

1,364,003.

2 SHEETS—SHEET 1.

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STOCK FEEDING APPARATUS.
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Patented Dec. 28, 1920.

2 SHEETS—SHEET 2.

Fig. 3

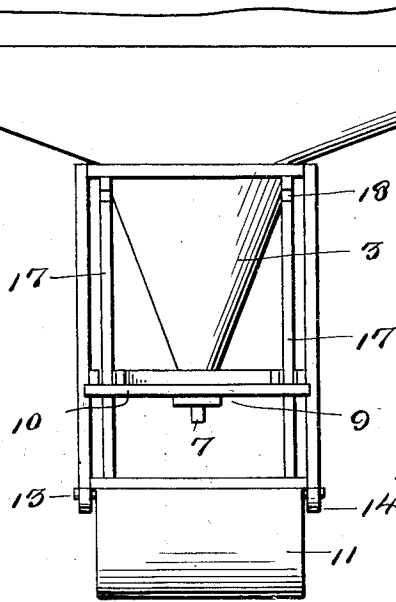
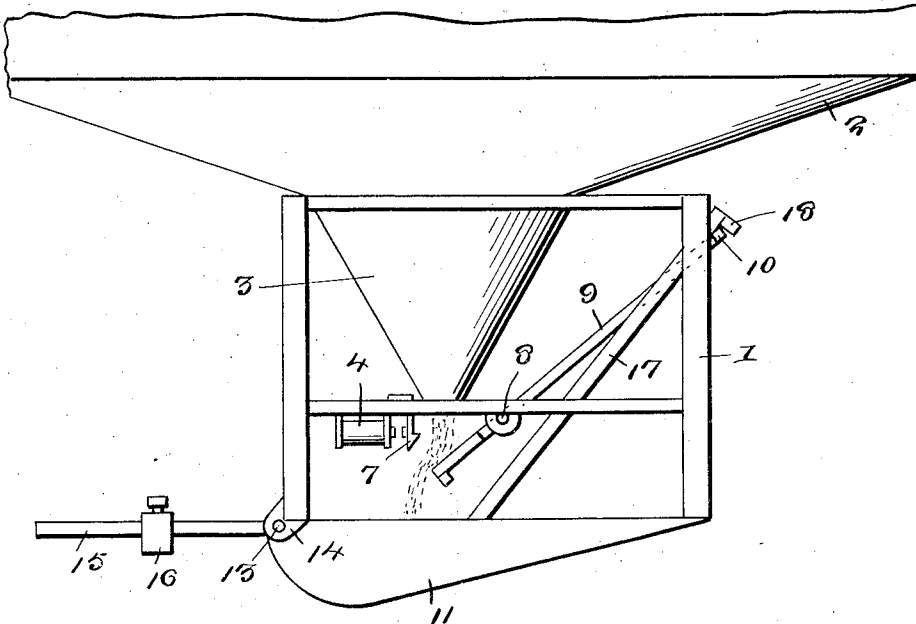


Fig. 4



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UNITED STATES PATENT OFFICE.

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STOCK-FEEDING APPARATUS.

1,364,003.

Specification of Letters Patent.

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Application filed May 25, 1920. Serial No. 384,028.

To all whom it may concern:

Be it known that I, LEE SMITH, a citizen of the United States, residing at Elwood, in the county of Clinton and State of Iowa, have invented new and useful Improvements in Stock-Feeding Apparatus, of which the following is a specification.

The object of my present invention is the provision of a simple, inexpensive and reliable electro-mechanical apparatus through the medium of which a person located at a point remote from a feed trough may bring about it the deposit of a quota of feed in said trough.

To the attainment of the foregoing, the invention consists in the improvement as hereinafter described and definitely claimed.

In the accompanying drawings, hereby made a part hereof:

Figure 1 is a view showing in side elevation the best practical embodiment of my invention, and also showing diagrammatically the source of electric energy, the wiring, and the means for closing the normally opened circuit.

Fig. 2 is a horizontal section taken in the plane indicated by the line 2—2 of Fig. 1, looking downwardly.

Fig. 3 is an end elevation of the apparatus taken from a view-point at the right of Fig. 1.

Fig. 4 is a side elevation illustrating the working parts in the positions they assume when the pivoted chute or pan is moved downwardly by a predetermined quantity of grain or other feed deposited therein.

Similar numerals of reference designate corresponding parts in all of the views of the drawings.

Among other elements my novel apparatus comprises a frame 1, which may be of the construction shown or of any other construction compatible with the purpose of my invention. The said frame 1 is arranged under a grain bin 2, and carried in the frame 1 and arranged with its upper and larger end in communication with the bin 2, is a hopper 3.

Carried by the frame 1 is an electromagnet 4, the coil of which is arranged in a normally open circuit with a battery or other source of electric energy 5 and a circuit closer 6. The said circuit closer 6 is preferably in the form of an ordinary push-button and is arranged in a farm-house at any

desired distance from the barn in which the frame 1 is disposed.

Opposed to and normally spaced from one end of the core of the magnet 4 is a resilient armature and keeper 7. The said armature and keeper 7 is carried by the frame 1 in about the position illustrated relative to the lower and discharge end of the hopper 3.

Pivoted at 8 in the frame 1 is a cut-off lever 9, designed when held by the combined armature and latch 7 in the position shown in Fig. 1, to close the lower end of the hopper 3 and thereby prevent the discharge of grain from the said hopper. The rear arm of the lever 9 is provided exteriorly of the frame 1 with a T-head 10.

At 11 is a grain receptacle, preferably a pan, which is designed to discharge grain into a feed trough (not shown) or into a chute or conduit leading to a feed trough. The said pan 11 is provided at 13 with trunnions which are journaled in bearings 14 on the frame 1, and the said pan 11 is also equipped at its pivoted end with an arm 15 on which is an adjustable pea or weight 16. By virtue of the provision of the said adjustable weight 16, the pan 11 may be nicely adjusted to gravitationally open under the weight of free quantities of grain. Carried at opposite sides of and extending upwardly and rearwardly from the sides of the pan 12 are arms 17 that are equipped at their upper and rear ends with hooks 18, arranged to cooperate with the T-head 10 of the lever 9.

In the practical use of my novel apparatus the combined armature and latch 7 will operate to retain the cut-off lever 9 in its closed position, so long as the electro-magnet 4 is deenergized. When, however, the electro-magnet 4 is energized following the closing of the circuit at the point 6 remote from the frame 1, and its appurtenances, the combined armature and latch 7 will be attracted by the electro-magnet 4 and will release the cut-off lever 9, whereupon the weight of the grain in the hopper 3 will move the said cut-off lever 9 downwardly and out of engagement with the combined armature and latch 7. The said operation will permit grain to flow from the hopper 3 to the pan 11, and when sufficient grain is received in the said pan 11, the same will swing downwardly and discharge the said grain into the trough 12. Incidental to the

said downward swinging movement of the pan 11, the hooks 18 on its arms 17 will operate on the T-head 10 of the lever 9, and will move the said T-head 10 downwardly and thereby restore the lever 9 to its closed position, in which position the lever 9 will be retained by the combined armature and latch 7, because at that time the electro-magnet 4 will be deenergized. Then after the grain is discharged from the pan 11, the pea or weight 16 on the arm 15 will operate to return the pan 11 to and yieldingly retain the same in the normal position shown in Fig. 1.

It will be apparent from the foregoing that notwithstanding the simplicity of its construction, my novel apparatus is reliable in operation and is adapted to enable a person located at a distance remote from the feed trough 12 to bring about the deposit of a predetermined quantity of feed in the said trough 12 at any desired time; and it will also be apparent that by adjusting the pea or weight 16, the quota of feed to be supplied at each downward movement of the pan 11 may be predetermined.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:

1. An electro-mechanical stock-feeding apparatus comprising a frame, a source of electric energy, an electro-magnet carried by the frame, a circuit closer arranged in a normally open circuit with the source of electric energy and the magnet, a combined armature and keeper carried by the frame and opposed to the magnet, a hopper in the frame, a cut-off lever fulcrumed in the frame for coöperation with the combined armature and keeper and the discharge end of the hopper, said cut-off lever having a T-head at its rear end, a pan pivoted to the frame and arranged to receive feed from the hopper and equipped with counter-balance means, and arms carried by and extending upwardly and rearwardly from the pan and having hooks at their upper ends

to coöperate with the T-head of the cut-off lever.

2. In an electro-mechanical stock-feeding apparatus, the combination of a frame, a hopper, a movable cut-off complementary to the hopper and arranged to be opened by the gravitational action of grain in the hopper, a movable grain receptacle arranged to receive grain from the hopper, means on the said receptacle adapted on downward movement thereof to close the cut-off, an electro-mechanical means to retain the cut-off in its closed position and through the medium of which the cut-off may be released at the will of an operator located at a point remote from the apparatus.

3. In a stock-feeding apparatus, the combination of a frame, a hopper therein, a movable cut-off complementary to the discharge end of the hopper, a movable keeper under the control of an operator to normally hold the cut-off in closed position, a movable receptacle to receive grain from the hopper, counter-balance means to return the said receptacle to and normally maintain the same in closed position, and means on the receptacle adapted on downward movement thereof to return the cut-off to its closed position.

4. In a stock-feeding apparatus, the combination of a frame, a hopper therein and having a lower discharge end, a cut-off lever opposed to the discharge end of the hopper and having a T-head at its rear end, a movable keeper under the control of an operator to detachably secure the cut-off lever in its closed position, a counter-balanced receptacle connected with the frame and arranged to receive grain from the hopper, and hooked arms on the receptacle and adapted on downward movement of the receptacle to engage the T-head of the cut-off lever.

In testimony whereof I affix my signature.

LEE SMITH.