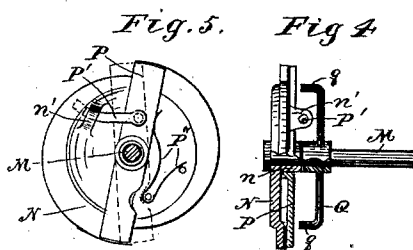
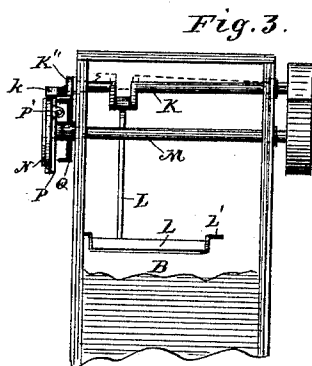
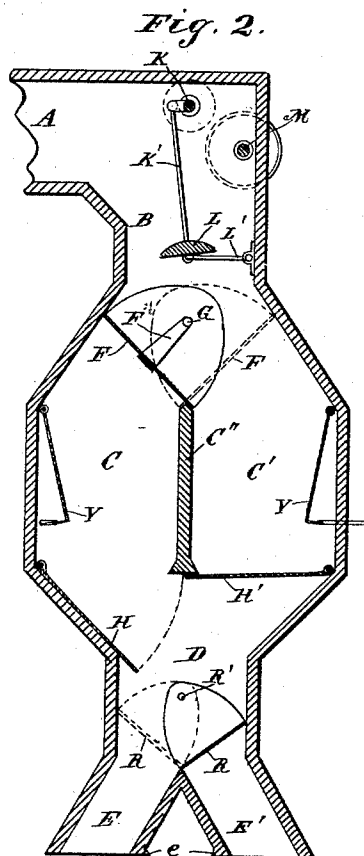
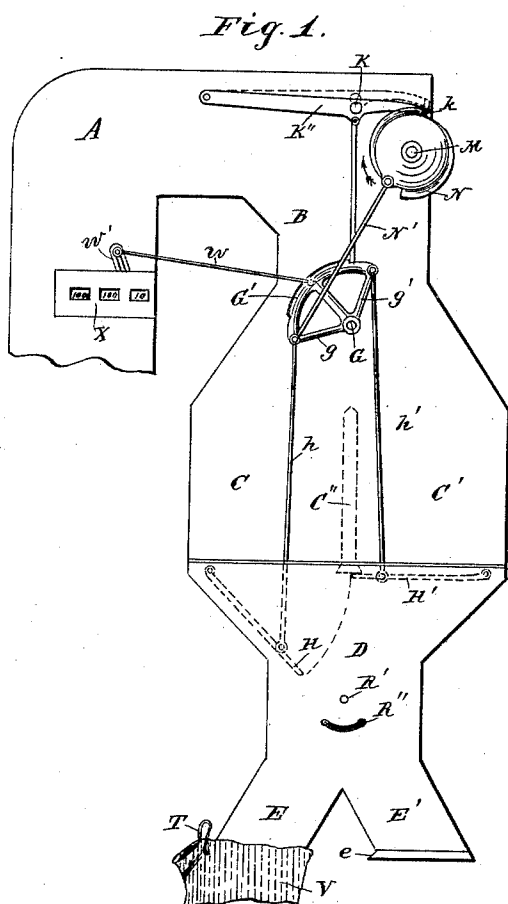


(No Model.)

G. ANDERSON.
GRAIN MEASURER AND BAGGER.

No. 468,091.

Patented Feb. 2, 1892.



Witnesses
A. H. Opsahl.
Emmett C. Moore.

Inventor.
Gustav Anderson
By his Attorney.
Jas. F. Williamson

UNITED STATES PATENT OFFICE.

GUSTAV ANDERSON, OF WELLS, MINNESOTA.

GRAIN MEASURER AND BAGGER.

SPECIFICATION forming part of Letters Patent No. 468,091, dated February 2, 1892.

Application filed March 23, 1891. Serial No. 385,954. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV ANDERSON, a citizen of the United States, residing at Wells, in the county of Faribault and State of Minnesota, have invented certain new and useful Improvements in Grain Measurers and Baggers; 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.

My invention has for its object to provide an efficient grain measurer and bagger. To this end I employ a case divided by a vertical partition into two compartments, having above the same a common feed-throat in communication with the elevator-hood or other source of supply, and having below the compartments a common discharge-waist provided with divergent discharge chutes or legs to which the bags are attached. The compartments are provided with pivoted bottoms constituting their discharge-valves, and in the throat is placed a cut-off and shunt valve for controlling the inlet of the grain to the compartments. In the discharge-waist is placed another cut-off and shunt valve to direct the grain through one of the other chutes at will. The inlet and discharge valves are connected to a common shaft, which is controlled from a forced feed located in the feed-throat, the connections being such that whenever one compartment has become filled and the grain accumulates in the feed-throat the resistance thus afforded to the forced feed will trip the valve-operating mechanism, opening the discharge from the filled compartment, closing the discharge-valve of the empty compartment, and shifting the shunt or cut-off valve to its opposite position, so as to exclude the grain from the filled compartment and direct the same to the empty compartment. The shunt-valve in the waist is controlled by hand, so as to direct the discharge into one bag or the other, as required.

In the accompanying drawings, wherein like letters refer to like parts throughout, Figure 1 is a side elevation of the invention. Fig. 2 is a vertical section of the same. Fig. 3 is an end view of a part of the case, some por-

tions being broken away; and Figs. 4 and 5 are details showing the clutching and tripping mechanism for operating the valves.

A is the elevator-hood. B is the feed-throat. C C' are the measuring-compartments divided by the partition C''. D is the discharge-waist, and E E' are the discharge chutes or legs. The various parts above specified are preferably constructed so as to be continuous within a common case, the central part of which is enlarged to give space for the two compartments.

F is the cut-off or shunt valve in the feed-throat, and is formed of a flat plate rigidly secured to the free end of a pendulum or rocking arm F', suspended from a point above the partition C''. As shown, the arm F' is a crank-arm on a transverse shaft G, provided on the exterior of the case with bell-cranks *g* and *g'*. This construction of the shunt or cut-off valve causes it to operate with an upward and outward sweep from the head of the partition C''. Hence from the time it begins to move an opening is formed into the empty compartment and the upward stroke on the filled compartment acts like a striker, leveling the grain and throwing the excess over into the empty compartment.

H H' are the pivoted bottoms or discharge-valves, and *h h'* are connections from the free ends of the same to the crank-arms *g g'* on the shaft G.

K is a packer-driving crank-shaft at the head of a feed-throat, at least one end of which is mounted in sliding bearings, so that the shaft is free to rise or fall therein.

L is the pivoted packer supported from the pivoted bail L' and driven from the crank-shaft K by the connecting-rod K'.

M is the valve-driving shaft, also located in the head of the feed-throat, adjacent to but lower than the packer-shaft K.

N is a cam-crank, loosely mounted on the shaft M, having a pair of cam-surfaces on its periphery, with their notches or shoulders at diametrically-opposite points.

N' is a connecting-rod from the cam-crank N to one of the crank-arms *g g'*. The cam N is provided with an extended hub *n*. On this hub is loosely mounted a trip-lever P, having

a pivoted arm or pawl P', which works through a lug n' on the face of the cam. This trip-lever is under tension from a spring P'', which tends to throw the arm P' outwardly radially to its limit.

On the shaft M, adjacent to the cam N, is a clutch-arm Q, rigid with the shaft, having fingers q projecting toward the face of the cam-disk.

On the packer-driving shaft K is a hook-detent K'', which projects from the shaft into position to engage with the cam-surfaces on the disk. The engaging-lip $\frac{1}{2}$ of this detent is of a breadth to strike not only the shoulder of the cam, but also the adjacent face of the trip-lever P. Normally this detent engages the cam-shoulder and trip-lever and holds the arm P' inward to its limit against its retracting-spring P''. When the grain accumulates in the feed-throat, so as to form a resistance to the pivoted packer L, the shaft K will be lifted thereby and the detent K'' lifted out of engagement with the cam-shoulder, and the trip-lever will then be thrown outward, bringing the pawl P' into the path of the projecting fingers q of the clutch-arm Q. The disk will then be rotated with the shaft for a half-revolution, operating the valves. The accumulated grain in the feed-throat having passed to the empty compartment, the packer-shaft will fall into its normal position, permitting the detent to engage with the shoulder of the other cam, holding the trip-lever and the valves in their normal position, as at the start. When the other compartment is filled, the trip-lever is again permitted to escape, the disk is revolved for another half-revolution, and the valves are operated in a reverse direction.

R is the shunt-valve in the discharge-waist, depending from the shaft R', which projects through the face of the case and is provided with a crank-arm R''. This shunt-valve operates similar to the cut-off valve F by an upward sweep from the dividing angle between the discharge-legs. The discharge-legs are provided on their extremities with angular flanges e, which afford the supports for the bags, the margin of the mouth of the bag being drawn

around these ledges and the lap taken up at one corner by a spring-clamp T.

V represents a part of the bag in position. As shown, the crank-arms g and g' on the shaft G are connected by a segment G', to which is attached connecting-rod W, connected at its other end to a rock-shaft W', which may be used to operate a registering device. (Indicated at X.)

Y represents take-up devices for varying the capacity of the measuring - compartments. These take-up devices are in the form of plates, pivoted to the walls of the compartment, provided with outturned flanges at their lower ends working through slots in the walls of the case, the friction between the flange and the slot being relied on to hold the plate in any desired position.

The operation has already been described.

What I claim, and desire to secure by Letters Patent, is as follows:

1. The combination, with the inlet and discharge valves, of the crank-shaft having connections with said valves, the pivoted packer and packer-driving shaft mounted in sliding bearings, the valve-driving shaft, the loose cam-crank on said valve-shaft, the connecting-rod from the same to the crank-shaft, an automatic clutching device for rendering the cam rigid with the valve-shaft, and a retaining device extended from the packer-shaft to hold the cam-crank releasable by the accumulation of grain under the packer, substantially as described.

2. The combination, with the shaft G, of connections to the inlet and discharge valves, the shaft M, the loose cam-crank N, the pivoted packer L, the sliding packer-shaft K, with connection K' to the packer, the detent K'', the clutch-arm Q, and the pivoted trip-lever P, with clutch-locking arm P', working through the lug n', and the spring P'', substantially as described.

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

GUSTAV ANDERSON.

Witnesses:

BERT BILLINGS,
T. W. WOODARD.