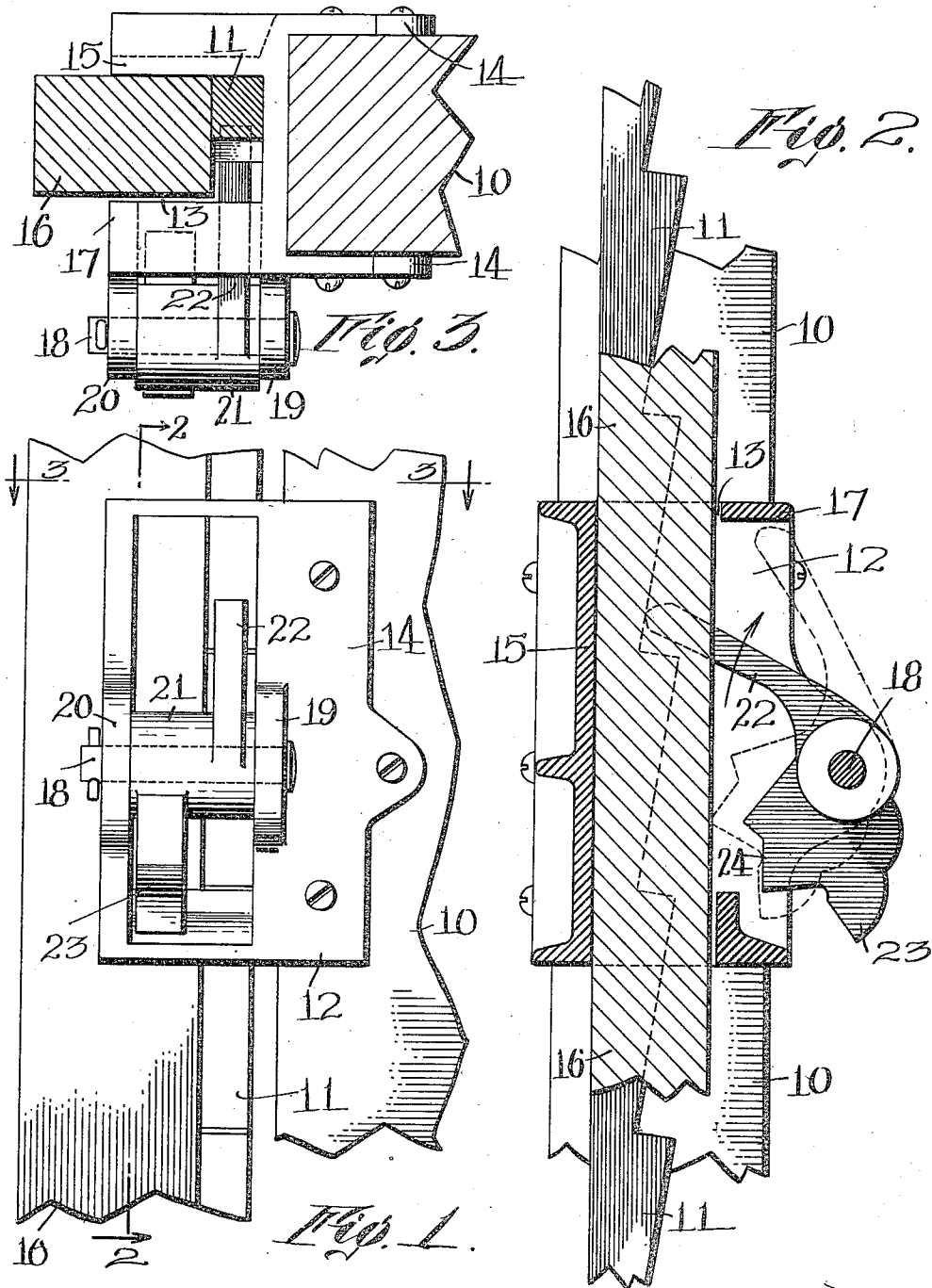


A. L. BUSH.
ELEVATOR SAFETY CATCH.
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1,031,980.

Patented July 9, 1912.



Witnesses:

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UNITED STATES PATENT OFFICE.

AUGUSTUS L. BUSH, OF WORCESTER, MASSACHUSETTS.

ELEVATOR SAFETY-CATCH.

1,031,980.

Specification of Letters Patent.

Patented July 9, 1912.

Application filed December 19, 1910. Serial No. 598,065.

To all whom it may concern:

Be it known that I, AUGUSTUS L. BUSH, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Elevator Safety-Catch, of which the following is a specification.

This invention relates to an elevator safety device, and is an improvement on the invention set forth and described in my Patent No. 975,828, granted Nov. 15, 1910.

In my above identified patent the construction is such that a single rack is employed both for tripping the safety device and for catching the latch thereof to hold the elevator. Obviously therefore the teeth of the rack constitute positive stops, and the elevator is arrested with some suddenness and can only be stopped when the latch comes into engagement with one of the teeth so that the maximum distance through which the elevator can drop in practice is the length of two teeth.

The present invention is designed for the purpose of providing means whereby the latch that stops the elevator will not have to come into operation at any definite point along the elevator well, and to provide a construction in which the points at which the car can be made to stop are not perfectly definite. In this way the car can be stopped at comparatively shorter intervals and the rack which the latch engages can be made with longer teeth. Also as these teeth never have to support the car the rack can be made of very thin and light stock.

The invention also involves an improved device coöperating with the back of the rack and its support for guiding the car therealong and other details of construction hereinafter described.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a front elevation of a portion of an elevator well and car showing a preferred embodiment of this invention; Fig. 2 is a sectional view on the line 2—2 thereof, and Fig. 3 is a horizontal sectional view on the line 3—3 of Fig. 1 showing the stopping attachment in plan.

Like my prior invention this safety device works entirely independently of the cable which is not shown, also it is adapted to be used in pairs, one on each side of the car, but as each one works independently, only one is shown. This is shown as mounted on a car

10 which works in a well provided along the side of the same with a vertical rack 11 having the usual teeth thereon projecting toward either the front or rear of the well instead of toward the car as in the other case. The form of the attachment shown comprises a forging or casting 12 secured on the car near the side, and constituting a bracket. This bracket is provided with a passage 13 therethrough open at the side. There is no necessity in this case of providing the car with any passage as the bracket is provided with ears 14 spaced from each other adapted to be secured to the opposite side of an upright, standard or the like on the car. From the rear ear projects a wall 15 which engages the rear of the fixed upright support 16 on which the rack 11 is mounted.

On the front of the bracket it is provided with another projection 17. These two projections 15 and 17 move along the opposite sides of the support 16 and assist in guiding the car with respect to the elevator well. This front projection 17 is provided with a pivot-pin 18 located in perforated, forwardly extending ears 19 and 20 thereon. On this is pivoted the hub 21 of the safety catch. This safety catch has an arm 22 extending upwardly from the hub or body 21 and serving the same purpose as the arm 16 of my prior patent. That is, it engages the rack 11 and serves to trip the catch whenever the elevator drops. Extending down from the arm is a member 23 acting as a weight to hold the hub in such position on its pivot that the arm 22 will remain in contact with the rack. It is also provided with a tooth 24 located opposite the front wooden surface of the support 16 and adapted to bite into the same and hold the car when the car starts to drop.

The parts are so arranged, it will be understood, that if the car drops the first or at least the second tooth that the arm 22 strikes will give it a blow which will swing the whole latch on its pivot far enough to throw the tooth 24 into the dotted line position in Fig. 2 where it will bite into the wood of the support 16 and prevent further descent of the car. In this way it will be seen that the catch can work anywhere independently of the location of the teeth of the rack and that the tooth 24 does not come into contact with a positive metallic projection to perform the stopping operation. In the ordinary operation of the car it will be under-

stood that the arm 22 simply vibrates back and forth over the teeth without being thrown out far enough to cause the tooth 24 to engage the member 16.

5 Because the guide arm 15 engages the support 16 on the side opposite that on which the latch works, the effect of the operation of the latch is simply to force the surfaces of the parts 15 and 16 into frictional engagement.

10 While I have illustrated and described a preferred embodiment of the invention, I am aware that many modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claim. Therefore I do not wish to be limited to all the details of construction herein shown and described, but

20 What I do claim is:—

In a safety device for elevators, the combination with a vertical support and a rack

along the side thereof, of a bracket adapted to be mounted on an elevator car and having a latch pivoted on said bracket and having 25 an upwardly extending arm, and a counterbalancing arm in another parallel plane in position to hold the end of the upwardly extending arm against the rack teeth, said counterbalancing arm having a projection 30 in position to swing against said vertical support when the upwardly extending arm moves away from the plane of the rack teeth, said bracket having a vertical integral guide arm engaging the side of the 35 support opposite that on which said latch operates.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

AUGUSTUS L. BUSH.

Witnesses:

LOUIS W. SOUTHGATE,
E. M. ALLEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."