(No Model.)

M. A. SHEPARD.

ELEVATOR AND CONVEYER.

No. 304,241. Patented Aug. 26, 1884.

Fig. 1

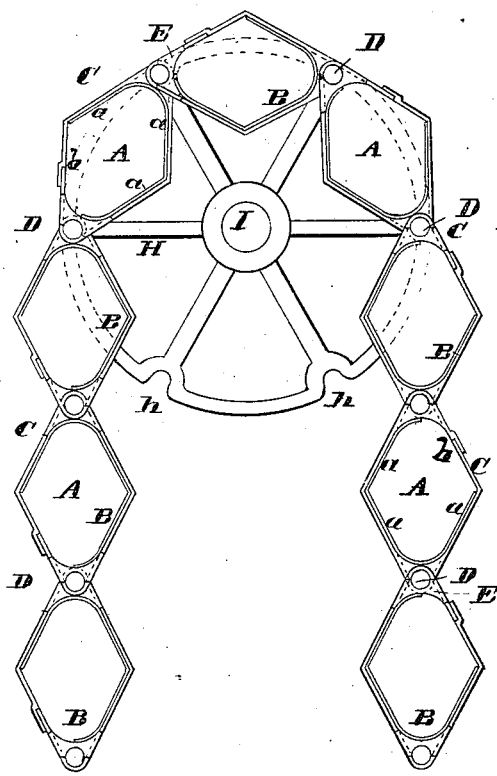


Fig. 2.

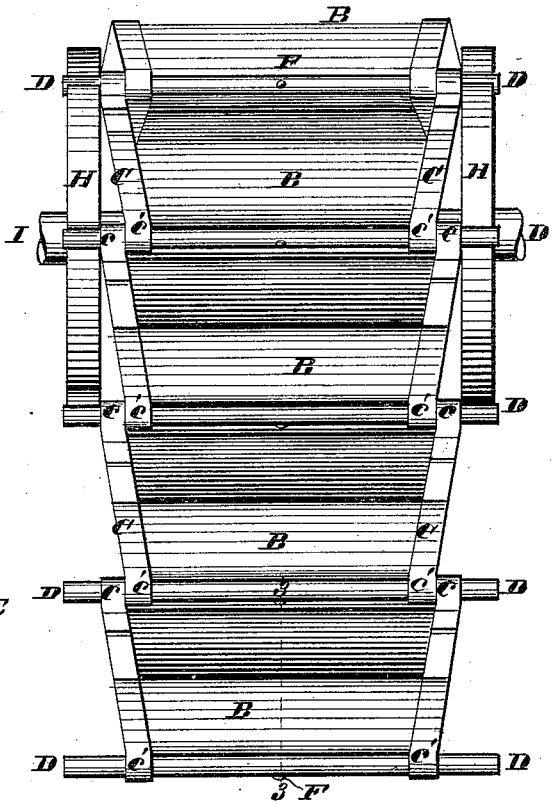


Fig. 3.

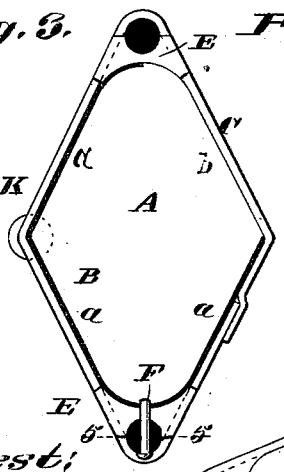


Fig. 5.

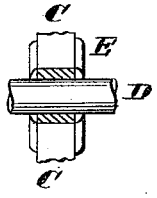


Fig. 4.

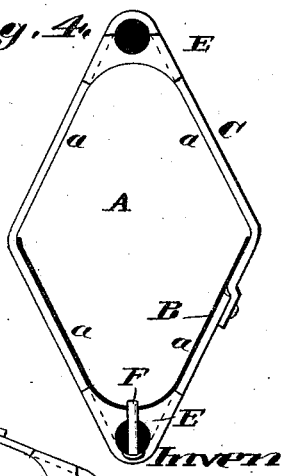
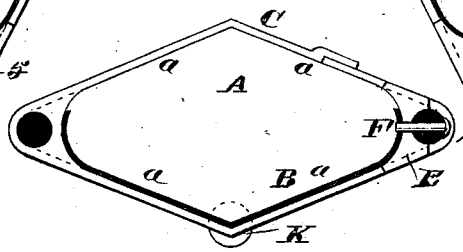


Fig. 6.



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UNITED STATES PATENT OFFICE.

MORRILL A. SHEPARD, OF LEBANON, ILLINOIS.

ELEVATOR AND CONVEYER.

SPECIFICATION forming part of Letters Patent No. 304,241, dated August 26, 1884.

Application filed January 24, 1884. (No model.)

To all whom it may concern:

Be it known that I, MORRILL A. SHEPARD, of the city of Lebanon, in the county of St. Clair and State of Illinois, have invented a certain new and useful Improvement in Elevators and Conveyers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Reference is made to the claims for statement of the invention.

Figure 1 is a side view of a portion of the elevator, showing one of the driving-wheels. Fig. 2 is an elevation of the device shown in Fig. 1. Fig. 3 is an enlarged section of one of the elevator-buckets at 3 3, Fig. 2, said bucket being adapted for either a horizontal conveyer or for a vertical or inclined elevator. Fig. 4 is a transverse section of the bucket in form suited for elevator. Fig. 5 is a transverse section through the hinge at 5 5, Fig. 3. Fig. 6 is a transverse section through a bucket suitable for conveying earth, grain, or any solid material.

The elevator or conveyer is composed of a number of similar buckets hinged together in an endless chain with suitable supporting and propelling machinery.

I will first describe the construction of the buckets.

A A are end pieces, that may be made of wood, as shown, and will be so described, although iron or other suitable material may be used. The ends A are shown of diamond form.

B is a trough bent to fit two or three edges, *a*, of the pieces A, and secured to the edges, so as to form the sides of the bucket.

C C are metal straps overlying the ends of the plate B and surrounding the pieces A, as shown. At the acute corners of the buckets are the coupling or pintle rods D, which have bearing in the inner corners of the straps C, and against a metal box, E, inserted beneath the strap at the corner of the pieces A, as shown in Figs. 3, 4, and 6. The pintle-rod has upon it a lug or teat, F, that enters a hole in the plate B, so as to prevent endwise movement in the rod, the elasticity of the rod allowing it to be sprung outward for the insertion of the teat F. In order to prevent the lateral movement of one bucket relatively to the bucket to which it is hinged, the strap-loops *c c* of one bucket are outside the loops *c' c'* of the other bucket. I prefer for the loops *c*, that are upon the outside, to be at the forward side of each bucket, and the inside loops, *c'*, to be at the rear end, the end pieces, A, being set a little nearer together at the rear or lower side. This construction is not, however, essential. In a vertical conveyer or elevator the trough B is fitted to the two lower sides, *a a*, (see Fig. 4,) whereas in a horizontal conveyer the trough is fitted to the two under sides *a a*. (See Fig. 6.)

In Fig. 3, where the bucket serves both to carry the material both horizontally and vertically, the trough B is secured to the three sides or edges *a a a* of the end pieces, A, leaving only the side *b* open for the entrance and exit of material. The endless conveyer is supported at each bend in its course upon wheels H at the inner side of the bend. (See Figs. 1, 2.) One or more of the pairs of wheels are drive-wheels, the other or others being merely for the purpose of keeping the conveyer in position.

The wheels H are set in pairs upon a shaft, I, and having recesses *h*, the ends of pintle-rods D extending from the recess of one wheel to an opposite recess of the other wheel. The distance of the wheels asunder equals or exceeds the length of a bucket.

To ease the movement of the conveyer and to lessen wear, each bucket may have supporting-wheels K, that may be flanged or grooved to fit them to travel on rails or cables.

The form of bucket shown in Fig. 4 is adapted to the elevation of solids or liquids, either in a vertical direction or at an inclination, while the buckets, as shown in Fig. 6, are adapted to be filled with solid matter from above and to carry the same horizontally or in an inclined direction. The buckets constructed as shown in Fig. 3 are not as readily filled as the others, but have the advantage of being equally applicable to horizontal or vertical movement. The contents may be easily discharged from the buckets of either form by simply tilting them or inverting them, which is done at the commencement of the return movement.

The parts A, B, and C of the buckets may be secured together by nails or screws passed

through the parts C and B into the ends A. Where the ends A are of metal these parts may be secured by screws in substantially the same manner. Where the ends are made of metal the straps C may be dispensed with and the loops be in form of lugs cast on the end pieces.

I claim as my invention—

1. An elevator or conveyer bucket composed of the end pieces, A, side plate, B, and strap C, forming hinge-loops *c*, substantially as set forth.

2. The combination, in an elevator or conveyer, of the buckets composed of the described end pieces, A, with plate B, bent at an angle on one or more lines and extending on one or more of the edges *a* of the end piece, the straps C, having loops *c*, and the pintle-rods D, substantially as set forth.

3. The combination, in an elevator or conveyer, of buckets hinged together by pintle-rods D, extending beyond the buckets, and bearing wheels H, with recesses receiving the ends of the rods D, for the purpose set forth.

4. The buckets A B C, connected by rods D, and supporting-wheels K, substantially as and for the purpose set forth.

5. An elevator or conveyer bucket having ends A, with corner loops or lugs for attachment to buckets on either side, and side plate, B, secured to the end pieces, A, for the purpose set forth.

MORRILL A. SHEPARD.

Witnesses:
J. A. SHEPARD,
C. M. BECK.