No. 708,663. Patented Sept. 9, 1902.

J. W. RENO.

INCLINED ELEVATOR.

(Application filed Feb. 20, 1902.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

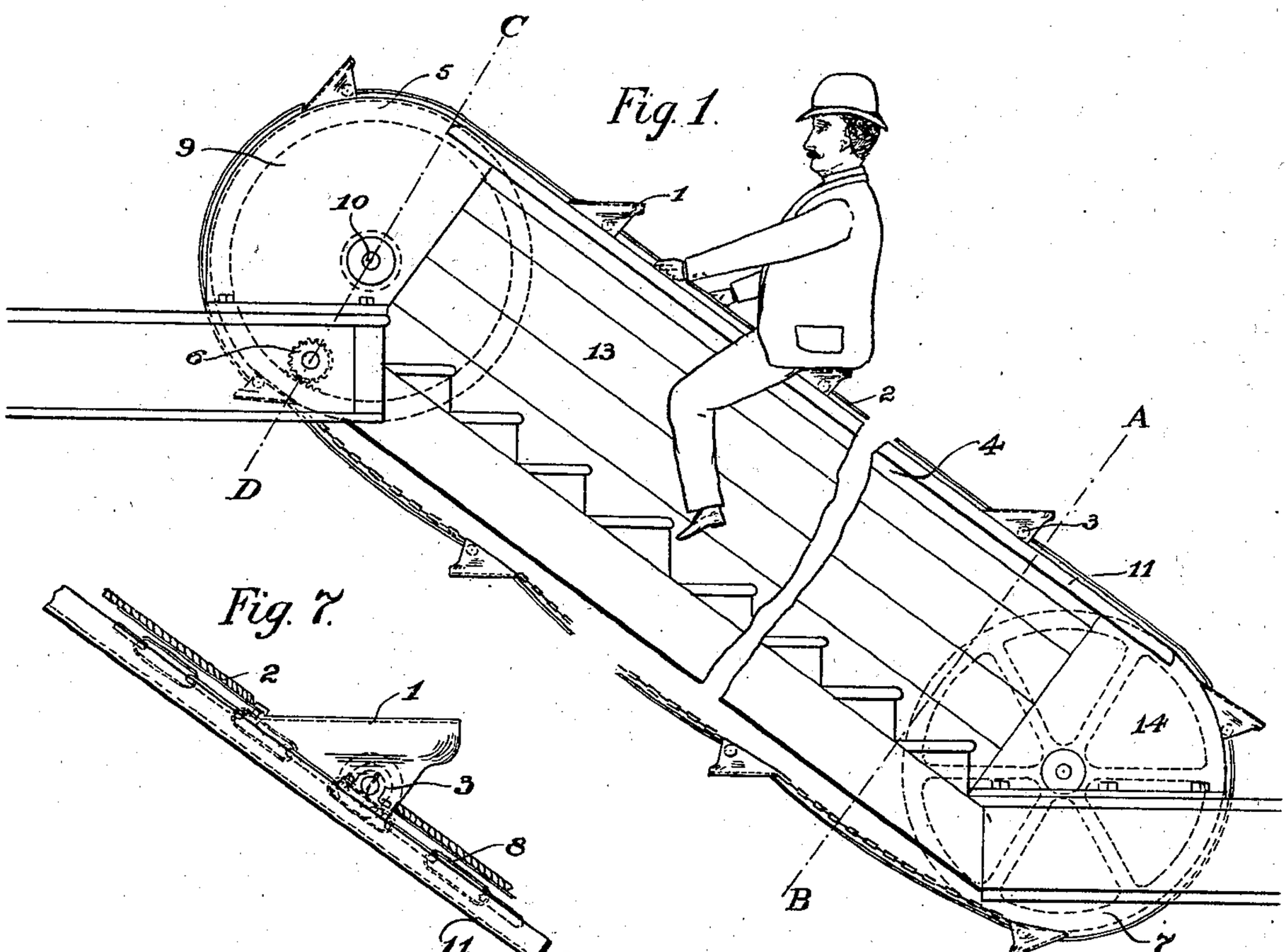


Fig. 7.

Fig. 8.

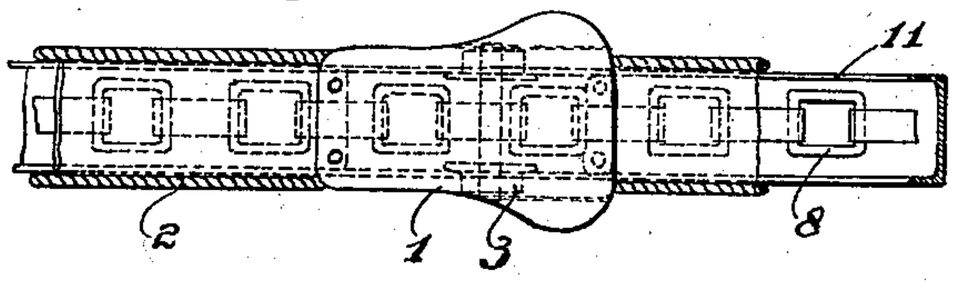
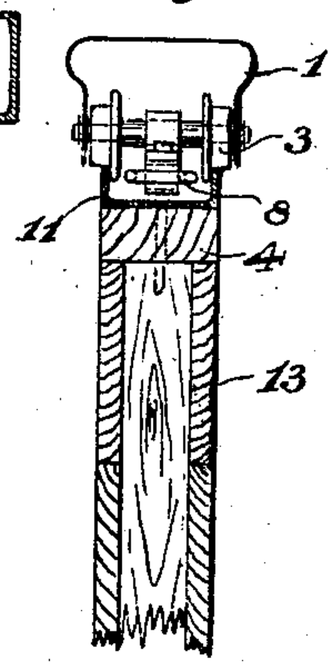


Fig. 9.



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(No Model.) 2 Sheets—Sheet 2.

Fig 2.

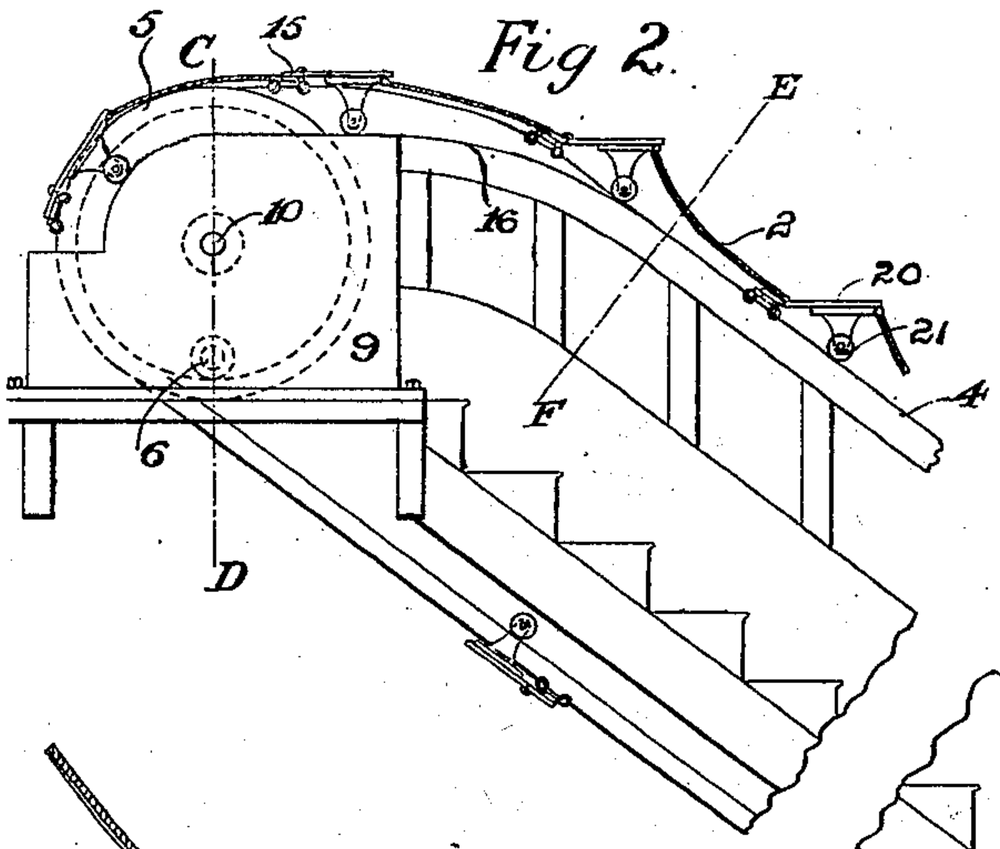
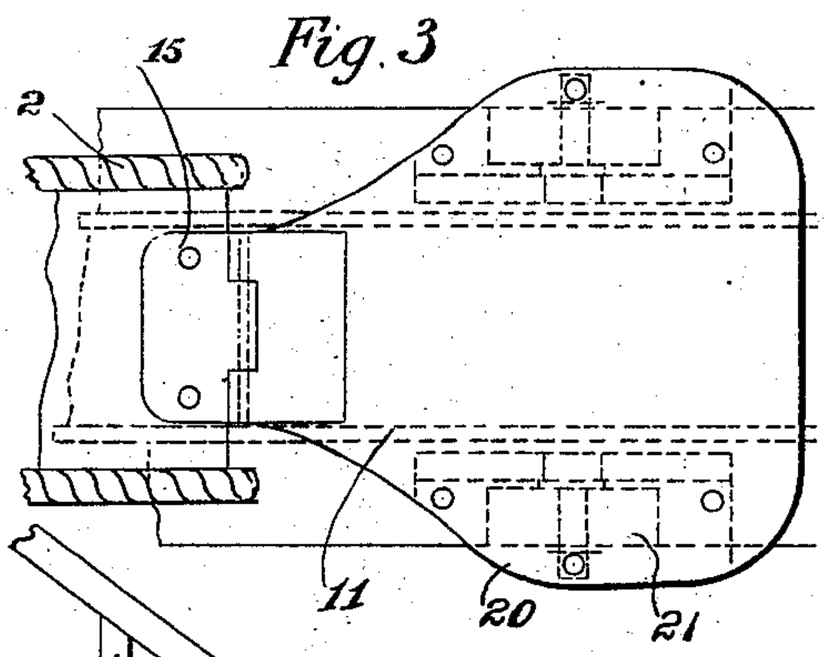
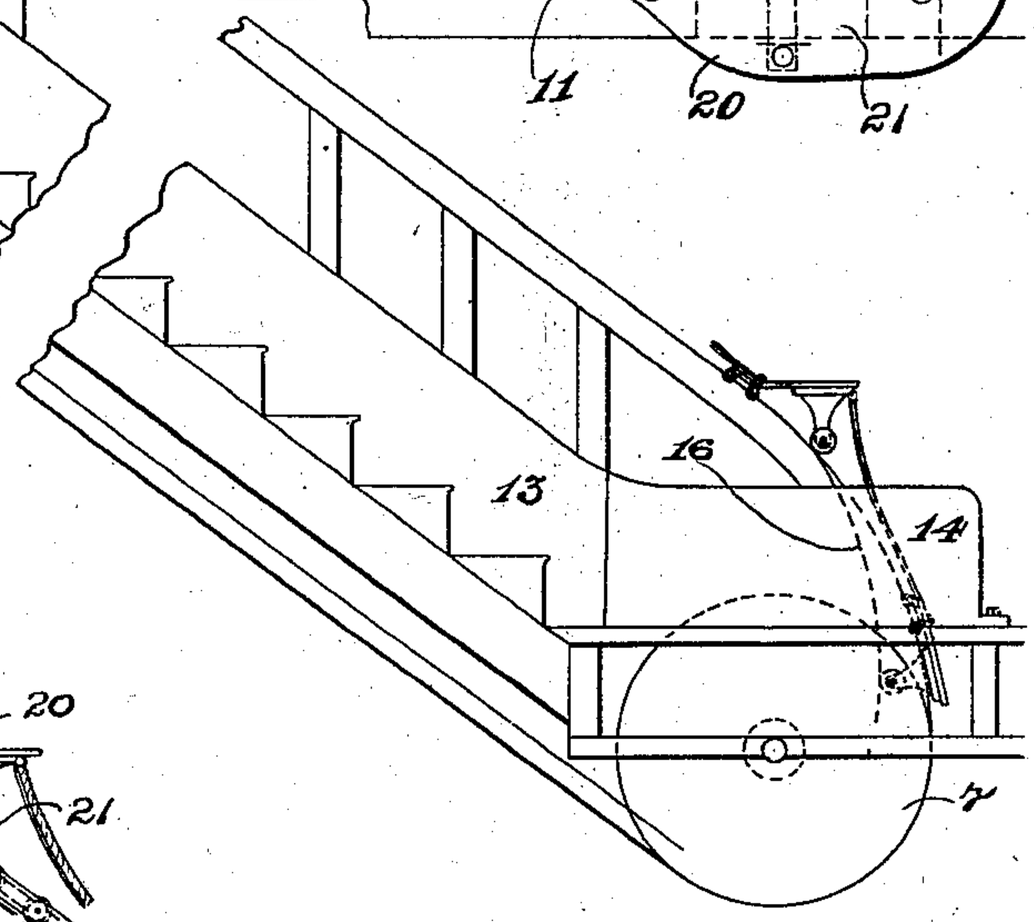


Fig. 3





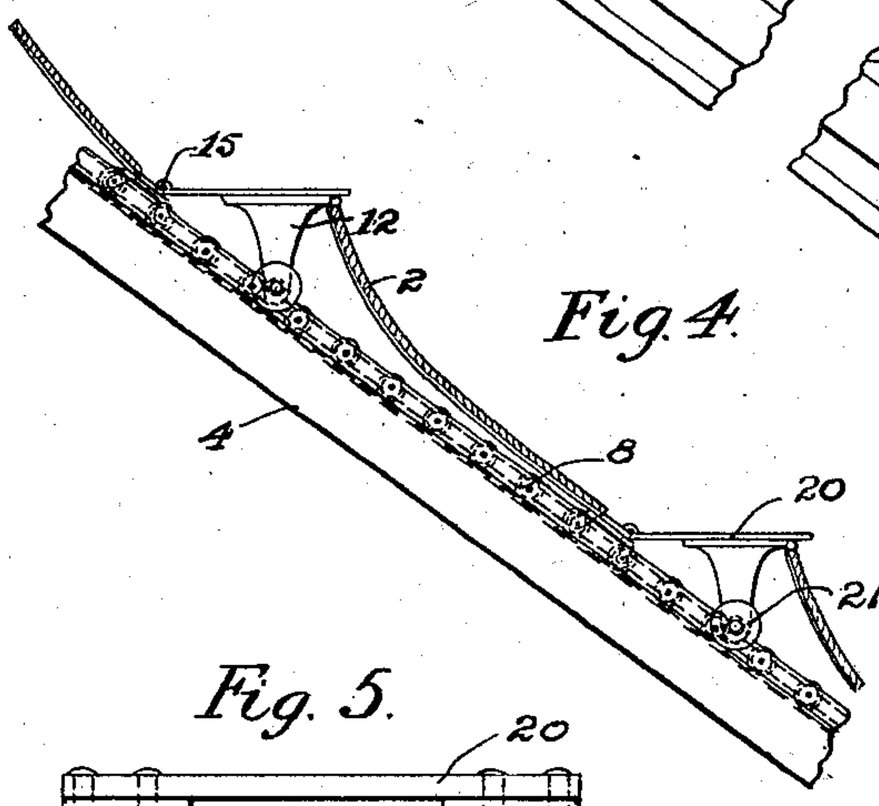
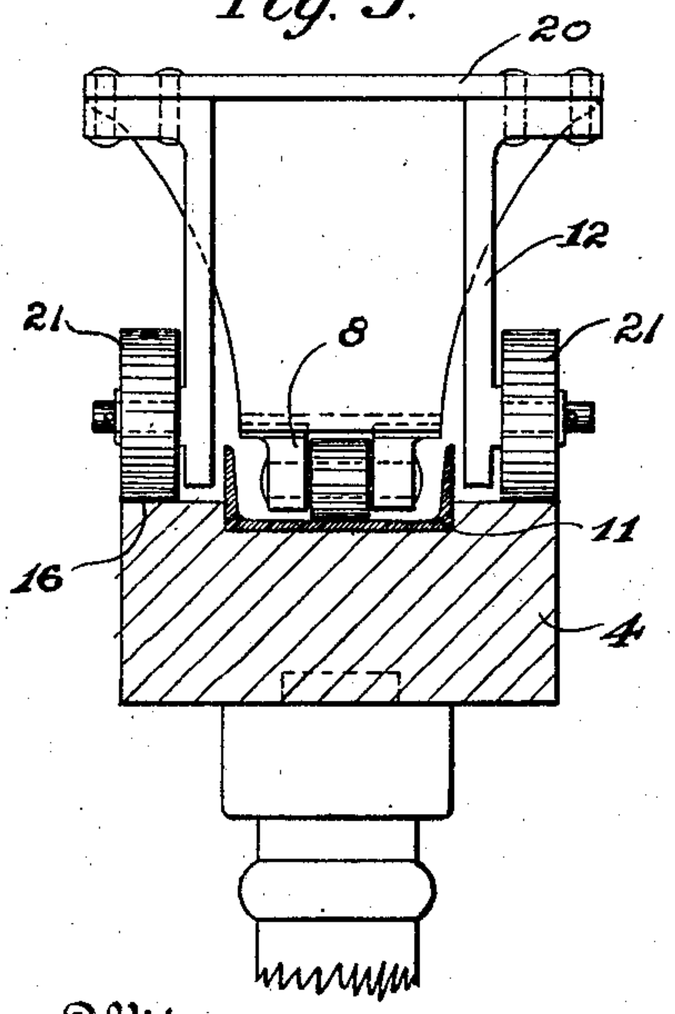


Fig. 4.

Fig. 5.



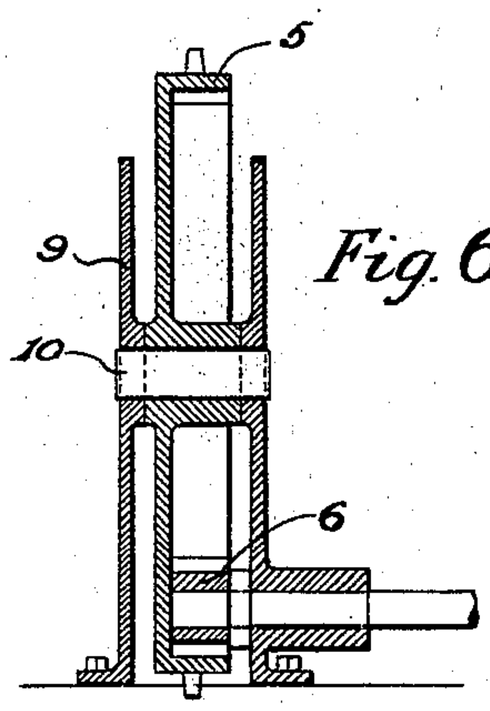


Fig. 6.

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UNITED STATES PATENT OFFICE.

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

INCLINED ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 708,663, dated September 9, 1902.

Application filed February 20, 1902. Serial No. 95,004. (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 Inclined Elevators, of which the following is a specification.

My invention relates to improvements in inclined elevators by means of which passengers may be carried from one floor to another along an incline—as, for instance, along a banister of an ordinary stairway—the object being to provide an elevator of this class which is especially adapted to be applied to stairways of factories for the use of employees and others.

My invention consists in providing a banister or other stationary support, at the upper and lower ends of which are placed guide-sheaves, and in providing a track upon said banister and an endless chain adapted to operate along said track and around said guide-sheaves, and in securing to said endless chain seats at intervals upon which passengers may be transported.

In the drawings accompanying and forming part of this specification, Figure 1 represents a side view of one form of my improved elevator, in which the seats are arranged at a fixed angle to the axis of the chain to which they are attached. Fig. 2 represents another and the preferred form, in which the seats are adapted to maintain a horizontal position as they approach and leave the main incline of the stairway. Fig. 3 represents a plan view, on an enlarged scale, of one of the seats of the form shown in Fig. 2. Fig. 4 represents a partial side view, also on an enlarged scale. Fig. 5 represents a section on line E F of Fig. 2. Fig. 6 represents a section on line C D of Fig. 2. Fig. 7 shows a partial side view, on an enlarged scale, of the form shown in Fig. 1. Fig. 8 shows a top view of Fig. 7, and Fig. 9 shows a cross-section on line A B of Fig. 1.

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

Numeral 1 represents the seats of the elevator in the form shown in Fig. 1, which are secured to the chain 8. Numeral 2 represents a flexible section extending between the seats, which I prefer to construct of a belt of sufficient width to cover the chain 8, and to provide with a rope or cord to secure to its edge, the purpose of which is to provide a covering for the chain and at the same time give the passenger something to grasp with his hands. Numeral 3 represents rollers secured to the seats 1 and adapted to travel upon the track 11. 4 represents the top rail of the banister or stationary support to which the rail 11 is secured. 5 represents the upper or driving sheave, which is preferably in the form of a sprocket-wheel, adapted to drive the chain 8. 6 represents a driving-pinion. 7 represents the lower guide-sheave. 8 represents the endless chain to which the seats are secured. 9 represents the casing, in which is journaled the shaft 10, upon which is mounted the driving-wheel 5. 11 represents the track or guide for the chain, which in the form shown in Fig. 1 serves as a track for the rollers 3.

In the preferred form, (shown in Figs. 2, 3, 4, 5, and 6), 12 represents the vertical supports secured to the seats 20, at the lower ends of which are secured the rollers or wheels 21. 13 represents the seats or casing of the banister, and 14 represents the lower casing, in which is journaled a shaft for the lower sheave 7. 15 represents the hinge connection between the chain 8 and the seats 20. 16 represents the track upon which the rollers 21 travel, which track is parallel to chain-guide 11 during the greater part of the incline, but which deviates from the chain-guide at the upper and lower ends in such a manner as to maintain the seats in a substantially horizontal postion as they come upon and leave the main incline of the elevator.

In the operation of the elevator the seats are kept in continuous motion, and the passenger stands astride the lower casing 14, and as the seats come into operative position he is carried upon said seat up the incline and landed at the upper landing.

Having thus described my invention, what I claim is—

1. In an inclined elevator, the combination with an inclined support, of an endless chain adapted to travel on said support, and seats secured to said chain.

2. In an inclined elevator, the combination with an inclined support, guide-sheaves located at the upper and lower ends of said support, an endless chain adapted to travel upon said support and around said guide-sheaves, and seats secured at intervals to said chain.

3. In an inclined elevator, the combination with an inclined support, guide-sheaves located at the upper and lower ends of said support, an endless chain adapted to travel upon said support and around said guide-sheaves, seats secured at intervals to said chain and a loose flexible connection between said seats independent of said chain.

4. In an inclined elevator, the combination with an inclined support and guide-sheaves located at either end of said support, of an endless chain adapted to travel upon said support and around said guide-sheaves, seats provided with hinged connections to said chain at their front ends and a roller-support to the rear of said hinged connections.

5. In an inclined elevator, the combination with an inclined support and guide-sheaves located at either end of said support, of an endless chain, a track for said chain, seats having hinged connections to said chain at their forward ends, a roller-support to the rear of said hinged connections, an independent track for said roller-support, whereby said seats may be maintained in a horizontal position.

6. In an inclined elevator, the combination with a stairway and its banister of a track upon said banister, an endless chain adapted to operate upon said track and seats secured to said endless chain.

7. In an inclined elevator, the combination with a stairway and banister of a track upon said banister centrally located, an endless chain adapted to travel upon said track, seats having hinged connections to said chain, bearing-rollers mounted under said seats, and independent tracks upon said banister for said bearing-rollers.

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

JESSE W. RENO.

Witnesses:
EDWIN N. WHITFIELD,
ELLA TUCH.