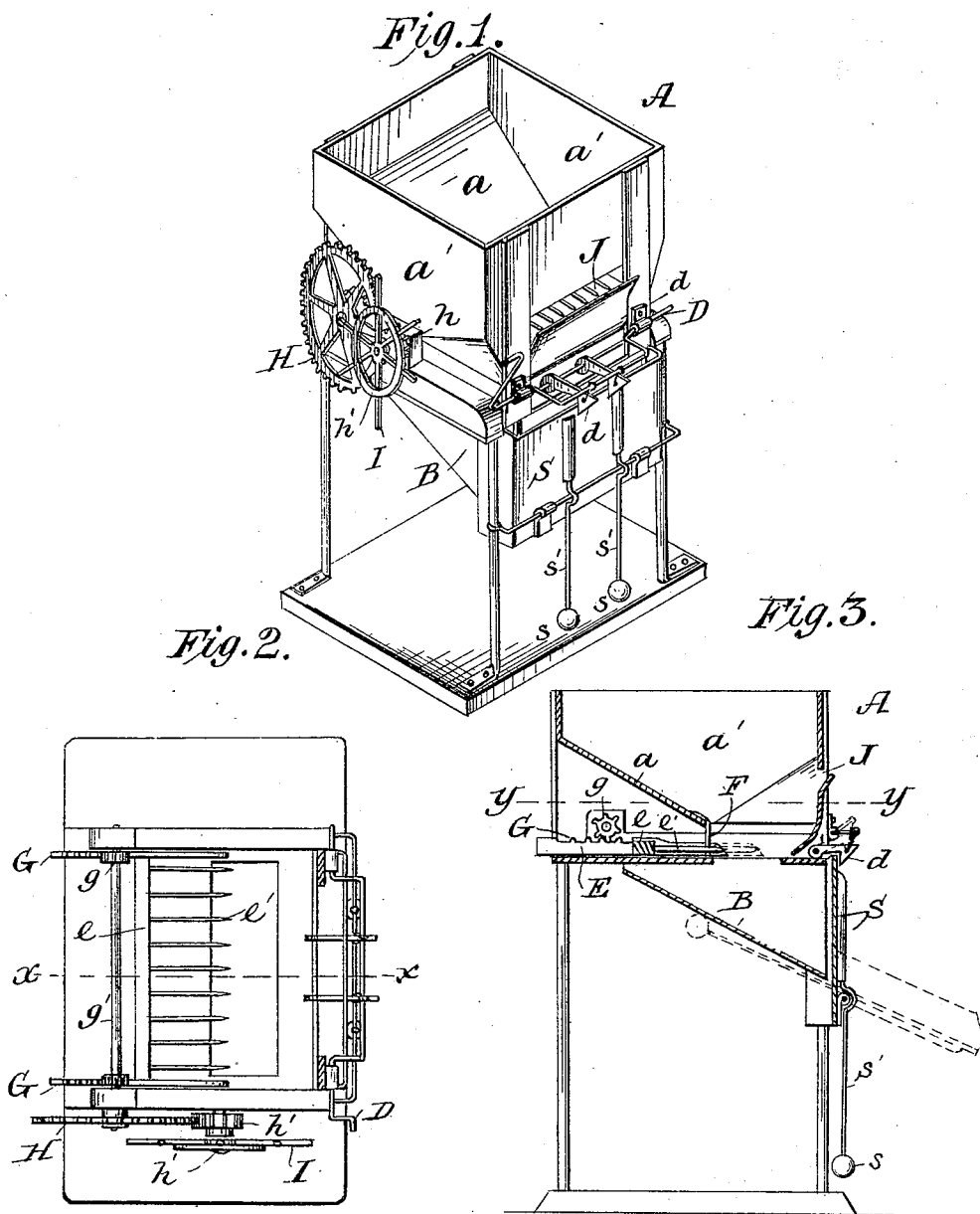


(No Model.)

W. WALKER.
COAL OR GRAIN BIN.

No. 450,267.

Patented Apr. 14, 1891.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM WALKER, OF SCANDIA, KANSAS.

COAL OR GRAIN BIN.

SPECIFICATION forming part of Letters Patent No. 450,267, dated April 14, 1891.

Application filed June 5, 1890. Serial No. 354,392. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WALKER, a citizen of the United States, residing at Scandia, in the county of Republic and State of Kansas, have invented certain new and useful Improvements in Coal or Grain Bins; 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.

This invention relates to an improved storage and dumping bin for coal or grain.

The object of this device when used for coal is to save the labor of handling the coal over as many times as is done under the present system, instead of unloading the coal into storage-bins placed down upon the ground (as at present) as it comes from the miner and then reloading it again and running it up onto the elevated roadway, there unloading it again on platforms, and from there shoveling into chutes or dumps as needed. With this device the storage-bins are built on an elevated platform beside an elevated track and the coal is placed in the elevated bins as it comes from the mines. At intervals along and beneath the bin chutes or dumps are constructed for the purpose of receiving from the storage-bin above a given amount of coal as may be required to furnish each engine such an amount as the engine may wish. The cut-off is placed between the top of the chute or dump and the bottom of the storage-bin, and when the operator draws the cut-off or gate the coal in the bin will fall into and fill the chute or dump. When the chute or dump is filled, he then stops the flow of coal by shoving the cut-off through the coal, so that when the chute or dump is opened to supply the engine there will not any more coal pass to the engine than what the chute contains. When used for grain-bin, the object of this device is to measure the grain that may be loaded into cars or other vehicles by placing the cut-off at a given point above the bottom of the bin, which space shall contain such amount as may be desired. When this bin is filled and it is desirable to load out the grain, the operator shoves the cut-off forward and through the grain, and by so doing he prevents all grain passing into

the car, excepting that which remains beneath the cut-off. He then opens the cut-off, lets the grain pass down, and fills the measure again, and repeats the operation until the car is filled. This device saves a large expenditure of money for track or hopper scales used at elevator grain-houses and coal-stations.

The improvement consists of the novel features and peculiar construction and combination of the parts, which hereinafter will be more fully described and claimed, and which are shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a storage-bin embodying my invention. Fig. 2 is a horizontal section on the line Y Y of Fig. 3. Fig. 3 is a vertical section on the line X X of Fig. 2, showing the operation of the cut-off and the chute by dotted lines.

The storage-bin A is of usual construction, having a slanting bottom *a* and a vertical side *a'* opposite the said slanting bottom. Beneath the bin is located the chute B, which inclines from its upper end. The lower or front end of the chute is open, and is normally closed by the hinged door S, which when opened forms an extension of chute B. The upper end of door B overlaps the lower end of chute B and is counterbalanced by the weights *s*, which are attached to the arms *s'*. The purpose of the weights is to automatically close the door after the substance, coal or grain, has entirely passed from the same. The catches *d* engage with the door S and hold it shut against the pressure of the substance confined in the chute and are connected with the crank-shaft D, which is journaled near its end to the front end of the storage-bin by the links *l*.

The slide or cut-off E divides the space between the bin proper and the chute and serves to close the bottom of the said bin A, and may be closed or opened, as required. For grain and similar commodities it is preferred to have the cut-off made closed, thereby holding the grain in the bin; but for coal and such like substances it is preferred to have the cut-off made open, whereby it will penetrate the same when closing. The cut-off as constructed to be used for coal is composed of the cross-bar *e* and teeth *e'*, which are secured

at their inner ends to the said cross-bar *e*, the front ends of the teeth being free and sharpened to better penetrate the substance. A guard is provided to prevent the coal clogging or wedging between the teeth *e'*, and is composed of a series of bars *F*, which pass between the teeth *e'* and are secured at their upper ends to the slanting bottom *a* of the bin. The cut-off is provided with rack-bars *G*, which project rearwardly therefrom. The pinions *g* on the shaft *g'* mesh with the rack-bars *G* and serve in the rotation of the shaft *g'* to move the cut-off to and fro across the space between the storage-bin and the chute. The gear-wheel *H* on the outer end of the shaft *g'* meshes with the pinion *h* on the shaft *h'*, which is provided at its outer end with the hand-wheel *I*. Obviously by rotating the hand-wheel *I* the cut-off through the gearing just described will be moved fore and aft, as required.

Provision is had to prevent choking in the bottom of the storage-bin by the openings *J* in the front side *a'* of the bin. These openings are arranged close to the bottom of the bin and a suitable instrument may be thrust therethrough to loosen the coal when required. When the bin is to be used in the capacity of a measure, the compartment formed beneath the storage-bin by chute *B*, hinge-door *S*, and the cut-off may be of a given capacity corresponding with the amount of grain to be measured, as will be readily appreciated.

The operation of the invention is as follows: The grain, coal, or other commodity to be stored is placed in the bin *A*, and when a given quantity is required the cut-off is drawn back by the mechanism hereinbefore specified, thereby permitting a filling of the compartment beneath the bin. After the said compartment is filled the cut-off is projected forward and the crank-shaft *D* is operated to disengage the catches *d* from the door *S*, when the pressure of the confined substance or commodity will force the door open and glide down the chute and over the said door *S* and

be received in the vessel or other receptacle placed to receive the same. After the said compartment has been completely emptied the door *S* will close automatically by reason of the weights *s*, when the bin will be in condition for a repetition of the operation just described.

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

1. The combination, with the storage-bin having a measuring-compartment below and forming part thereof, the bottom *B* of the measuring-compartment being inclined to the horizontal and the said compartment being open at its front side, and a cut-off between the bin and the measuring-compartment, of a door hinged near its lower end adjacent to bottom *B* and adapted to open outward and form an extension thereof, the catches *d*, and the crank-shaft *D*, having loose connections with the said catches, substantially as specified.

2. The hereinbefore-specified storage-bin having openings *J* in its front side and having a measuring-compartment beneath and forming part thereof, the bottom *B* of said compartment being inclined to the horizontal and having the front side of the compartment open, the door *S*, hinged near its lower end in line with and having its rear portion adapted to overlap the bottom *B* and having its sides flanged, the weighted arms projected rearwardly from door *S*, the catches *d*, the crank-shaft *D*, having loose connections with the catches *d*, the cut-off between the bin and measuring-compartment having rearwardly-extending rack-bars, and the shaft having pinions to mesh with the said rack-bars, substantially as and for the purpose described.

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

WILLIAM WALKER.

Witnesses:

ALLIE C. SMITH,
JAMES MCGOWAN.