

No. 811,573.

PATENTED FEB. 6, 1906.

J. P. McINTYRE.
FEED BOX.

APPLICATION FILED NOV. 23, 1904.

Fig. 1.

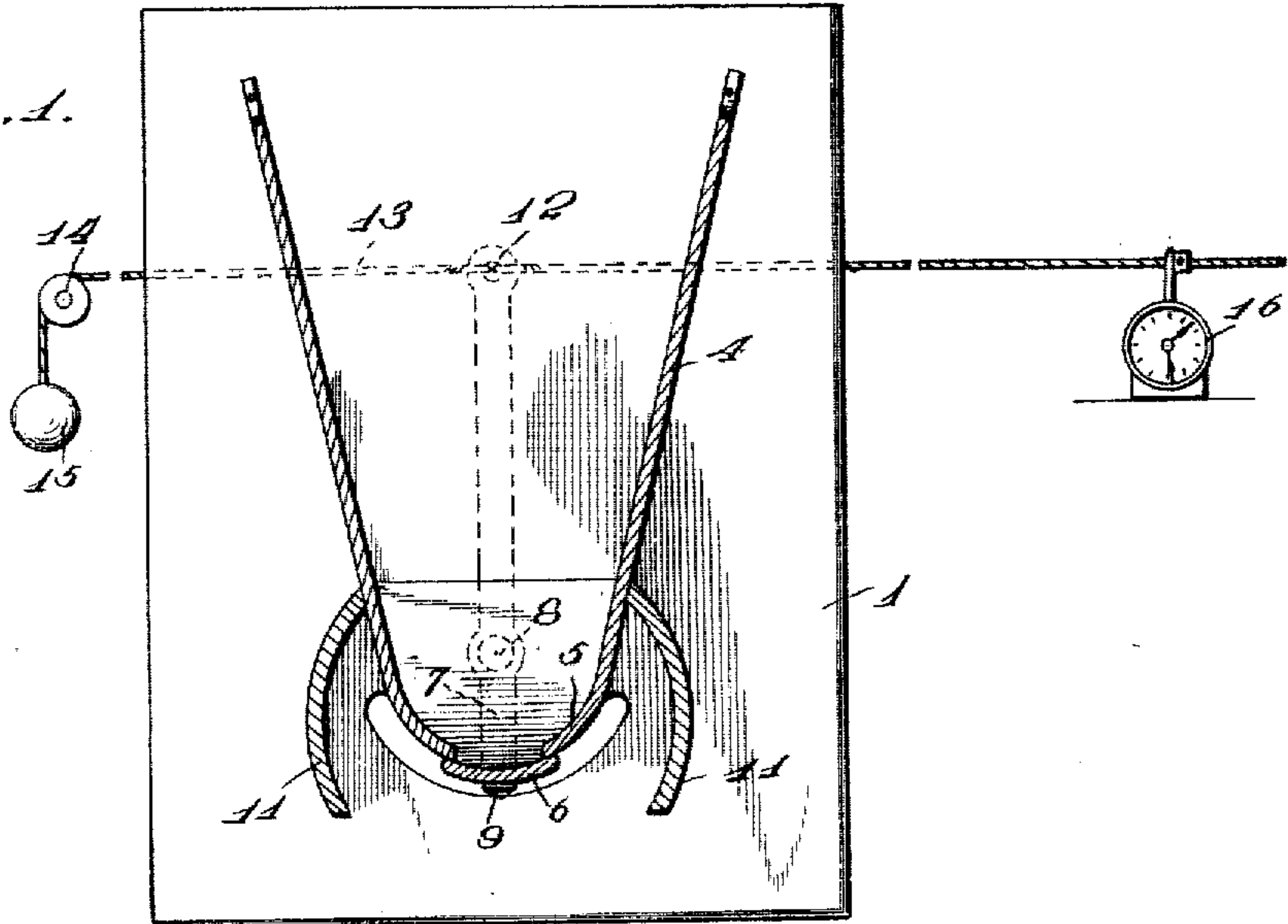


Fig. 3.

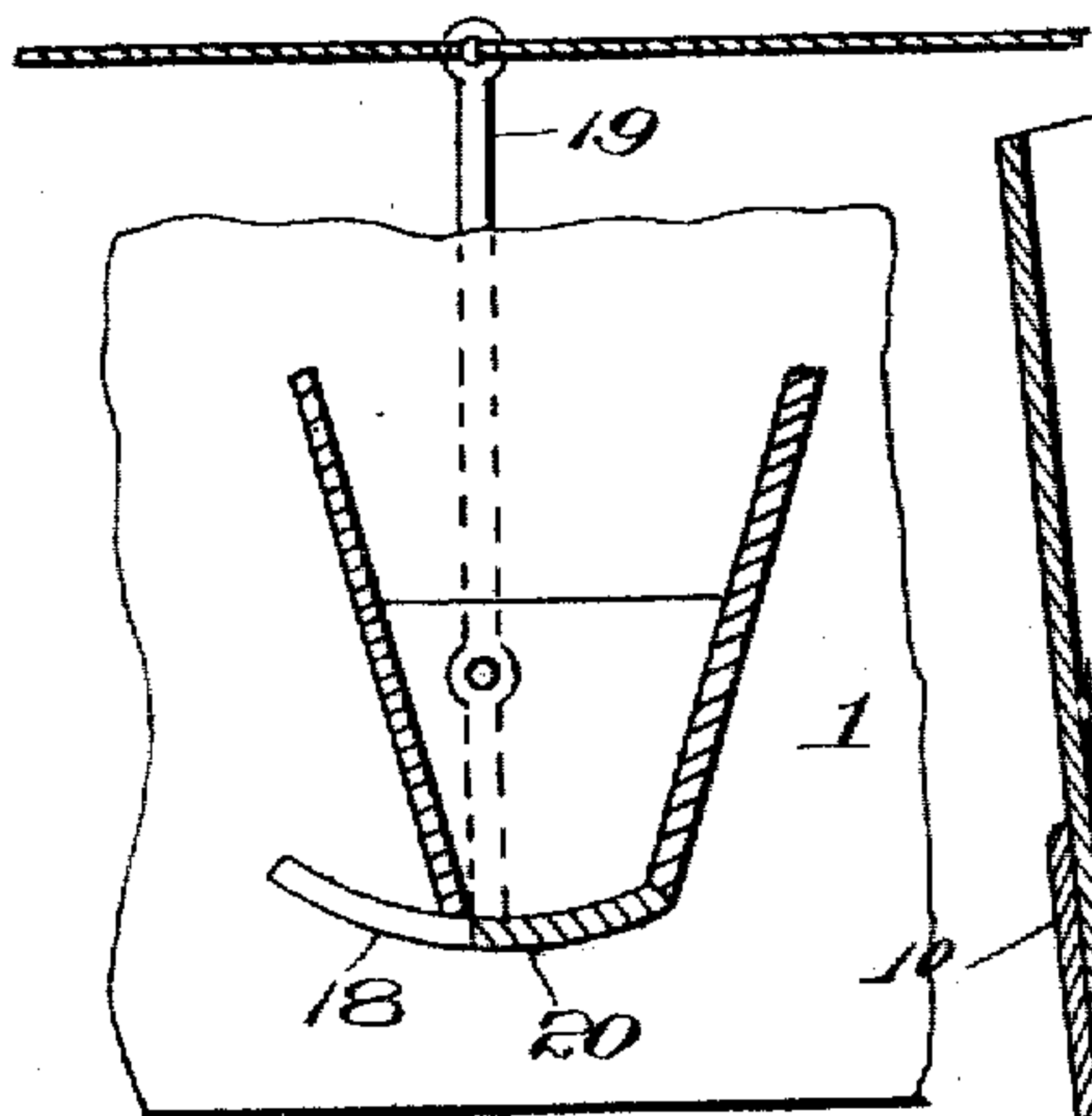
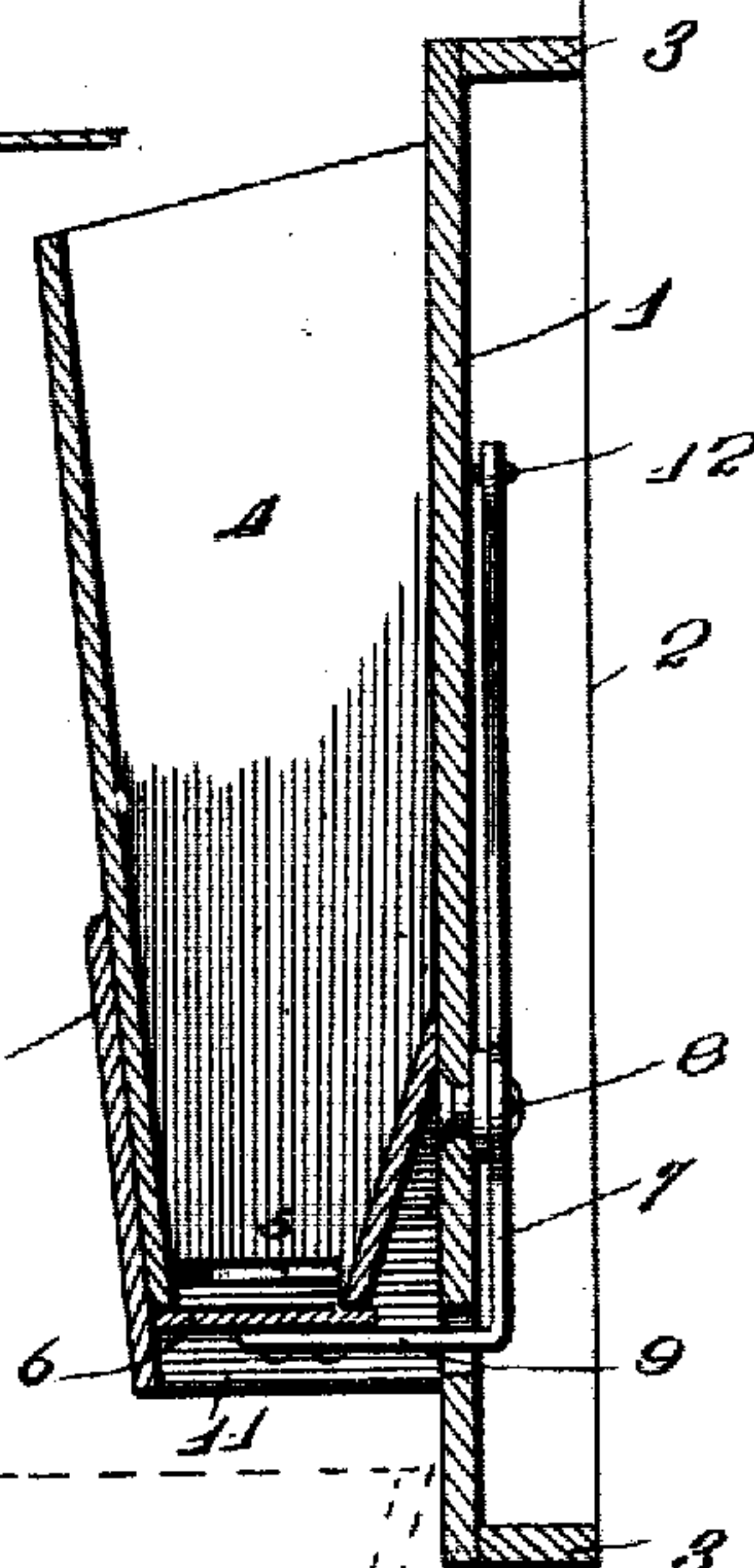


Fig. 2.



Witnesses

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FEED-BOX.

No. 811,573.

Specification of Letters Patent.

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Application filed November 23, 1904. Serial No. 284,070.

To all whom it may concern:

Be it known that I, JAMES P. McINTYRE, a citizen of the United States, residing at Chicago Lawn, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Feed-Boxes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in feed hoppers or boxes; and it has for its object the constructing of a box which is provided with means for automatically controlling the discharge of grain or the like therefrom.

Another object of the invention is to provide means whereby the discharge of the material contained within the box is controlled automatically at predetermined periods.

Another object of the invention is to provide means for spacing the feed-hopper from the wall to which it is adapted to be secured for the purpose of providing a compartment on the back of said hopper for the reception of a lever to which is secured a slide which is adapted to inclose the opening upon the bottom of said hopper and also for the purpose of permitting of the assembling of means with the said lever for actuating the same automatically.

With these and other objects in view the invention consists in the novel construction, combination, and arrangement of parts, as will be hereinafter fully described in the specification and more particularly pointed out in the claims hereto appended.

Figure 1 is a vertical section through the feed hopper or box. Fig. 2 is a side elevation of the hopper or box shown in transverse section. Fig. 3 is a vertical section through the lower portion of the feed-hopper, the same being provided with a modified form of valve.

Referring to the drawings by numerals, 1 designates a supporting or holding board for the hopper, which also forms one of the walls of the same. For the purpose of providing reinforcing means and also for spacing the supporting or holding board 1 from the walls of a barn or any building I provide cleats or spacing-strips 3 at the upper and lower ends of the wall 1 of the hopper. These cleats 3 are arranged in parallel position and are adapted to extend longitudinally of the feed

box or hopper. The feed-box is also provided with a plurality of sides 4, which are provided with inwardly-extending portions 5, which do not come entirely together at the lower portion, but terminate adjacent to each other, thereby forming an opening through which the material which is adapted to be placed within the hopper is discharged. This opening in the lower part of said hopper is provided with a valve or slide 6 for the purpose of closing the same. The said valve 6 is carried upon a lever 7, and said lever 7 is pivotally mounted at 8 upon the rear portion of the supporting or holding board 1 of the said hopper. The valve or slide 6 is secured to a right-angle extension 9, formed integral with the lever 7.

To prevent the slide from being moved except at predetermined periods, I have provided upon the front of the hopper and near the bottom of the same a suitable guard 10, which is formed with concavo-convex side portions 11, said side portions 11 extending below the horizontal plane of the slide or valve 6, which is carried by the lever 7. It will be apparent that by the assembling of this guard upon the feed box or hopper as shown in the drawings the same prevents the valve from being actuated manually from the front of the said feed-box without the operator tampering with the valve by reaching under the guard.

Secured to the end 12 of the lever 7 is a suitable cable 13, which is adapted to be passed around a pulley 14 and connected with a suitable weight 15. The opposite end of said cable, which is secured to the lever 7 at 12, is connected to a suitable clock mechanism 16, or, if it is preferred, to electrical means for the purpose of permitting the lever to be moved upon its pivot-point 8, and thereby open the aperture formed in the bottom of the hopper at predetermined periods, as may be desired by the operator of the device.

In the practical application of the device I have found it essential to construct the rear portion of the hopper as shown in the drawings for the reason that it frequently occurs that the valve when provided with a lever which extends to the front of the hopper is often actuated when it is not desired. It will be apparent that an animal could operate the lever if the same was mounted upon the front portion of the hopper; but by the

construction of the hopper and spacing the same from the walls of a building means is provided whereby the operation of the device is greatly facilitated and the discharge of the grain or the like from the hopper is prevented, except when the lever is operated by the releasing of the cable, which is controlled by the clock mechanism, and owing to the weight which is secured at one end of the cable the slide will be automatically moved to one side of the discharge spout or bottom portion of the hopper and the material carried within the same is discharged therefrom into a suitable trough or receptacle 17, carried beneath the discharge portion of the hopper or box. The slot which is formed in the rear wall or holding-board 1 permits of the free movement of the right-angle portion 9 of the lever 7 when it is desired to move the valve or slide 7 either for closing the opening formed in the bottom of the hopper or for opening the same.

In Fig. 3 I have shown the hopper provided with a modified form of valve. In this construction the holding-board 1 has a segmental slot or opening 18, extending laterally from one wall of the hopper; but this slot is not arranged at the sides of the hopper-outlet, and therefore material passing from the hopper cannot fall through the slot 18 into the space back of the holding-plate. In order to permit the use of a slot such as shown in this modification, it is necessary to pivot the lever 19 above one end of the slot and to connect it to one edge of the valve 20.

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

1. In a device of the character described, the combination of a hopper, comprising a holding-board, sides, and front, said holding-board having an opening, a lever carried by said holding-board and projecting through said opening, valve means carried by said lever, and guard means carried by said hopper.

2. In a device of the character described, the combination of a hopper provided with means for spacing the same from the supporting-walls, a guard secured upon the front of said hopper and adapted to project below the horizontal plane of the bottom of said hopper, a lever movably mounted upon the rear portion of said hopper, and means carried by said lever for controlling the opening and closing of the discharge-aperture of said hopper.

3. In a device of the character described, the combination with a hopper provided with means for spacing the same from a wall, of a guard secured upon said hopper and projecting below the discharge portion thereof, valve means carried by said hopper engaging said discharge portion of the same, and means for automatically actuating said valve means engaging the discharge portion of said hopper.

4. In a device of the character described,

the combination of a hopper comprising a back, sides, and front, said back having an opening, and valve-carrying means secured to said hopper and extending through the opening of said back.

5. In a device of the character described, the combination of a hopper, comprising a back, sides, and front, said back having a slot formed therein near the discharge-opening of the hopper, valve means positioned within the slotted portion of said back, and means for causing movement of said valve means.

6. In a device of the character described, the combination of a hopper, comprising a holding-board, sides secured to said holding-board, a front secured to said sides, said hopper having a discharge-opening, said holding-board provided with a segmental slot formed therein near the discharge-opening of the hopper, parallel spacing-strips secured transversely of said holding-board and upon the back of the same, an angular lever secured to said holding-board and extending through said slot, valve means secured to said lever and normally closing the opening of said hopper, a guard secured to the discharge end of said hopper and inclosing said valve means, a weight secured to said lever, and means for automatically causing movement of said lever.

7. A device of the character described, comprising a hopper, the back of said hopper extending below the discharge end thereof, said back having an opening formed therein contiguous to the discharge end of the hopper, lever means secured to said hopper, said lever means extending through said slotted portion of the back, means carried by said lever for closing the discharge-opening of said hopper, a guard secured to said hopper and extending below the slotted portion of the back, comprising concavo-convexed sides, and substantially flat front, and means for causing movement of said lever means.

8. In a device of the character described, the combination with a hopper, of valve means coacting with said hopper, and a guard secured to said hopper, comprising concavo-convexed sides and a flat front.

9. In a device of the character described, the combination of a hopper provided with an opening formed in the back thereof, valve means movably positioned within said opening, and guard means secured to said hopper and extending below the horizontal plane in which said opening is formed.

10. The combination with a support, of a hopper provided with an opening spaced from said support, and valve-carrying means extending through the opening of said hopper and capable of closing the discharge end of the same.

11. The combination with a support, of a hopper having an elongated opening and provided with spacing means, secured to said

support, and valve-carrying lever means extending through said elongated opening of said hopper, and normally closing the discharge end of the same.

5 12. In a device of the character described, the combination of a hopper provided with an elongated opening, valve means coacting with said hopper and positioned within the elongated open portion thereof, a weight se-
10 cured to said valve means, and means for automatically causing movement of said valve means.

13. The combination with a support, of a hopper provided with an opening spaced from
15 said support, lever means extending through said opening, valve means secured to said le-

ver means, and a weight secured to said lever means.

14. The combination with a support, of a holder-board spaced from said support, a
hopper formed upon said holder-board, said
holder-board provided with an opening near
the discharge end of said hopper, a movable
support positioned within the opening of said
holder-board, and valve means carried by
25 said movable support.

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

JAMES P. McINTYRE.

Witnesses:

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HERBERT L. WHITAKER.