(No Model.)

A. W. BUTTS.

GRAIN SCALE.

No. 448,316. Patented Mar. 17, 1891.

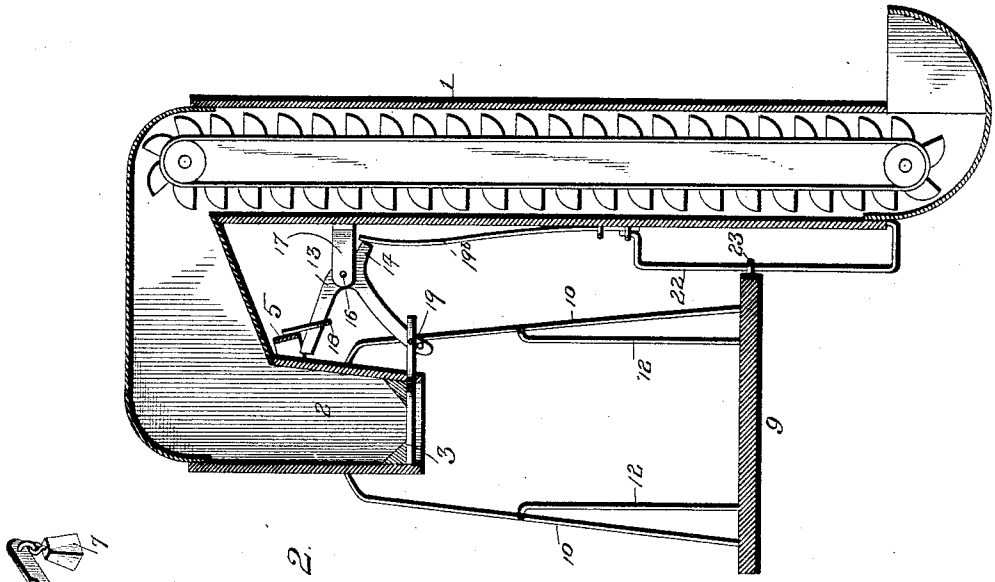


Fig. 2.

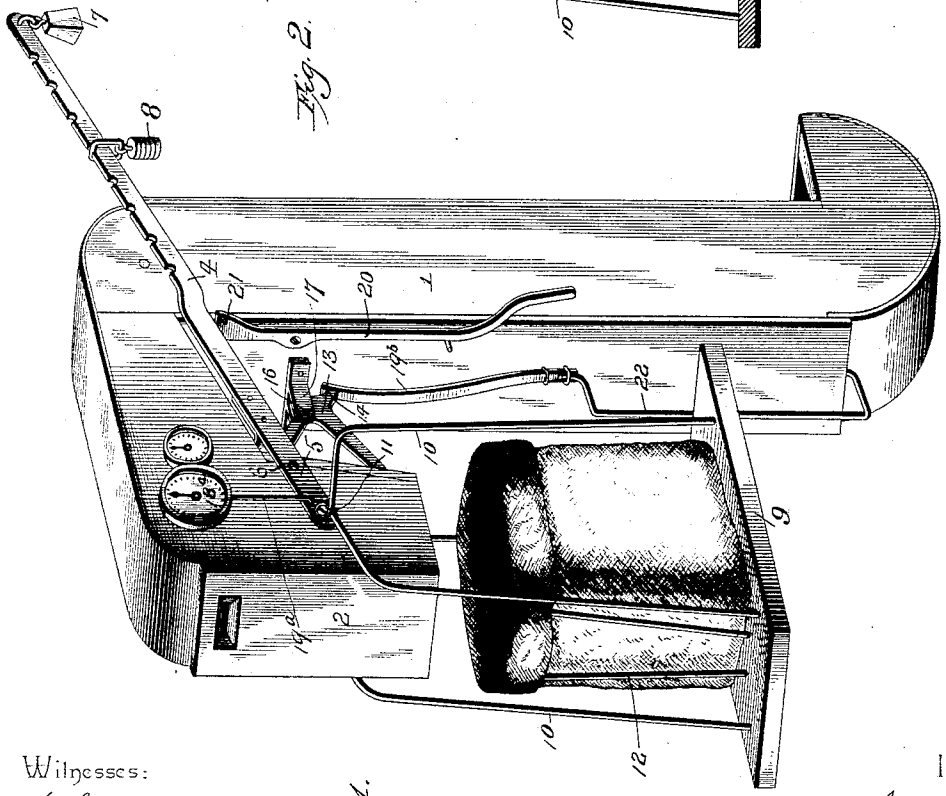


Fig. 1.

Witnesses:
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UNITED STATES PATENT OFFICE.

ALEXANDER W. BUTTS, OF CELINA, TEXAS.

GRAIN-SCALE.

SPECIFICATION forming part of Letters Patent No. 448,316, dated March 17, 1891.

Application filed June 30, 1890. Serial No. 357,246. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER W. BUTTS, a citizen of the United States, residing at Celina, in the county of Collin and State of Texas, have invented a new and useful Grain-Scale, of which the following is a specification.

This invention has relation to improvements in grain-scales, especially adapted for location at the rear end of a thrashing-machine and for receiving therefrom the thrashed grain, weighing and subsequently bagging the same in predetermined quantities.

The objects and advantages of the invention, together with the novel features thereof, will be hereinafter described, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective of a grain-scale constructed in accordance with my invention. Fig. 2 is a longitudinal vertical section of the same.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates an ordinary conveyer adapted to be attached to the rear end of a thrashing-machine and having its interior provided with an endless cup-belt for elevating the grain to the upper end of the conveyer and delivering said grain into the depending discharge-spout 2, in which said conveyer terminates. The lower end of the spout is reduced, as shown, and mounted in opposite guides below such reduced point is a reciprocating cut-off 3, the rear end of which projects beyond the wall of the conveyer.

4 designates a scale-beam, which terminates at its front end in a yoke 5, fulcrumed in rear of its end, as at 6, to the opposite side walls of the discharge-spout above the cut-off. The outer end of the scale-beam is provided with a counterpoise 7 and with a movable weight 8, the latter designed to slide upon the beam in accordance with the amount of grain to be successively weighed.

9 designates a platform, which is suspended from the free ends or terminals of the yoke by means of a pair of opposite suspension-bails 10, the upper ends of which are loosely pivoted in the ends of the yoke, as at 11. The platform 9 is also provided with a pair of vertical bag-supporting standards 12, in which a bag may be mounted and have its upper edge turned over, and thus its mouth maintained in an open position immediately under the cut-off.

13 designates a bell-crank lever provided at its rear end with a dog 14 and pivoted at its angle, as at 16, in a pair of bearing-ears 17, projecting laterally from the wall of the conveyer 1. The upper branch of the bell-crank lever loosely engages a loop 18, depending from the lower edge of the scale-beam, and the lower end or branch of said bell-crank lever is pivoted, as at 19, to the rear or extended end of the cut-off 3.

The operation of the invention is as follows: The grain carried up by the grain-elevator is delivered into the delivery-spout and passes from thence into the bag supported upon the platform underneath said spout. The weight that is influencing the scale-beam elevates the platform so that the mouth of the bag is directly under and in close proximity to the mouth of the discharge. The upper branch of the bell-crank lever is pressed upon so that its lower terminal is rearwardly moved and opens the cut-off. When a sufficient quantity of grain has passed from the delivery-spout into the bag, and its weight serves to counterbalance the weight upon the beam, said beam is tilted and the platform with the bag lowered. As the bag is lowered, the upper terminal of the bell-crank lever is elevated by reason of the fact that its connection with the beam is in rear of the point of fulcrum of the said beam, and consequently the lower end of the bell-crank lever is forced inwardly, so that a cutting off of the grain is effected. The bag is now removed and a second bag mounted in position. As soon as the bag is removed the weight serves to depress the beam and elevate the platform and, furthermore, withdraw the cut-off, whereby the filling operation recommences.

18[a] designates a register for registering the number of bushels of grain weighed, said register being operated by a connecting-rod 19[a], the lower end of which is secured to the yoke 5.

19[b] designates a flat spring secured to the conveyer and projecting upwardly and having contact with the lug or dog 14, and serves to close the cut-off. This spring exerts no tendency to raise the beam until the weight of the grain raises said beam, but simply remains inactive until the weighted end of the

beam is elevated and presses rearwardly against said spring.

20 designates a latch or lever pivoted to the conveyer and provided with a shoulder 21 designed to take under the scale-beam and prevent a depression of the same and an elevation of the platform during the operation of removing and replacing the bag.

22 designates a guide-rod secured to the wall of the conveyer, and over said rod rides an eye 23 projecting from the adjacent end of the platform, whereby the platform is guided in its vertical reciprocations.

By the lever 20 the scale-beam may be locked in a raised position and the platform in a lowered position even after the bag of grain has been removed, so that the beam will not return and elevate the platform and open the valve as soon as the bag is removed. In this way an empty bag may be substituted for a filled bag, the operator readily regulating the operation of the scale by means of the lever.

Having described my invention, what I claim is—

1. The combination, with the discharge-spout and the cut-off located at the lower end of the same, of a scale-beam terminating at its front end in a yoke pivoted between its ends to the opposite sides of the spout, a bag-supporting platform depending from the front ends of the yoke, and a bell-crank lever pivoted at its angle to the casing, connected at its upper end to the yoke in rear of its pivot and at its lower end to the end of the cut-off, substantially as specified.

2. In a grain-scale, the combination, with the overhanging discharge-spout, of a scale-beam terminating at its front end in a yoke fulcrumed on the spout and provided with a sliding weight and a counterpoise, a pair of bails depending loosely from the ends of the yoke, a platform having bag-holders supported by the bails, a cut-off mounted for sliding in the spout, a pair of bearing-ears projecting from the conveyer, a bell-crank lever pivoted at its angle in said ears, provided below its pivot with a rearwardly-disposed lug, the upper terminal of the lever loosely engaging a loop projecting from the scale-beam in rear of its fulcrum and the lower terminal of said lever being pivoted to the cut-off, and a flat spring secured to the conveyer and having its free end terminating against the lug of said lever, substantially as specified.

3. The combination, with the casing terminating in the overhanging spout and the valve located in the latter, of the scale-beam pivoted to one side of the spout, the bell-crank lever pivoted at its angle to the casing, at its upper end to the beam and at its lower end to the valve, the platform suspended from the front end of the beam, and the lever 20, pivoted to the casing in rear of the fulcrum of the beam and adapted to be swung under and support the same, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ALEXANDER W. BUTTS.

Witnesses:

A. J. RALLER,

B. C. BUCHANAN.