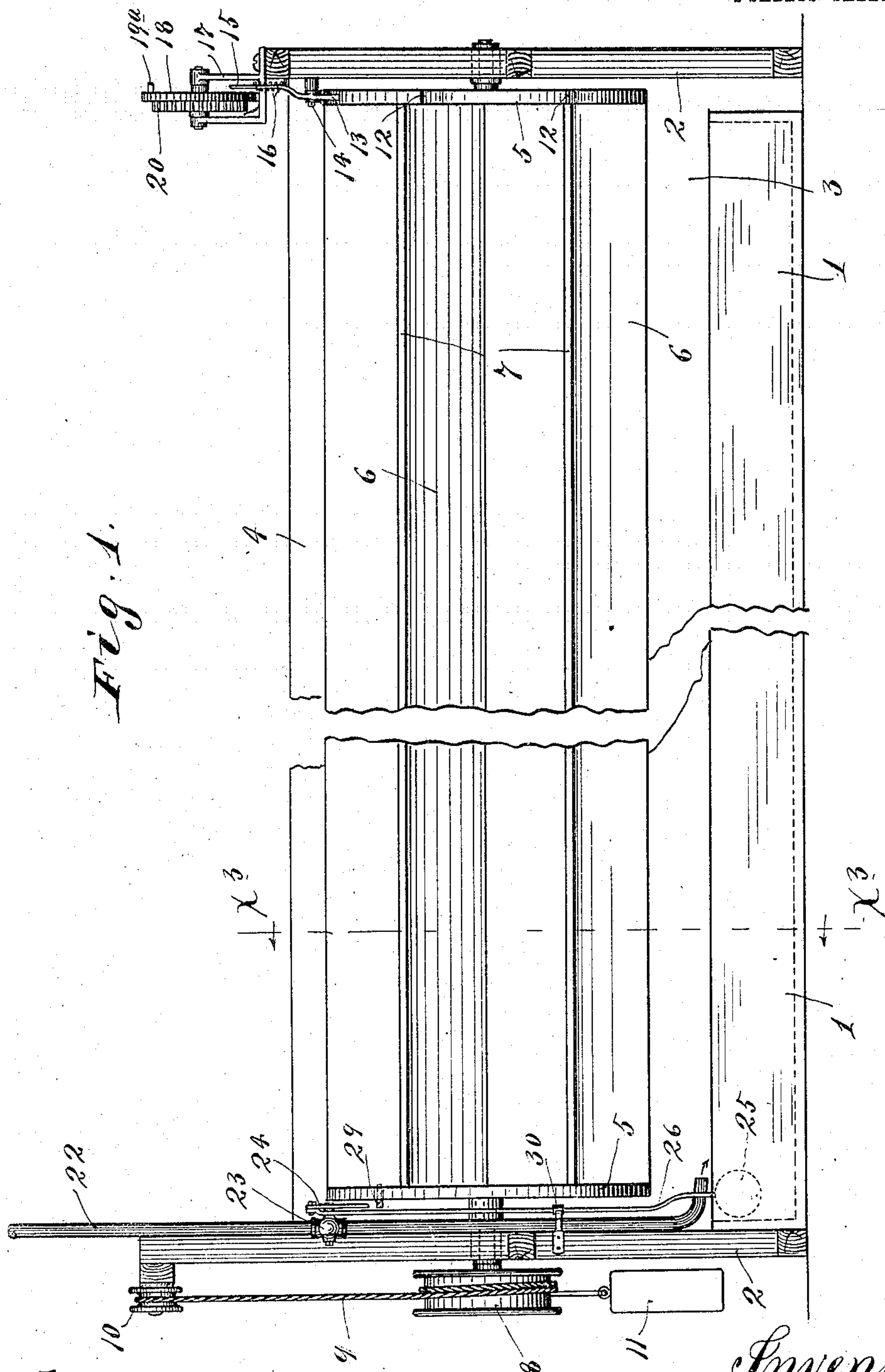


F. OLSEN.
 AUTOMATIC STOCK FEEDING DEVICE.
 APPLICATION FILED MAY 16, 1908.

911,674.

Patented Feb. 9, 1909

2 SHEETS—SHEET 1



Witnesses.
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UNITED STATES PATENT OFFICE.

FREDERIK OLSEN, OF GROVE CITY, MINNESOTA

AUTOMATIC STOCK-FEEDING DEVICE

No. 911,674.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed May 16, 1908. Serial No. 433,176.

To all whom it may concern:

Be it known that I, FREDERIK OLSEN, a citizen of the United States, residing at Grove City, in the county of Meeker and State of Minnesota, have invented certain new and useful Improvements in Automatic Stock-Feeding Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an improved automatic stock feeding device; and to this end it consists of the novel devices and combinations of devices hereinafter described and defined in the claim.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view in front elevation, showing the improved device, some parts being broken away. Fig. 2 shows the improved device in side elevation; and Fig. 3 is a transverse vertical section taken on the line $x^3 x^3$ of Fig. 1.

A long feed trough 1 is rigidly secured at its ends to the lower portions of a pair of laterally spaced upright frames 2. One side of the trough 1 has an approximately semi-cylindrical extension 3 that terminates in a radially projecting flange 4, the said parts 3 and 4, as well as the said trough, being secured at their ends to said frames 2. Mounted in suitable bearings on the frames 2, with its axis concentric to the axis of the semi-cylindrical section 3, is a long feed holder made up of a pair of heads 5 and partitions 6 and 7 that divide the said holder into a multiplicity of feed compartments of which, as shown, there are six. The outer extremities of the said feed compartments are normally open but are adapted to be closed when they are turned against the fixed segmental or approximately semi-cylindrical section 3. One of the trunnions of this feed holder is provided with a flanged pulley 8, around which a cable 9 is wound and to which it is secured at one end. This cable 9 also runs over a guide sheave 10 journaled to one of the frames 2, and at its depending end it is provided with a weight 11 that tends to rotate the feed holder in the direction of the arrow marked thereon in Fig. 2.

One of the heads 5 of the feed holder, as shown, the right hand member, as viewed in

Fig. 1, is provided with six teeth 12; there being, of course, as many teeth as there are compartments in the holder. An escapement dog 13 is pivoted at 14. This dog 13 is provided with an upwardly projecting tripping arm 15 and it has a hooked end that is normally held by a spring 16 in engagement with one of the teeth 12, so that the feed holder is held against rotation with one of the compartments in position to discharge into the feed trough 1.

Mounted in a suitable bearing bracket 17 on the frame 2 to which the escapement dog 13 is pivoted is a tripping wheel or disk 18 provided, as shown, with twelve pin seats 19, with any one of which the tripping pin 19^a may be engaged. This tripping wheel, in practice, is driven by a suitable clock-work, (not shown in full in the drawings but which may be of any suitable construction). Of the parts of the clock-work shown, the numeral 20 indicates a gear secured to the tripping wheel 18 and the numeral 21 indicates another gear that meshes with the said gear 20. The said gears 20 and 21 in practice will usually be driven by the main spring of the clock.

The numeral 22 indicates a water supply pipe which leads from a suitable source of water supply and which is arranged to deliver water directly into the feed trough 1. In this water supply pipe 22 is a normally closed valve 23, to the stem of which a lever 24 is intermediately secured. A float 25, preferably in the form of a hollow metal bulb, is connected by a rod 26 to one end of the lever 24, and the said lever, at its other end, is provided with a weight 27 that counter-balances the said float and rod, so that said valve will be frictionally held either in an open or closed position, depending on the position in which it may be set. The left hand head 5 of the feed holder is provided with six pin holes 28, with any one of which a pin 29 is adapted to be engaged. The pin 29, when engaged with the weighted end 27 of the lever 24, by rotary movement of the feed holder will cause the said lever to move the valve 23 into an open position. As shown, the rod 26 is guided for true vertical movements by a keeper 30 secured to the adjacent frame 2.

The numeral 31 indicates feed, such as oats or corn, placed within one of the compartments and the numeral 32 indicates feed, such as hay, placed in another of the com-

partments of the rotary feed holder. The feed will, of course, be placed within the respective compartments when the compartments are turned upward.

5 When the device is to be set for automatic feeding, the pin 19^a should be placed in the seat 19 of the wheel 18 corresponding to the hour at which the deposit of the feed into the trough 1 should take place. Also the filled
10 compartments should be turned as shown in Fig. 3. If, for instance, it is desired to feed hay at 7 a. m., a pin should be placed in the seat 19 opposite the 7 o'clock hour mark on the wheel 18, so that at 7 a. m. the said pin
15 will strike the arm 15 of the escapement dog 13 and thus release the rotary feed holder and permit the same to be given one step of rotary movement under the action of the weight 17. Furthermore, if it is also de-
20 sired to deliver into the feed trough a feeding of grain, say at 8 a. m., a second tripping pin 19^a should be inserted in the seat 19 of the tripping wheel 18 opposite to the 8 o'clock hour mark.

25 When the pin 19^a strikes the arm 15 it will move the hooked end of the escapement dog so as to release the rotary feed device and permit the same to make slightly less than a one-sixth of a complete rotation, and the de-
30 pending end of said dog will engage the upwardly moving tooth 12 of the said rotary feed holder and intercept the further movement thereof until after the said pin 19^a has moved out of engagement with the arm 15;
35 but this disengagement of the pin from said arm 15 will not take place until nearly an hour subsequent to the time of engagement of the said pin with the said arm. Hence, by placing a pin 29 in the proper perforation 28,
40 the said pin may be so located that it will engage the weighted end 27 of the lever 24 and thereby cause opening of the valve 23 at a time, say shortly before 9 a. m., to-wit, when the said rotary feed holder completes the
45 final part of the one-sixth rotary movement which was started at 8 a. m. and at which

time, it will be remembered, the grain was delivered into the said feed trough.

When the valve 23 is opened water will run into the trough until it rises to such an 50 altitude as to float the ball 25 and cause the same to force the valve 23 back into its closed position, thereby cutting off further supply of water into the trough and, of course, resetting the lever 24 into its normal 55 position shown in Fig. 3.

From what has above been said it is, of course, evident that by the proper location of the tripping pins 19^a and 29, feed and water may be delivered at the proper desired times 60 into the feed trough, all under the control of the clock-work or timed tripping wheel and without any attention whatever at the times of delivery or deposit into the feed trough. The importance of an automatic feeding de- 65 vice of the kind above described is thought to be too obvious to require further comments. The device for accomplishing this automatic feed is simple and of small cost.

What I claim is:

70 The combination with a rotary feed holder and a trough adapted to receive feed therefrom, of means tending to rotate said feed holder, an escapement normally holding said feed holder against rotation, a tripping 75 device for action on said escapement to cause the latter to release said feed holder, a water supply tank arranged to deliver into said trough, a valve normally closing said pipe, a valve opening device timed in respect to the 80 movement of said feed holder for opening said valve, and means for automatically closing said valve after a predetermined supply of water has been delivered into said trough, substantially as described. 85

In testimony whereof I affix my signature in presence of two witnesses.

FREDERIK OLSEN

Witnesses:

WM. HANSON,
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