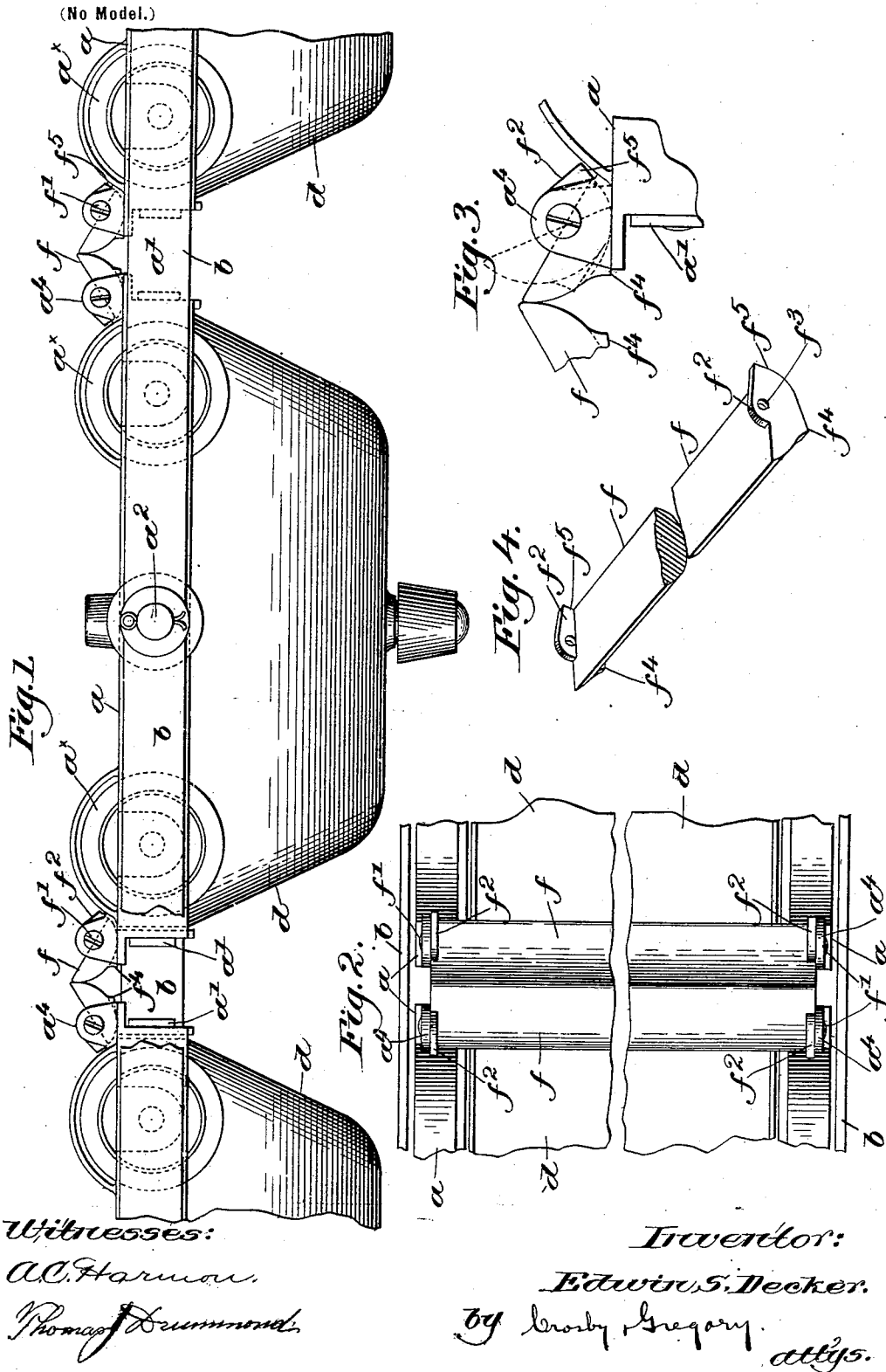


No. 630,803.

Patented Aug. 8, 1899.

E. S. DECKER.
ENDLESS CONVEYER.

(Application filed June 10, 1896.)



UNITED STATES PATENT OFFICE.

EDWIN S. DECKER, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE STEEL
CABLE ENGINEERING COMPANY, OF MAINE.

ENDLESS CONVEYER.

SPECIFICATION forming part of Letters Patent No. 630,803, dated August 8, 1899.

Application filed June 10, 1896. Serial No. 594,965. (No model.)

To all whom it may concern:

Be it known that I, EDWIN S. DECKER, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Endless Conveyers, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to apparatus for handling coal, grain, and the like by means of endless conveyers; and it has for its object the production of an improved conveyer the buckets of which are provided with means for closing the space between adjacent buckets, more particularly as they pass the loading device.

In another application filed by me July 25, 1895, Serial No. 557,068, I have shown and claimed a swinging or pivotally-mounted overlapping device which changes its position when necessary sufficiently to permit the buckets to swing past each other in rounding the ends of the runs, so that the buckets themselves do not have to tip or change their positions.

My present invention is an improvement on the construction forming the subject-matter of said application; and it consists in certain details of construction and arrangement, as will be hereinafter fully described, and particularly pointed out in the claims.

Figure 1, in side elevation and partly broken out, represents a sufficient portion of a conveyer embodying my invention to enable the same to be understood. Fig. 2 is a top or plan view, centrally broken out, of the adjacent ends of two buckets with the overlapping devices. Fig. 3 is a detail in side elevation, enlarged, showing the position assumed by one of the overlapping devices as one bucket swings past the other; and Fig. 4 is a perspective view, centrally broken out, of one of the overlapping devices detached.

I have herein shown each bucket as mounted in a frame composed, essentially, of sides a and end or cross bars a' , rigidly bolted together and provided with four suitable carrying-wheels a^x , arranged to travel upon tracks or runs (not herein shown) in the usual manner. The sides are provided with studs a^2 , Fig. 1, projecting outwardly at

right angles therefrom at their centers, to receive the ends of links b , the two lines of links forming sprocket-chains that constitute one type of endless connection with the buckets between them, while the pivots a^2 are engaged by the usual sprocket-wheels at the ends of the runs, substantially as in the application referred to. To the ends a' of the frames are hinged or pivoted the members d d of the buckets, adapted to swing about pivots which are substantially parallel to the direction of travel of the buckets, to open or close, the bucket members being so shaped that when they come together they form a complete open-top bucket.

The buckets are usually filled from a hopper as they pass beneath the discharge-opening thereof, and the spaces between the buckets must be closed at such time to avoid losing anything, and for this purpose each bucket is provided with a suitable overlapping device or lip f , preferably one of such devices being located at each end.

I have shown the side frames as provided with upturned ears a^4 , one at each end, to form bearings for the axes or pivots f' of the overlapping members f . Preferably the members f are castings, plano-convex in cross-section, with their plane surfaces uppermost and having upturned portions f^2 , provided with suitable holes f^3 , Fig. 4, to receive the pivots f' , and forward of its axis on its convex face each of the members f has a flattened shoe f^4 , one at each end, to engage the top of the frame side a and limit tipping movement of the lap f in one direction, as in full lines, Fig. 3. At their rear sides the upturned portions f^2 are substantially tangent to the curved surface, as at f^5 , to serve as stops when the members f are tipped up into dotted-line position, Fig. 3.

By referring to Figs. 1, 3, and 4 it will be seen that the pivotal supports of the lap members f are eccentrically located, so that normally said members will drop outwardly by gravity, extending part way over the space between two adjacent buckets, the two members f on the adjacent bucket ends resting the one against the other with their convex faces in engagement. The space between the buckets is thus closed, the plane faces of

the lap members inclining in opposite directions and extending entirely across the end bars *a'*, the inner longitudinal edges of said faces preferably extending over the bucket ends. Any of the material falling from the hopper onto the lap members will be directed thereby into one or the other of the adjacent buckets, and when the apparatus is set up the links *b* are of such length that one or both of each pair of engaging lap members will be slightly tipped up, so that the shoes or stops *f*⁴ will not rest on the sides of the bucket-frame. As the parts wear the buckets will separate slightly, so that finally the lap members will normally rest upon the shoes *f*⁴, and I thus obviate the formation of a space between the members after the apparatus has been in use some time. When the buckets are rounding the usual sprocket-wheels at the ends of the runs, the rearmost lap member *f* on each bucket lifts or tips the cooperating member on the adjacent bucket, swinging it up into dotted-line position, Fig. 3, the latter dropping by gravity to its normal position as soon as the buckets have assumed their normal positions.

The overlapping members are equally well adapted to be used with buckets of other form or construction than that herein shown, for the buckets may be hung on transverse pivots in their frames provided the inner edges of the lap members do not overlap the bucket ends sufficiently to prevent the buckets from swinging freely.

By my present invention the buckets may rise or fall as may be necessary in rounding the ends of the runs without tipping.

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

1. In an apparatus of the class described, a plurality of buckets, combined with cooperating lap members pivotally mounted at the adjacent ends of successive buckets, to normally cover the space therebetween, substantially as described.

2. In an apparatus of the class described, a plurality of buckets, combined with cooperating lap members eccentrically pivoted in fixed bearings at the adjacent ends of successive buckets, to normally cover the space therebetween, substantially as described.

3. In an apparatus of the class described, a bucket, and a lap member plano-convex in cross-section pivotally mounted at the end of the bucket and normally extending beyond it, substantially as described.

4. In an apparatus of the class described, a plurality of buckets, combined with cooperating lap members pivotally mounted at the adjacent ends of successive buckets, and stops to limit the pivotal movement of said lap members, substantially as described.

5. In an apparatus of the class described, a series of bucket-frames, buckets arranged therein, fixed bearings on the frames at each end thereof, lap members pivotally mounted in said bearings and normally extending beyond the frames, the under engaging faces of the lap members being convexed, and stops on the said members, to engage the frames and limit pivotal movement of the members, substantially as described.

6. In an apparatus of the class described, a plurality of buckets, combined with cooperating lap members pivotally mounted at the adjacent ends of successive buckets, and means to maintain said members with their upper flat faces oppositely inclined, substantially as described.

7. In a conveyer having buckets and connections for uniting the buckets in endless series, the combination with the buckets, of lips, pivots connecting the lips near the edges of the buckets, and means for limiting the movements of the lips on their pivots and allowing them to return automatically to their normal positions, substantially as specified.

8. In a conveyer having buckets and connections for uniting the buckets in endless series, the combination with the buckets, of lips, pivots for connecting the lips near both the edges of the buckets, and means for limiting the movements of the lips on their pivots and causing them to return automatically to their normal positions, substantially as specified.

9. In a conveyer having buckets and connections for uniting the buckets in endless series, the combination, with the buckets, of lips, pivots for connecting the lips near the edges of the buckets, and stops for limiting the upward movements of the lips on their pivots, so that they may return automatically to their normal positions, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWIN S. DECKER.

Witnesses:

JOHN C. EDWARDS,
EMMA J. BENNETT.