

D. A. TOWNSEND.

Automatic Mangers.

No. 136,192.

Patented Feb. 25, 1873.

Fig. 1.

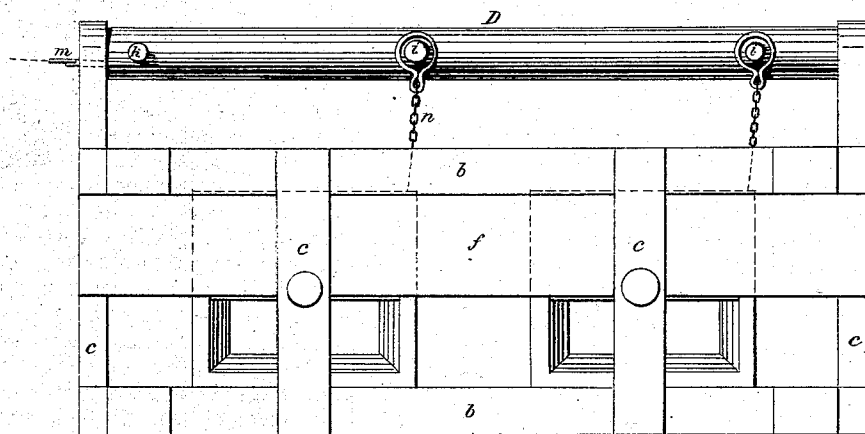


Fig. 2.

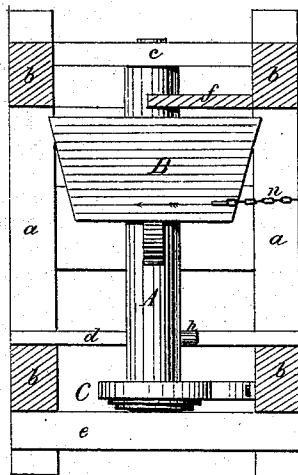


Fig. 3.

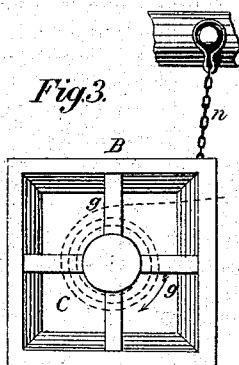
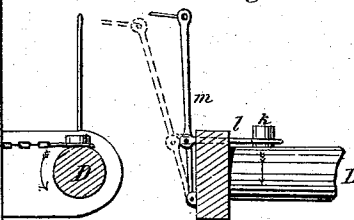


Fig. 4.



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UNITED STATES PATENT OFFICE.

DANIEL A. TOWNSEND, OF UNIONVILLE, SOUTH CAROLINA.

IMPROVEMENT IN AUTOMATIC MANGERS.

Specification forming part of Letters Patent No. 136,192, dated February 25, 1873.

To all whom it may concern:

Be it known that I, DANIEL A. TOWNSEND, of Unionville, in the county of Union and State of South Carolina, have invented certain Improvements in Mangers, of which the following is a specification:

It oftentimes becomes necessary to feed horses and stock at such an hour that they can be used early in the morning; and to do this without personal attention several automatic devices have been designed, which are composed generally of troughs arranged in connection with auxiliary feed-receptacles, which latter are operated by an alarm-clock attachment in such a manner as to deposit their contents in the troughs at the desired hour.

My invention relates to certain improvements in automatic mangers whereby prompt action is insured, the cost greatly reduced, and the construction is simplified so that ordinary mechanics can make and put up the apparatus. The improvements consist of troughs divided into several compartments and secured on vertical shafts arranged within a suitable frame-work, in such manner as to expose only a part of the troughs at one time. Springs are coiled around the lower part of the shafts, one end being secured to the shafts and the other to the frame-work, for the purpose of causing the troughs to revolve. A revolving shaft is supported horizontally in the frame, and the troughs, turned half around, are connected therewith by cords, &c.; and said shaft, being held in the proper position by suitable stops, is released by the action of an alarm-clock on said stops, whereby the troughs are freed and turn around, exposing the portion thereof that was covered by the frame-work and which contains the feed.

In the accompanying drawing illustrating my invention, Figure 1 is a plan view, Fig. 2 is a central transverse vertical section, and Fig. 3 is a top view, of one of the troughs detached, showing its connection with the spring and horizontal shaft. Fig. 4 is a side view of one end of the horizontal shaft, showing the stop mechanism.

Similar letters of reference indicate like parts in the several figures.

The frame-work, in this method of carrying out my invention, consists of standards *a a*, to which beams *b b* are secured, and cross-pieces

c d e are attached to the beams *b*. A board, *f*, is secured longitudinally on the cross-pieces *c c*. In suitable bearings in the cross-pieces *c d e* vertical shafts *A* are arranged, and upon them troughs *B* are secured. These troughs are divided into compartments—say, four—by means of partitions *g g*, arranged vertically and at right angles to each other between the shaft *A* and sides of the trough. Springs *C* are attached by one end to the lower part of the shafts and coiled around them, and their other end fastened to the frame-work; and stops *k* are inserted in the shafts, acting against cross-pieces *d*, to limit the rotation of the shafts caused by the action of said springs. *D* is a shaft or roller, horizontally arranged in bearings projecting from the rear of the frame-work. *i i k* are pegs or pins on said roller. *l* is a rod or pin passing through the top of the shaft-bearing, and jointed to a lever, *m*, which is pivoted to said bearing. This pin *l* serves to hold the shaft *D* in position, as hereinafter explained, by engaging with peg *k*, as shown in Figs. 1 and 4. The upper end of lever *m* is connected with the alarm mechanism of a clock (not shown) for drawing pin *l* away from peg *k*, so as to release the shaft and allow it to rotate. *n* are chains or cords attached to the front of the troughs, and having loops on their other ends, which, by turning the troughs half around, can be slipped over the pegs *i i* on the shaft *D*.

These several devices co-operate in the following manner: Suppose it is desired to feed the horse or other animal at, say, four o'clock next morning, the feed is placed in those compartments of the troughs which are shown in the drawing as under the covering-board *f*, but which, in this case, are out from it, in front. The troughs are then turned half around, so as to bring the filled compartments under the covering-board, that the animal may not get at them, and the loops of chains *n* are slipped over pegs *i*, the shaft or roller having been first secured, with its pegs topmost, by means of the pin *l*, as described. The lever *m* is then connected with the alarm mechanism of a clock set to strike at the desired hour. When this hour arrives the lever and stop *l*, by reason of the connection with the clock, are drawn back, and the shaft turns in the direction indicated by the arrow, Figs. 3 and 4,

when the loops slip off from the pegs, thus allowing the springs to carry the full compartments around to the front, where the animal can have access to them.

It is obvious that any number of troughs thus constructed may be connected with a shaft; and, if desired, shafts may be arranged at right angles to the main shaft, and connected therewith by gearing so as to operate several series of troughs.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of compartment-troughs and vertical shafts with actuating-springs, operating substantially as described.

2. The compartment-troughs with their

shafts, actuating-springs, and chains or cords, in combination with the horizontal shaft and releasing mechanism, substantially as specified.

3. In an automatic manger, a horizontal roller adapted to be released by means of an alarm-clock, in combination with a spring-actuated revolving trough arranged to be connected with said roller, all operating substantially as described.

To the above specification of my invention I have signed my name this 27th day of January, A. D. 1873.

DANIEL A. TOWNSEND.

Witnesses:

R. F. STOKES,
CHARLES BOLT.