

W. F. BIRD.
AUTOMATIC FEED DROPPER.
APPLICATION FILED AUG. 11, 1916.

1,274,845.

Patented Aug. 6, 1918.
2 SHEETS--SHEET 1.

Fig. 1.

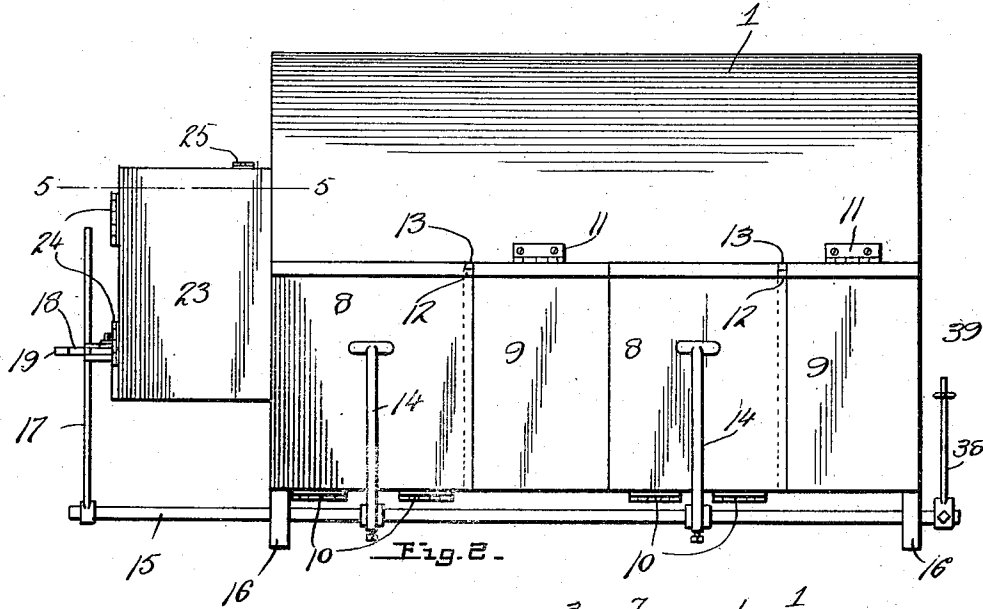
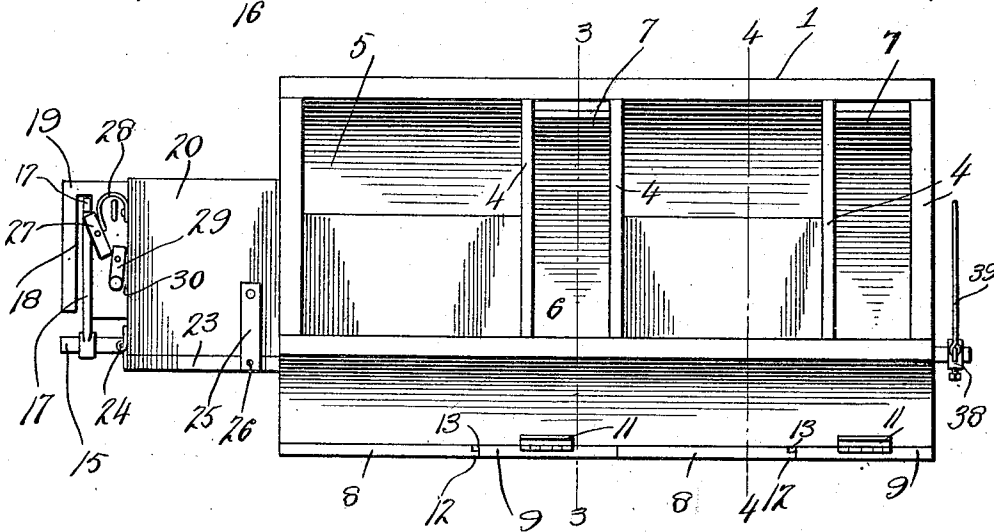


Fig. 2.



WITNESSES

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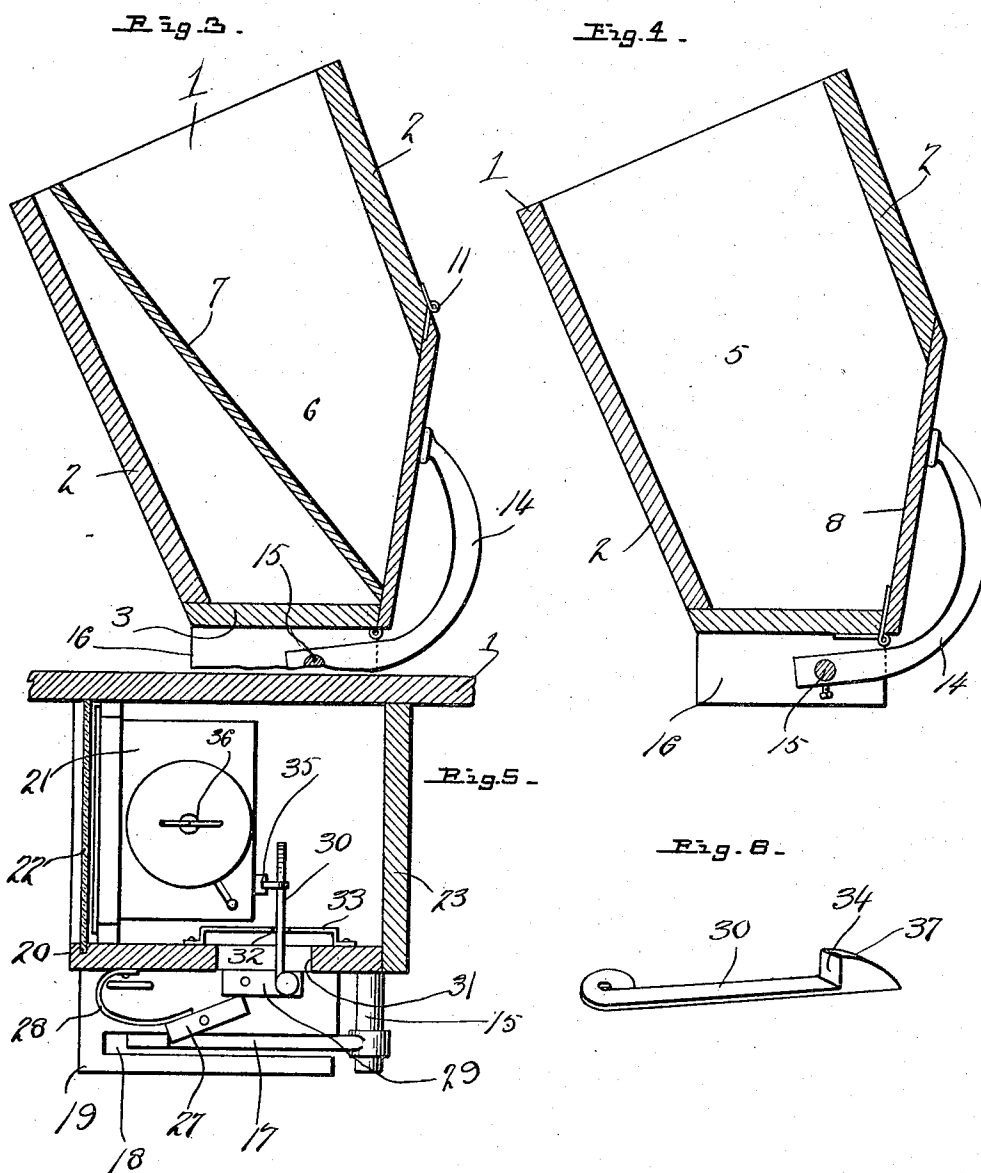
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UNITED STATES PATENT OFFICE.

WILLIAM F. BIRD, OF BRUCETON MILLS, WEST VIRGINIA.

AUTOMATIC FEED-DROPPER.

1,274,845.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM F. BIRD, a citizen of the United States, residing at Bruceton Mills, in the county of Preston and State of West Virginia, have invented certain new and useful Improvements in Automatic Feed-Droppers, of which the following is a specification.

This invention relates to certain new and useful improvements in automatic feed droppers.

The primary object of this invention resides in the provision of an automatic feed dropper which will be of improved construction and operation.

Another object of the invention resides in the provision of an automatic feed dropper which includes a plurality of separate compartments for containing hay, grain or the like with separate doors for the compartments, means for normally retaining the doors in closed position, and means for automatically releasing the holding means at a predetermined hour.

The invention has for another object, the provision of an automatic feed dropper of the above-stated character, which will be provided with oppositely opening doors for the different compartments with the doors constructed and arranged in such manner that retaining members will be required, one for the doors opening at their upper edges, so that when the last mentioned doors are in closed position, they overlap the adjacent edges of the remaining doors and retain the same in closed position.

For a further object, the invention contemplates the provision of an automatic feed dropper of this character in which will be included novel retaining and releasing means for the doors, the releasing means being connected with a clock, the alarm of which may be set for operation at any predetermined hour and the releasing means permitted to operate upon operation of the alarm.

With these general objects in view and others that will appear as the nature of the invention is better understood, the same consists in the novel combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the appended claims.

In the drawings forming a part of this application and in which like-designating

characters refer to corresponding parts throughout the several views:—

Figure 1 is a front elevation of the complete invention.

Fig. 2 is a top plan view of the same.

Fig. 3 is a vertical section substantially on the plane of line 3—3 of Fig. 2.

Fig. 4 is a similar view on a plane of line 4—4 of Fig. 2.

Fig. 5 is a detail horizontal section on the plane of line 5—5 of Fig. 1, and

Fig. 6 is an enlarged detail view of the reciprocating releasing lever.

Referring more in detail to the drawings, 1 designates a tank having sloping sides 2 and a flat bottom 3. The tank 1 is provided with vertical partitions 4 to divide the same into wide compartments or bins 5 to contain hay, and narrow compartments or bins 6 for grain or the like. Within each grain compartment or bin 6 is an inclined bottom member which has its lower end extended to the forward edge of the bottom 3. The doors 8 and 9 for the hay compartments or bins and grain compartments or bins respectively, are inclined forwardly toward their upper ends and the doors 8 are hinged at their lower edges to the bottom 3 by suitable hinges 10, while the doors 9 are hinged at their upper edges to the inclined front side 2, by suitable members 11. Each door 8 has a flange 12 formed along one longitudinal or vertical edge and resting upon a similar flange 13 formed along the adjacent longitudinal or vertical edge of the adjacent door 9, while said door 8 is in closed position to retain said door 9 in closed position, as will be readily understood by referring to the drawings.

Each door 8 is retained in closed position by an arm 14 projecting from the shaft 15 extended longitudinally beneath the bottom 3 and mounted in suitable bearings 16 depending from the latter. One end of the shaft 15 is turned at an angle and extended upwardly to form a lever 17 which is adapted to swing in the slot 18 of the supporting shaft 19. The plate 19 is secured to one side or end of the casing 20 mounted upon one end of the shaft 1.

The casing 20 serves to inclose a clock 21 or the like, the casing 20 being provided with a transparent member 22 in its front portion, while a door 23 is provided for the rear side of the casing 20, said door being mounted upon suitable hinges 24 and re-

tained in closed position by a spring latch member 25 carried by the casing 20 and normally engaged over the latch pin 26 carried by the door 23.

5 The lever 17 is normally held at the inner end of the slot 18 by means of a pivoted latch member 27 mounted upon the plate 19 and having one end of a curved leaf spring 28 pressing upon one side to resiliently re-
10 tain one end of the latch member 27 in position across the slot 18 in the path of the lever 17. A second pivoted member 29 is mounted upon the plate 19 and has one end engaged with the remaining end of the
15 member 27. Pivoted upon the opposite end of the member 29 is the main latch member 30 which is adapted to reciprocate through an opening 31 in one wall of the casing 20. The main latch member 30 also reciprocates
20 through the guide recess 32 in the guide bar 33 secured to the inner face of the casing 20. The free end of the main latch member 30 has a nose 34 formed thereon for engagement by the winding key 35 of the alarm
25 mechanism 36 of the clock 21. During the winding of the alarm mechanism 36, the key 35 will ride over the inclined face 37 of the nose 34 without having any effect upon the pivoted members 27 and 29. It will also be
30 understood that the alarm mechanism 36 may be set to operate at any predetermined hour and release the lever 17.

Upon operation of the alarm mechanism 36 causing rotation of the winding key 35,
35 the latter will be caused to operate against the main or straight face of the nose 34, drawing the main latch member 30 inwardly, turning the pivoted member 29 and causing the latter to swing the pivoted member 27
40 against the tension of the spring 28 until the lever 17 is released. This will permit rotation of the shaft 15 and movement of the arms 14 away from the doors 8, which latter will swing outwardly upon hinges 10
45 and release the doors 9 to permit the latter to swing outwardly at their lower edges a limited distance. Upon opening of the doors 8 and 9, the contents of the compartments or bins 5 and 6 will be released and
50 permitted to drop from the same in a steady stream until the lever 17 is returned to normal position.

The shaft 15 has its end opposite the lever 17 extended upwardly to form a lever
55 38, to which may be connected a wire 39 extended to any suitable point and if desired, this wire 39 may be employed for returning the lever 17 to normal position.

What I claim as new is:—

60 1. The combination with a receptacle having a hinged door, of a rotatable shaft, an arm fixed to rotate with said shaft, and nor-

mally engaged with the door to retain the same in closed position, a lever fixed to rotate with the shaft, a plate provided with a
65 longitudinal slot adapted to receive said lever, a latch mounted on the plate and normally engaged with the lever to retain the same locked therein, and time controlled means for disengaging the latch from the
70 lever to permit the doors to open.

2. The combination with a receptacle having a hinged door, of a rotatable shaft, an arm carried by said shaft and normally holding said door in closed position, a plate
75 provided with a slot, a lever carried by said shaft and adapted to be received in said slot, a pivoted latch adapted to be extended across said slot for locking engagement with the lever, a releasing member engageable
80 with said latch, a clock mechanism, and an operative connection between said clock mechanism and said releasing member to enable the latch to be released at a predetermined
85 hour.

3. The combination with a receptacle provided with a hinged door, of a rotatable shaft, arms carried by said shaft and normally holding said door in closed position, a lever carried by said shaft, a plate pro-
90 vided with a slot to receive said lever, a pivoted latch member carried by said plate and normally extended across said slot for locking engagement with said lever, a pivoted releasing member mounted on said plate and
95 engageable with said latch, an actuating member connected with said releasing member to move the same out of engagement with said lever, and a clock mechanism including a rotatable key operatively engaged
100 with and controlling said actuating member.

4. The combination with a receptacle having a hinged door, of a shaft, an arm carried by said shaft and normally holding
105 said door in closed position, a lever carried by said shaft, a plate carried by said receptacle and provided with a slot to receive said lever when the door is in closed position, a latch pivoted upon said plate and adapted to be extended across said slot to
110 retain the lever therein, a releasing member pivoted upon said plate and having one end thereof engaged with said latch, a reciprocating actuating member carried by said releasing member, and a clock mechanism including a rotatable winding key engageable
115 at times with said actuating member to move the latch to a lever releasing position.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM F. BIRD.

Witnesses:

ROSS LEONARD,

VESTUS THOMAS.