(No Model.) 2 Sheets—Sheet 1.

A. H. W. DROSTE & H. H. BRUNS.

GRAIN WEIGHING MACHINE.

No. 483,909. Patented Oct. 4, 1892.

Fig. I.

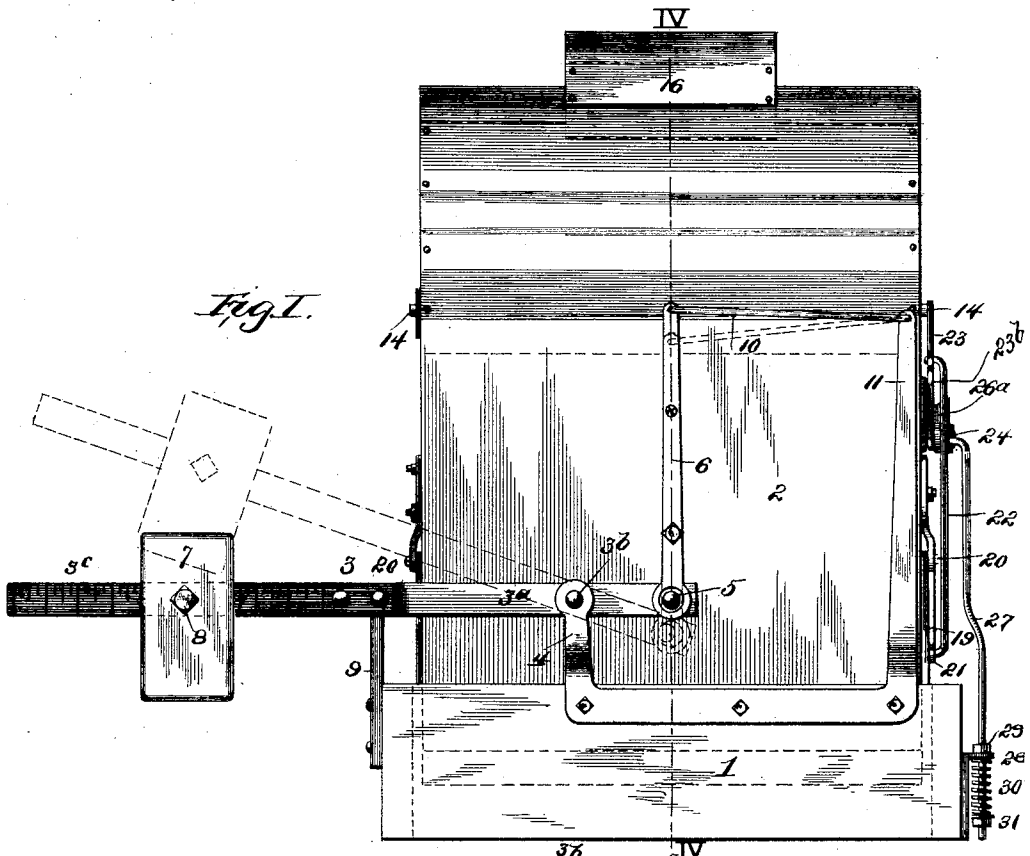
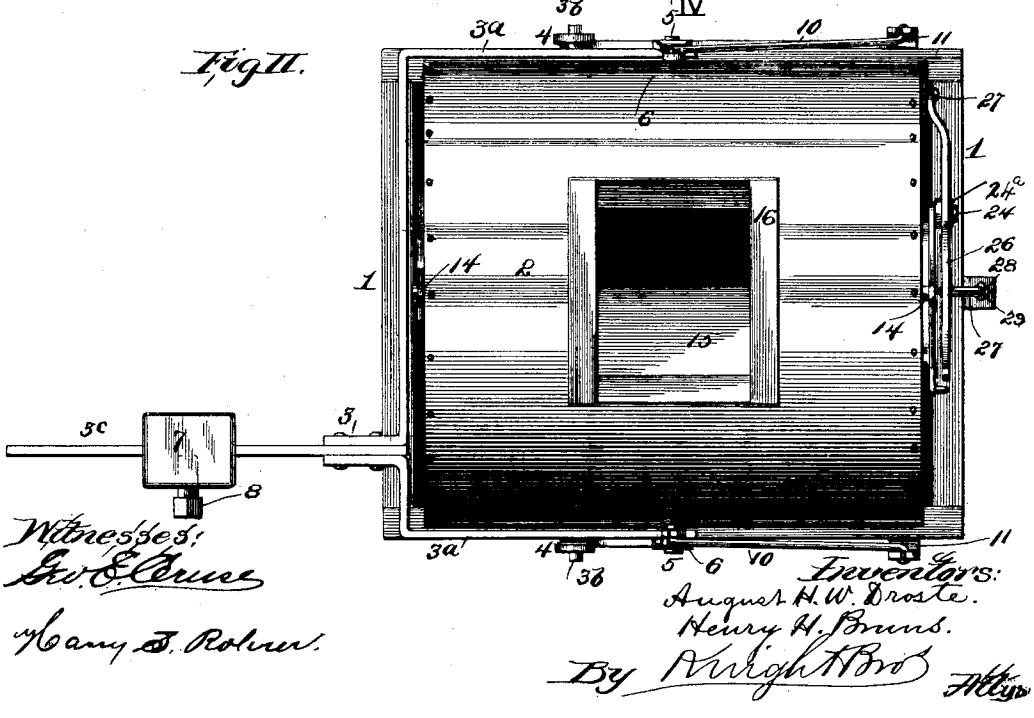


Fig. II.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. IV.

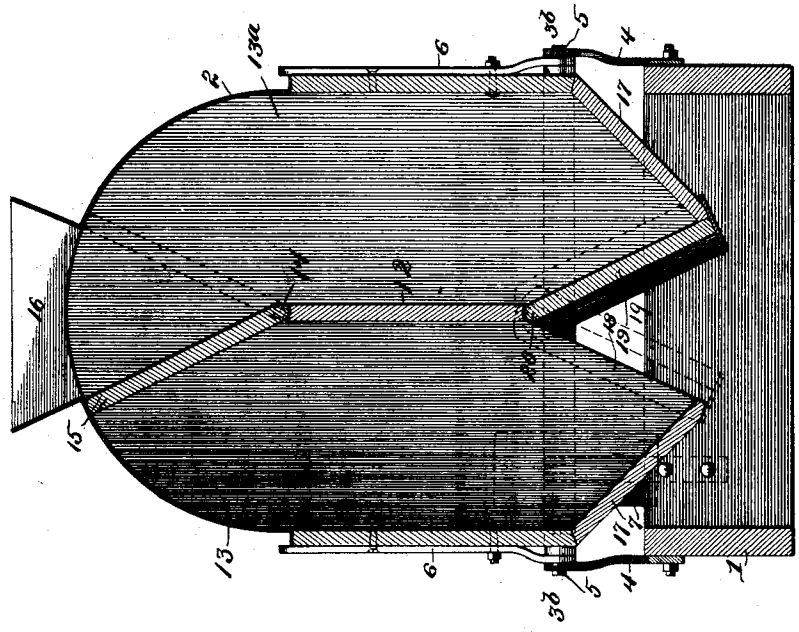
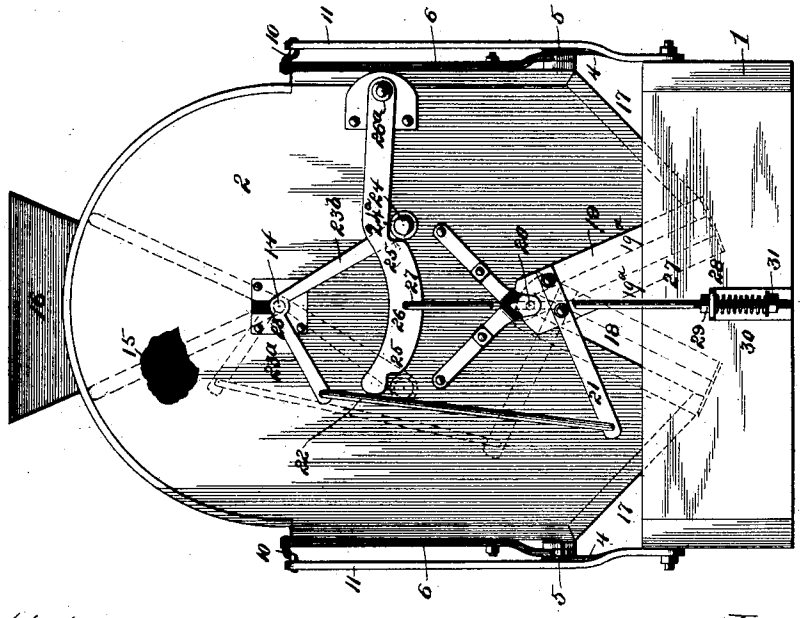


Fig. III.



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UNITED STATES PATENT OFFICE.

AUGUST H. W. DROSTE AND HENRY H. BRUNS, OF ST. CHARLES, MISSOURI.

GRAIN-WEIGHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 483,909, dated October 4, 1892.

Application filed April 12, 1892. Serial No. 428,869. (No model.)

To all whom it may concern:

Be it known that we, AUGUST H. W. DROSTE and HENRY H. BRUNS, both of St. Charles, in the county of St. Charles and State of Missouri, have invented a certain new and useful Improvement in Grain-Weighing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This may be regarded in some respects as an improvement on the weighing-machine for which Letters Patent No. 408,467 were granted to said A. H. W. Droste August 6, 1889.

The novel features of the present invention will be set forth in the claims.

Figure I is a side elevation of the machine in the receiving position, the position of the scale-beam at discharge being indicated by dotted lines. Fig. II is a top view. Fig. III is an end elevation, the shifting parts being shown in opposite position in full and dotted lines, respectively. Fig. IV is a transverse vertical section taken at IV IV, Fig. I.

1 is the fixed frame or base on which the grain-receptacle 2 is supported.

3 is the scale-beam, having two arms 3^a extending on opposite sides of the receptacle and having studs or knife-edges 3^b resting on standards 4, fixed to the frame 1. The ends of the arms 3^a give bearing to studs 5, projecting from the receptacle and supported in the end of upright bars 6, fixed to the sides of the receptacle.

3^c is the scale-arm of the beam carrying a movable weight 7, whose position is such as to exactly counterbalance the receptacle when loaded with grain. The weight is fixed in position by a set-screw 8.

9 is a stop limiting the descent of the scale-arm and consequently the ascent of the receptacle. The receptacle is guided in its vertical movements by the arms 3^a and by rods 10, connecting the upper ends of the bars 6 to the fixed standard 11. The receptacle 2 is divided by a vertical partition 12 into two compartments 13 and 13^a.

14 is a rock-shaft extending over the upper edge of the partition and parallel therewith and having bearing in the sides of the receptacle.

15 is a deflector secured to the rock-shaft and swinging from the position shown in full lines in Fig. IV to the position shown by dotted lines in the same figure. The purpose of the deflector is to carry the grain entering the mouth 16 into the compartments 13 and 13^a alternately. The compartments 13 13^a have inclined bottom boards 17. The discharge-openings 18 of the compartments extend the whole width of the receptacle and from the lower edge of the partition 12 to the lower edges of the fixed bottom boards 17. These discharge-openings are closed alternately by a swinging bottom board 19, fixed at its upper edge to a rock-shaft 20, extending across the receptacle in line with and just below the lower edge of the partition 12. The swinging bottom board always closes the compartment into which the grain is falling until the required quantity has been received, when the receptacle descends, and simultaneously the bottom board 19 swings over to the other compartment and the deflector 15 is also reversed. The swinging bottom board 19 has double flanges 19^a at its lower edge and ends overlapping the edges of the discharge-opening 18 at every place except the top, so as to prevent the escape of any of the grain, even though the fit of the parts should not be perfectly tight.

21 is an arm fixed to one end of the swinging bottom board 19, whose free end is connected by a rod 22 to one arm 23^a of a bell-crank 23, fixed to the rock-shaft 14. This connection insures the proper synchronous movement of the swinging boards 15 and 19. In order to keep the bottom board 19 closed while the compartment is filling, the other arm 23^b of the bell-crank 23 has a stud 24, that engages against the shoulder 25 of a detent-latch 26, pivoted at 26^a to the receptacle. In order to lift the latch and disengage the stud 24 as the receptacle descends, the latch has a hanging rod 27, passing through a lug 28 on the fixed frame 1. Upon the rod above the lug is a nut or collar 29, which arrests the downward motion of the latch as the receptacle descends, and thus the stud becomes disengaged from the shoulder 25, when the weight of the grain on the bottom board 19 throws the board to the bottom of the other compartment, reversing at the same time the position of the deflector-board 15.

In order to give the latch a rapid downward movent and to hold it down, the end of the rod 27 carries below the lug 28 a spring 30, whose upper end presses against the bottom of the lug 28 and its lower end upon a nut 31 on the rod 27.

The stud 24 has preferably an antifriction-roller 24^a, as shown.

We claim as our invention—

1. In a grain-weighing machine, with a grain-receptacle supported on a scale-beam and having two compartments 13 13^a for alternate use, a swinging bottom common to both compartments, an arm extending from said bottom board, a detent-lever 23, a rod connecting the said arm to the lever, and a gravitating latch 26 with shoulders engaging the stud 24 on the lever 23.

2. In a grain-weighing machine, a grain-receptacle supported on a scale-beam and having two compartments for the grain, a swinging bottom common to both compartments, an arm extending from the swinging bottom, a rod connecting the said arm to a lever, having a detent-stud, a gravitating detent-latch pivoted to a fixed point and having shoulders engaging the detent-stud in the two positions of the swinging bottom, and a rod extending from the latch to a fixed point and arresting the descent of the latch and disengaging the detent-lug on the descent of the receptacle, substantially as and for the purpose set forth.

3. In a grain-weighing machine having a receptacle supported on a scale-beam and with two compartments, a swinging bottom common to both compartments, an arm extending from said bottom connected by a rod with a lever carrying a detent-stud, a latch pivoted at a fixed point and with shoulders engaging the detent-stud in the two positions of the swinging bottom, a rod hanging from the latch, passing loosely through a fixed lug, with a stop-nut on the rod above the lug, and a spring on the rod below the lug, all constructed and adapted to operate substantially as and for the purpose set forth.

4. In a grain-weighing machine, a receptacle having two grain-compartments for alternate use, a scale-beam supporting such receptacle, a swinging bottom common to both compartments, a deflector adapted to deflect the grain into either compartment, a device, substantially as set forth, connecting the swinging bottom and deflector, an arm depending from the deflector, having a stud, a gravitating detent-latch having shoulders engaging the stud, and a device to arrest the descent of the detent-latch with the receptacle, all substantially as and for the purpose set forth.

5. The combination, in a grain-weighing machine, of a scale-beam, a grain-receptacle supported on the scale-beam and having two grain-compartments for alternate use, a swinging bottom common to both compartments, a deflector deflecting the grain into either compartment, arms on the deflector and swinging bottom connected by a rod, an arm on the deflector carrying a detent-stud, and a detent-latch adapted to hold the deflector in either position and released by the downward movement of the grain-receptacle, substantially as set forth.

AUGUST H. W. DROSTE.
HENRY H. BRUNS.

In presence of—
LOUIS H. BREKER,
ROBT. H. BLACKWELL.