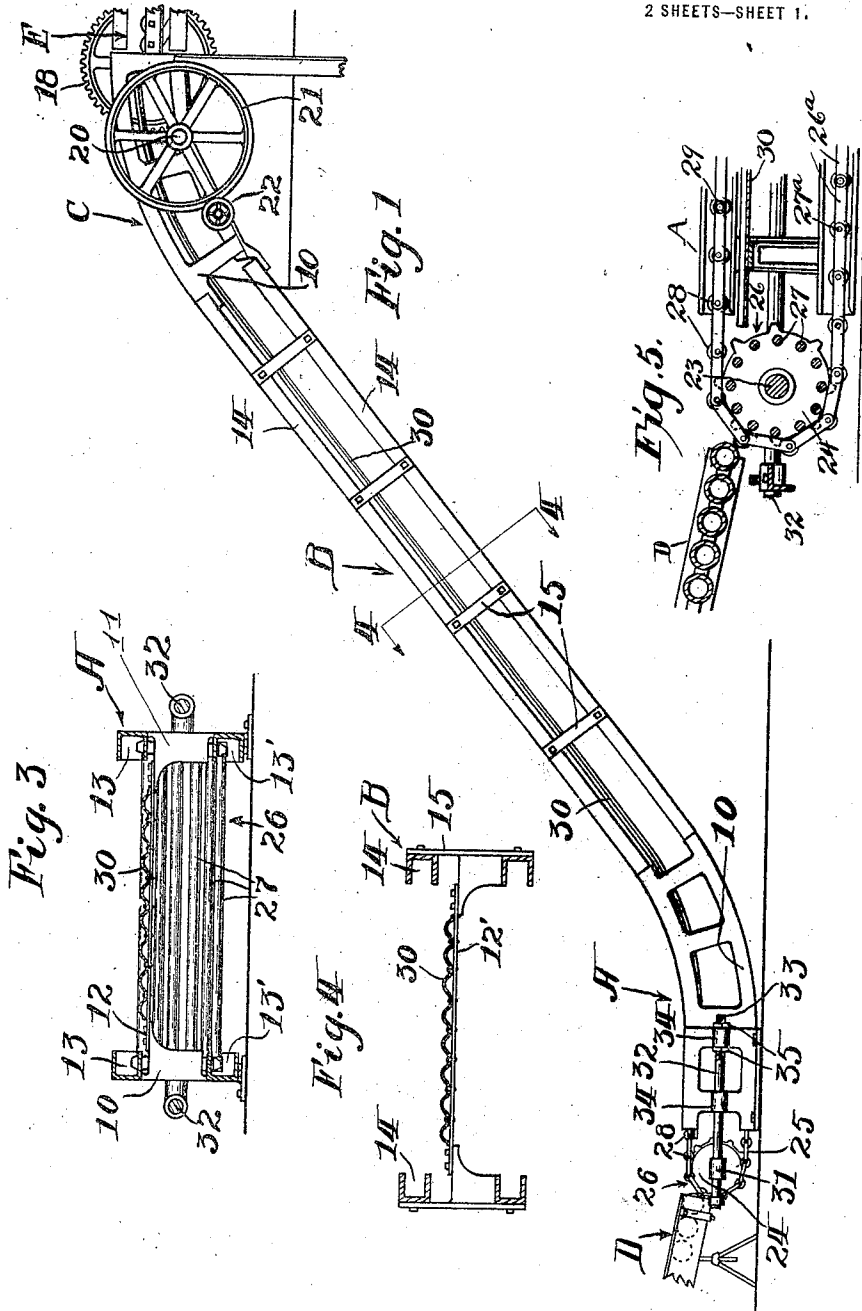


C. H. LISTER.
 INCLINED ELEVATOR.
 APPLICATION FILED JAN. 21, 1915.

1,200,508.

Patented Oct. 10, 1916.
 2 SHEETS—SHEET 1.



Witnesses
 R. A. Fischer
 H. Caswell

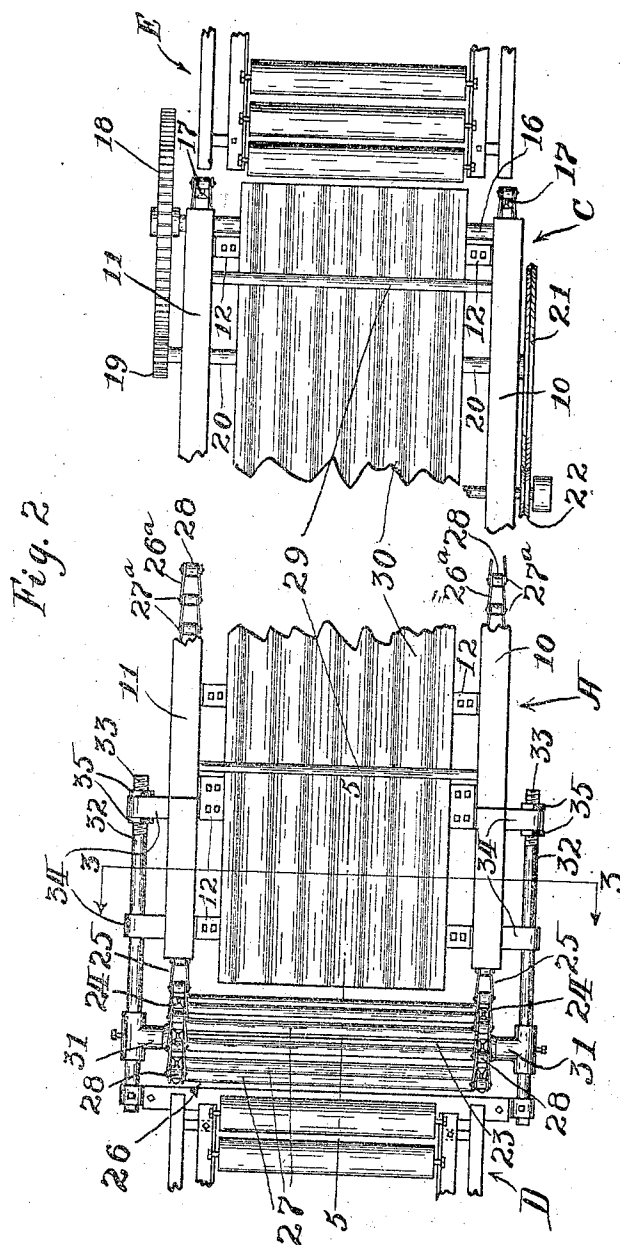
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UNITED STATES PATENT OFFICE.

CHARLES HENRY LISTER, OF NORTH ST. PAUL, MINNESOTA.

INCLINED ELEVATOR.

1,200,508.

Specification of Letters Patent.

Patented Oct. 10, 1916.

Application filed January 21, 1915. Serial No. 3,500.

To all whom it may concern:

Be it known that I, CHARLES HENRY LISTER, a citizen of the United States, residing at North St. Paul, in the county of Ramsey and State of Minnesota, have invented new and useful Improvements in Inclined Elevators, of which the following is a specification.

My invention relates to improvements in inclined elevators.

Its object is to provide an inexpensive, durable and efficient device for transferring articles from a lower to a higher elevation, said device being supplied with improved and novel means for transferring boxes, packages, or other objects from a gravity carrier to the elevator track without injury.

A further object is to provide in an elevator of this kind a simple and inexpensive stationary track or floor upon which objects may be conveniently retained and moved.

A further object is to provide improved carrying mechanism for elevators of this type, having means for easily adjusting the tension thereof.

In the drawings Figure 1 is a side elevation illustrating my improved elevator and showing portions of adjacent conveyers; Fig. 2 is an enlarged fragmentary plan view thereof; Fig. 3 is a sectional view taken on the line 3—3 of Fig. 2, the chains being omitted to permit a view of certain other parts; Fig. 4 is a sectional view in detail taken on the line 4—4 of Fig. 1, and Fig. 5 is a vertical sectional view in detail taken on the line 5—5 of Fig. 2.

Referring to the accompanying drawings, I have used the reference letter A to indicate the curved receiving section of the frame of the elevator; B the inclined intermediate section thereof and C the curved delivery section of said frame.

D indicates a feeding conveyer of the ordinary gravity type for moving articles to the elevator and E designates a similar conveyer for receiving articles from the upper end of the elevator. Each of the frame sections A and C comprises right and left castings indicated by the numerals 10 and 11. Said castings are united in parallel relation by the bars 12 and are formed with upper and lower channeled ways 13 and 13' upon the inner sides thereof. The ways of one section communicate with the respective ways of the other section through channel bars 14, which are secured in parallel

relation by the tie bars 15 and spacing bars 12', all of which form the intermediate section B of the elevator frame. A revoluble shaft 16 on the section C is supplied with sprocket wheels 17, and with a gear wheel 18. This gear wheel meshes with the gear wheel 19 on the countershaft 20 in said frame section and a friction wheel 21 on said countershaft bears against the power-driven friction wheel 22. The section A is also provided with a revoluble shaft 23, having sprocket wheels 24 thereon. An endless traveling chain 25, consisting of links 26, joined by pins 27, having roller bearings 28 thereon, passes over the sprocket wheels 17 and 24 at each side of the elevator frame and is guided in its travel between said sprocket wheels by the ways 13 and 13' in the frame. Transverse flight carriers 29 are secured at their ends upon the opposite chains and are spaced well apart throughout the length of the elevator. A sheet metal track or floor 30 is mounted upon the spacing bars 12 and 12' in position between the upper and lower runs of the chains 25, and said floor is corrugated longitudinally to minimize the frictional supporting surface thereof and to form smooth depressions into which protuberances (such as nails or cleats) upon boxes or other objects may pass and remain in their ascent upon the said track or floor. Between the gravity and the power elements of the device, a composite roller 26 is provided, which consists of a series of peripheral rods 27 revolubly mounted at their ends upon the sprocket wheels 24. The function of said roller is to support and impel objects in their travel from the gravity conveyer D to the floor 30 of the power elevator, and the conformation thereof furnishes a roller bearing surface over which objects may freely pass either at a greater rate of speed than the peripheral movement of the roller, or upon which such objects may be retarded and move slowly without resulting damage.

To provide means for adjusting the tension of the chains 25, I place bearings 31 for the shaft 23 upon slidable rods 32, which are threaded at 33. One of the rods 32 is movably mounted in the supports 34 at each side of the section A and nuts 35 on the threaded portion 33 of each rod abut against opposite sides of one of said supports 34 to supply means for shifting said rod in either direction and securing the same, whereby the

distance between the sprocket wheels 17 and 24 may be increased or diminished, thus tightening or loosening the chains 25.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

1. The combination with a conveyer of an inclined elevator comprising a frame, a track or floor on said frame, a composite roller having its periphery formed of a series of transverse revoluble rods, adapted to transfer packages from said conveyer to the floor of the elevator, and traveling carriers cooperating with said roller to advance packages upon said floor.

2. In an elevator, a frame having an intermediate inclined portion and substantially horizontal end portions, said frame being formed with an upper and lower channeled way on either side thereof, a power shaft on the upper end of the frame having driving sprockets thereon, an idler shaft on the lower end of the frame, a package receiving roller on said shaft, comprising a series of peripherally supported revolubly mounted rods, sprocket wheels on the roller, an endless chain guided by the ways at each side of the frame, each of said chains passing over one of the driving sprocket wheels and a sprocket wheel on said roller, a track or floor upon said frame, and transverse carriers connecting the chains at intervals.

3. The combination with a gravity carrier

of an inclined power elevator, comprising a frame, a revoluble shaft on said frame, a roller carried by said shaft and consisting of a series of peripherally arranged revolubly mounted rods, said roller being interposed between the delivery end of said carrier and the receiving end of the elevator, a track or floor upon said frame, and carriers cooperating with said roller to move objects upon said track or floor.

4. In an inclined elevator, a track, carrying means for moving packages upon said track and a receiving roller driven by said carrying means, said roller consisting of a series of peripherally arranged revolubly mounted rods.

5. In an inclined elevator, a frame, a track on the frame, endless traveling chains joined at intervals by transverse carriers, a shaft revoluble in the frame near the lower end of said track, a sprocket wheel near each end of the shaft, over which one of said chains travels, and a roller consisting of a series of peripherally arranged rods revolubly mounted upon said sprocket wheels.

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

CHARLES HENRY LISTER.

Witnesses:

F. C. CASWELL.

A. M. RUGE.