No. 751,999. PATENTED FEB. 9, 1904.

J. W. RENO.

ELEVATOR.

APPLICATION FILED DEC. 14, 1903.

NO MODEL.

Fig. 1.

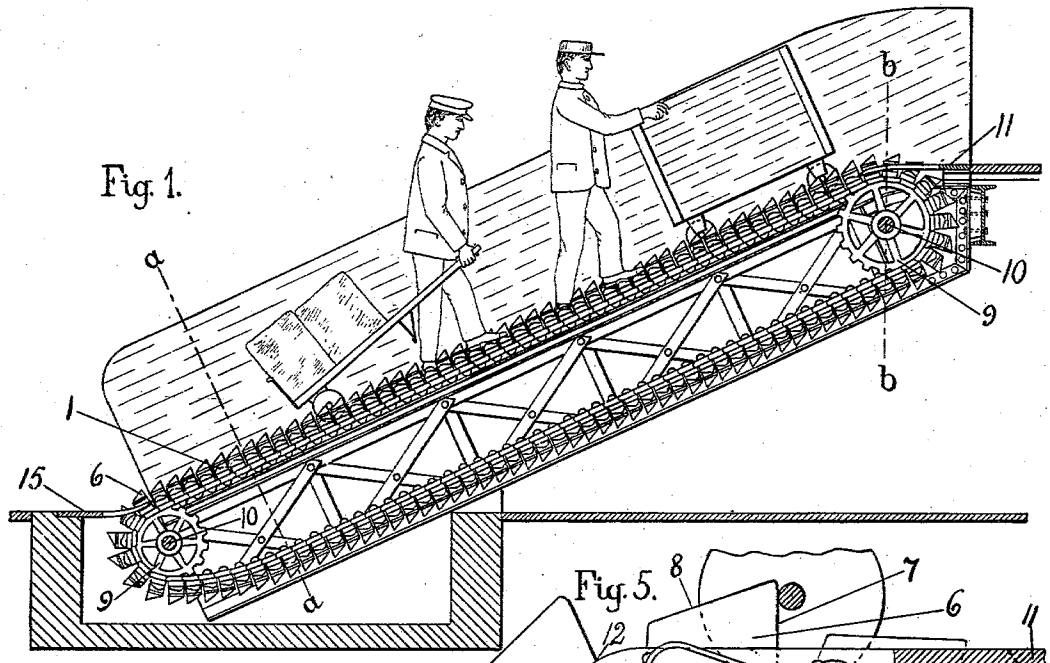


Fig. 5.

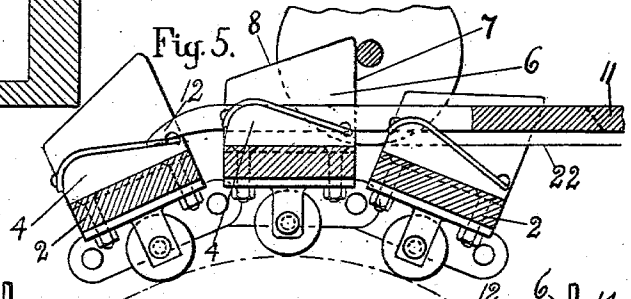


Fig. 2.

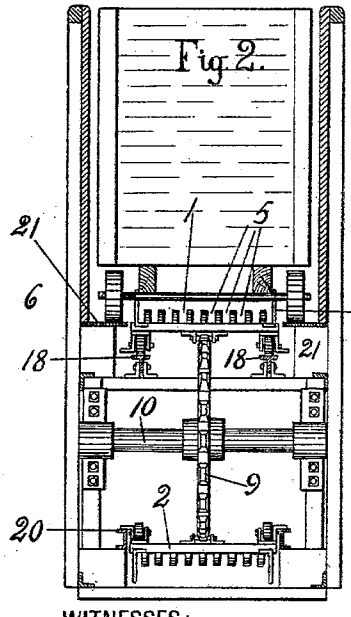
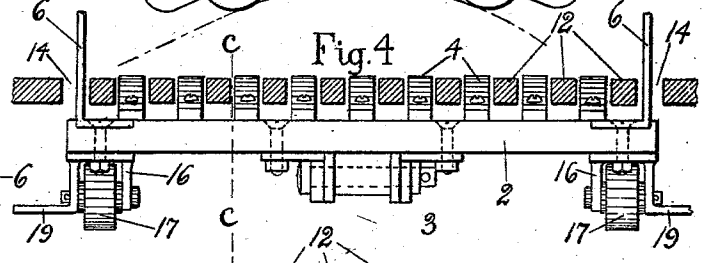


Fig. 4



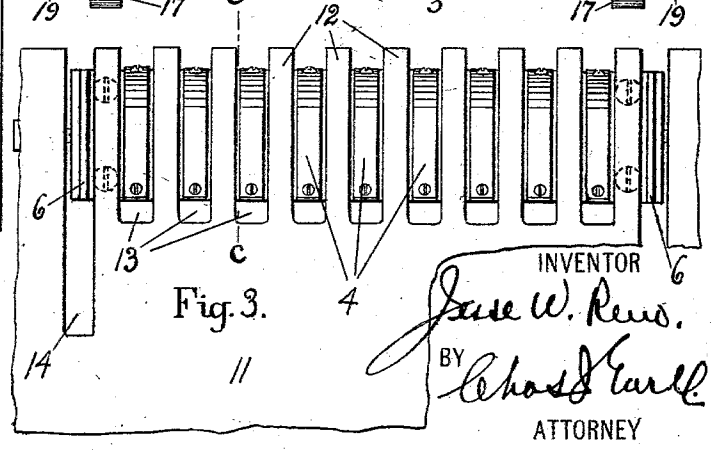


Fig. 3.

WITNESSES:

Ella Tuck

Harry S. Bandler

INVENTOR

Jesse W. Reno.

BY Chas. J. Faulk

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 751,999. Patented February 9, 1904.

UNITED STATES PATENT OFFICE.

JESSE WILFORD RENO, OF NEW YORK, N. Y.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 751,999, dated February 9, 1904.

Application filed December 14, 1903. Serial No. 185,160. (No model.)

To all whom it may concern:

Be it known that I, JESSE WILFORD RENO, a citizen of the United States of America, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Elevators, of which the following is a specification.

My invention relates to inclined elevators for the transportation of freight, goods, and passengers.

The object of my invention is to provide an elevator of this class which shall be simple and efficient in its construction and operation and which is especially adapted for carrying simultaneously trucks or barrows along with attendants who have them in charge.

In many cases in the handling of freight of various descriptions by means of trucks or barrows it is desirable to have the attendant remain with the articles placed in his charge during the entire interval while they are being transported from one point to another. Thus where baggage or other freight is being carried on shipboard it is desirable to allow the articles to remain in charge of the porter, who first takes them until they reach their destination.

In the assembling of packages and articles to be delivered from department-stores or other mercantile establishments, where a number of delivery-men are employed to distribute the articles in different parts of a city it is the practice for the person in charge of each delivery-wagon to gather up the articles which he has to deliver from various points in the store and convey them in convenient trucks to his delivery-wagon, and as he is held responsible for all articles in his possession from the time he first receives them until they are delivered it is essential that he should not be compelled to leave them during any part of their transit. In such cases as these, therefore, any satisfactory means for elevating freight of this description from one place to another must also have provision for the safe and convenient carrying of a person along with such freight.

My invention consists in providing a supporting structure adapted to connect two points, generally at different elevations; in providing a belt-like structure made up of transverse slats joined to the links of an endless chain; in providing a safe and convenient means for adapting the belt-like structure to carry passengers and to deposit them on suitable landings; in providing tracks or ways upon said structure to support the endless belt; in providing independent tracks to support and guide trucks; in providing means upon said belt for engaging the trucks, and in other novel features of construction to be hereinafter more fully pointed out and described.

In the drawings accompanying and forming part of this specification, Figure 1 is a side elevation of an elevator embodying my invention. Fig. 2 is an end elevation, partially in section, on line *a a* of Fig. 1. Fig. 3 is a plan view, on an enlarged scale, of the upper landing. Fig. 4 is a partial section on line *b b* of Fig. 1, and Fig. 5 is a partial transverse section on line *c c* of Fig. 4.

The reference characters are used in the same sense in all of the figures and the specification.

Numeral 1 represents a carrier or conveyer belt formed of transverse slats 2, secured to a chain 3. Upon the upper or outer surfaces of the slats are secured tread-pieces 4, which are arranged in rows longitudinally of the general direction of the conveyer-belt, so as to leave longitudinal grooves 5. The tread-pieces 4 have their upper faces inclined to the upper faces of the slats, so that when they are upon the incline the upper faces of the tread-pieces are substantially horizontal. The width of the slats or the length of the tread-pieces is such that the average human foot may span a plurality, so that the passenger may step upon the tread-surface at random and without paying particular heed to the tread-surface. They are, however, of sufficient size to form convenient footholds and are much more desirable than a plain or flat surface would be. At some points along the top surface of the slats, preferably at their ends, are secured truck-engaging lugs 6, which project above the tread-surface. The front or engaging face 7 of the truck-engaging lug is substantially normal to the general direction of the inclination of the con-

veyer-belt, and its top surface 8 is inclined thereto, as shown most clearly in Fig. 5.

9 represents sprocket-wheels mounted on the shafts 10, which are journaled in the supporting-frame. These sprocket-wheels engage the chain 3, and one of them may be driven by any convenient connection to a source of power.

11 represents the upper comb-landing, which is provided with the prongs 12 and recesses 13, adapted to register with the longitudinal grooves 5 of the conveyer-belt.

14 represents elongated recesses in the comb-landing adapted to register with the truck-engaging lugs 6. The lower comb-landing 15 is provided with similar recesses and prongs, which are, however, curved upward to connect the lower floor-level with the inclination of the conveyer-belt.

16 represents brackets secured to the ends of the inner surfaces of the slats 2. These brackets carry the friction-rollers 17, which engage the inclined tracks 18, fixed to the supporting structure. The brackets 16 have also a projecting lug 19, which is adapted to engage the guideways or rails 20 on the return.

21 represents rails, tracks, or guideways secured to the supporting structure, preferably at a height somewhat below that of the tread-surface, adapted to be engaged by the truck-wheels. The location of the tracks 21 may be varied to suit the particular conditions of the trucks employed, and the height of the lugs 6 may likewise be varied to suit any particular conditions. I prefer to locate the tracks 21 so that the axle on which the truck-wheels are mounted will safely clear the tread-surface and make the height of the truck-engaging lugs such that it will engage the axle. It is obvious, however, that special lugs may be placed upon the trucks to engage the lugs 6. By giving the top face 8 of the lug 6 an inclination the shock and consequent damage which would result from forcibly shoving a loaded truck upon an elevator is avoided, as the truck will readily ride up over the inclined face 8 and drop into position on the driving-face 7.

The trackways 21 are preferably carried a short distance beyond the point where the tread-surface meets the upper floor-level, and I prefer to keep the level of the horizontal portion of the trackways, as indicated at 22 in Fig. 5, below the floor-level for a short distance in order that the lug 6 may not be disengaged from the truck until the latter is well landed.

It is thus seen that by means of my invention I have provided a safe and convenient means for the simultaneous transportation of trucks and their attendants and that the load upon the trucks and the means for supporting the trucks during their elevation is independent of the tread-surface. The tread-surface may therefore be of lighter construction than would otherwise be required if the weight of the truck had to be borne by the tread-surface.

Having thus described my invention, what I claim is—

1. In an elevator, the combination with a tread-belt adapted to carry passengers, of truck-engaging lugs secured to said tread-belt.

2. In an elevator, the combination with a tread-belt adapted to carry passengers, of truck-engaging lugs secured to the sides of said tread-belt.

3. In an inclined elevator, the combination with a tread-belt adapted to carry passengers, means for automatically depositing the passengers on landings, and truck-engaging lugs secured to and projecting above said tread-surface.

4. In an inclined elevator, the combination with a longitudinally-ribbed tread-belt adapted to carry passengers, truck-engaging lugs secured to the sides of said tread-belt and projecting above the ribs thereof, a comb-landing adapted to register with said ribbed tread-surface and said truck-engaging lugs.

5. In an inclined elevator, the combination with a longitudinally-ribbed tread-belt adapted to carry passengers, truck-engaging lugs secured to the sides of said tread-belt and projecting above the ribs thereof, a comb-landing adapted to register with said ribbed tread-surface and elongated slots at the sides of said comb-landing adapted to register with said truck-engaging lugs.

6. In an inclined elevator, the combination with a series of slats joined together in the form of an endless chain, tread-pieces secured to said slats so as to form a tread-surface having longitudinal grooves therein, a comb-landing adapted to register with said longitudinal grooves and lugs secured to the ends of said slats and projecting up above the surface of said tread-pieces.

7. In an inclined elevator, the combination with the movable tread-surface, of stationary tracks arranged along the sides of said movable tread-surface, and truck-engaging lugs secured to said movable tread-surface.

8. In an elevator, the combination with a series of slats secured to the links of an endless chain at their middle points, friction-rollers mounted on the ends of said slats, inclined tracks for said friction-rollers, tread-pieces secured to the operative sides of said slats, intermediate the ends, lugs adapted to project above the tops of said treads secured to the ends of said slats and stationary inclines arranged at the sides of said tread-surface.

9. In an inclined elevator, the combination with a tread-surface composed of transverse slats linked together in the form of an endless chain, of friction-wheels secured near the ends and on the inner sides of said slats, lugs secured to the outside of said tread-belt projecting above the surface thereof, stationary inclines arranged along the sides of said tread-

belts, laterally-projecting lugs secured to the inner side of said tread-belt, rails adapted to be engaged by said friction-rollers during the operative portion of the traveling of said tread-belt, and rails adapted to be engaged by said laterally-projecting lugs on the return portion of said tread-belt.

10. In an inclined elevator, the combination with a tread-surface adapted to carry passengers, of truck-engaging lugs secured to said tread-surface, said truck-engaging lugs having driving-faces substantially normal to the general direction of the incline of the tread-surface and a rear surface inclined thereto.

11. In an elevator, the combination with a supporting structure, of a tread-belt adapted to convey passengers, trackways upon said supporting structure adapted to guide and support said tread-belt and independent trackways upon said supporting structure adapted to guide and support trucks.

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

JESSE WILFORD RENO.

Witnesses:
ELLA TUCH,
ROGER H. LYON.