

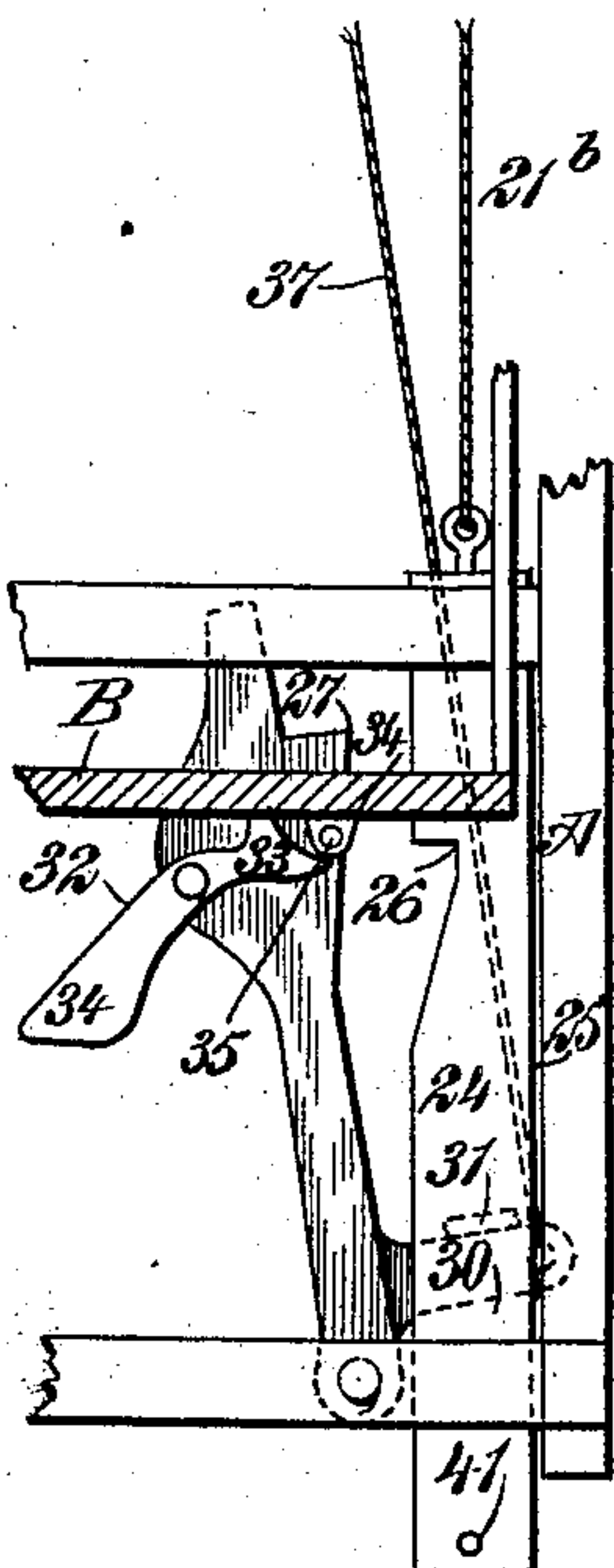
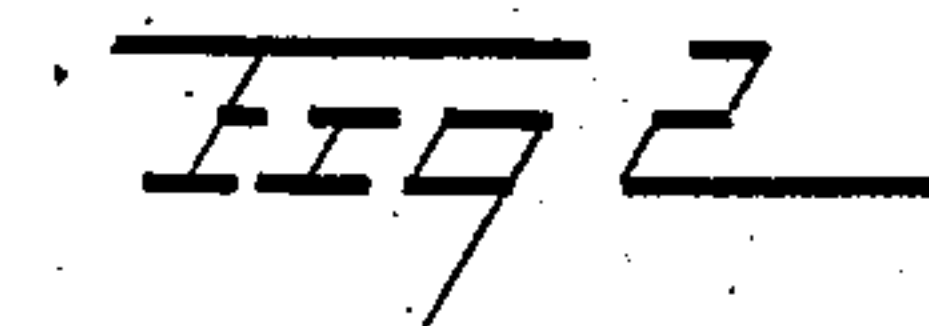
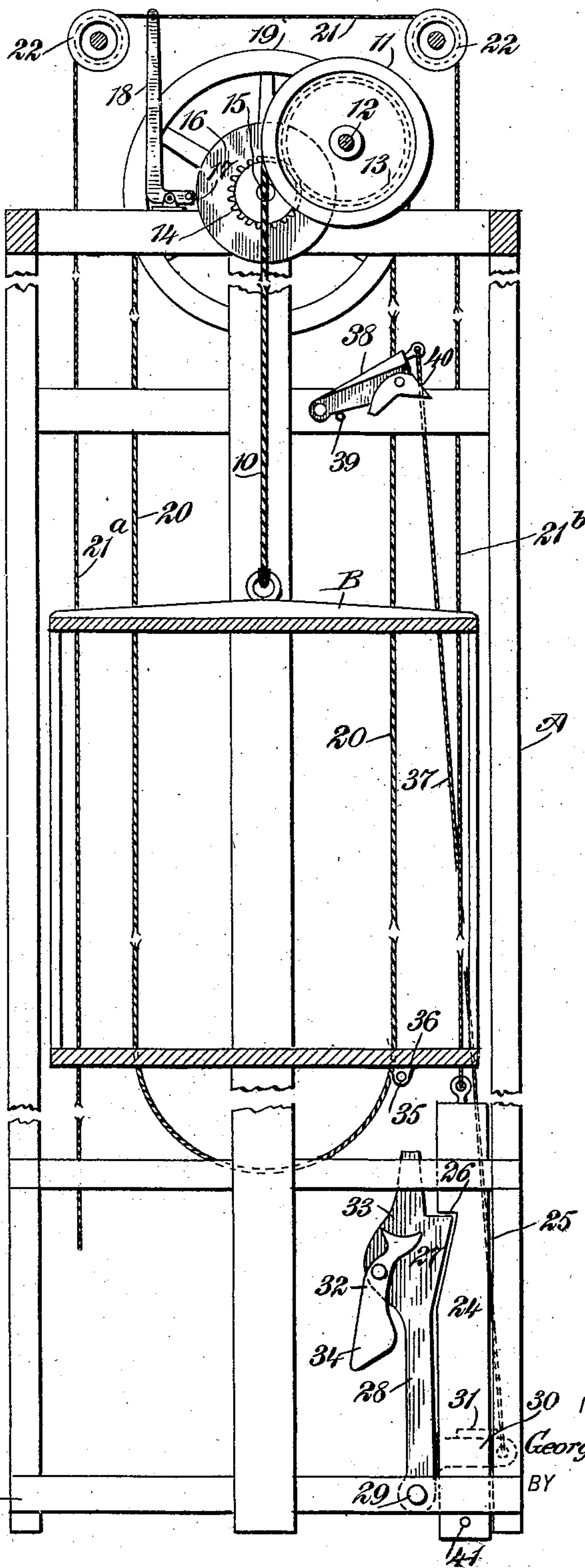
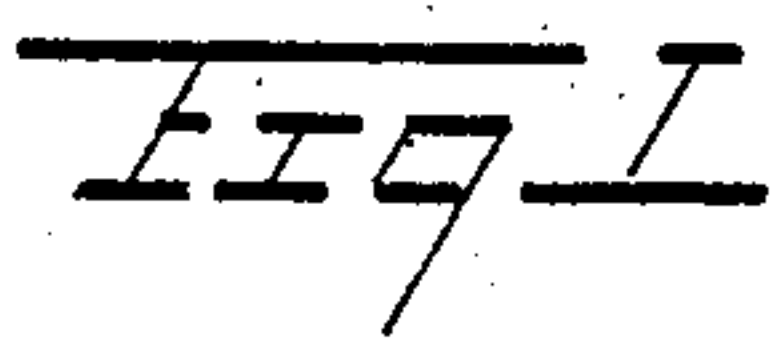
No. 720,403.

PATENTED FEB. 10, 1903.

G. W. CHAMBERLAIN.
BRAKE ATTACHMENT FOR ELEVATORS.

APPLICATION FILED JULY 29, 1902.

NO MODEL.



WITNESSES:

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BRAKE ATTACHMENT FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 720,403, dated February 10, 1903.

Application filed July 29, 1902. Serial No. 117,516. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. CHAMBERLAIN, a citizen of the United States, and a resident of Atlanta, in the county of Fulton and State of Georgia, have invented a new and Improved Brake Attachment for Elevators, of which the following is a full, clear, and exact description.

My invention relates to a brake attachment for elevators; and the purpose of the invention is to provide a simple, durable, and effective brake mechanism which can be manually operated at any time, but which is especially adapted to be automatically operated to apply the brake when the elevator reaches predetermined points at the top and bottom of the shaft, thereby preventing shocks or accidents at such points by reason of the operator failing to operate the check-rope sufficiently quick or at the proper time.

Another purpose of the invention is to provide for the automatic stoppage of the car at any floor between the top and bottom of the shaft for which the means are set.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both figures.

Figure 1 is a sectional side elevation of the elevator-shaft and elevator and the actuating and brake mechanism for the elevator, the brake being shown off; and Fig. 2 is a detail sectional side elevation of a part of the bottom portion of the shaft and bottom portion of the elevator, showing the position of the controlling-weight for the brake and the controlling-pawl for said weight when the weight is applied.

A represents an elevator-shaft of any approved construction, and B an elevator-car adapted to travel in said shaft. The elevator-car B is shown supported centrally at its upper part by a rope, chain, or cable 10, which extends upward and is wound around the drum 11, mounted on a suitable shaft 12 at the upper portion of the elevator-shaft. This drum 11 is usually provided with an attached

gear 13, which meshes with a pinion 14 on a drive-shaft 15, also located at the upper portion of the elevator-shaft A. This drive-shaft 15 has attached thereto a peripherally-grooved disk or pulley 16, around which a strap-brake 17 is applied of the usual construction, and said strap-brake is attached to one member of an elbow-lever 18, as is shown in Fig. 1. A master-wheel 19 is secured on the drive-shaft 15, said master-wheel 19 being peripherally grooved to receive an endless cable, chain, or rope 20, which extends down within reach of the operator in the car B, as is shown in Fig. 1. A brake-rope 21 is passed over pulleys 22, located at the top of the structure, as is shown in Fig. 1, and this brake-rope 21 is attached to the brake-lever 18 at a point between the guide-pulleys and passes downward in two vertical strands 21^a and 21^b, both of which are within reach of the occupant of the elevator-car. The strand 21^a may be termed a "release-strand" and the strand 21^b a "brake-strand."

A weight 24 is held to slide in a suitable pocket at the bottom portion of the elevator-shaft A and is placed at one side of said shaft, so as not to be in the way of the elevator-car. Preferably at a point near the upper end of the brake-controlling weight 24 a recess 26 is formed, (shown in both Figs. 1 and 2,) and when the weight 24 is in its upper position it is held in such position by the nose 27 of a pawl 28 entering the said recess 26, as is shown in Fig. 1, the pawl being pivoted by a suitable pin 29 at its lower end to a convenient support. When the brake-controlling weight 24 is in its upper locked position, (illustrated in Fig. 1,) the brake-lever 18 is relieved from tension and the brake is removed from braking action on the drive-shaft 15, enabling the car through the medium of the operating rope or cable 20 to be raised or lowered at will. At the lower end of the pawl 28 an outwardly-extending arm 30 is secured or formed, provided with a weight 31, which weight serves to hold the pawl 28 in locking engagement with the brake-controlling weight 24 in the upper position of the latter. When the brake-controlling weight 24 is in the lower position, tension is applied to the brake-lever 18, and the brake 17 is consequently applied to the

drive-shaft 15 to check the movement of the elevator-car. A trigger 32 is pivoted on the pawl 28, and this trigger above its pivot-point is provided with a shoe 33, normally held in an upper practically horizontal position (shown in Fig. 1) by the lower portion 34 of said trigger, which is quite lengthy and is likewise weighty. The shoe 33 of the trigger 32 is adapted to be engaged by a horizontal pin 35, projected from a bracket 36 at the bottom of the elevator-car B, as is shown in Fig. 2, and such an engagement is brought about when the car reaches the bottom portion of the shaft. When this engagement is obtained, the pawl 28 is carried from locking engagement with the brake-controlling weight 24, and said weight will immediately drop to apply the brake, and the car will pass down sufficiently to clear the shoe 33 and permit the trigger 32 to assume its normal position and the pawl to move to an engagement with the brake-controlling weight 24 to again assume its locking engagement therewith when the said weight 24 is raised. The pawl 28 through the medium of the rope 37 is automatically disengaged from the brake-controlling weight 24 when the car reaches the upper portion of the shaft, so that the brake is applied automatically at such time and prevents the car from striking the mechanism at the top portion of the elevator-shaft, which it is likely to do when empty, as at such times the car travels upward very quickly. The brake is applied automatically by the car at the top of the shaft A through the medium of a lever 38, fulcrumed at a convenient point in the elevator-shaft A and limited in its downward movement by a pin 39, and a check-rope 37 is attached to this lever. The said lever is provided with a pivoted trigger 40, and the lever is raised to apply the brake by the projection 35 from the car engaging with the said trigger 40, lifting the said lever 38. The brake-controlling weight 24 may be raised by hand at any time, so as to remove the brake and permit the car to operate by simply drawing downward upon the brake-rope strand 21^a. Preferably the operation of releasing the brake for the car to ascend or descend is performed by simply pulling down upon the brake-rope strand 21^a, as ordinarily, which action releases the brake and draws the weight 24 up to where the pawl 28 enters the recess 26 in the weight 24, thus holding the weight 24 suspended until disengaged by the elevator-car reaching a predetermined point, whereupon the weight is released by the elevator-pin 35 coming in contact with the shoe-section of the trigger 32 or at the top of the shaft by engaging the trigger 40 on the lever 38, it being understood that the weight 24 is attached to the lower end of the brake-rope strand 21^b, which brake-rope strand is attached to the brake-lever 18, thus joining the strand 21^a. Therefore if the strand 21^a be drawn down upon the strand 21^b must be

raised, to which latter the weight 24 is attached, as has been stated.

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

1. An elevator-car, an actuating mechanism therefor and a brake for the said mechanism, a weight connected with the brake, a locking-pawl for the weight, and means, carried by the pawl and adapted to be engaged by the car to disengage the pawl from the weight, as set forth.

2. An elevator-car, an actuating mechanism therefor and a brake for the said mechanism, a weight mounted to slide, a flexible connection between the weight and the brake, a locking-pawl for the weight, adapted to hold the same in an upper position or in a position to release the brake, and means, substantially as described, for tripping the pawl through the movement of the car, to set the brake at predetermined points in the travel of the car in both directions, as specified.

3. A shaft, an elevator-car having movement in the shaft, an actuating mechanism for the car and a brake for the actuating mechanism, a weight flexibly connected with the brake and having a recess in one of its faces, a pawl pivoted for movement to and from the weight and adapted in one position of the weight for locking engagement therewith, a trigger carried by the pawl for engagement by the car, to release the pawl from the brake-controlling weight, and means independent of said trigger for operating the said pawl, as described.

4. In elevators, a brake, a weight connected with the brake, a locking-pawl for the weight, a trigger pivotally mounted upon the locking-pawl, and a check device independent of the trigger and connected with the locking-pawl, substantially as described.

5. In elevators, a weight, a brake connected with the weight, a locking-pawl for the weight, a trigger pivotally mounted upon the locking-pawl, a weighted arm extending from the pawl, a lever fulcrumed above the locking-pawl, a flexible connection between the lever and the weighted arm of the pawl, and a trigger carried by the lever, for the purposes described.

6. In an elevator, a brake, a sliding weight connected with the brake, a pawl for engaging the weight to lock the same in an upper position, and means for automatically disengaging the pawl from the weight when the car ascends or descends, as set forth.

7. In an elevator, a sliding weight, a brake operatively connected with the weight, a pawl for locking the weight raised, a lever adapted to be operated by the car, and a connection between said lever and pawl, as set forth.

8. In an elevator, a sliding weight, a brake operatively connected with the weight, a pawl for locking the weight raised, means carried

by the pawl and adapted to be engaged by
the car to disengage the pawl from the weight,
a lever, a trigger carried by the lever and
adapted to be engaged by the car, and a con-
5 nection between the said lever and pawl, as
set forth.

In testimony whereof I have signed my

name to this specification in the presence of
two subscribing witnesses.

GEORGE W. CHAMBERLAIN.

Witnesses:

JOHN C. WAYT,
CHAS. A. SISSON.