

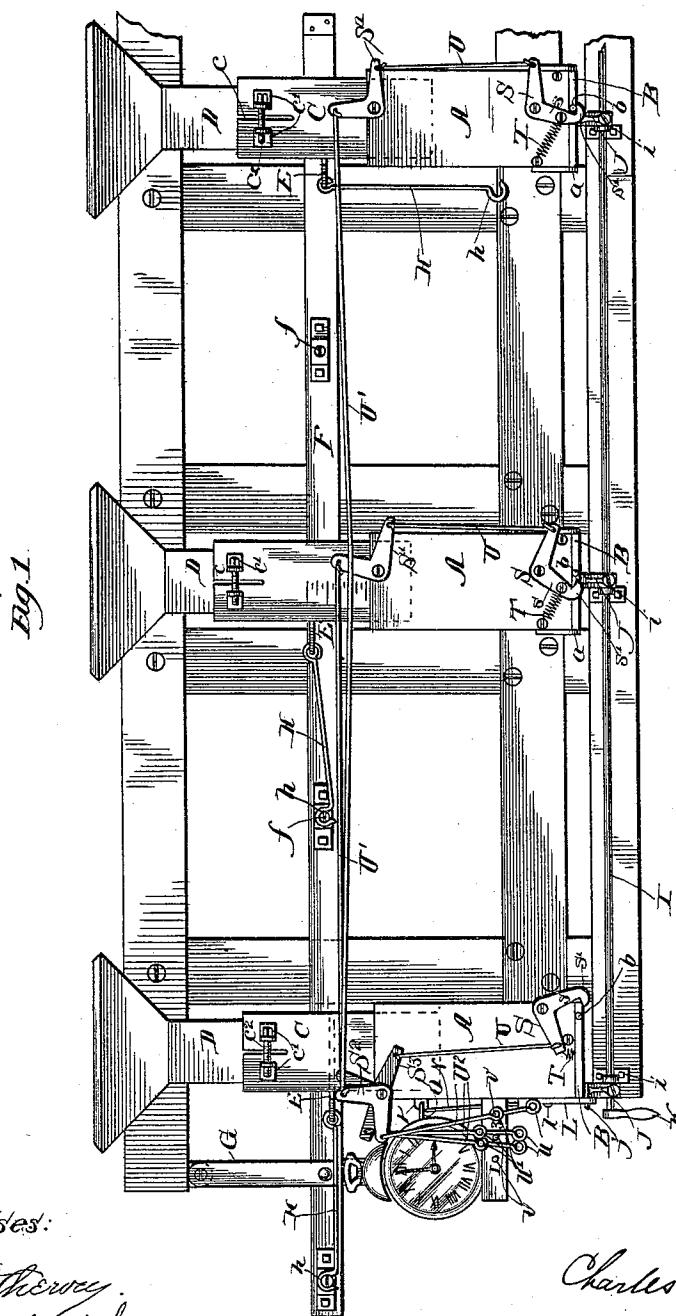
(No Model.)

2 Sheets—Sheet 1.

C. H. TERRY.  
TIME STOCK FEEDER.

No. 461,457.

Patented Oct. 20, 1891.



Witnesses:

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C. P. Smith

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(No Model.)

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Fig. 4.

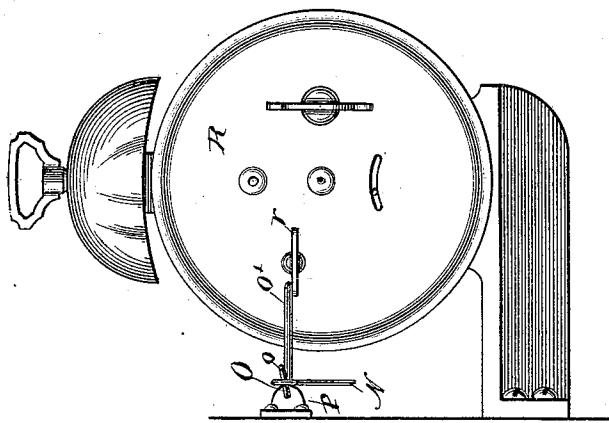
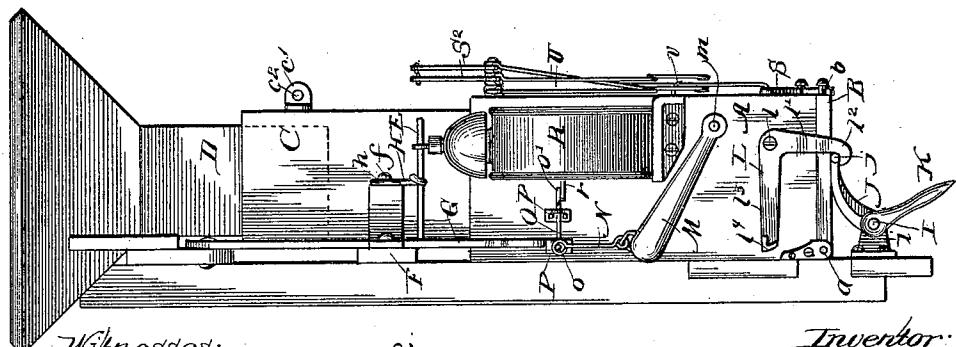
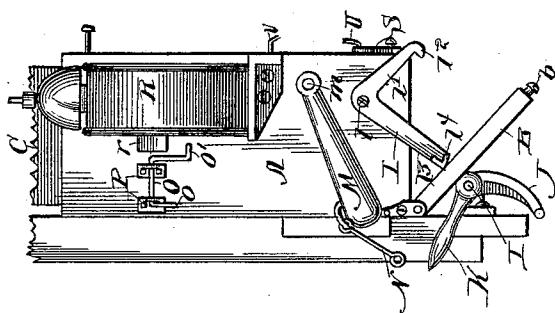


Fig. 5.



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Fig. 2.

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# UNITED STATES PATENT OFFICE.

CHARLES H. TERRY, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO  
THEODORE F. LAWRENCE, OF SAME PLACE.

## TIME STOCK-FEEDER.

SPECIFICATION forming part of Letters Patent No. 461,457, dated October 20, 1891.

Application filed January 19, 1891. Serial No. 378,277. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. TERRY, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Stock-Feeding Devices, of which the following is a specification.

My invention relates to an apparatus designed to enable an attendant to feed simultaneously from a single point a large number of horses, cattle, or other animals kept in separate stalls or pens and having separate feed boxes or troughs. It is my purpose, first, to provide each one of the feed boxes or troughs with a measuring device connected with a supply of feed and which shall be adjustable, so that its capacity can be suited to the requirements of the animal or animals which eat from the trough; second, to connect all of these measuring devices together, so that they can be operated from the desired point, and also so that either one can be either released from such connection or locked out of action without interfering with the operation of the others; third, to make the discharging apparatus of the feed-boxes automatic and to so arrange it that it shall be tripped and put into operation by a clock or other time-piece, which may be set to trip the device at any desired time. In addition to these general features I desire to make certain minor structural improvements, all of which will clearly appear from the following description.

In the drawings presented herewith, Figure 1 shows a side elevation of three measuring devices arranged to be operated at the left. Fig. 2 is an end view of the left-hand device. Fig. 3 is a similar view of the same device, showing the parts in another position; and Fig. 4 is an enlarged rear view of the clock and the means by which it trips the automatic discharging apparatus.

Like reference-letters are applied to the same parts in all the different figures.

Describing the construction shown in the drawings by means of such reference-letters, the measuring devices, which are all alike with the exception of the one from which all are operated, consist of a square spout A, supported by suitable frame-work, provided with

a hinged valve B at the bottom and open at the top, a second square spout C, open at both ends, telescoping into the spout A at its lower end and upon a third square spout D at its upper end. The latter spout is also secured to the frame-work, and to retain the spout C in position it is slotted, as seen at c, and has secured to it on the opposite sides of said slot brackets c', provided with a bolt and nut c<sup>2</sup>, by means of which the brackets may be drawn together, closing the slot c and tightly clamping the spout C upon the spout D. In the middle spout an ordinary slide-valve E is arranged, adapted to close the passage through the spout. The spout D is to be connected with the feed-bin, which will keep a supply of feed at all times above the valve E. Whenever the valve E is opened, the feed will drop down and fill the interior of the spouts between this valve and the valve B. The valve E should then be closed, so that when the valve B is opened only the quantity beneath the first valve will be discharged. The size or quantity of the feed can be regulated by raising or lowering the middle spout C, which carries the valve E with it, and thus increases or decreases the space in the spouts between said valve and the valve B.

To enable all of the valves E to be operated from a single point, I extend a sliding bar F through the whole system, provided with an operating-handle G at the desired point, and connect it with the valves E by means of rods H, pivoted to the bar and to the valves and of sufficient length so that the vertical motion of the valves in regulating the feed shall not be interfered with. To enable any one of the valves E to be disconnected from the bar, the rods H are connected to said bar by means of hooks h, dropped over pins f upon the bar. The right-hand spout in Fig. 1 shows the rod H disconnected from the pin and the valve E closed, so that however often the other spouts may be filled and discharged no grain will fall into the spout A at the right.

The discharge-valves B are hinged to the spouts A at a, and one of said valves is shown in its closed and open positions at Figs. 2 and 3, respectively. Beneath said valves a rod I, extending throughout the entire apparatus,

is journaled in suitable brackets *i* and has rigidly secured upon it swinging arms *J*, one of which is located under each of the valves *B*, and which are swung upward against the bottom of said valves to close them when desired. The rod is provided at the operating-point with a handle *K*, by means of which it may be oscillated. To hold the valves *B* closed, the arm *J* beneath the valve at the left in Fig. 1, which is the one shown in Figs. 2 and 3, has a pin *j* extending laterally therefrom, and a swinging lever *L* is pivoted to the spout *A* at *l* and has a depending arm *l'*, ending in a hook *l''*, adapted to be engaged with the pin *j* to hold the arms *J* up against the valves *B* and the latter closed. The arm *l'* of the lever *L* may be operated by hand, if desired, to disengage it from the pin *j* and allow the discharge-valves to drop. It is, however, desirable at times to feed the animals when it is not convenient for the attendant to be present to operate the device. For this purpose the lever *L* is provided with a second arm *l<sup>3</sup>*, terminating in a laterally-projecting lug *l<sup>4</sup>*. A weight *M* is pivoted to the spout *A* at *m* and hung by means of a link *N* from a laterally-projecting end *o* of a rod *O*, journaled in brackets *P*, secured to the spout *A*, and the other end of the rod is also bent to form a lateral projection *o'*, suitably proportioned to rest at its free end, when properly adjusted, upon a flat-headed key *r*, secured to the winding-arbor of the main-spring which operates the alarm of a clock *R*.

To release the valves *B* at any desired time, and thereby to discharge the grain from the spouts *A*, which may be in proper adjustment for such discharge, the alarm-spring of the clock is wound and the alarm mechanism set to be released at the desired moment. When such release takes place, the alarm of the clock will sound, the alarm-spring in unwinding will turn the key *r* as the flat head of said key is turned from its horizontal position, the arm *o'* of the rod *O* will be released, the arm *o* be pulled down by the weight *M*, allowing the link *N* to slide from said arm, and the weight *M* will drop upon the arm *l<sup>3</sup>* of the lever *L*, oscillating said lever upon its pivot and forcing the hook *l''* from beneath the pin *j*, which will allow the arms *J* to drop and release the feed-valves *B*.

To enable any one of the valves *B* to be locked, so that it will not open when the arm *J* beneath it drops, each one of said valves is provided with a pin *b*, projecting from its front edge, and a bell-crank lever *S* is pivoted to the spout *A*, having a depending arm *s*, engaging by means of a hook *s'* with the pin *b*, and having a spiral spring *T* connected at one end to it and at the other to the feed-spout and tending to unhook the arm *s* from the pin *b*. The other arm of the bell-crank lever is connected by means of a rod *U* with a second bell-crank *S'*, which in turn is connected by means of a rod *U'* with a third bell-crank *S<sup>2</sup>*, having attached to it a depend-

ing rod *U<sup>2</sup>*, provided with a handle *u* and an eye *u'*, adapted to hook over a pin *v*, secured to a suitable frame or key-board, upon which figures may be placed to indicate to the attendant with which valve each one of the rods *U<sup>2</sup>* connects. In the case of the left-hand spout in Fig. 1 the connection is somewhat simplified, as the rod *U* leads directly to a straight lever *S<sup>3</sup>*, pivoted upon the same rod as the levers *S<sup>2</sup>*.

To throw all of the valves *B* into operation, the rods *U<sup>2</sup>* are released and the levers *S* are unhooked by the springs *T*. Whenever it is desirable not to feed from any one of the spouts, the attendant merely selects the rod *U<sup>2</sup>* leading to such spout, and, pulling it downward, secures it upon the pin *v*, hooking the lever *S* over the pin *b* and locking the valve at the bottom of said spout, so that when the other valves are dropped it will remain closed.

It will be seen that the device above described places the entire apparatus under the control of an attendant at a single operating point. From this point he can feed from a single spout or from any number of spouts, either by hand or automatically, by setting the clock and its connecting devices so as to operate the feed-valves at any desired time during his absence. Whenever an animal or any number of animals are placed in one of the stalls or pens, the feed-spout located at such stall will be adjusted by means of the movable middle portion *C* to the requirements of such animal or animals, and the quantity of grain, determined by the adjustment of such spout, can thereafter be fed as often and at such times as may be desirable without again going to the stall or pen. If it is thought desirable, the movable spout *C* may be marked with a scale, as seen upon the middle spout in Fig. 1, to indicate the exact quantity of grain which will be contained between the valve *E* and the valve *B*.

The different portions of my apparatus have been described above specifically and in detail in their preferred form. I do not, however, limit myself to the exact construction described; nor to any combination of the different portions of the apparatus except as clearly pointed out in the appended claims. Great variation is possible in the form and arrangement of any of the parts of my apparatus. For instance, the movable spouts *C* might be considerably modified in form, the only purpose of said spouts being to furnish a support for the valves *E* to enable the latter to be raised or lowered to increase or decrease the size of the feed. Although it is clearly preferable to make these spouts as shown, yet it is not absolutely essential that the movable support for the valves *E* should be made in the form of spouts. The spouts *A*, *C*, and *D* might be combined in a single spout and the valve *E* made movable therein by supporting it in a vertically-sliding gate at the side of the spout. The numerous connecting devices are of course capable of al-

most infinite variation and will necessarily be changed more or less to adapt the apparatus to different uses and different locations. I should not consider such changes a departure from the main features of my invention; but

I claim as new and desire to secure by Letters Patent—

1. In a measuring device, the combination, with a suitable frame-work, of a spout A, secured thereto, having a discharge-valve at the bottom, a supply-spout D, also secured to said frame-work and connected with a quantity of the article to be measured, a movable spout 15 C, telescoping at its opposite ends with the spouts A and D, respectively, a valve applied to the spout C, adapted to close the passage through the same, and means for clamping the spout C in any desired position, substantially as described.

2. The combination of a series of receptacles located at different points, each of which is provided with a discharge-valve and a suitable device for opening said valve, a connecting device uniting all of said opening devices, means for operating said opening devices at a desired point, independent locking devices applied to said valves, respectively, and independent connecting devices between each of 25 said locking devices and the desired point, whereby all of said valves may be operated simultaneously from said point or as many as desired may be locked and the remainder simultaneously operated, substantially as described.

3. In a stock-feeding device, the combination of a series of spouts, each connected with a supply of feed and each provided with a cut-off valve and a discharge-valve, and 30 suitable connections between the cut-off valves and the discharge-valves, respectively, whereby both series of valves may be operated from a single point, substantially as described.

4. In a stock-feeding device, the combination of a series of feed-spouts connected with a feed-supply, a series of cut-off valves applied to said spouts, respectively, suitable connections between said cut-off valves and a 45 given point, means located at said point and

adapted to operate said valves through said connections, a series of discharge-valves applied to said spouts, respectively, releasing devices applied to said discharge-valves, a connecting device uniting all of said releasing 55 devices and leading to the given point, means located at said point for operating said releasing devices through said connecting device, a series of locking devices applied to said discharge-valves, respectively, each provided with a connecting device leading to the given point, and means located at said point for operating each of said locking devices, substantially as described.

5. The combination, with a series of receptacles A, having discharge-valves B at their bottoms, of an oscillating rod I, bearing-arms J beneath the discharge-valves, a lock L, provided with means of engagement with the rod I to secure said rod against rotation, a 60 suspended weight M, adapted when released to disengage the lock L from the rod I, a time mechanism provided with suitable connections with the weight M to suspend said weight, and a trip applied to said time mechanism, adapted to release said weight at a predetermined moment, substantially as described.

6. The combination of a series of feed-spouts, a series of cut-off valves arranged 65 therein, a sliding bar extending through the whole series, and a series of rods H, pivoted to the cut-off valves and hooked to the sliding bar, substantially as described.

7. The combination of a series of feed-spouts having hinged valves B at the bottoms, means for simultaneous releasing of said valves from a given point, a series of locking-levers S, adapted for engagement with said valves, a series of springs applied to said levers and adapted to operate them in one direction, and a series of connecting devices between said locking-levers and the given point, through which said locking-levers may be separately operated in the other direction, 75 substantially as described

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