

(No Model.)

C. O. BREED.

LIFE SAVING DEVICE FOR ELEVATOR CARS.

No. 568,733.

Patented Oct. 6, 1896.

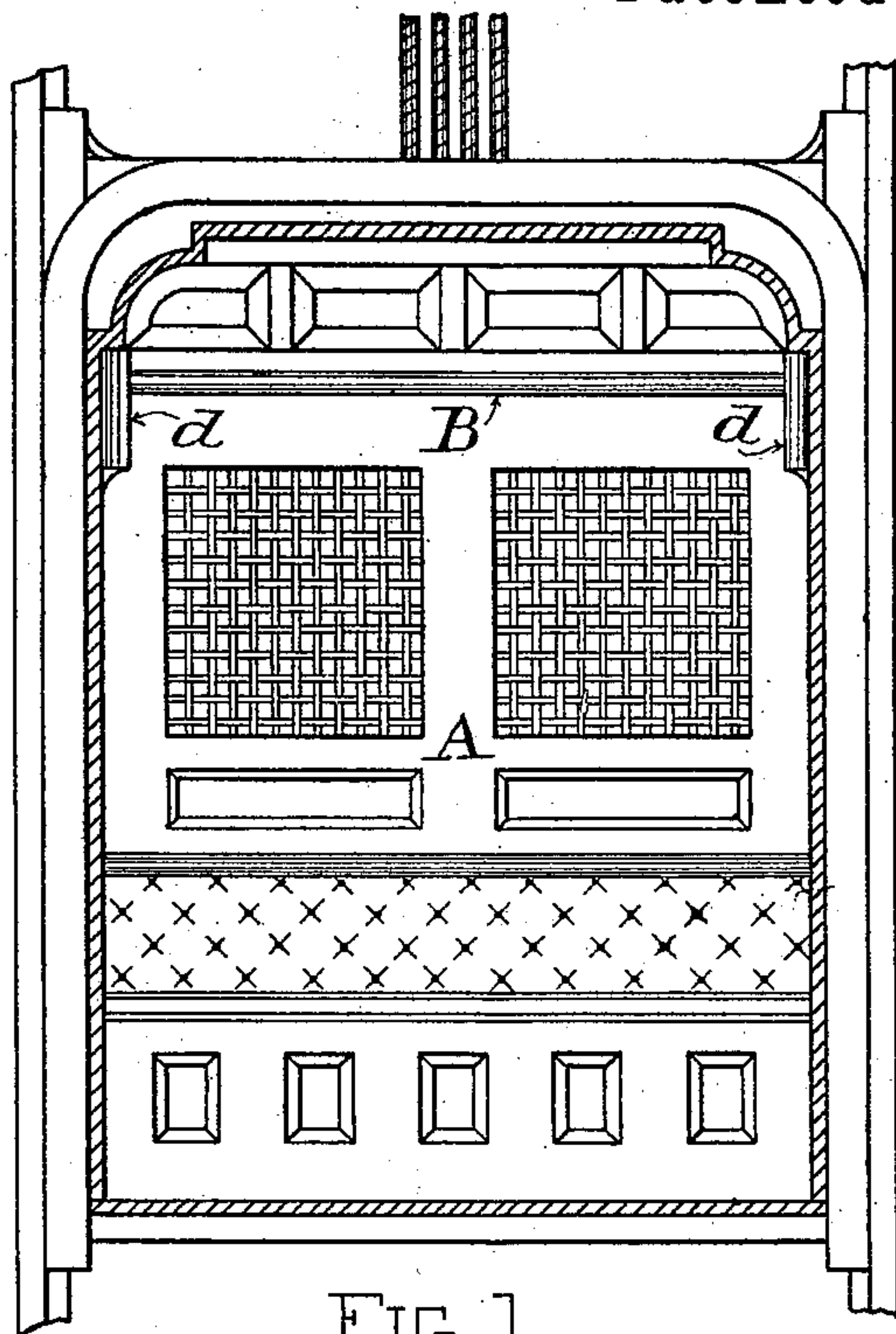


FIG. 1.

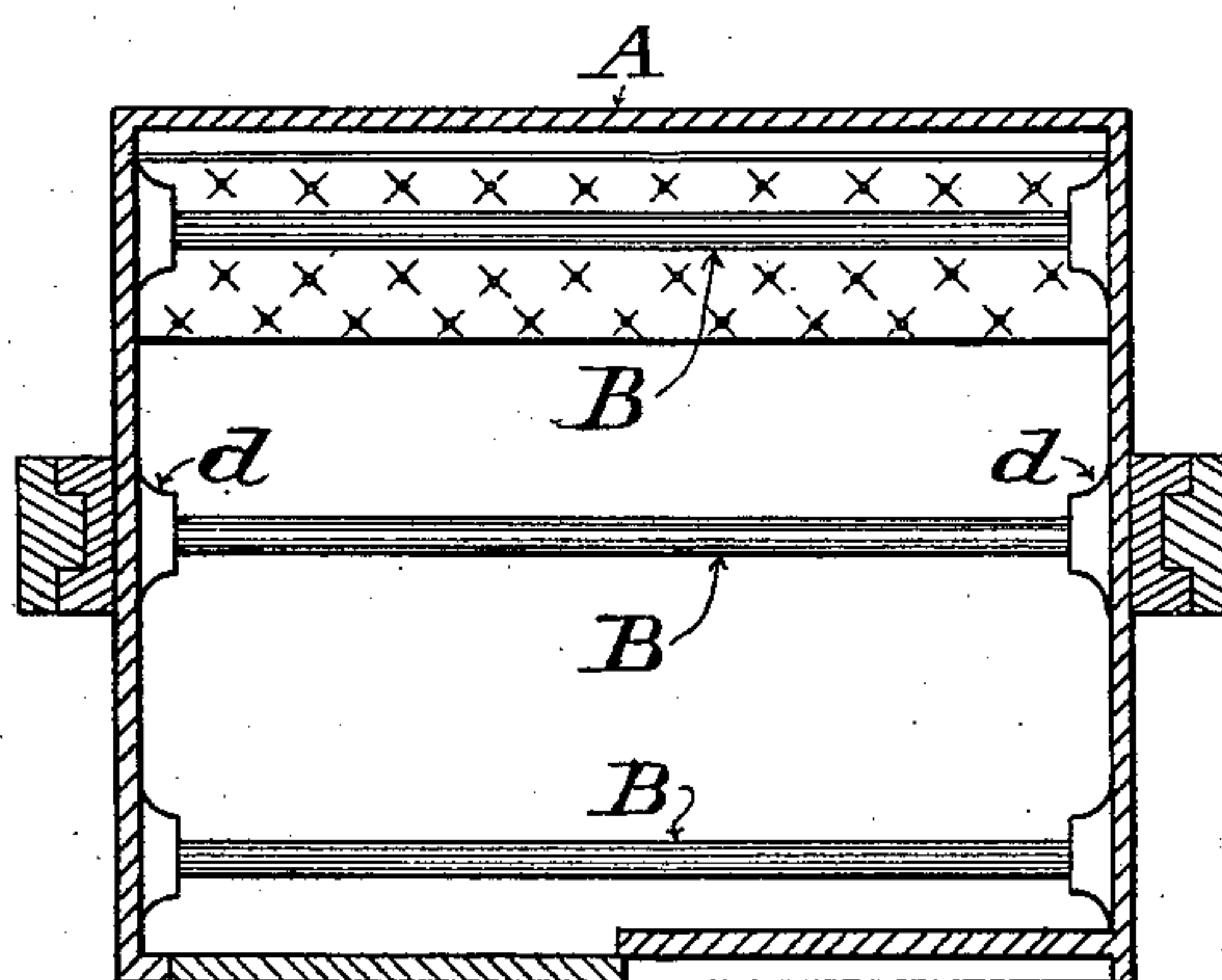


FIG. 2.

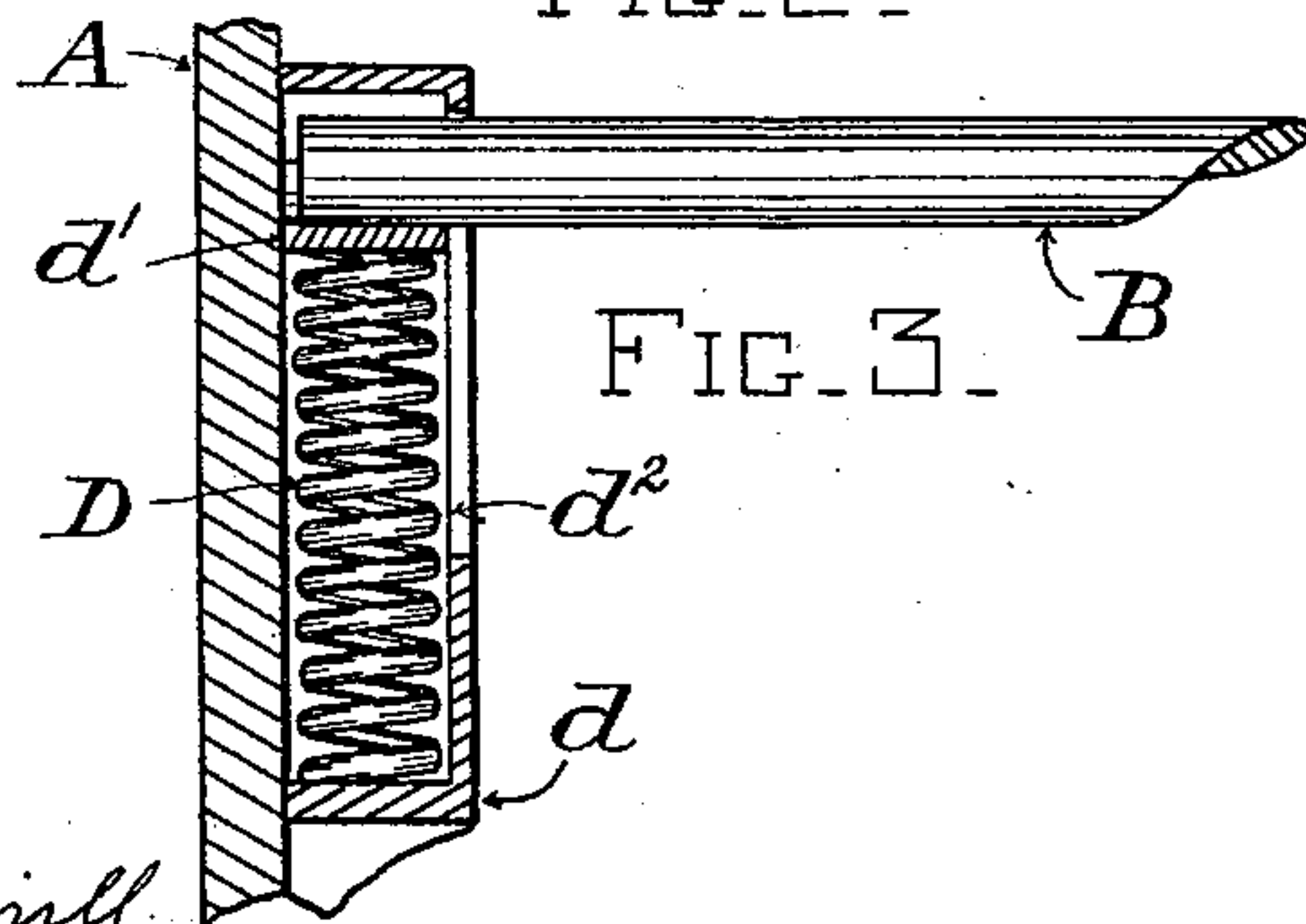


FIG. 3.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

CHARLES ORRIN BREED, OF LYNN, MASSACHUSETTS.

## LIFE-SAVING DEVICE FOR ELEVATOR-CARS.

SPECIFICATION forming part of Letters Patent No. 568,733, dated October 6, 1896.

Application filed August 23, 1895. Serial No. 560,308. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES ORRIN BREED, a citizen of the United States, and a resident of Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented a new and useful Improvement in Life-Saving Devices for Elevator-Cars, of which the following, taken in connection with the accompanying drawings, is a specification.

10 The present invention relates to improvements in devices of the above class; and it consists of a bar or series of bars supported substantially horizontally within the elevator-car above the head of and in convenient position to be grasped by a passenger of average height.

15 The present invention further consists of the means of supporting said bar or bars and of the devices and combinations of devices hereinafter set forth and claimed.

20 The object of the present invention is to provide a convenient means whereby a passenger in an elevator-car who perceives that the car is falling (otherwise than normally) may throw the weight of his body upon his arms and thus take up in the muscles of the arms a portion of the shock occurring when the elevator reaches the limit of its fall, and which if sustained by a passenger standing

25 upon his feet upon the floor of the car would result in a serious if not fatal rupture, even if the passenger were otherwise uninjured.

30 The present invention is illustrated in the accompanying drawings, in which—  
35 Figure 1 is a vertical section of an elevator-car provided with my improved life-saving device. Fig. 2 is a horizontal section of the same taken above the life-bars. Fig. 3 is a detail view, partially in section, showing one of the yielding supports for the life-bars.

40 Similar letters of reference refer to similar parts throughout the several views.

45 In the drawings, A represents an elevator-car, which may be of any convenient form or construction.

50 B B B, &c., represent a series of life-bars located within the car A above the head of and in convenient position to be grasped by a passenger of average height. I would say in this connection that I consider the bars B B B, &c., in a convenient position to be grasped

by a passenger of average height, not only when he can reach the same when standing erect, but also when the bars are slightly beyond the reach of his arms when standing erect and he is obliged to make an easy jump in order to lay hold of the bars.

55 The bars B B B, &c., may be of any suitable material of sufficient strength and of any suitable shape for the purposes herein- after stated. As shown in the drawings, the bars B B B, &c., are supported substantially horizontally and are substantially parallel to each other, extending from side to side across the car, so that one or the other of said bars is easily accessible to a passenger from any portion of the car.

60 Although the life-bars B B B, &c., would undoubtedly be of great utility, however mounted, in enabling a passenger to throw the weight of his body upon his arms, and thus receive the shock of the falling car through the yielding muscles of the arms rather than through the legs, which, when sustaining the weight of the body, are substantially rigid against a vertically-applied force, and although there will be more or less elasticity in the bars themselves, which will tend to take up a portion of the shock, I prefer in practice to provide the bars B B B, &c., with yielding and preferably elastic supports.

65 To the above end, in the form of my invention shown in the drawings, I have provided at each end of each of the bars B B B, &c., a casing or box *d*, secured to the frame of the car or a suitable support thereon.

70 Each of the casings or boxes *d d d*, &c., incloses and supports a coiled spring *D*, upon which rests a plate or block *d'*, fitted to the box *d*, and free to reciprocate along the same. Each of the boxes *d d*, &c., is vertically placed and provided with a vertical slot *d<sup>2</sup>*, through which projects the end of one of the bars *B*, which extends into the box *d* and rests upon the plate or block *d'*, the above-described arrangement being such that a sudden downward impulse upon any of the bars B B, &c., depresses the bar *B* to which it is applied, the plates *d' d'* at each end of the bar yielding downwardly against the tension of the springs *D D*. I would say, however, that I do not consider the present invention as lim-



ited to the specific form and arrangement of the yielding supports for the life-bars B B B, &c., as herein shown and described, as the same may be modified in many ways by a person skilled in the art without any departure from the essential nature of the present invention.

In using the present invention a passenger in an elevator-car provided with the same, when he feels any preadmonition of the accidental falling of the car, such, for example, as the stoppage of the car between the floors or the falling of the car at the rate beyond its normal speed, by reaching up or by an easy upward leap grasps one of the life-bars B and raises or suspends his body above the floor, so that when the car strikes he does not receive the shock through his legs, which, acting on the principle of the toggle-lever, when straightened to sustain the weight of the body are substantially unyielding to a downwardly-acting force suddenly applied, but the shock is received through the arms as communicated thereto from the yieldingly-supported life-bar B, and so much of the shock will be taken up in overcoming the resistances of the springs D D and in the yielding muscles of the arm, especially if the same are bent as in the act of raising the body toward the bar, that even if the passenger is finally thrown to the floor of the car the liability of fatal or even serious injury is greatly reduced.

I am aware that straps have been placed in railway-cars dependent from horizontally-supported bars, but such bars or straps are intended merely to enable a passenger to steady himself when standing upon the floor of the car against the jolting of the car, and the same are not intended nor are they arranged or located in a suitable position to

perform the function of the life-bars B B B, &c., as hereinbefore described.

I therefore claim as my invention and desire to secure by Letters Patent of the United States—

1. The combination with an elevator-car of a bar or series of bars supported substantially horizontally within the car, above the head of and in convenient position to be grasped by a passenger of average height, and yielding-supports for said bar or bars, substantially as described.

2. A safety device for elevator-cars, and in combination with such car and located in the same above the heads of the passengers, a safety-bar as B, boxes *d*, *d*, and springs D, D, and plates *d'*, *d'*, substantially as shown and described.

3. In combination with an elevator-car, and attached to the same above the heads of the passengers and within reach of the same, a bar as B with means for elastic attachment to such car, substantially as and for the purpose set forth and described.

4. In a safety device for elevators, the combination with an elevator-car of the slotted boxes *d*, *d*, secured to the sides of the elevator above the heads of the passengers, the springs D, D, within said boxes, the plates *d'* secured each to the upper end of one of the springs and a safety-bar B having its ends projected through the slots in the boxes and resting on the plates carried by the springs.

Witness my hand, in the presence of two attesting witnesses, this 21st day of August, 1895.

CHARLES ORRIN BREED.

Witnesses:

PERCY E. CLARKE,  
BENJAMIN PHILLIPS.