L. GALLAHER.

Elevators for Water, Grain, or Earth.

No. 196,348. Patented Oct. 23, 1877.

Fig. 1.

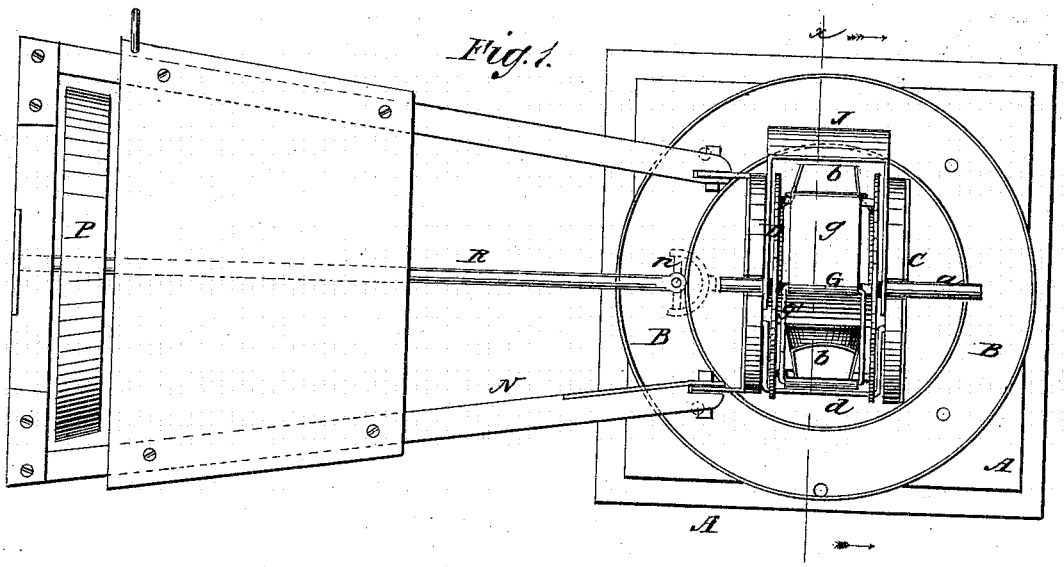
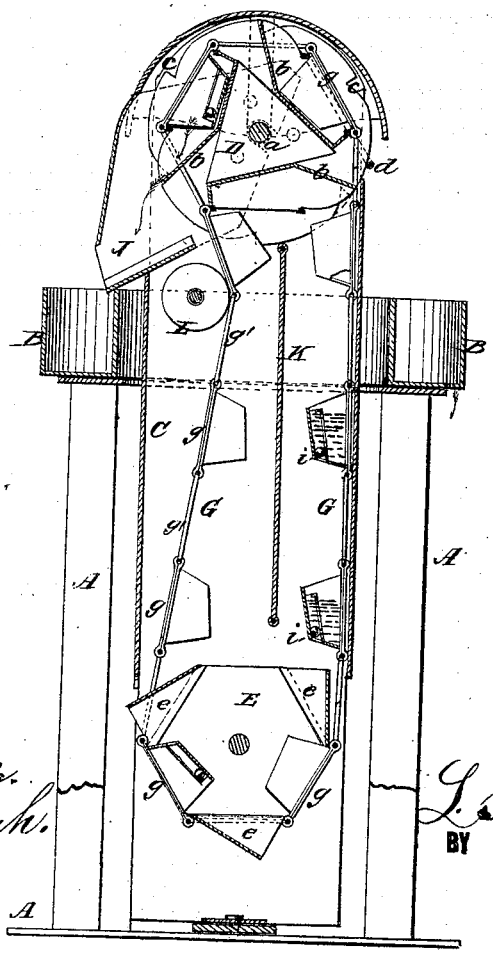


Fig. 2.



WITNESSES:

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LEVI GALLAHER, OF BUSINESSBURG, OHIO.

IMPROVEMENT IN ELEVATORS FOR WATER, GRAIN, OR EARTH.

Specification forming part of Letters Patent No. **196,348**, dated October 23, 1877; application filed June 4, 1877.

To all whom it may concern:

Be it known that I, LEVI GALLAHER, of Businessburg, county of Belmont, and State of Ohio, have invented a new and useful Improvement in Elevators, of which the following is a specification:

This invention relates to machinery for raising water, grain, earth, &c.; and the nature of my invention consists in combining, with an endless chain of lifting-buckets which are connected together by open links, a lower drum having scoops or dippers fixed to it, which supply the buckets of the chain with water or other material to be raised, as will be hereinafter explained.

The invention also consists in constructing the upper drum with chutes, which are so arranged that they will necessarily register with the buckets of the chain, and guide the water into a suitable receiver, as will be hereinafter explained.

The invention also consists in an endless chain of buckets, and the drums thereof applied in a frame, which is allowed to revolve, whereby a wind-wheel or a horse-power may be adapted for rotating the drums, as will be hereinafter explained.

Other features of my invention not above referred to will be hereinafter fully described.

In the annexed drawings, Figure 1 is a top view of my improved elevator, showing a traction-wheel and pivoted sweep applied for using the power of a horse to operate it. Fig. 2 is a section taken vertically through the machine in the plane indicated by dotted line *x* in Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

The letter A designates a suitable frame for supporting the elevating mechanism, and also an annular trough, B, which receives the elevated material. C designates a rectangular shaft, which is stepped on the base of the frame A, and guided above by the annular trough B, so that it is free to turn about its vertical axis. At the upper end of the shaft C is a triangular drum, D, applied on an axis, *a*, and constructed with chutes or spouts *b*, arranged equidistant from each other, and set at an angle, as shown in Fig. 2. The circular flanges of the drum D are notched or shouldered, as shown at *c*, to engage with a pivoted bail, *d*, which prevents the drum from being turned backward. At the lower end of the shaft C is a hexagonal drum, E, which is constructed with three scoops or dippers, *e*, arranged equidistant apart, with spaces between them, as shown in Fig. 2. G designates an endless chain of lifting-buckets, secured to rectangular backs *g*, which are connected together by open links *g'*. The shape of the buckets and the length of their backs and connecting-links are such that they will exactly correspond to the two drums D and E, so that during the revolution of these drums the scoops or dippers *e* will assist in filling the buckets, and the chutes *b* will conduct the water from them and discharge it through a spout, J, into the trough B. The buckets are all applied on the inner side of the chain, and they are successively received into the spaces between the dippers and chutes of the two drums as these drums rotate. Each bucket of the chain is provided with an air-vent through its bottom, which is closed by a small ball-valve, *i*, applied in a suitable cage. This will allow air to escape from the buckets during their descent into the water. K is a vertical partition, which is fixed to the sides of the shaft A between the ascending and descending portions of the chain of buckets, and L is a roller, which causes the descending portion of the chain of buckets to hug closely to the drum D at the spout J.

It will be seen that by mounting the elevator so that it will rotate freely, a wind-wheel may be applied to it, so as to edge or face freely to the wind. Should it not be desired to use wind-power, a sweep, N, may be pivoted to the shaft C, and the power of a horse used to operate the elevator, in which case a traction-wheel, P, will be used, mounted on a circular track, and applied on a shaft, R, that is coupled by a universal joint, *n*, to the shaft of drum D, as shown in Fig. 1.

When convenient the driving-power may be applied to the shaft of the lower drum.

Having thus fully described my invention,

I claim as new and desire to secure by Letters Patent—

1. In combination with an endless chain of lifting-buckets, a drum, L, constructed with scoops or dippers *e*, substantially as described.

2. In combination with an endless chain of buckets, a drum, D, constructed with discharge-spouts *b*, substantially as described.

3. A shaft, C, carrying an endless chain of lifting-buckets and drums therefor, and made horizontally adjustable about its axis, in combination with an annular trough, *g*, substantially as described.

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Witnesses:
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