

(No Model.)

C. SORBER.

SAFETY GATE FOR ELEVATORS.

No. 328,820.

Patented Oct. 20, 1885.

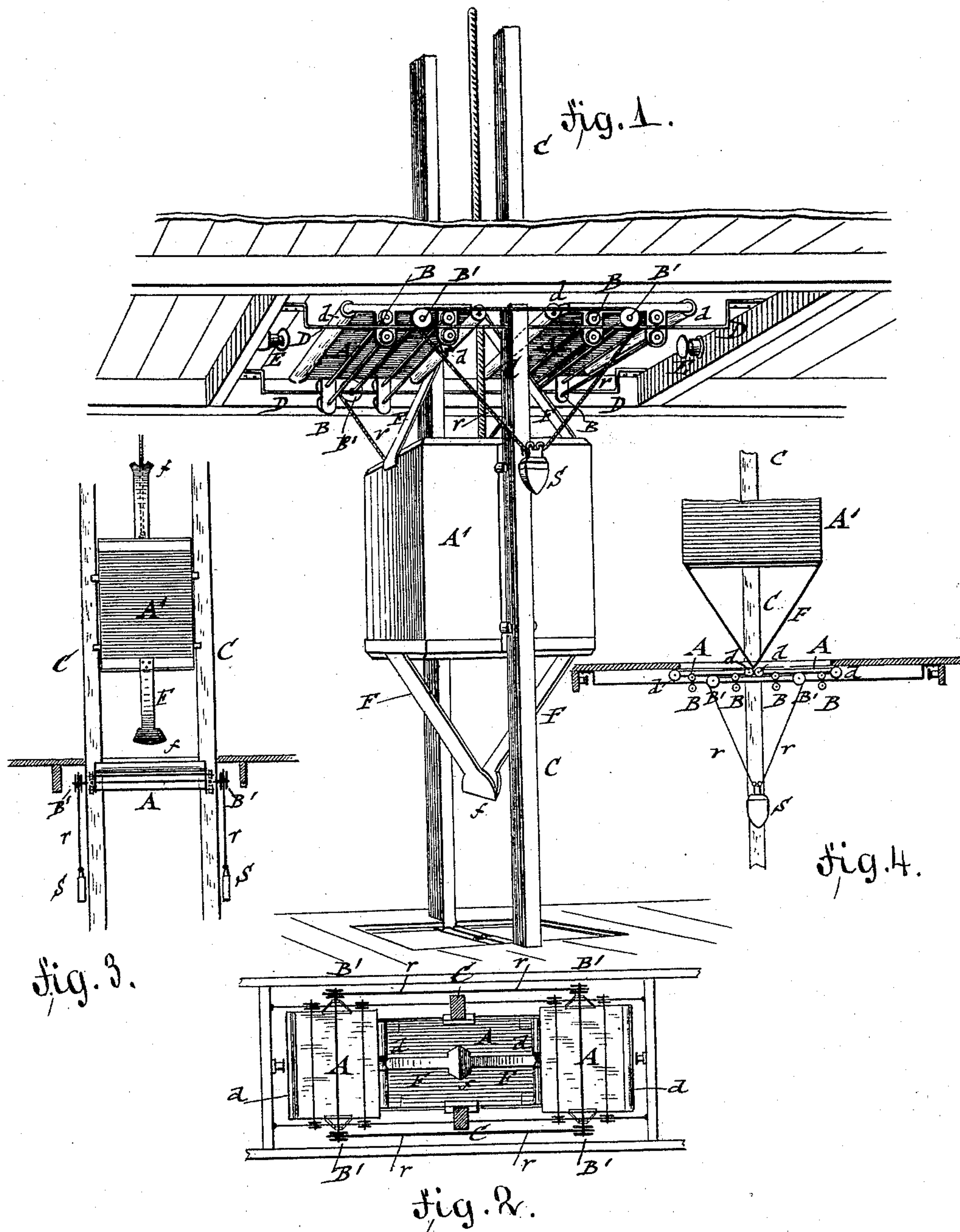


Fig. 3.

Fig. 2.

Fig. 4.

WITNESSES

J. H. Rosenbaum.  
Martin Petry.

INVENTOR

Charles Sorber  
By his Attorneys  
Gropius & Raegen



# UNITED STATES PATENT OFFICE.

CHARLES SORBER, OF ST. LOUIS, MISSOURI.

## SAFETY-GATE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 328,820, dated October 20, 1885.

Application filed August 19, 1885. Serial No. 174,785. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES SORBER, of St. Louis, in the county of St. Louis and State of Missouri, have invented certain new and useful Improvements in Safety-Gates for Elevators, of which the following is a specification.

This invention relates to improved safety-hatches for passenger and freight elevators, which are automatically opened by the car and closed after the same has passed, so as to prevent accidents; and the invention consists of an elevator-car provided with inclined top and bottom braces terminating in knife-edges, and a pair of laterally-movable hatches that are guided on rails below the floors and balanced by suitable weights suspended from chains and pulleys, said hatches being provided at their meeting-edges with rollers, between which the knife-edges of the inclined braces enter, so as to produce the opening or closing of the hatches by the joint action of the ascending or descending motion of the car and of the balance-weights of the hatches.

In the accompanying drawings, Figure 1 represents a perspective view of my improved safety-hatches for elevators. Fig. 2 is a bottom view of the hatches, showing them in open position; and Figs. 3 and 4 are respectively a side elevation and a vertical longitudinal section showing the car in the act of opening the hatches.

Similar letters of reference indicate corresponding parts.

In the drawings, A A represent two hatches, which are guided below the hatchway of the floor through which the elevator-car A' ascends and descends. Each hatch A is guided by means of four pairs of rollers, B B, on horizontal rails D D, one roller of each pair being arranged above the other roller below the rails D. The rails D D are bent at right angles at the ends in the shape of hangers and attached to the under side of the floor. The rails D D are made long enough to permit the entire opening of the hatches. They are supported at the middle parts by the vertical guide-posts C C of the elevator-car, through holes of which they are passed. The hatches A A are provided at both ends with cylindrical rubber rollers *d d*, which are set in motion during the lateral motion of the hatches. The

rollers *d d* project slightly above the upper edges of the hatches and move easily and noiselessly along the under side of the hatchway. Each hatch A is provided at each side, intermediately between the guide-rollers *d d*, with a pulley, B', over which pulley and the pulley B' of the other hatch A is passed an endless chain or wire-rope, *r*, that is also passed below two pulleys of a weight, S, which is always suspended by the pulleys in a line centrally between the guide-pulleys B'. The weights S serve to close the hatches after the car A' has passed in its ascending or descending motion through the hatchway.

The elevator-car A' is provided at its top and bottom parts with inclined braces F of iron or steel, which are provided at their meeting-edges with sharp edges *f*. The upper edge, *f*, is perforated at the center for the passage of the elevator-rope, as shown in Fig. 3. The inner rollers, *d d*, of the hatches A have for the same purpose annular guide-grooves, as shown in Figs. 1 and 2. The meeting-edges *f* form wedges that enter between the inner rubber-covered rollers, *d d*, of the hatches and gradually separate them, so that the inclined braces move the hatches sidewise and open them sufficiently for the passage of the car. The inner rollers, *d d*, move over the inclined braces and along the side walls of the car until the latter has passed the hatches, when the other set of inclined braces of the car pass along the rollers *d d* owing to the closing of the hatches by the action of the weights S S.

The transverse end beams that inclose the space within which the hatches are moved are provided with buffers E E, which are pushed back by the hatches when they are opened by the car. The buffers E E serve for starting the return-motion when pressure on the same has ceased. During the descending motion of the elevator-car the hatches rest on the upper guide-rollers B, while during the ascending motion of the car the hatches rest on the lower guide-rollers B.

The safety-hatches are opened and closed automatically by the joint action of the car and balance-weights in a noiseless and reliable manner, and can never be left open by carelessness, so that accidents and the quick spread of fire through the hatchways are prevented.

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

1. The combination of a vertically-reciprocating elevator-car having inclined top and  
5 bottom braces with sharp meeting-edges, laterally reciprocating and guided hatches having transverse rubber-covered end rollers and side guide-rollers, horizontal rails for guiding said hatches, and balance-weights and chains  
10 applied to the hatches, substantially as set forth.

2. The combination of a vertically-reciprocating elevator-car having inclined top and

bottom braces with sharp meeting-edges, laterally reciprocating and guided hatches having transverse end rollers and side guide-rollers, weighted chains applied to the hatches, and spring-buffers for cushioning the hatches, substantially as set forth. 15

In testimony that I claim the foregoing as  
my invention I have signed my name in presence of two subscribing witnesses. 20

CHARLES SORBER.

Witnesses:

JOHN KELLNER,

HENRY HOLMANN.