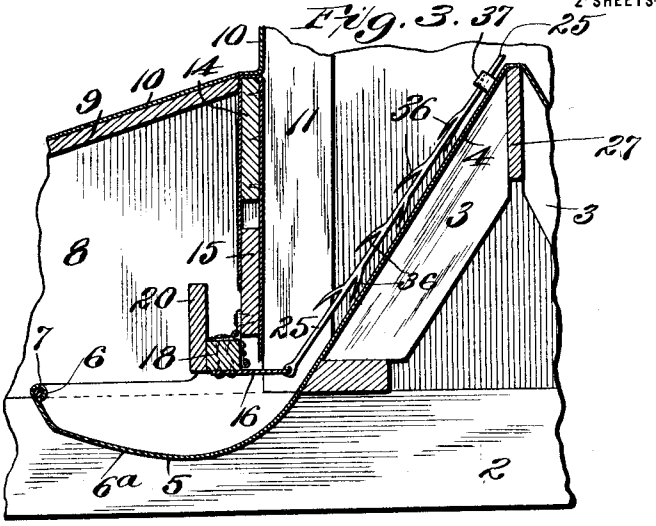


Fig. 4.

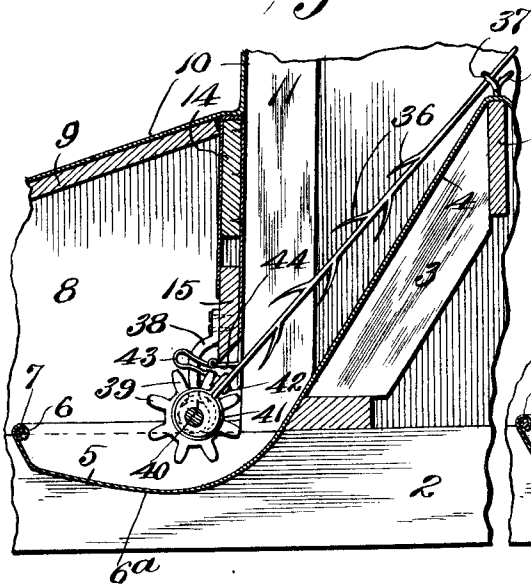
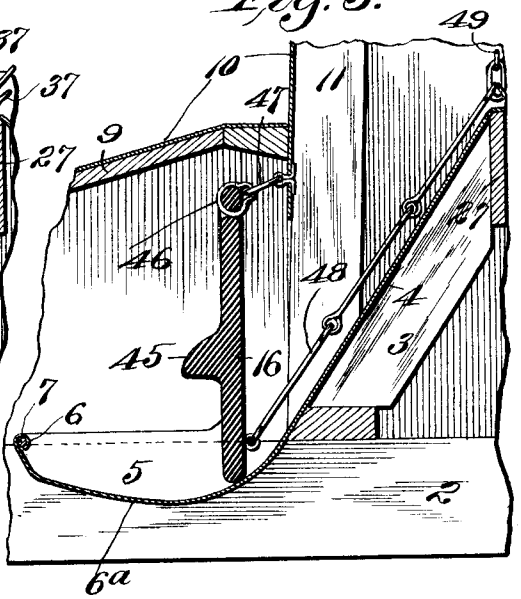


Fig. 5.



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STOCK-FEEDER.

1,179,351. Specification of Letters Patent. Patented Apr. 11, 1916.

Application filed November 27, 1914. Serial No. 874,272.

To all whom it may concern:

Be it known that I, JOHN DIERKS, a citizen of the United States, and resident of Billings, Montana, have invented certain new and useful Improvements in Stock-Feeders, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improved stock feeder, and consists in the novel construction hereinafter described and specifically pointed out in the appended claims.

The object of my invention is to provide an improved mechanism for agitating and delivering the feed, whereby the feed in the bin will be more certainly fed to the feed troughs and supplied in proper amount to each of a plurality of separate feeding stalls.

In the drawings: Figure 1 is a side elevation of my improved stock feeder, with parts broken away; Fig. 2 is an end elevation, partly in section; Fig. 3 is a detail section of the feed trough and its adjacent parts, having a modified form of feeding attachment for feeding alfalfa; Fig. 4 is a similar view of an additional modification of the feeding mechanism for alfalfa; and Fig. 5 is a further modification of the feeding mechanism for feeding grain.

The numeral 1 indicates the feed bin, which may be rectangular, as shown, and mounted upon a suitable base composed of any desirable material. The base in the present instance is composed of a series of bars or joists 2, all setting on edge parallel with each other, and spaced apart in a workmanlike manner. Mounted on the upper edges of the said base joists 2 is the apexial frame work 3 of the inclined hopper bottoms 4. Said hopper bottoms are composed of sheet metal, and extend downwardly and outwardly beyond the said apexial framework 3 at opposite sides thereof, and are thence curved upwardly in the form of feed troughs 5. The said feed troughs 5 and hopper bottom 4 are preferably made of galvanized steel, with the up-turned outer edges of said feed troughs reinforced by a marginal bead 6, and with a half inch round steel rod 7 crimped within said bead. Said feed troughs 5 are supported by curved seats 6^a, which are formed in the upper edges of the said base joists 2.

To prevent the animals when feeding from crowding each other and from rooting the feed over the trough ends, I provide a series of vertical stall walls 8 upon the upper edges of the said base joists 2, and upon the upper ends of said vertical walls 8 I provide an inclined roof or cover 9. Said roof or cover 9 is covered with galvanized steel 10, as is also the frame 11 of the said bin, the joints of which are to be waterproofed in the usual manner. Said bin 1 is provided with a suitable roof 12, which in the present instance is composed of galvanized steel. In the said roof is a suitable filling opening, which is normally closed by a detachable cover 13. The V-shaped spaces in the lower part of the bin on opposite sides of the said apexial framework 3 form the feed hoppers.

Extending across the front of each feed hopper is an upper horizontal bar 14 and a lower horizontal bar 15. The said vertical stall walls 8 divide the space above the said feed troughs 5 into a plurality of separate feeding stalls, wherein the animals may feed without being disturbed by animals feeding in adjacent stalls. The space between the lower edge of said lower horizontal bar 15 and the feed through is the feed throat, which is controlled by a feed valve 16, the outer edge of which is pivotally secured by means of hinges 17 to the nose bar 18, which in turn is pivotally connected by means of hinges 19 to the said lower horizontal bar 15. There is preferably, as shown in Fig. 1, a separate nose bar for each stall. Arising from the said nose bar 18 and secured to the outer face thereof by means of suitable screws or nails is a buck board, 20. Fixed to the said buck board 20 by means of suitable nuts 21 are a series of curved stirring pins 22, which extend into the feed hopper through openings 23 in the said lower horizontal bar 15 and have enlargements 24 upon their inner free ends for the purpose of agitating the feed and preventing the clogging of the same in the feed hopper. The free edge of the feed valve 16 is supported, as shown in Fig. 2, by means of suitable wires or rods 25, the lower ends of which are loosely connected to said feed valve by being passed through an aperture in said valve and headed or enlarged. The upper ends of said wires or rods 25 are loosely secured to and supported and guided by common screw eyes 26 which are fixed in the upper edge of the ridge board 27 of the said apexial frame work 3. For the purpose of yieldingly depressing the said nose bar 18, a suitable

weight or spring is provided. This when a weight is used is described as follows: 28 indicates a lever, pivoted at one end by means of a bolt or screw 29 to the upper horizontal bar 14. Said lever 28 is provided with a series of bolt apertures 30 and a vertical rod 31 connects said lever to the nose bar 18, the lower end of said vertical lever 31 loosely engaging a staple 32 driven into said nose bar while the upper end of said vertical lever 31 is pivotally connected to the said lever 28 by means of a bolt or screw 33 passed through an aperture in the upper portion of said vertical lever and into and through one of the said apertures 30 of the said lever 28. A weight 34 is slidingly mounted upon said lever 28 and adjustably secured thereon by means of a suitable thumb screw 35.

The operation is as follows: Suitable grain or feed is supplied to the bin by removing its cover 13. The feeding animals will root in the troughs 5 and vibrate or oscillate the nose bars 18 on their hinges, thereby causing the feed valves 16 to be moved outwardly and inwardly, permitting the feed to pass downwardly into the said feed trough as required by the feeding animals. The said stirring pins 22 and the said wires or rods 25 will effectually agitate the feed in the hoppers and prevent the same from clogging. The weighted lever 28 returns the parts to a normal position after the nose bar has been elevated by the noses of the feeding animals.

In the modification shown in Fig. 3, I have omitted the stirring pins 22 and have also fixed the feed valve 16 upon the nose bar 18 and the agitating wires or rods 25 are pivotally connected to the inner edge of the said feed valve so that said rods will ride endwise whenever said feed valve is vibrated. The said wires or rods 25 are in this modification provided with a series of downwardly projecting sharpened prongs 36, for the purpose of forcing the feed, especially alfalfa, downwardly toward the feed throat. The upper ends of said pronged rods 25 are loosely mounted to slide in suitable guides 37.

In the modification shown in Fig. 4, which is the preferred form I have omitted the hinged nose bar and the feed valve, and have mounted in suitable brackets 38 a corrugated feed roller 39 which carries an eccentric 40, upon which an eccentric strap 41 is loosely mounted in the usual manner, and to this eccentric strap the lower end of the pronged feed rod 25 is secured by means of a suitable bolt 42. A suitable pawl or dog 43 is hinged at 44 to the said lower horizontal bar 15 and engages the corrugations of the said roller 39 and prevents said roller from rotating in a reverse direction. The noses of the animals in rooting against said roller 39 will rotate the same and cause the feed to be agitated in the feed hopper and delivered into said feed troughs 5.

In the modification shown in Fig. 5 I have shown a feed valve in the form of a vertical bar having a nose hump 45 on its exterior to be contacted by the noses of the animals, so that said vertical apron will be lifted to permit the feed to gravitate into the feed troughs. The upper end of said apron, which I may also term a feed valve, is loosely connected to the hopper wall by means of a common hog nose-ring 46 and common metal ring 47. To the lower portion of the said vertical feed valve 16 I pivotally secure the lower end of a chain having long links 48, and which chain extends upwardly in the feed hopper and is suspended by means of suitable fastenings 49, so that when said vertical feed valve is agitated by the feeding animals the said links 48 of said chain will agitate the feed in the feed hopper and will cause the same to be fed downwardly into the feed troughs.

I claim:

1. The improved stock-feeder, comprising a suitable bin, an inclined bottom for said bin, a trough, a nose device movably mounted at the base of said bin, a series of feed-agitating rods pivotally connected at their lower ends to said movable nose device, and means for supporting and guiding the upper ends of said rods at the upper end of said bottom.

2. A stock feeder comprising a suitable bin and slanted bottom for said bin, a corrugated feed roller at the base of said bin, a feed trough below said feed roller, an eccentric on said feed roller and feed rods having downwardly projecting prongs and connected to said eccentric.

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses.

JOHN DIERKS.

Witnesses:
D. V. DIERKS,
E. B. WARD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."