No. 693,199. Patented Feb. 11, 1902.

D. WILDE.

GRAIN WEIGHER.

(Application filed Nov. 12, 1900.)

(No Model.) 2 Sheets—Sheet 1.

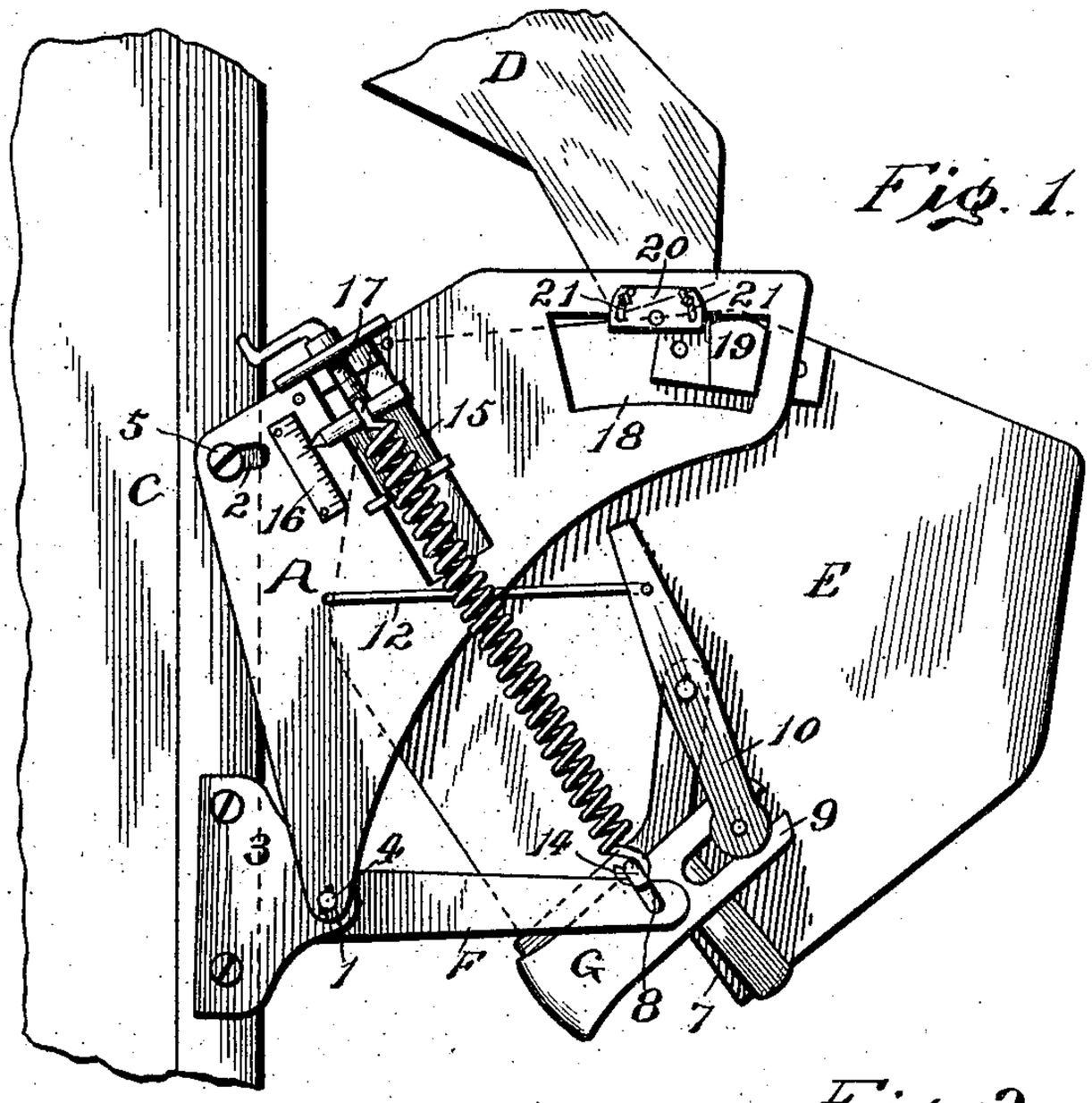
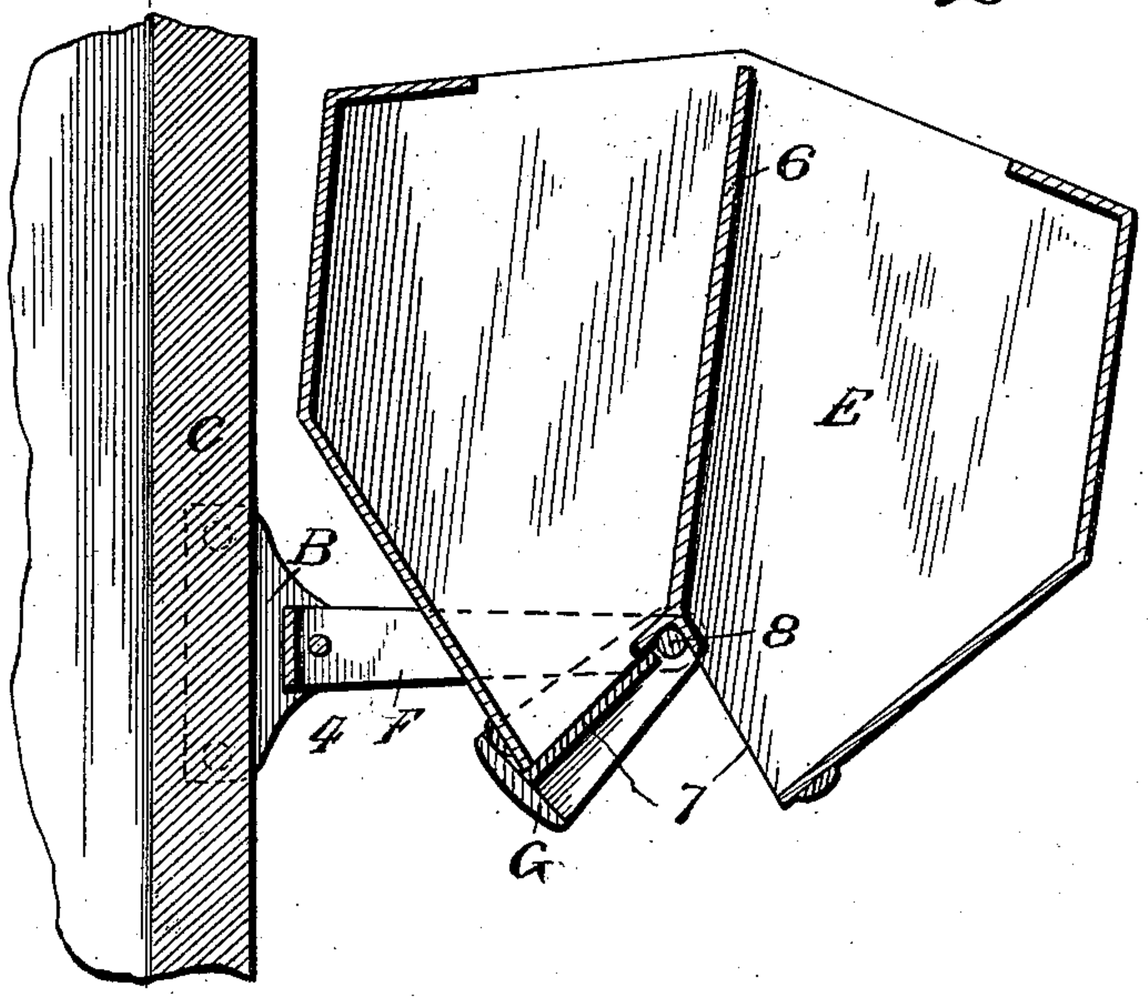


Fig. 1.

Fig. 2.



Witnesses
E. W. Hart
Ralph S. Mayfield.

Inventor
Daniel Wilde.

By Rhesa L. Dorsey & Co. Attorneys

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Fig. 5.

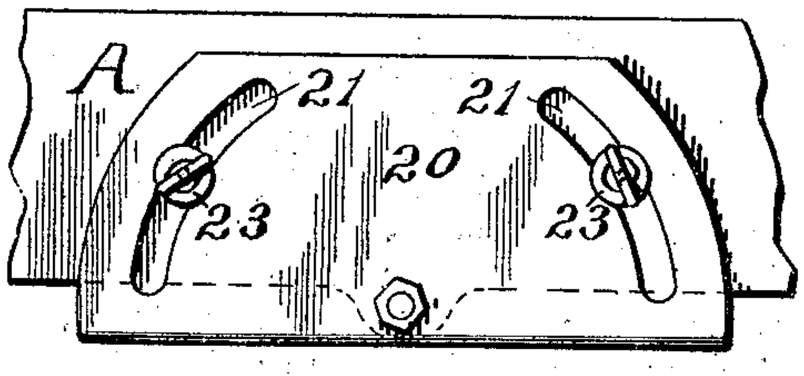
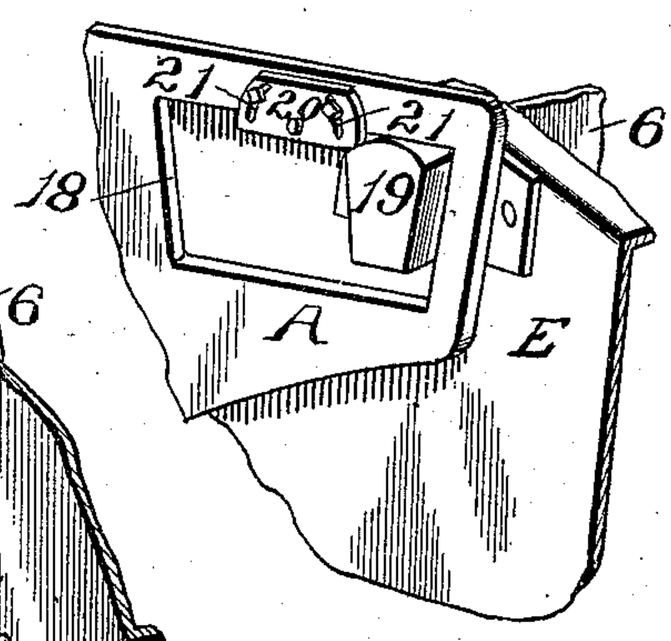


Fig. 4.



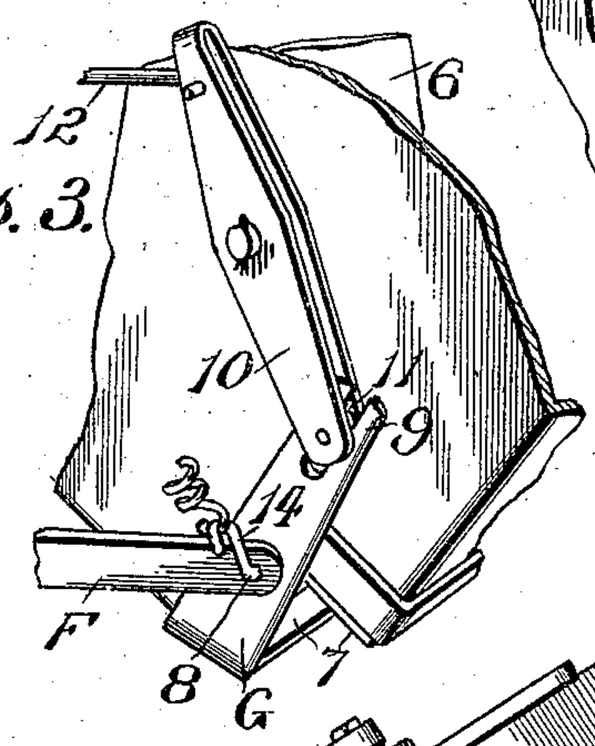
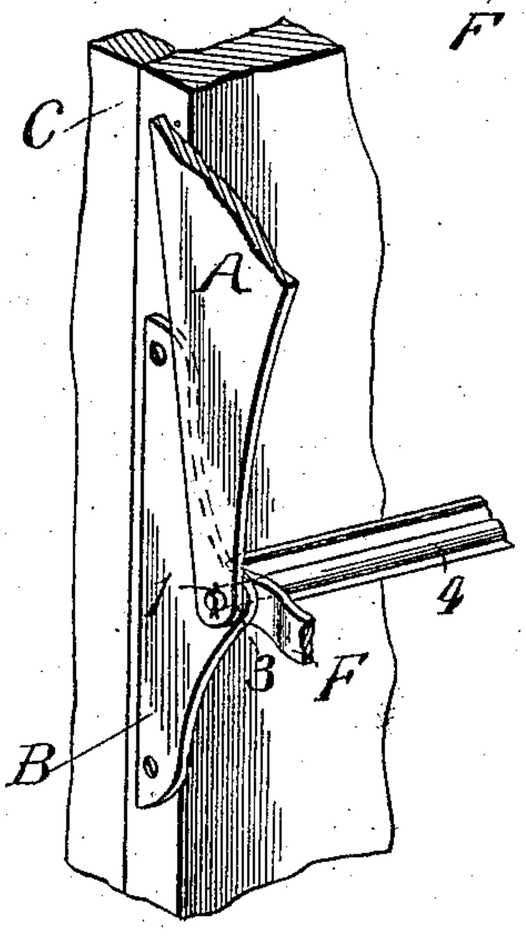


Fig. 3.

Fig. 6.



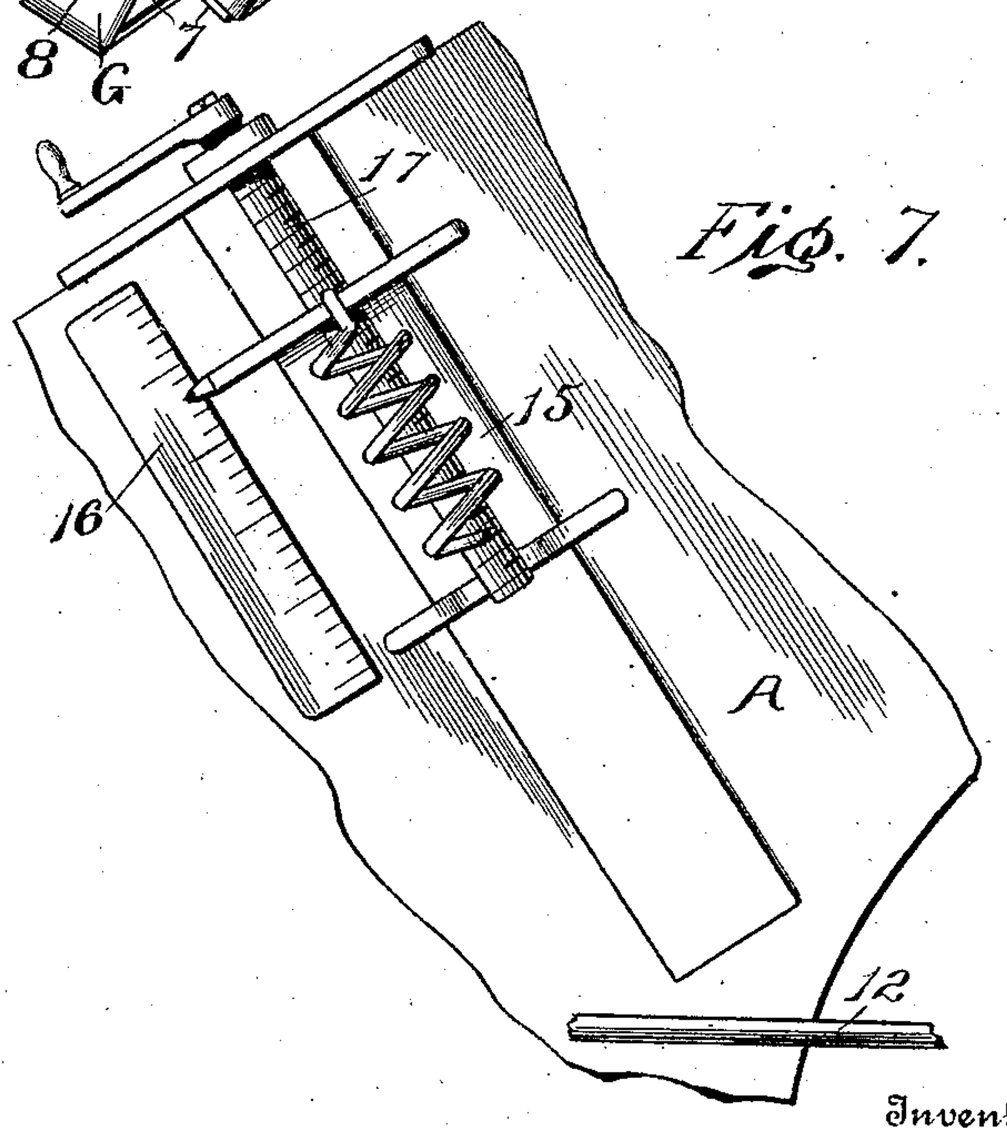


Fig. 7.

Inventor

Witnesses

E. W. Hard

Ralph L. Warfield.

By Rhesa L. Boisot & Co.

Attorneys

UNITED STATES PATENT OFFICE.

DANIEL WILDE, OF WASHINGTON, IOWA.

GRAIN-WEIGHER.

SPECIFICATION forming part of Letters Patent No. 693,199, dated February 11, 1902.

Application filed November 12, 1900. Serial No. 36,315. (No model.)

To all whom it may concern:

Be it known that I, DANIEL WILDE, a citizen of the United States of America, residing at Washington, in the county of Washington and State of Iowa, have invented certain new and useful Improvements in Grain-Weighers, of which the following is a specification.

My invention relates to an improvement in grain-weighers.

The present invention is an improvement on the grain-weigher disclosed in Letters Patent No. 411,514, granted to me September 24, 1889. One of the disadvantages under which I labored with this patented construction was that while the two pockets of the hopper weighed alike in the factory, yet when it was placed on a thresher if for any reason they did not weigh alike in all cases it caused considerable trouble and loss and the difficulty was encountered of devising any way by which they could be corrected. Sometimes the elevators would not stand exactly plumb, which would cause heavy and light sides, and there seemed to be no way of obviating this difficulty. The object of my present invention is to entirely overcome this objection, and with this end in view it consists in certain novel features of construction and combinations of parts, which will be hereinafter more fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation. Fig. 2 is a vertical section, and Figs. 3, 4, 5, 6, and 7 are enlarged details.

A represents a bracket, which may be made of sheet-steel or other metal and preferably of the general form shown in Fig. 1, with a hole 1 at its lower end and an elongated slot 2 at its upper left-hand corner, which slot is curved in the arc of a circle struck from hole 1 as a center, as well as other accessories which will be described. A pair of plates B B are secured to the upright C at a suitably separated distance from each other. These plates are provided each with a hole 3 at the outer edge and through them the rod 4 passes, this rod also extending through hole 1 of bracket A and affording a support therefor and a center from which said bracket may be swung when it is desired to adjust it with relation to the elevator D of the threshing-machine. This bracket is also held to the upright by means of a set-screw or other means 5, passing through the curved elongated slot 2 in the bracket. The object of this slot is this: In the factory the weigher is put up with the upright or backboard on an elevator which is perfectly plumb. In the field where the thresher is at work if the elevator is not set so as to be perfectly plumb this bracket A is swung to the right or left, as the case may be, until it is adjusted, so that the weigher center is on a plumb-line, when the set-screw 5 is tightened and the bracket held securely in position and the other parts of the weigher in accurate adjustment for work.

E represents the hopper. This is in the main like the one disclosed in the patent referred to, it having a central partition 6 and with the two openings 7 7 at the bottom on either side of said partition; but instead of being supported at or near the center this hopper oscillates on a rod 8, located at its bottom, upon which the hopper rests astride. This rod bears in the outer end of bail F, which latter is supported and turns on the rod 4 in the plates B B. Gate G is likewise pivoted and hinged on this rod 8, so that it swings on the rod as a center to alternately open or close one or the other of the openings 7 7 at the bottom of the hopper. At one end the gate is provided with a fork 9, and an oscillating arm 10, pivoted on the corresponding end of the hopper, is provided with an antifriction-roller 11, which operates in said fork and as the arm oscillates causes the gate to swing back and forth with each of its movements, but in the opposite direction therefrom. A steady-rod 12 is pivoted at one end to the bracket A and at the other to the upper end of the oscillating arm, so that as the hopper vibrates back and forth with the depression caused by the full complement of grain in one side or the other the oscillating arm is caused to swing in an opposite direction and with it the gate or door G is forced aside to open the chamber containing the grain and allow the latter to discharge, after which the upward movement takes place as the weight is removed from the hopper and the other chamber is being filled with more grain.

On one or both ends of the rod 8 a crook 14 is formed and from this or these spiral spring

or springs extend to an adjustable block 15, which block is made adjustable by the screw 17, operating therein, and which adjustment causes the desired tension upon the spring, as the nearer the block is to the top of the bracket the stronger the spring and the more grain is required to lower the hopper, and the farther the block from the top of the bracket the less the tension, and in consequence the smaller the amount of grain required to lower the hopper. A scale 16 is placed at one side of the block to indicate where to adjust the latter for certain predetermined weights. It is obvious that the spring or springs may be so placed as to pull directly upward, although I prefer the position indicated in Fig. 1.

At the upper right-hand end of bracket A a large slot 18 is formed, and through this a lug 19, secured to the hopper, projects. A plate 20, pivoted centrally above this slot, is provided with two curved elongated slots 21 21, upon arcs of which the pivot 22 is the center, and set-screws 23 23 are employed for setting this plate in its adjusted position. It will be seen that the ends of this plate serve as shoulders for the lug 19 to strike and that the hopper has to descend until the lug reaches the bottom of this plate, when it is free to move along the bottom or lower edge thereof to the other end, which operation places the other pocket or chamber of the hopper in position to receive the grain. It will be understood that the lower the hopper has to descend before the lug clears the plate the more it draws out the spring or springs, and the increased power of the spring has to be balanced by an increased quantity of grain. Now if it is found that one pocket or chamber of the hopper is weighing heavier than the other one it is simply necessary to raise the end of the plate which operates the heavy pocket and lower the end which operates the light pocket, thus keeping the combined weight of the two pockets the same as well as making the two pockets dump with equal weight. In this way the operation is made perfect, whether the elevator happens to be perfectly plumb or not, and the weighing of the grain is rendered absolutely accurate at all times.

It is evident that slight changes might be made in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

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

1. The combination with an upright, of a bracket supported thereon at its lower end and provided with a curved elongated slot struck from the center of support of said bracket, a set-screw operating in said slot for adjusting the lateral position of the bracket, a grain-weighing hopper sustained from said adjustable bracket, the hopper having a lug thereon which projects into the slot in the bracket, and a plate adjustably secured on the bracket to regulate the downward movement of the lug prior to the tilting of the hopper.

2. The combination with an upright, of a bracket supported thereon at its lower end and provided with a curved elongated slot struck from the center of support of said bracket, a set-screw operating in said slot for adjusting the lateral position of the bracket, a grain-weighing hopper sustained from said adjustable bracket, said hopper having a lug thereon which projects into the slot in the bracket and a plate pivoted to the bracket and means for adjusting the position of said plate on its pivot.

3. The combination with a bracket having a slot therein, of a tilting hopper sustained thereby, the hopper having a lug which projects into the slot in the bracket, and a plate pivoted to the bracket and means for adjusting its position on its pivot.

4. The combination with a bracket, of a tilting hopper sustained thereby, the hopper having a lug which projects into the plane of the plate, and a plate pivotally connected with the bracket, this plate having a slot curved in the arc of a circle struck from the pivot as a center, and means in the slot for setting the plate whereby the position of its ends is regulated to determine the movement of the lug on the hopper with respect thereto.

5. The combination with a bracket, of a tilting hopper sustained thereby, the hopper having a lug which projects into the plane of the bracket, and a plate pivotally connected with the bracket, this plate having a pair of slots, on opposite sides of the pivot curved in the arc of a circle struck from the pivot as a center and means in these slots for setting the plate whereby the position of its ends is regulated to determine the movement of the lug on the hopper with respect thereto.

6. The combination with an adjustable bracket, a hopper sustained thereby and a gate, of an oscillating arm pivoted to the hopper and connected with the gate for swinging the latter and a steady-rod pivotally connected with the adjustable bracket and oscillating arm.

7. The combination with a bracket and a hopper pivotally sustained thereby, of a gate for closing the opening in the lower end of the hopper, said gate having a fork on one end, an oscillating arm pivoted to the hopper and provided with an antifriction-roller which enters and operates in said fork and a steady-rod pivotally connected with the bracket and arm.

8. The combination with a support, a bail hinged thereto, a rod in the free end of the bail, a hopper adapted to rock on this rod as a center, and a spring for sustaining the outer end of the bail and the hopper, of a gate pivoted to the rod, and means for swinging the gate with the lateral movements of the hopper.

9. The combination with a support, a bail

pivotally connected with a suitable support, and a rod sustained on the outer end of the bail, of a hopper pivotally supported at its lower end on said rod, a gate pivotally supported on the rod, an oscillating arm loosely connected with said gate and pivotally connected with the hopper whereby to shift the gate back and forth, and a steady-rod pivotally connected with the support and the arm.

10. The combination with a support, a bail pivotally connected with a suitable support, and a rod sustained on the outer end of the bail, of a hopper pivotally supported at its lower end on said rod, a gate pivotally supported on the rod, an oscillating arm loosely connected with said gate and pivotally connected with the hopper whereby to shift the gate back and forth, a steady-rod pivotally connected with the support and the arm, a spring connected with the rod carried at the outer end of the bail and means for adjusting the tension of the spring.

11. The combination with plates having holes therein, a bail pivotally connected with the plates, a bracket pivoted at the same point or center at which the bail is pivoted, said bracket having an elongated curved slot in an arc described with the said pivot as a center and a set-screw for regulating the lateral adjustment of said bracket on the pivot, of a rod supported on the outer end of the bail, a spring for sustaining said outer end, a hopper pivoted at its lower end on said rod a gate pivoted to said rod, an oscillating lever for operating the gate and a steady-rod pivotally connected with the bracket and arm.

12. The combination with plates having holes therein, a bail pivotally connected with the plates, a bracket pivoted at the same point or center at which the bail is pivoted, said bracket having an elongated curved slot in an arc described with the said pivot as a center and a set-screw for regulating the lateral adjustment of said bracket on the pivot, of a rod supported on the outer end of the bail, a spring for sustaining the outer end, a hopper pivoted at its outer end on said rod, a gate pivoted, an oscillating arm or lever for operating the gate, a steady-rod pivotally connected with the bracket and arm, said hopper having a lug thereon which projects through a slot in the bracket, and a plate pivoted to the bracket at the center of said slot and provided with two slots in the arc of a circle of which the pivot is the center and set-screws in said slot for adjusting the plate.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DANIEL WILDE.

Witnesses:
O. K. CLAPPER,
H. E. KEELEY.