(No Model.)

P. ALLEN.

AUTOMATIC GRAIN WEIGHING, BAGGING, AND REGISTERING APPARATUS.

No. 367,577. Patented Aug. 2, 1887.

Fig. 1.

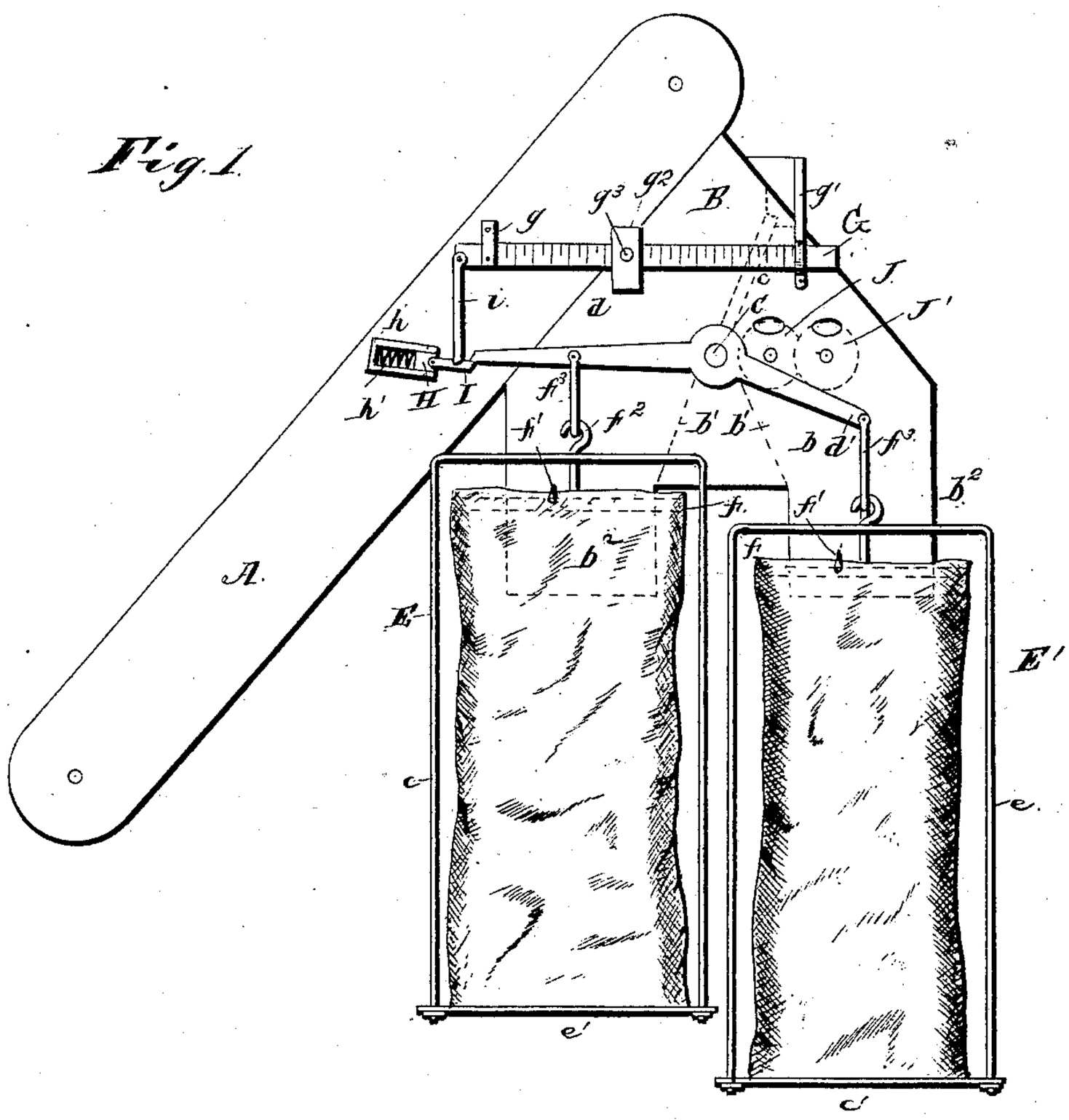
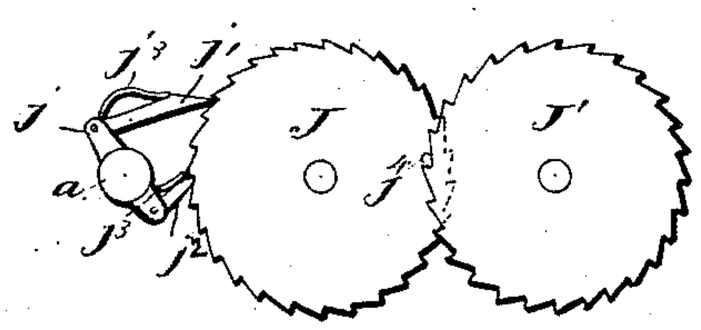


Fig. 2.



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PERRY ALLEN, OF FLINT, MICHIGAN.

AUTOMATIC GRAIN WEIGHING, BAGGING, AND REGISTERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 367,577, dated August 2, 1887.

Application filed January 6, 1887. Serial No. 223,595. (No model.)

To all whom it may concern:

Be it known that I, PERRY ALLEN, a citizen of the United States, residing at Flint, in the county of Genesee and State of Michigan, have invented a new and useful Improvement in Automatic Weighing and Registering Attachments for Thrashing-Machines, of which the following is a specification.

This invention relates to improvements in that class of weighing and registering attachments which are especially adapted for use upon grain-thrashing machines to automatically weigh out a given quantity of the grain as it passes from the thrashing-machine to the proper receptacles, and to accurately register each time a given quantity of grain—such as a bushel—is delivered; and my invention consists in the peculiar combination of devices and novel construction and arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my invention applied to the inclined elevator of a thrashing-machine. Fig. 2 is a detail view of the registering mechanism.

Referring to the drawings, in which like letters of reference denote corresponding parts in both the figures, A designates the usual inclined case of an elevator of a thrashing-machine of the ordinary well-known construction. To the upper end of this inclined case the hopper B is detachably connected by any suitable means, the upper sides of the said hopper being cut away in inclined lines which converge toward each other, the inclination of the said sides corresponding to the inclination of the case, to adapt the hopper to fit snugly against the lower side of the case. This hopper is provided with two separate passages, b, which are formed by the partitions b', which are converged toward each other and meet about midway of the hopper and at a short distance below the open sides of the mouth of the same.

A rock-shaft, C, is arranged across the hopper at the apex of the converging partitions, and this shaft is suitably journaled or supported in the hopper. The shaft is free to turn or rock in the hopper, and it carries a swinging cut-off, c, which is affixed to the shaft and extends upwardly therefrom, said cut-off being adapted to alternately fit over either of the diverging passages of the hopper, and thereby direct the grain delivered from the elevator into the hopper in the diverging passages of the latter alternately. One end of the rock-shaft is extended or projected beyond the side of the hopper, and the lever-bar D is affixed to the extended end of the shaft, so as to turn or move therewith, the rock-shaft thus serving as the fulcrum for the lever-bar.

The lever-bar is arranged in a horizontal position, and has two arms, d d', which are arranged at a slight or obtuse angle to each other, one of the arms, d, being longer than the other arm, and having its free end beveled or inclined, for a purpose presently described.

The hopper shown in Fig. 1 of the drawings has depending legs b^2, which are adapted to fit in the open mouths of the bags or receptacles supported on the depending frames E E', which are suspended from the arms of the lever-bar. Each of these frames has the vertical connected bars e, which carry the fixed horizontal platform e' at their ends, upon which platform the bag or receptacle is placed. Near the upper end of each suspended frame is located a horizontal ring or annulus, f, which is rigidly secured or affixed to the frame in any suitable manner, and this ring is provided with projecting hooks or prongs f', which are adapted to take into the upper edges of the bag, and thereby connect the latter to the ring which serves to hold the mouth of the bag distended. Each frame is provided at its upper end with hooks f^2, which take into depending links f^3, which are pivoted on one of the arms of the fulcrumed lever-bar, these links being pivoted to the arms of the lever-bar at points equidistant from the fulcrum of the lever-bar.

Steelyards G are arranged above the lever-bar, preferably on both sides of the hopper, and each steelyard is independently fulcrumed on a suitable fixed bracket, g. The free end of each steelyard works in a fixed guide, g', and on the steelyard is fitted a suitable weight or poise, g^2, which is adapted to slide on the steelyard, to weigh loads of varying heaviness, said weight having a binding-screw, g^3, for holding it from movement. A slide, H, is arranged in a suitable fixed case or frame, h, and to the outer end of the slide is pivoted a latch, I, which is normally projected into the

path of the beveled end of the long arm of the lever-bar by means of a return-spring, *h'*, which is housed in the case or frame, and presses on the slide, as shown. The free end of the latch is connected with a link, *i*, which in turn is pivoted to the shorter end of the steelyard on the opposite side of the fulcrum thereof to the poise or weight, as shown.

The operation of this part of my invention is as follows: In the position shown in Fig. 1 the cut-off is arranged over the upper end of the right-hand passage of the hopper, and the free end of the longer arm of the lever-bar is arranged above and in contact with the pivoted latch. The grain from the elevator passes into the hopper, and is directed by the swinging cut-off into the left-hand passage of the hopper, and thence into the bag or receptacle on the left-hand suspended frame, the other frame being lowered. The grain flows into this receptacle until a sufficient quantity has accumulated therein to counterbalance the weight or poise on the steelyard, when the free end of the long arm of the lever-bar is drawn down to force the pivoted latch down with it, and thus turn the steelyard on its fulcrum, the combined pressure of the lever-bar and the downward movement of the link serving to turn the latch on its pivot and force the slide and latch rearwardly, (against the tension of the return-spring,) and thereby permit the long arm of the lever to pass the pivoted latch. Simultaneously with the downward movement of the long arm of the lever-bar and the depending frame suspended therefrom, the short arm of the lever-bar and its suspended frame are elevated and the rock-shaft turned or oscillated to adjust the swinging cut-off over the previously-open passage, to close the latter and thus open the unused passage. The grain then flows into the receptacle on the elevated frame, so that the free end of the long arm is in contact with the latch until a sufficient quantity has accumulated in the receptacle to overcome the weight or poise on the steelyard, when the short arm and its frame will be borne down, the long arm forced upwardly past the pivoted latch, which yields to the arm to permit it to pass, the rock-shaft being turned to throw or adjust the swinging cut-off over the other passage.

The rock-shaft has two radial fixed arms, *j*, projecting from opposite sides of the same, and to the free ends of these arms are pivoted pawls *j' j²*, which are normally forced into engagement with teeth on a ratchet-wheel, J, by means of springs *j³*, so that one of the pawls will feed or turn the wheel one notch at each turn or movement of the rock-shaft without reference to the direction in which the shaft oscillates. This wheel J has the units inscribed thereon to denote each time scales are used, and at a suitable point near the periphery of the wheel a pin, *j⁴*, is fixed thereto, this pin being adapted to strike one of the teeth on a hundreds-wheel, J'. These units and hundreds wheels are supported on suitable shafts or arbors, and they are inclosed within the hopper, which has observation openings or slots through which the numerals on the wheels can be readily observed.

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

1. The combination of the spring-actuated slide, a fulcrumed steelyard, a latch pivoted to the slide and connected with the steelyard by an intermediate link, and mechanism for striking the free end of the latch, substantially as described.

2. The combination of a fixed case or frame, a slide working in the same, a latch pivoted to the slide, a fulcrumed steelyard, a link intermediate the latch and steelyard, an operating arm or bar arranged to strike the latch, and a spring for normally forcing the latch into the path of the arm or bar, substantially as described.

3. The combination of the fulcrumed lever-bar carrying the suspended frames, the cut-off controlled by the lever-bar, the steelyard, a latch connected to the steelyard for sustaining one end of the lever-bar when the said end is elevated, and a spring-controlled slide to which the latch is connected, substantially as described.

4. The combination of the hopper having the diverging passages, the rock-shaft carrying the cut off, the lever-bar secured to the rock-shaft and having the arms of unequal length formed at an angle to each other, the suspended frames connected to the arms of the lever-bar at points equidistant from the rock-shaft, a steelyard, and a yielding latch connected to the steelyard and arranged normally in the path of the longer arm of the lever-bar, substantially as set forth.

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