W F. EASTER.

FEEDER.

APPLICATION FILED FEB. 2, 1920.

1,368,708.

Patented Feb. 15, 1921.

Fig. 1.

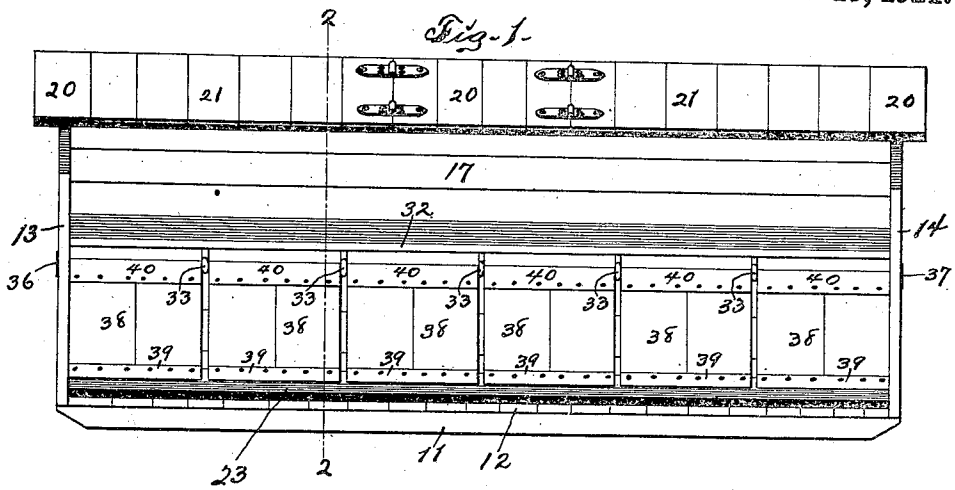


Fig. 2.

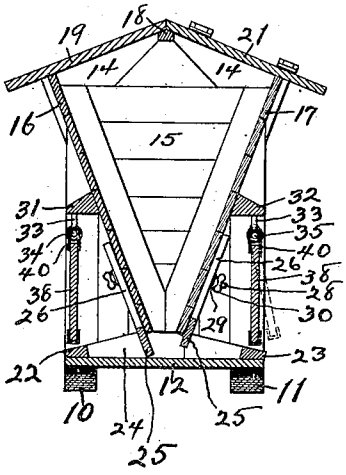
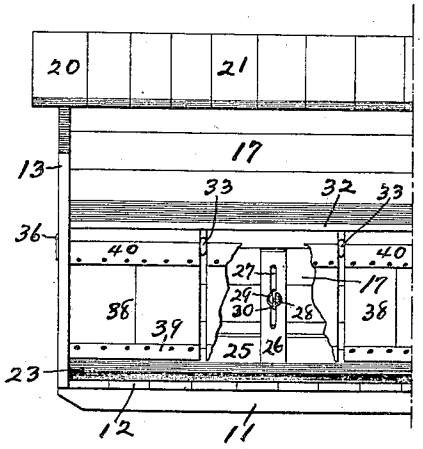


Fig. 3.



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UNITED STATES PATENT OFFICE.

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FEEDER.

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To all whom it may concern:

Be it known that I, W FRANK EASTER, a citizen of the United States of America, and resident of Marshalltown, Marshall county, Iowa, have invented a new and useful Improvement in Feeders, of which the following is a specification.

The object of this invention is to provide an improved construction for feeders.

A further object of this invention is to provide improved means of suspending doors relative to a trough in such manner as to protect the contents of the trough from rain, snow and the like and at the same time permit an animal feeding in said trough to withdraw a foot from beneath one of said doors where it has been accidentally caught.

My invention consists in the construction, arrangement and combination of elements hereinafter set forth, pointed out in the claims and illustrated by the accompanying drawing, in which—

Figure 1 is a side elevation of a feeder embodying my improvements. Fig. 2 is a cross-section on the indicated line 2—2 of Fig. 1. Fig. 3 is a detail side elevation of a portion of the feeder, one of the doors being broken away to reveal interior construction.

In the construction of the device as shown the numerals 10, 11 designate supports, such as skids, on which a floor 12 is mounted and secured. End walls 13, 14 are fixed to and rise from end portions of the floor 12 and one or more partitions 15 are arranged between said end walls and extend vertically. Each of the partitions 15 is of substantially inverted A-shape and side walls 16, 17 are secured to converging sides of said partitions and also are secured to the end walls 13, 14. A ridge-pole 18 is fixed to and carried by central portions of the upper ends of the end walls and partitions and roof members 19, 20 are fixed in oppositely sloping relation to said ridge-pole and side walls and overlap the same as well as said end walls. Door members 21 are hinged to selected roof members 20 and are adapted to occupy, when closed, inclined positions flush with said roof members 20. Front rails 22, 23 are mounted on the side portions of the floor 12 and extend from one end wall to the other, the inner margins of said rails forming obtuse angles with the upper surface of the floor. Spacing strips 24 are mounted on the floor 12 and extend transversely thereof between the rails 22, 23 and also extend beneath the side walls 16, 17. The spacing strips are spaced apart and from the end walls and serve to subdivide the trough portion (consisting of the floor, rails and end walls) into suitable compartments for convenience in feeding. The magazine portion (formed in part by the side walls 16, 17) preferably does not extend below the upper margin of the central portions of the spacing strips 24, and said spacing strips are inclined from said walls to the rails 22, 23, thus providing spaces between the floor and side walls for the discharge of feed from the magazine to the trough by gravity flow. Gates 25 (two of which are shown in Fig. 2, and one in Fig. 3) are provided, each of such length and width as to cover a space between the floor 12 and a side wall and between spacing strips or between a spacing strip and an end wall. Each gate 25 is provided with a stem 26 having a longitudinal slot 27 and said stem extends upwardly across the inclined outer surface of a side wall 16, 17 and is secured by a bolt 28, one for each stem 26, mounted through the side walls, its head being within the magazine, and extending through a slot 27. Each bolt is provided with a washer 29 and a wing nut 30 on its outer end portion adapted for manual adjustment. It is the function of each gate to regulate, control and determine the flow of feed from the magazine toward the rail 22, or 23 and such function is carried out by manual adjustment of said gate toward closed or open position through the medium of the bolt 28 and wing nut 30. Longitudinal bars 31, 32 are mounted parallel with and above the rails 22, 23 and are suitably secured to the end walls 13, 14 and side walls 16, 17 and said bars may be of any suitable size or construction. Rows of hangers such as screw-eyes 33 are mounted in and depend from the bars 31, 32 and the eyes thereof are in register in said rows and also in register with holes cut in the end walls. The screw-eyes 33 preferably are spaced apart and from the end walls equally and said screw-eyes correspond in number, in each row, with the spacing strips 24 and preferably are located in the same vertical planes with said strips. The end walls 13,

14 are formed with holes registering with the eyes of the screw-eyes 33 and rods 34, 35 are mounted in said rows of eyes and have their end portions confined in said holes; there being retaining plates 36, 37 mounted on the outer faces of the end walls and overlying said holes. A plurality of doors 38 are provided, one door for each feeding space on each side of the feeder. Each door preferably is formed with a channel 39 made of sheet metal and embracing the lower end of the door and secured thereto. Also each door preferably is formed with a hanger 40 made of sheet metal, of channel form or U-shape, mounted in embracing relation on and secured to the upper margin of the door. The curved central portion of the hanger 40 is spaced from the upper margin of the door, a distance greater than the diameter of either rod 34, 35 and the diameter of the said rods preferably is less than the inner diameter of the eyes. Thus provision is made for hanging the doors on the rods between the screw-eyes and between some of the screw-eyes and the end walls in such manner that the doors may articulate on said rods. Normally the doors 38 hang vertically and in such position protect the contents of the trough from rain, snow and the like. Either door may be moved outward and upward through an arc away from the gate in the rear thereof for convenient adjustment and manipulation of said gate.

Feeding hogs, sheep and the like may gain access to the feeding compartments by pushing any door selectively inward and when the animal withdraws and relaxes the pushing force the doors assume their original vertical positions. Sometimes it occurs that an animal plants a foot in a feeding compartment and upon attempting to withdraw the same it is caught between the lower margin of the door and the adjacent rail 22 or 23. In that event the animal, applying continued strain, lifts the door and swings it outward over the rail, as shown by dotted lines in Fig. 2, thus releasing the foot without material hurt. This operation is permitted by the freedom of movement provided in two relations, viz., the difference in diameter between the rods and screw-eyes and the spacing of the curved portions of the hangers 40 from the upper margins of the doors a distance greater than the diameter of the rods.

I claim as my invention—

1. In a feeder having a trough and a magazine spaced relative to and supplying feed to said trough, an alining row of eyes carried by said magazine, rods mounted in said eyes and having a freedom of diametrical movement therein, and doors mounted for oscillation and also for reciprocation on said rods and adapted to swing over side portions of said trough.

2. In a feeder having a trough and a magazine spaced relative to and supplying feed to said trough, said magazine being provided with a roof having means of ingress, end walls connecting said trough and magazine, bars connecting said end walls alongside of said magazine, eyes depending from said bars, said end walls being formed with holes registering with said eyes, rods mounted in said eyes and holes and having a freedom of diametrical movement therein, and doors mounted for oscillation and also for reciprocation on said rods and adapted to swing over side portions of said trough.

Signed at Marshalltown, in the county of Marshall and State of Iowa, this 24" day of January, 1920.

W FRANK EASTER.