

Denzler & Miller,

Time Check.

Nº 68,965.

Patented Sep. 17, 1867.

Fig. 2

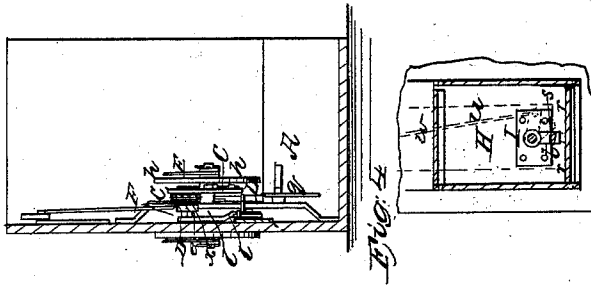
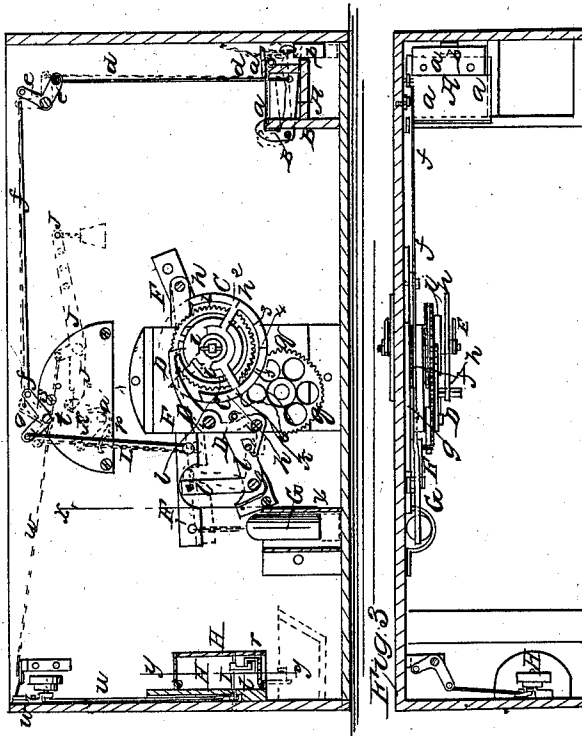


Fig. 1



Witnesses:

Chas. Fische
Alfred H. Egerton

Inventor:

F. Denzler
J. Miller
Per Munn & Co.
Attorneys -

United States Patent Office.

FREIDERICH DENZLER AND JACOB MILLER, OF BROOKLYN, NEW YORK.

Letters Patent No. 68,965, dated September 17, 1867.

IMPROVEMENT IN MANGERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, FREIDERICH DENZLER and JACOB MILLER, of Brooklyn, Kings county, New York, have invented a new and useful Improvement in Mangers, Feed-Boxes, &c.; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a front elevation, partly in section, of our invention.

Figure 2 is a vertical cross-section of the same, the plane of section being indicated by the line *x x*, fig. 1.

Figure 3 is a plan or top view of the same.

Figure 4 is a detail vertical sectional view of our improved feed-box, the plane of section thereof being indicated by the line *y y*, fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to such a connection of mangers, feed-boxes, or feed-troughs with ordinary clock-work, that the same can be automatically opened at the necessary time, not requiring any attention after the boxes or troughs have been filled, closed, and the clock-work arranged.

The object of this invention is to economize time and labor, especially in large dairies, studs, and stables, and to provide regularity in the time of feeding, the apparatus being so arranged that any desired number of troughs or boxes will be simultaneously opened from or by means of one clock-work with which they are connected.

A represents a manger or trough of suitable construction. It is provided with a hinged cover, *a*, which is weighted in rear of its pivoting point, or which is connected with a weight, *b*, that is suspended from a plate or lug that projects beyond the pivot *c*, by which the cover is hinged to the ends of the trough or manger. This weight has the tendency to always keep the cover *a* open, as is indicated by red lines in fig. 1. B is an elbow-lever pivoted to or near one end of the trough, and having a hook-shaped termination of one arm. The other horizontal arm is connected by a rod, *d*, with a bell-crank or lever, *e*, which is pivoted to the wall of the stable, as shown. The bell-crank *e* may be connected by means of any desired number of rods, *f f*, and intermittent bell-cranks, with a bell-crank, *g*, which is also pivoted to the wall of the stable, or building with which the stable may be connected, by the aforesaid rods *f*, which connect the bell-cranks *e* and *g*. C is a clock-work, of ordinary or suitable construction, on which a dial, *h*, which revolves with the hour-hand of the clock, as in ordinary alarm attachments, is arranged. A cam-disk, *i*, which revolves with the dial *h*, being connected with the same, and which has a notch or recess in its circumference, supports the end of an elbow-lever, D, which is pivoted by means of a pin, *j*, to the frame of the clock, or to some other stationary device. E is a stationary hand, which is fitted on the arbor around which the dial *h* turns. The hand E can, if desired, be connected with the cam *i*, when the dial *h* will be stationary, and the hand will turn. A bell-crank, *k*, which carries a pin on one arm, and which is, by another bell-crank, *l*, which is provided with a pin for moving the crank *k*, pressed so against the lower end of the vertical arm of the lever D that it thereby presses the hook-shaped end of the horizontal arm of the lever D upon the edge of the disk *i*. The pin on the horizontal arm of the crank *l* is, by the action of a spring, *m*, pressed upon the horizontal arm of the crank *k*. To the upper part of the vertical arm of the crank *l* is secured a pin, *n*, which fits under the pin *o*, that is secured to the free end of a swinging bar, F, as shown. The free end of the bar F is provided with a weight, G, which tends to pull it down. The bar F is held up by resting upon the pin *n*. By a wire or other rope, *p*, the bar F is connected with the bell-crank *g*, and thus a connection between the trough A and the clock-work is effected.

The operation is simple and as follows: The end of the lever B, which has a hook-shaped termination, is hooked over the cover *a* of the trough, so as to hold it down. The dial *h* is then turned, so that that hour at which it is desired the door *a* should be opened will stand opposite to the hand E'. The parts are then all in the position shown in fig. 1. At the desired time the notch in the disk *i* will come under the end of the lever D, when the latter will, by the action of the spring *m* and weight G, be thrown into the notch, the cranks *k* and *l* following. The pin *n* will thus be moved from under the pin *o*, and the bar F will be pulled down by the weight G, thereby pulling the rod *p* and crank *g*, rods *f*, crank *e*, rod *d*, and lever B, and disengaging the latter from the cover *a*, so that the same will be opened by means of the weight *b*, as is indicated by red lines in fig.

1. The position of the bar F and its appendages, when the door is opened, is also shown by red lines in fig. 1. The disk *i* can then be turned by turning a cog-wheel, *g*, which meshes into a cog-wheel that is mounted on the same sleeve on which the disk is mounted. When it is desired to open the bottom of a feed-box which is held above the trough or manger, and which contains the oats or food, but which retains the same until the said bottom is opened, when the contents will drop into the trough, we prefer to use the device which is shown partly by blue lines in fig. 1. The feed-box H is made of any suitable shape and material, and has a hinged bottom, *r*, which can be opened by swinging down, as shown by red lines in fig. 1. A catch, *s*, on this door, engages with a vibrating hook, *t*, which is fixed on a crank-shaft, I, in the inside of the box H, said shaft being connected by means of a rod, *u*, with a bell-crank, *v*, which is, by means of a rod or rods, *w*, and intervening bell-cranks, connected with an arm projecting from a hinged weighted lever, J. The free (not weighted) end of this lever is held under a pin, *z*, which projects from a bell-crank, K, which is connected by a rod, L, with the bar G, and which is provided with a spring, *a'*, as shown. The operation is the same as described for the other apparatus. When the lever D falls into the notch in the disk *i*, the lever G will fall and will pull the rod L, thereby drawing the pin *z* off the lever J. The latter will then draw the rod or rods *w*, and will thereby turn the crank *v* and raise the rod *u*. The shaft I will thereby be turned so that the hook will be drawn away from the catch *s*, when the bottom will drop and the grain fall into the trough. This latter arrangement can be specially used where a number of feed-boxes or mangers are to be opened at once, the apparatus leading to each manger being connected with the lever J in the same manner as the rod *w* is connected with it.

What we claim as new, and desire to secure by Letters Patent, is—

1. Connecting the trap-doors of mangers, feed-boxes, or troughs, with clock-work, in such a manner that the said doors can be simultaneously opened at any desired time, substantially as and for the purpose herein shown and described.

2. The disk *i*, on the arbor of the clock-work C, in combination with the levers D, *k*, *l*, and F, the latter being connected with the door or doors of the mangers, troughs, or feed-boxes, substantially in the manner herein shown and described.

3. The hinged bottom *r* of the feed-box H, in combination with the catch *s* and swinging hook *t*, the latter being connected with the clock-work C, substantially as herein shown and described.

4. The weighted cover *a* of the trough or manger A, in combination with the catch-lever B, which is connected with the clock-work C, substantially as and for the purpose herein shown and described.

FRED. DENZLER,
JACOB MILLER.

Witnesses:—

WM. F. McNAMARA,
ALEX. F. ROBERTS.