

(No Model.)

J. T. HOBBS.

SAFETY MECHANISM FOR OPERATING ELEVATOR GATES.

No. 571,442.

Patented Nov. 17, 1896.

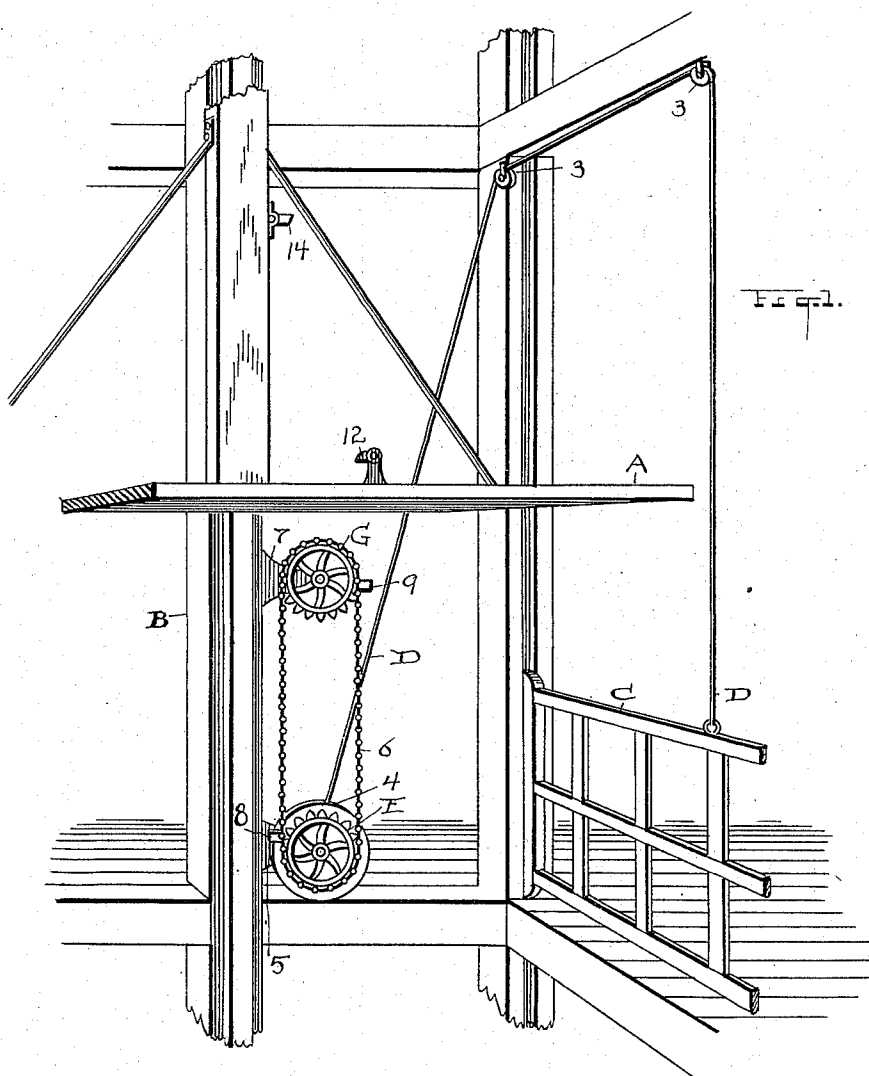


FIG. 1.

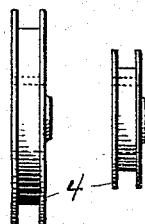
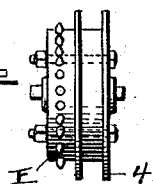


FIG. 2.

ATTEST

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JOHN T. HOBBS, OF CLEVELAND, OHIO, ASSIGNOR TO THE CLEVELAND
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SAFETY MECHANISM FOR OPERATING ELEVATOR-GATES.

SPECIFICATION forming part of Letters Patent No. 571,442, dated November 17, 1896.

Application filed April 3, 1896. Serial No. 586,064. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. HOBBS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Safety Mechanism for Operating Elevator-Gates; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to safety mechanism for operating elevator-gates, whereby the gate is automatically raised at the pleasure of the operator as the car or platform approaches a landing either from below or above, and the gate is closed as the car or platform leaves the landing, all substantially as shown and described, and particularly as pointed out in the claim.

In the accompanying drawings, Figure 1 is an elevation, partly in perspective, of a portion of an elevator crib, platform, and gate and my improved automatic mechanism in working position therewith. Fig. 2 is a separate or detail view, enlarged, of the lower sprocket-wheel and the same size of pulley as shown in Fig. 1. Fig. 3 is a detail of several different sizes of pulleys, all of which are adapted to be used as hereinafter fully described.

A represents a platform of a freight-elevator, but in lieu of this there might be an elevator-car and the connections be made therewith instead. The usual uprights or guideways B for the platform or car are shown as built into the well, and this or any other common construction can be used, the character or kind of elevator being immaterial, as my improved attachments are intended to be applied to any of the usual power-elevators found in warehouses, factories, shops, and other places.

C represents the gate, adapted to slide up and down in the front frame as usual, and the idea of the invention is to automatically raise this gate from the platform A on the approach of the platform from either direction if a stop is to be made, and at the option of the elevator-man as he goes from floor to floor. Thus the gate C is connected by rope

or cable D at its center over sheaves or rollers 3 underneath the next landing above and extends thence to the grooved sheave or pulley 4. This sheave or pulley has a bearing to rotate on the permanent support or bracket 5, and is supported on the sprocket-wheel E by means of threaded bolts or their equivalent, so as to leave the pulley free to be disengaged when occasion requires.

Immediately over and some distance above sprocket-wheel E is the sprocket-wheel G, supported on fixed brackets or supports 7. The sprocket-chain 6 is stretched over the sprocket-wheels E and G and carries lateral projections 8 and 9. The said wheels are located a given distance apart, say, six feet, and are, say, eight inches across, so that three rotations carry the chain six feet. The projections 8 and 9 on the chain 6 are therefore arranged to travel about six feet, which determines the rise or lift of the gate. Now to see how this operates refer for illustration to Fig. 1, where the platform A may be considered to be coming down. This platform carries at its side the pawl 12 in vertical line with the lateral projection 9 on chain 6. Hence if pawl 12 is not thrown out by the operator it will engage projection 9 as it descends, carry chain 6 along, and thereby rotate pulley E and through cable D raise the gate C. The downward movement of the parts 9 and 12 will continue together until projection 9 turns to pass under the wheel E, and thus passes out of disengagement with pawl 12, and then the gate C will be free to be closed. Meantime the projection 8 is carried the same distance up on the other side of the chain 6, and now projection 8 is up and projection 9 is down. The dog or pawl 14 now becomes a factor in the case, and when the platform reaches the open landing and the parts 9 and 12 are near to disengaging position the dog or pawl 14 has passed projection 8 and dropped in beneath the same. Now as disengagement of dog 12 occurs dog 14 is in position to lift on projection and thus prevent too sudden or violent closing of the gate. The reverse of this occurs when the elevator is going up. Then dog 12 drops in over projection 9 and prevents sudden closing of the gate. In one case the pawl opens the gate by

power. In the other case it prevents the gate from too rapid closing by reason of its weight and bears against this weight, thus letting the gate close only as fast as the elevator moves.

- 5 Each of the successive landings and gates are provided with these improved connections and are independent of one another and have their own operation. The rope or cable D is just long enough to pay all out when
10 the gate is down, so that it will always be stretched and will not run by on a backward rotation and get slack. It will also be noticed that only a single set of sprocket-wheels and a single sprocket-chain is needed by this construction, and likewise a single pulley, at any
15 one time; but the pulley is an exchangeable member, and therefore is mounted by the side of sprocket-wheel E in such way as to be easily removed and replaced by another of larger or
20 smaller size, according to the needs of the elevator. Thus, for example, in some places a six-foot rise of the gate suffices; in another, six and a half may be wanted; in another, seven; in another, eight, and so on. Fre-
25 quently the exact rise is not known till the place is reached to put the mechanism, and again there may be demand for variation on different floors in the same shaft. Now in
30 order that all the work necessary to adapt the parts to varying elevations may be anticipated and provided for in the factory I construct sprocket-wheels of the same size and chains of the same length for all places and

put them up always with the same brackets in the same way. The distance between pro- 35
jections 8 and 9 and the space between dogs 12 and 14 will therefore be the same at all times and places, and perfect uniformity as to these parts will be maintained wherever these attachments are found. Then to get 40
more rise of gate I simply put on a larger pulley, and each pulley may be marked for size according as it is to travel seven, eight, or nine feet in three rotations, or any other distance. The only difference then is found in 45
the size of the pulley, and such size is chosen out of the assortment on hand as the landing requires, and that is all that is required.

What I claim as new, and desire to secure by Letters Patent, is— 50

The attachment described, comprising a single pair of sprocket-wheels and a chain, projections on said chain and dogs on the elevator platform to engage the same, the gate and its cable, a pulley for said cable and 55
means to secure the pulley removably at the side of the lower sprocket-wheel, whereby one size or another of cable-pulley may be employed, substantially as described.

Witness my hand to the foregoing specification this 19th day of March, 1896. 60

JOHN T. HOBBS.

Witnesses:

H. T. FISHER,

R. B. MOSER.