(No Model.)

R. C. LIVINGSTON.

GRAIN MEASURING APPARATUS AND SACK HOLDER.

No. 335,940. Patented Feb. 9, 1886.

Fig. 3.

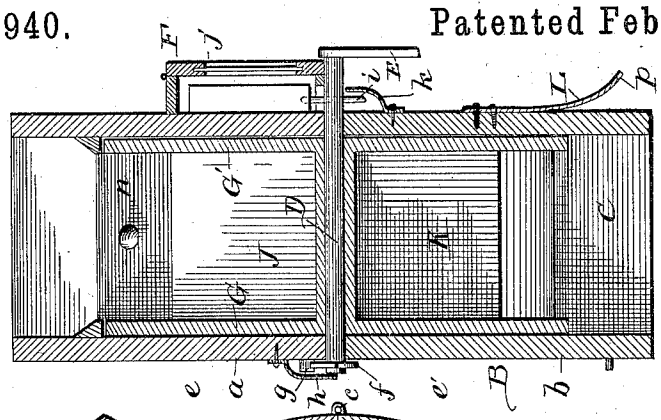


Fig. 2.

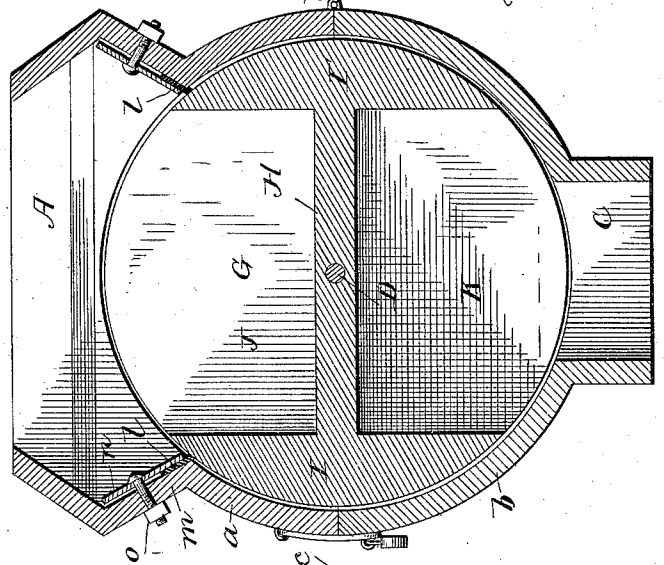
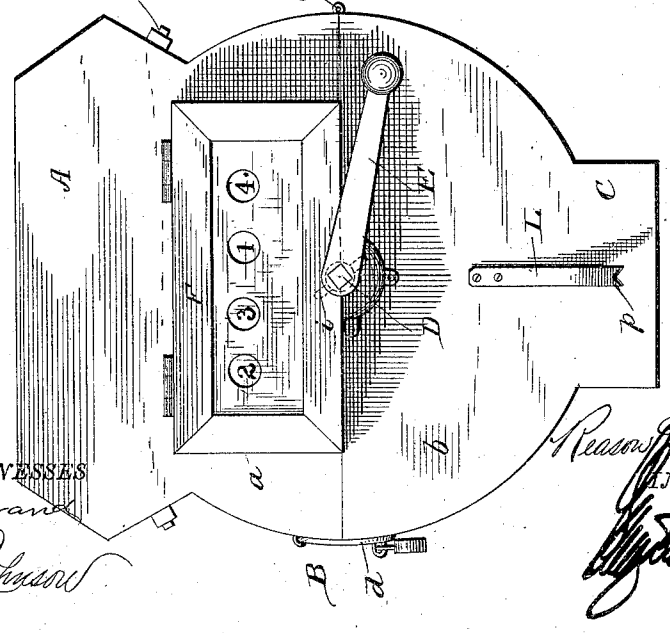


Fig. 1.



WITNESSES

F. L. Ourand

E. M. Johnson

Reason C. Livingston.

INVENTOR

Attorney

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

REASON C. LIVINGSTON, OF SPRING VALLEY, MINNESOTA.

GRAIN-MEASURING APPARATUS AND SACK-HOLDER.

SPECIFICATION forming part of Letters Patent No. 335,940, dated February 9, 1886.

Application filed September 17, 1885. Serial No. 177,380. (No model.)

To all whom it may concern:

Be it known that I, REASON C. LIVINGSTON, a citizen of the United States of America, residing at Spring Valley, in the county of Fillmore and State of Minnesota, have invented certain new and useful Improvements in Grain-Measuring Apparatus and Sack-Holders; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to grain-measuring devices; and it consists in the improvements hereinafter fully set forth and expressed, whereby a device is provided that is comparatively simple and inexpensive in construction, and useful and durable in operation, the said improvement combining both the features of a bag-holder and grain-measuring device.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of a device embodying my improvements. Fig. 2 is a longitudinal section, and Fig. 3 a transverse vertical section of the same.

The casing of the improvement is so constructed as to present at its upper part a receiving-hopper, A, and central circular portion, B, and a discharge chute or opening, C. The side casing is formed of two parts, *a b*, which are hinged together at one side by hinge devices *c*, and are securely locked together at the other side by a suitable locking device, *d*. The plates *e e'* of the upper and lower sections of the casing are each centrally notched, so as to jointly form circular openings, in which bears a central transverse shaft, D, the ends of which project beyond the outer faces of said side plates, and one of said ends projects more than the other, in order to receive an operating-crank, E. The shorter projecting end of said shaft D has rigidly secured thereon a ratchet-wheel, *f*, the teeth of which are designed to be engaged by a pawl, *g*, secured on the adjacent outer face of the plate *e*, the said pawl and ratchet being both protected by means of a depending housing, *h*, secured on the side plate. The other projecting portion of the shaft D is provided with a pin, *i*, which passes diametrically through said shaft, and is designed to contact with and operate the registering mechanism located in the case F, secured on the side of the plate *e* above. The front of the said case F is provided with a transparent panel to exhibit the register-numbers, and the said front is hinged at its upper end to afford access to said registering means.

k refers to an upwardly-extending housing secured on the outer face of the lower plate, *e'*, and designed to protect the operating-pin *i* of the shaft above. Two circular plates, G G', are rigidly mounted upon the shaft D in close proximity to the sides of the case, and the said plates are centrally connected together by a transverse horizontal plate, H, centrally pierced by the shaft D. Arc-shape sections I I' connect the plates G G' together at the ends of the central plates, H, and the said central and arc-shape plates form jointly the circular drum provided with two receptacles, J K.

By referring to Fig. 2 of the drawings it will be observed that the curved edges and figures of the said plates G G' and arc-sections I I' are located within the casing at just barely sufficient distance to prevent any friction of the surfaces with the interior face of the casing. Under these circumstances the grain, when fed from the hopper through the receptacle to the drum, would partially enter the space between the outer surfaces of the arc-sections I I' and the inner face of the casing, thereby creating friction and seriously impeding the free revolution of the drum. To overcome this I provide two transverse rubber strips, *l l'*, each of which are clamped against one of the lower inclined end pieces, *m*, of the hopper by means of a plate, *n*, secured in position by a bolt passing through same, through said inclined portion, and held in place by means of the nut *o*. It will be understood that the edges of the rubber strip project sufficiently beyond the face of the casing to prevent any grain from working down between the sections I I' to the said casing; but the said rubber strips do not interfere with the free movement of the drum. It will be readily understood that inasmuch as the rubber strips *l l'* are held in position by the clamp-plates *n*, the securing-bolts of the latter may be readily operated to release said plates, to

permit a change in the position of the strips relative to the drum. As it is necessary that the rubber strips be in close proximity to said drum, they will become more or less worn, which can be remedied by changing their position. The frictional contact of said strips may be increased or decreased, according to the character of the grain measured. The curved spring L is secured on the side of one of the plates *e'*, so as to depend downwardly and outwardly, the lower extremity of said spring being notched to present spurs *p*.

In operation the chute is inserted into the mouth of a bag, which will be held thereon by means of the pressure exerted by the spring, the spur *p* engaging the bag material to prevent the bag from slipping off the chute. The grain is then fed into the hopper A and passes into the uppermost receptacle, which may be of a fixed capacity—say one-half bushel. The shaft D being then revolved by means of a crank-handle, the drum will be rotated so as to reverse the position of the receptacles J and K and invert receptacle J, so as to discharge its contents out to the chute C into the bag or receptacle beneath. The said relation of the shaft D brings the other projecting portion of the pin *i* into position, causing the same to operate the registering mechanism. When it is necessary to secure access to the drum or remove the same, the locking device *d* may be disengaged and the upper section, *a*, of the casing thrown back out of position. By providing the pawl and ratchet *f g* the rearward rotation of the drum and consequent disarrangement or alteration of the registering device is prevented. To release the bag from the chute, it is only necessary to press the spring L inward.

I claim—

1. The combination, in a grain-measuring device, of a casing provided with a circular portion, and shaft centrally piercing said circular portion and provided with a drum containing grain-measuring receptacles, the end portions of which are formed by arc-sections I I', and adjustable rubber strips *l l'*, clamped at each end of the hopper, substantially as set forth.

2. The combination, in a grain-measuring device, of a casing composed of upper and lower sections, *a b*, hinged together at one side and provided at the other with a locking device, a shaft passing transversely through said casing and carrying a drum having grain-measuring receptacles, and an operating-crank for said shaft, substantially as set forth.

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

REASON C. LIVINGSTON.

Witnesses:
ASA R. BURLESON,
MILLIE ELLITHORP.