

No. 696,193.

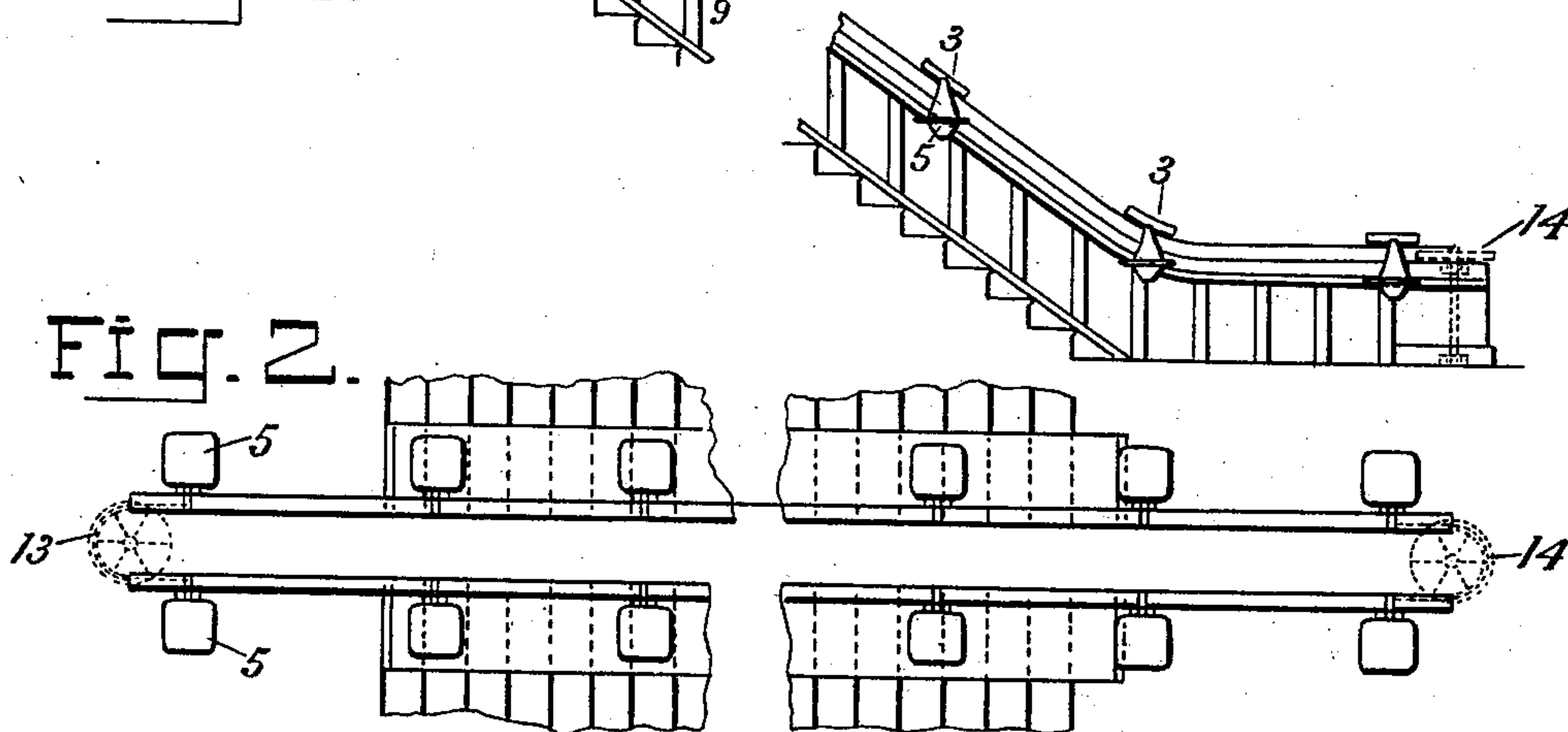
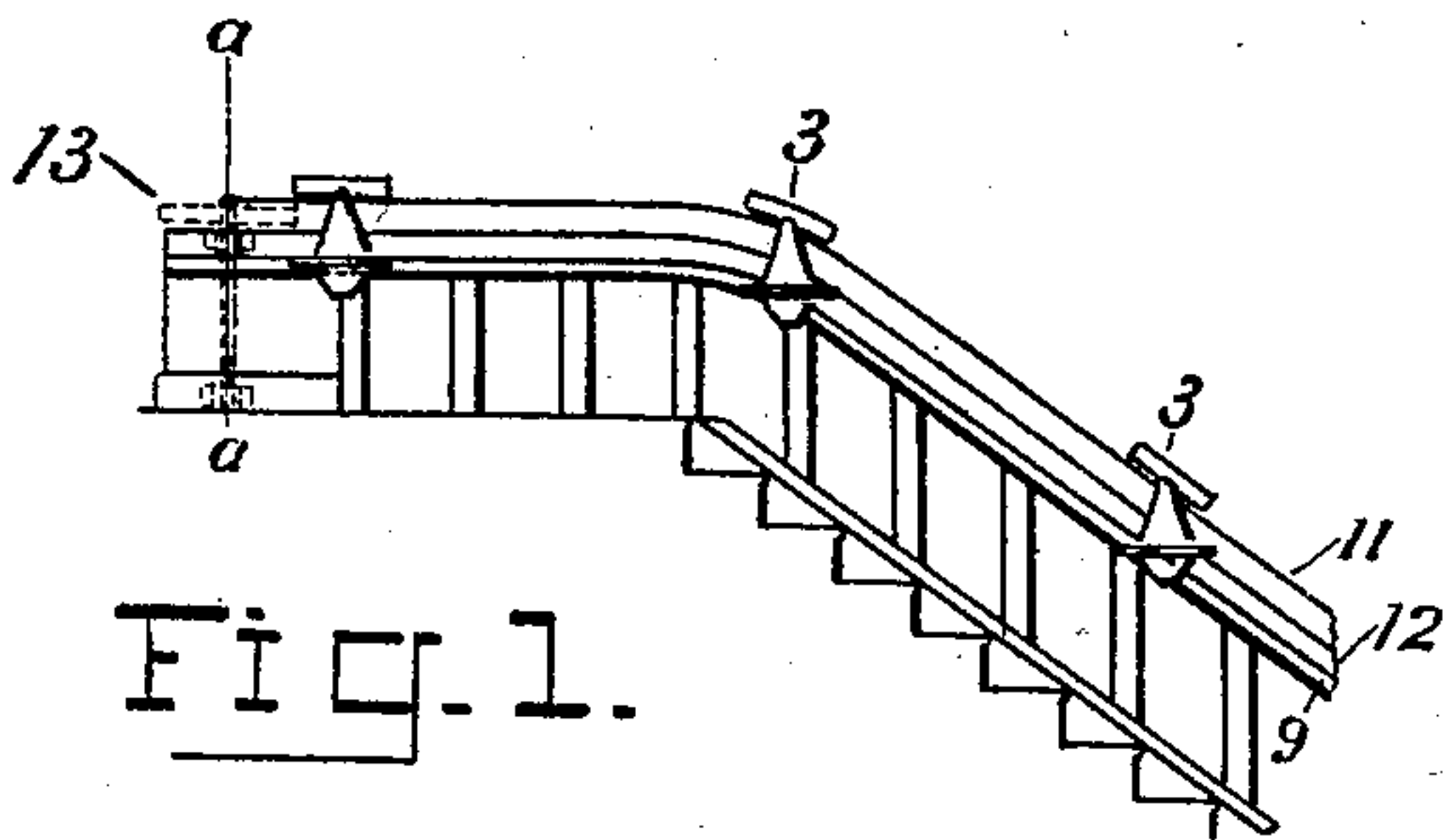
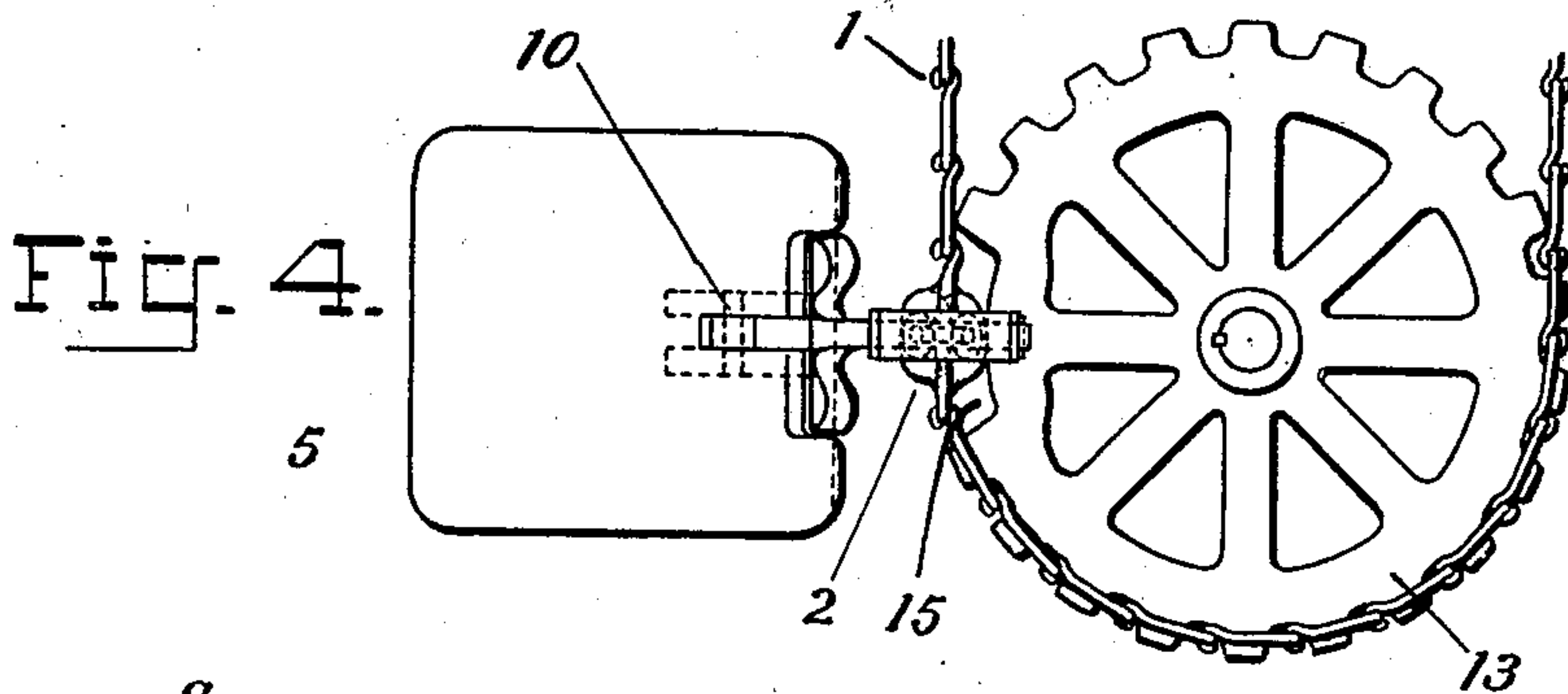
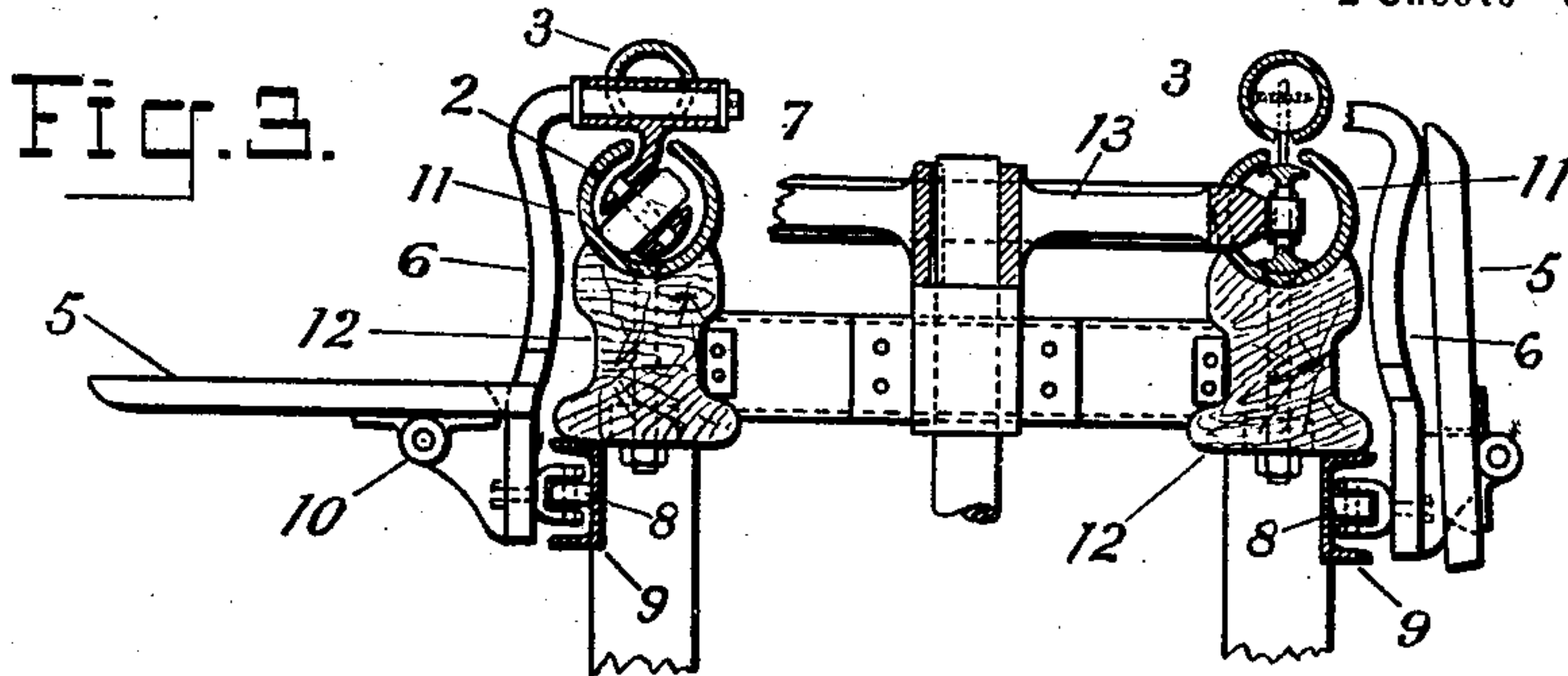
Patented Mar. 25, 1902.

J. W. RENO.
INCLINED ELEVATOR.

(Application filed Feb. 15, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
C. F. Carrington.
J. C. Chapin

Inventor
J. W. Reno
By his Attorney
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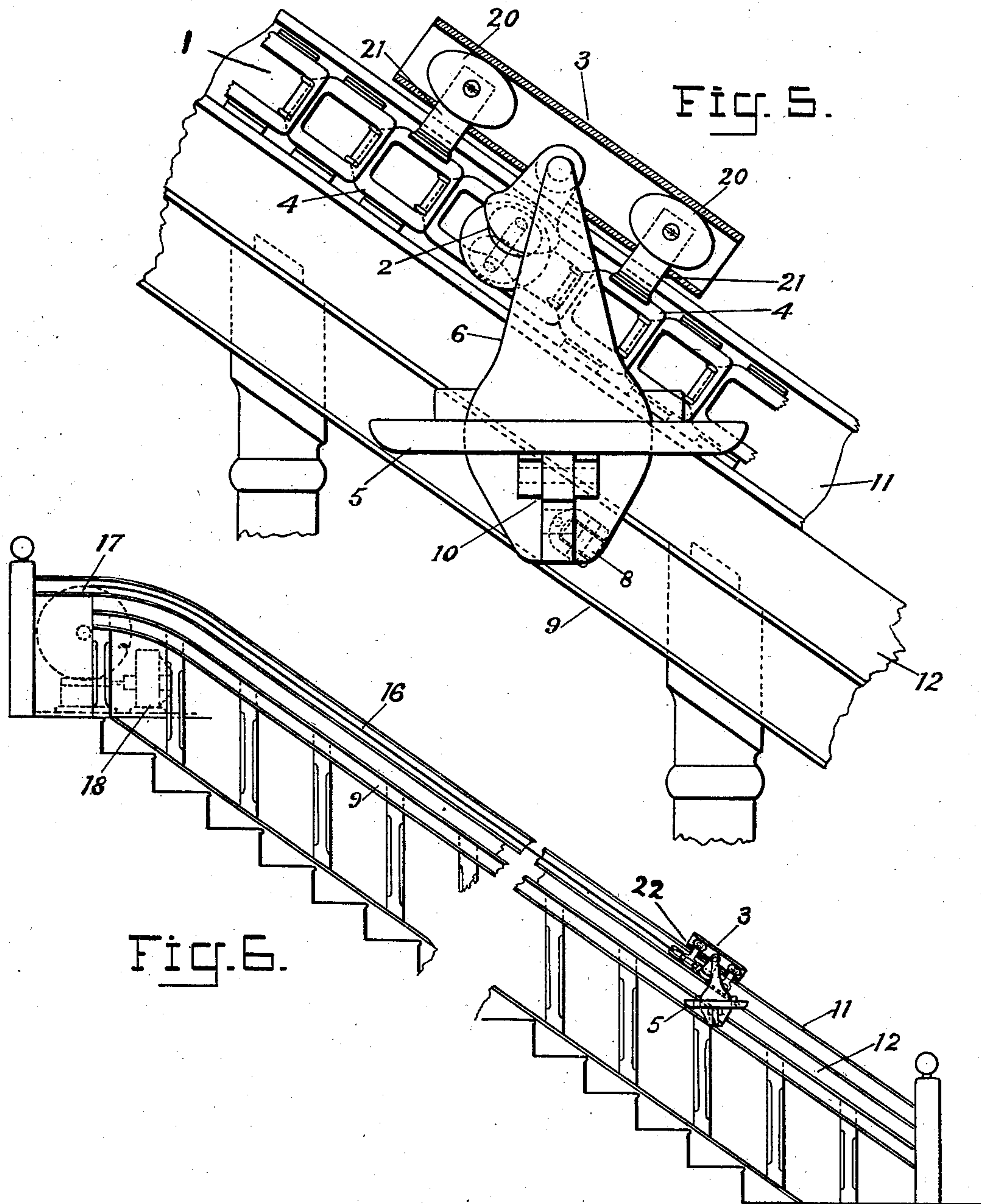
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UNITED STATES PATENT OFFICE.

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

INCLINED ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 696,193, dated March 25, 1902.

Application filed February 15, 1901. Serial No. 47,416. (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, the object being to provide an elevator of this class which is especially adapted to be applied to the stairways of apartment and private houses.

My invention consists in providing a seat or seats and means for supporting and carrying the same up or down the banister or other suitable support of an ordinary stairway.

More particularly my invention consists in arranging a guide along a banister or other stationary inclined supporting structure for a sprocket-chain or rope to which are pivotally secured depending seats for passengers, in arranging said seats so that they may be folded up to occupy less space when not in use, and in other novel features of construction to be hereinafter fully pointed out and described.

In the drawings accompanying and forming part of this specification, Figure 1 represents a side elevation of a stairway provided with my invention. Fig. 2 represents a plan view of the same. Fig. 3 represents a partial section, on a larger scale, on line *a* of Fig. 1 through the center of the upper or driving sprocket-wheel. Fig. 4 represents a plan view corresponding to Fig. 3. Fig. 5 represents a side elevation showing one of the depending seats on the inclined portion of the guide, and Fig. 6 represents a side elevation of a modified form in which only one seat is provided.

Numeral 1 represents a sprocket-chain to which the depending seats are secured. Numeral 2 represents one of the specially-formed links of said sprocket-chain from which the depending seat is suspended. Numeral 3 represents a handle secured to said sprocket-chain, adapted to be grasped by the hand. Numeral 4 represents the links to which said handle is secured.

Numeral 5 represents the seats; 6, the swing-

ing bracket, which is pivoted in the link 2 and to which the seat 5 is itself pivoted.

7 represents rollers journaled in the links 2 of the sprocket-chain.

8 represents rollers on the bracket 6 engaging the guide 9.

10 represents the pivotal connection by means of which the seat 5 is attached to the bracket 6.

11 represents the tubular guide for the driving sprocket-chain. 12 represents the rail or banister to which said guide is secured.

13 represents the sprocket-wheel for operating the sprocket-chain.

14 represents the lower idle sprocket-wheel.

15 represents a recess formed in the sprocket-wheels 13 and 14 to permit the special links 2 to pass.

16 represents a rope or cable which I prefer to use in the modified form shown in Fig. 6, where only a single seat is operated. 17 represents a drum upon which said cable is wound. 18 represents a motor for operating said drum.

The sprocket-wheel 13 is driven from any convenient source of power. The axis of the roller 7 is inclined, so as to make the plane of the roller substantially parallel to the direction of the force acting upon it, due to the fact that the load upon the seat is at some distance horizontally from said roller, and the axis of the roller 8, which engages the guide 9, is located in a vertical plane at right angles to the incline, so as to take up the side thrust. The guide 9 is formed, preferably, of a channel-bar, the legs of which limit the amount of swing of the seat. The roller 8 is arranged, however, so as to be clear of these legs when the seat is normally loaded.

The pivotal connection 10 for the seat 5 permits the said seat to be turned up, so as to allow the stairs to be used in the ordinary way with practically no interference.

The handle 3 is preferably made of a flexible tube secured to suitable buttons 20, the said buttons being secured to the shanks 21, which are a part of the links 4. This construction, it will be seen, permits the handle 3 to bend as the chain passes around the sprocket-wheels.

In the modified form of my device, (shown

in Fig. 6,) which is provided for the use of a single seat in the place of the chain 1, I use, preferably, a steel cable 16, at the end of which is secured, preferably, a link 22, corresponding to the links 2, said link 22 being provided with two or more rollers 7. The cable 16 instead of being endless and passing around sheaves at the top and bottom of the inclines is in this case wound around the drum 17, which is driven in any convenient manner, as by the motor 18. This modified form of my invention is designed especially to be used in private houses or apartments for the convenience of invalids or where its frequent use or the carrying of large numbers of passengers is not required.

Having thus described my invention, what I claim is—

1. In an inclined elevator, the combination with a banister of a guide secured to said banister, adapted to receive a chain, seats secured to said chain and a lower guide engaged by said seats.

2. In an inclined elevator, the combination with inclined guides of a carriage provided with rollers, adapted to move in said guides, a swinging member secured to said carriage and a seat pivotally secured to said swinging member.

3. In an inclined elevator, the combination with the chain 1, having the links 2, provided with rollers 7, the links 4, the handle 3 secured to said links, the swinging bracket 6 pivoted to the link 2 and the seat 5 secured to the bracket 6.

4. In an inclined elevator, the combination with a fixed stairway and its banister of guides on said banister, a chain operating in said guides and seats secured to said chain.

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

JESSE WILFORD RENO.

Witnesses:

C. F. CARRINGTON,
EDW. B. HAWKINS.