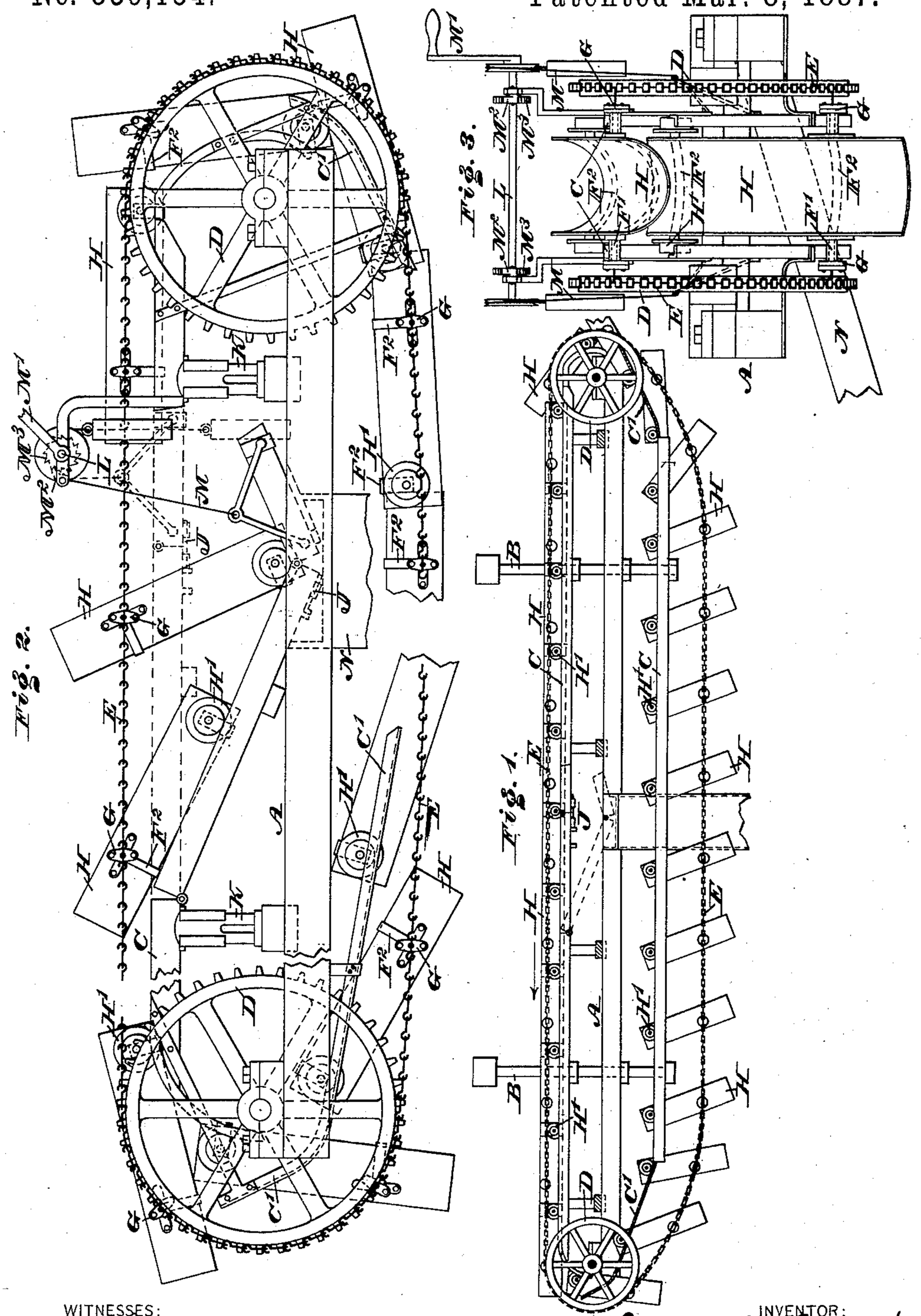
(No Model.)

L. D. HOWARD.

CONVEYER FOR GRAIN, ORE, COAL, OR EARTH.

No. 359,154. Patented Mar. 8, 1887.



WITNESSES:
L. Douville
W. F. Fischer

INVENTOR:
Lyman D. Howard.
BY John A. Wiedersheim
ATTORNEY.

UNITED STATES PATENT OFFICE.

LYMAN D. HOWARD, OF PHILADELPHIA, PENNSYLVANIA.

CONVEYER FOR GRAIN, ORE, COAL, OR EARTH.

SPECIFICATION forming part of Letters Patent No. 359,154, dated March 8, 1887.

Application filed March 29, 1886. Serial No. 197,053. (No model.)

To all whom it may concern:

Be it known that I, LYMAN D. HOWARD, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Conveyers for Ore, Coal, Grain, &c., in Bulk, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a side elevation of a conveyer embodying my invention. Fig. 2 represents a side elevation thereof on an enlarged scale. Fig. 3 represents an end view thereof.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a conveyer possessing novel features embodying the construction of the troughs and means for supporting the same, and the provision for dumping the load either at the end or side of the conveyer.

Referring to the drawings, A represents the frame of the conveyer, which is suspended from the hangers B, or may be otherwise supported.

C represents two tracks, which are connected with the frame A, and located, respectively, above and below said frame or adjacent thereto, the ends of the tracks being in communication by means of guides C′, whereby the pans or troughs employed may pass from the upper to the lower track, and vice versa.

D represents sprocket-wheels, which are mounted on the end of the frame A, and around the same is passed an endless chain or belt, E.

H represents troughs having open ends, one end of each of which is attached to the chain by means of gudgeons G, which are secured to the links of the chain and journaled in bosses F′, which project laterally from the sides of the troughs, near the ends thereof. The other end of the trough is mounted on rollers or wheels H′, which run on the tracks C, it being seen that the weight of the trough is superimposed on the tracks. In practice the bosses F′ are placed at a point one-third the length of the trough back from the forward end, thus permitting a trough equal in length to the diameter of the sprocket-wheel D to pass around the ends of the conveyer. The upper tracks are formed in sections hinged together, whereby they may be lowered and raised, as shown in Fig. 2, or otherwise opened and closed, and provided with bolts or latches J, whereby the sections may be connected as one and rendered immovable.

The upper track, on which the loaded troughs run, is firmly sustained by means of pedestals K, which rise from the frame A and are vertically adjustable, so as to raise the upper track, when so required, and prevent sagging of the same.

Supported on the frame A is a drum or windlass, L, around which passes a cord, M, which is attachable to either of the tracks, said drum being adapted to rotate in one direction by means of a crank-lever, M′, pawl M^2, and ratchet M^3, in order to raise the tracks, in which it is assisted by a weight secured to the cord M.

Connected with the frame A is an inclined chute, N, which is located below the upper track at any point where there is an opening section of the conveyer, between the ends thereof, and extending laterally for discharging loads at the side.

The troughs are so disposed on the chain E that when they occupy the upper track the forward end of one trough overlaps the rear end of the adjacent trough, it being noticed that the weight of the troughs is superimposed upon said track, and the chain E is employed merely to commuicate motion to the troughs, the overlapping arrangement of the troughs forming a continuity of the same, avoiding gaps or spaces in the length of the series of troughs, permitting the use of long troughs, and consequently obviating the use of a large number of troughs; it also being noticed (see Figs. 1 and 3) that the front ends of the troughs are suspended on the rear ends of the adjacent troughs, avoiding the use of rollers or wheels at both ends of the truck, and forming virtually a system of four-wheel trucks, yet permitting the troughs to run around the sprocket-wheel with considerable freedom.

Around the sides and bottom of the troughs are bands F^2, which are at or near the ends thereof, one of the bands having the bosses F′ connected with it, and the other band carries the journals of the wheels or rollers H′, said bands being riveted to the troughs and serving to brace and strengthen the same. When power is applied to either of the sprocket-wheels, the chain is advanced and the troughs

move therewith, the load then being placed on the troughs that are above. When the trough reaches the end of the conveyer, the gudgeons of the trough pass around the sprocket-wheel with the chain thereon, and the wheels of the trough ride on the guides C′, the trough gradually overturning and dumping the load at the end of the conveyer. The empty trough returns on the lower track, being sustained thereon, and by means of the opposite guides C′ again reaches the upper track.

It will be noticed that the troughs supported by the track, whether going in either direction—forward with a load on the upper track or returning on the lower track—form a support for the chain or pulling medium, and the troughs will carry the chain on a line with the periphery of the sprocket-wheels, or above or below, as desired.

Should it be desired to dump the load at the side of the conveyer, the latches of the portions of the upper track over the chute N are released when the loaded troughs are thereat, and the pawl M^2 is then lifted, whereby the troughs drop (see Fig. 2) and the load is directed into the chute N.

The tracks can be again raised and latched, and the troughs subsequently advancing may be reloaded and dumped at the end of the conveyer, or the side thereof, as desired.

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

1. In a conveyer, a frame having adjustable upper and lower tracks secured thereto, in combination with end guides, substantially as described.

2. In a conveyer, a frame having upper and lower tracks, the upper track being formed in sections hinged together and provided with fastening devices, all combined and arranged substantially as described.

3. In a conveyer, a frame having a sectional track adjustably secured thereto, in combination with means, substantially as described, for raising or lowering the adjacent sections of said track, substantially as and for the purpose set forth.

4. A conveyer having upper and lower tracks, end guides, and troughs open at both ends and overlapping, the said troughs being provided with rollers, all substantially as described.

5. In a conveyer, a frame with a sectional track having adjacent sections hinged together, means, substantially as described, for raising or lowering said sections, and an inclined chute located on the side of said sections and at the junction thereof, all of said parts being combined and arranged substantially as and for the purpose set forth.

6. A conveyer having upper and lower adjustable tracks, end guides, and troughs having rollers adapted to run on said tracks, an endless chain secured to said troughs, and means to operate the said chain, all substantially as described.

7. In a conveyer, the sectional hinged track having fastening devices, in combination with means, substantially as described, secured to the frame of the conveyer, for raising or lowering the adjacent sections of said track, all combined substantially as described.

L. D. HOWARD.

Witnesses:
JOHN A. WIEDERSHEIM,
E. L. CLARK.