

(Model.)

J. BOARDMAN.
BUCKET ELEVATOR.

No. 266,082.

Patented Oct. 17, 1882.

Fig. 1.

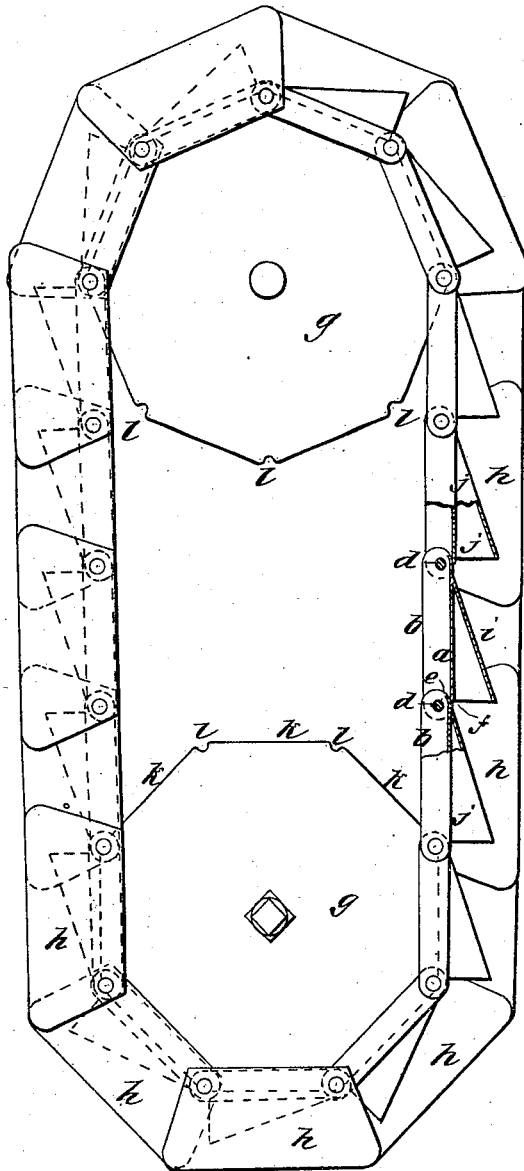
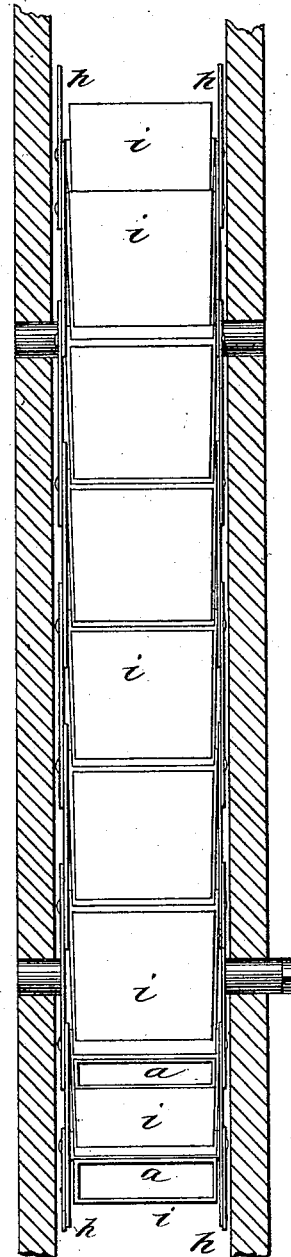


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES BOARDMAN, OF HAYWARD, DAKOTA TERRITORY.

BUCKET-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 266,082, dated October 17, 1882.

Application filed June 5, 1882. (Model.)

To all whom it may concern:

Be it known that I, JAMES BOARDMAN, of Hayward city, in the county of Pennington and Territory of Dakota, have invented a new and Improved Bucket-Elevator, of which the following is a full, clear, and exact description.

The invention consists of improvements in the construction of bucket-elevators, or carriers for elevating crushed ore from the ore breaker or crusher to the bins above for distribution to the stamps, and for carrying grain and for other like purposes, whereby it is designed to prevent fine sand and other hard substances from getting in the joints, and to provide substantial and durable construction of the same, as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a side elevation of my improved elevator with a part shown in section, and Fig. 2 is a vertical sectional elevation of the same.

I make a carrier consisting of plates *a*, having flanges *b*, turned over at the edges and connected in an endless chain by pivot-rods *d*, the said plates being curved at one end, *e*, that is overlapped by the end *f* of the next plate, so that with the lapping of the flanges *b* of the sides of said plates, as shown, the said joints are made sufficiently close to exclude fine gravel, sand, and the like from getting inside to wear the joints and clog the drums *g* and the carrier thereon. Besides the side flanges *b*, I also apply plates *h* outside of them, and being wider than the buckets, to permit the material from being thrown over the sides of the buckets to the space within the carrier.

The buckets consist of the joint-plates *i* and side plates *j*, attached to the carrier plates *a*, which form the back to said buckets. The carrier is mounted on the drums *g*, which have faces *k*, corresponding in length with the length of the plates *a* and grooves *l*, at the angles for the pivot-rods *d* of the joints. I prefer to make the drum with six or more sides.

In the present construction the plates *a* are a little taper from end to end, so that the side flanges, *b*, will enter at one end between the flanges at the wide end of another plate; but in practice it will be best to make the plates of even width from end to end, and set the ends of side flanges, *b*, in dies by expanding

them at one end and contracting them at the other end for lapping together. I propose also to cast the plates *a* and flanges *b* all together, and in that case will shape the flanges suitably for lapping. I will also cast the side plates *h* together with plates *a* and flanges *b*.

For carrying grain the machine may be arranged in horizontal position, or nearly so, and in that case supporting-rollers may be arranged at suitable intervals along the carrier to hold it up in line; but the carrier is more especially intended for use in ore-crushing mills, for which it is intended to provide a practicable means of elevating ore from the ore-breakers to the bins, in order that the breakers may be located low down on a solid foundation, instead of the present arrangement of placing them in an elevated position so as to discharge the ore directly into the bins, which is practiced for want of a practicable apparatus for elevating the ore, but which is objectionable because of the severe jars of the breakers, that are unavoidable by the elevated position.

It will be noticed that in the passage of the buckets around the drums the side flanges, *b*, of the buckets overlap the sides of the drums, which facilitates the proper seating of the connecting-rods in the grooves *l* of the drums and the smooth working of the entire apparatus.

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

1. The endless carrier for bucket-elevators, consisting of plates *a*, having flanges *b* and curved ends *e*, and being lapped at *e* *f* and on the flanges *b*, and connected by pivot-rods *d*, substantially as described.

2. The combination of bucket-plates *i* and *j* with carrier-plates *a*, having flanges *b* and curved ends *e*, and being lapped and pivoted together, substantially as described.

3. The combination, with the drums *g*, grooved at *l*, of the carrier-buckets, having flanges *b*, which overlap the sides of the drums, substantially as described.

4. The combination of side plates *h* with the endless chain of buckets and carrier therefor, substantially as described.

JAMES BOARDMAN.

Witnesses:

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H. I. BOSWELL.