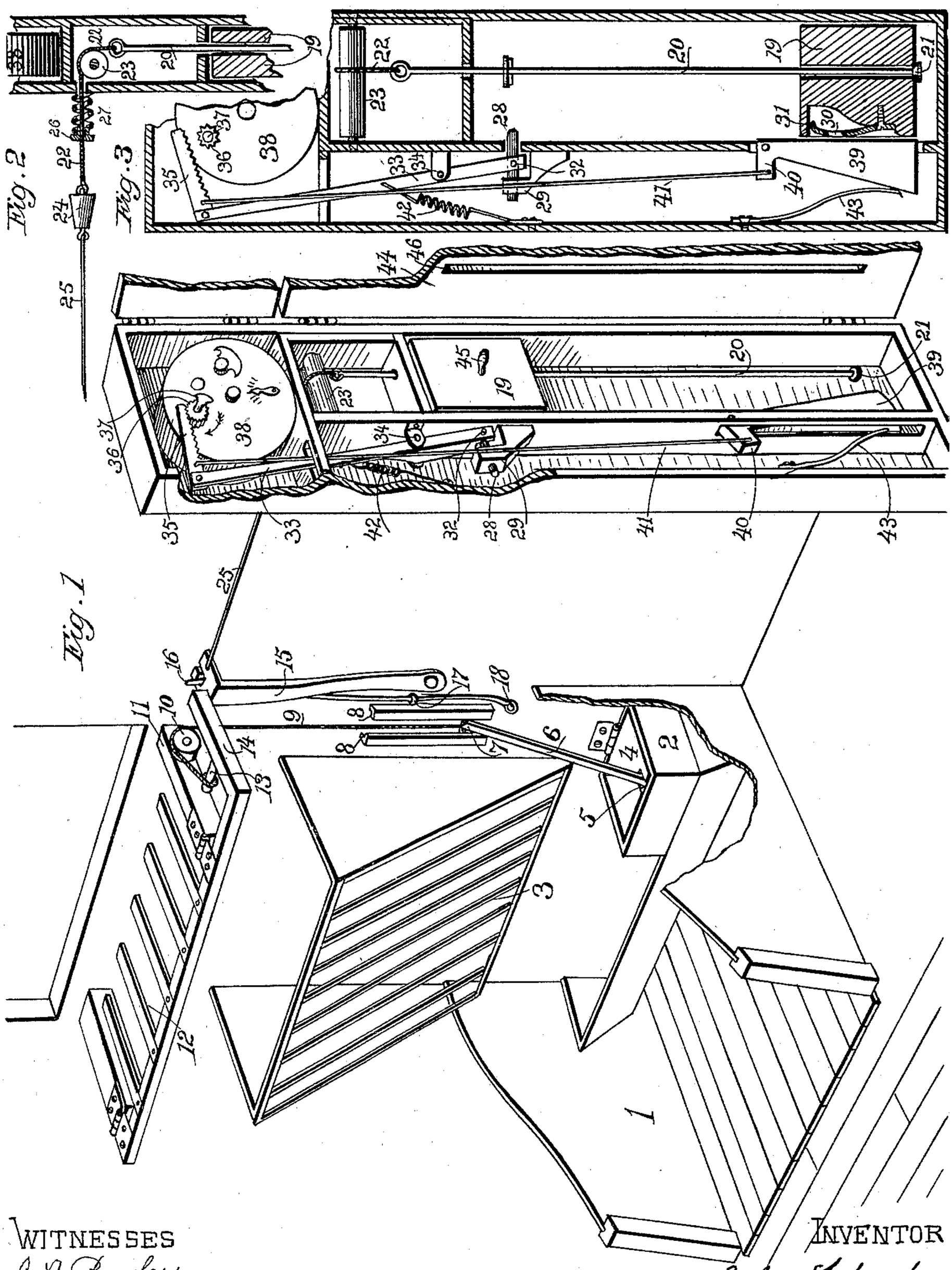
No. 612,917. Patented Oct. 25, 1898.

J. SHEPARD.

AUTOMATIC STOCK FEEDING DEVICE.

(Application filed Sept. 17, 1897.)

(No Model.)



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UNITED STATES PATENT OFFICE.

JOHN SHEPARD, OF APTOS, CALIFORNIA.

AUTOMATIC STOCK-FEEDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 612,917, dated October 25, 1898.

Application filed September 17, 1897. Serial No. 652,028. (No model.)

To all whom it may concern:

Be it known that I, JOHN SHEPARD, a citizen of the United States, residing at Aptos, in the county of Santa Cruz and State of California, 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 said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

My invention has for its object to provide an improved apparatus whereby horses or stock in general may be fed at a predetermined time without the immediate agency of an attendant, and is designed especially to obviate the inconvenience and burden of having to rise at an early hour in the morning to feed the stock.

With this object my invention resides in the novel construction, combination, and arrangement of parts hereinafter fully specified, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the whole apparatus, certain parts being broken away to show the details. Fig. 2 is a detail vertical section of a portion of the apparatus; and Fig. 3 is a vertical section, partly in elevation, to show the clock mechanism for operating the device.

1 represents a stall for a horse, 2 being the feed-box and 3 the feed-rack for hay. The lid 4 of the feed-box is pivotally secured at 5 to a rod 6, the upper end 7 of which moves vertically between guides 8 and is raised by means of a cord or rope 9, passing over a pulley 10, secured upon one of the beams 11 which supports the hay-rack 12, the upper end of the cord being attached to a finger 13 of an arm 14, rigidly extending from said hay-rack. Thus the rack 12 and lid 4 move in unison, the rack falling and depositing into the feed-rack the hay which had been placed thereon simultaneously with the rise of the lid 4 and opening of the feed-box. Thus both hay and grain may be fed to the horse at the predetermined time. Until this moment has arrived the hay-rack is retained in its upper position by the support of the end of the arm 14 by the pivoted stop 15, actuated by a spring 16, secured at two points 17 and 18. At the appointed time the stop 15 is withdrawn by means of the impact of the falling weight 19 giving a sudden and considerable momentum to the rod 20, down which said weight freely slides when released, as hereinafter described, until it impinges upon the head 21 of said rod, the force acquired by the fall being sufficient to impart a sudden jerk to the cord or rope 22, which cord passes over the roller 23 and withdraws the stop 15 through the intervention of the buffer 24 and rope 25. The collar 26 and spring 27 form a resilient stop against which the buffer 24 impinges, thereby preventing jarring.

Until released and allowed to fall the weight 19 is held suspended by means of a pin 28, sliding in a fixed guide 29 and entering an aperture 30 in a spring-latch 31, secured in a recess of said weight, said pin being pivotally secured at 32 to a lever 33, pivoted at 34, the long arm of which is jointed to a rack 35, engaging a gear 36 on the alarm-shaft 37 of an alarm-clock 38. When the time set for the motion of the alarm-shaft has arrived, said shaft will rotate in the direction of the arrow, Fig. 1, actuating the rack 35 and so withdrawing the pin 28, permitting the weight 19 to fall and so furnishing the feed to the stock. At the end of its descent the weight 19 operates the lever 39, the short arm 40 of which raises, by means of the link 41, the rack 35, thus permitting the winding of the alarm-shaft, and when said rack has been so raised it is brought back by means of the spring 42 into such position that when again lowered the forward end will engage the gear-wheel 36 and the rack will be in a position to be moved in a direction to actuate the lever 33 as before. This lowering of the rack 35 is accomplished automatically by means of the spring 43 as soon as the weight 19 is lifted, permitting freedom of movement to the lever.

The weight 19 can be raised into position to be suspended by the pin 28 without opening the door 44 by means of a handle 45, moving in a slot 46 in said door. The weight should be raised after the operator has wound the alarm-spring.

Having thus fully described my invention, I claim—

1. The combination, with a stock-feeding stall, of a movable hay-rack for supporting hay out of the reach of stock, a grain-box, a lid therefor connected with the hay-rack so that said lid is lifted and the box opened simultaneously with the movement of the hay-rack to discharge a supply of hay, a weight, a train of mechanism connected with the hay-rack and lid arranged to be set in motion by the fall of the weight, thereby moving said rack and lid to supply the feed, a support for the weight, clock mechanism and a tripping device for removing said support, arranged to be actuated by the clock mechanism at a predetermined time, substantially as described.

2. The combination, with a stock-feeding stall, of a movable portion arranged by its movement to permit access of the stock to the feed, a movable spring-actuated stop preventing the movement of said portion, a weight arranged to actuate by its fall said stop to withdraw the same, a support for the weight, clock mechanism, a tripping device for removing said support, arranged to be actuated by the clock mechanism at a predetermined time, means, actuated by the fall of the weight, for throwing said tripping device out of operative engagement with the clock mechanism, and a spring for replacing the tripping device in engagement therewith when the weight is raised, substantially as described.

3. The combination, with a stock-feeding stall, of a movable portion arranged by its movement to permit access of the stock to the feed, a movable stop preventing the movement of said portion, a cord for moving said stop, a rod suspended from said cord and provided with a head at its lower end, a weight sliding on said rod, a support for said weight, and clock mechanism for removing said support, substantially as described.

4. The combination, with a stock-feeding stall, of a movable portion arranged by its movement to permit access of the stock to the feed, a movable stop preventing the movement of said portion, a weight, clock mechanism, a train of mechanism connected with said movable portion arranged to be set in motion by the fall of the weight thereby moving the stop, said weight being recessed, a spring-latch in said recess, a pin engaging said latch, and a tripping device for removing said pin, arranged to be actuated by clock mechanism at a predetermined time, substantially as described.

5. The combination, with a stock-feeding stall, of a movable portion arranged by its movement to permit access of the stock to the feed, a movable spring-actuated stop preventing the movement of said portion, a weight arranged to actuate by its fall said stop to withdraw the same, a support for the weight, clock mechanism, a tripping device for moving said support, arranged to be actuated by the clock mechanism at a predetermined time, and a lever operatively engaged by the weight at the end only of its fall and connected with the tripping device to throw it out of engagement with the clock mechanism, substantially as described.

In testimony whereof I have hereunto signed my name in the presence of two witnesses.

JOHN SHEPARD.

Witnesses:
F. M. WRIGHT,
CHAS. J. ARMBRUSTER.