

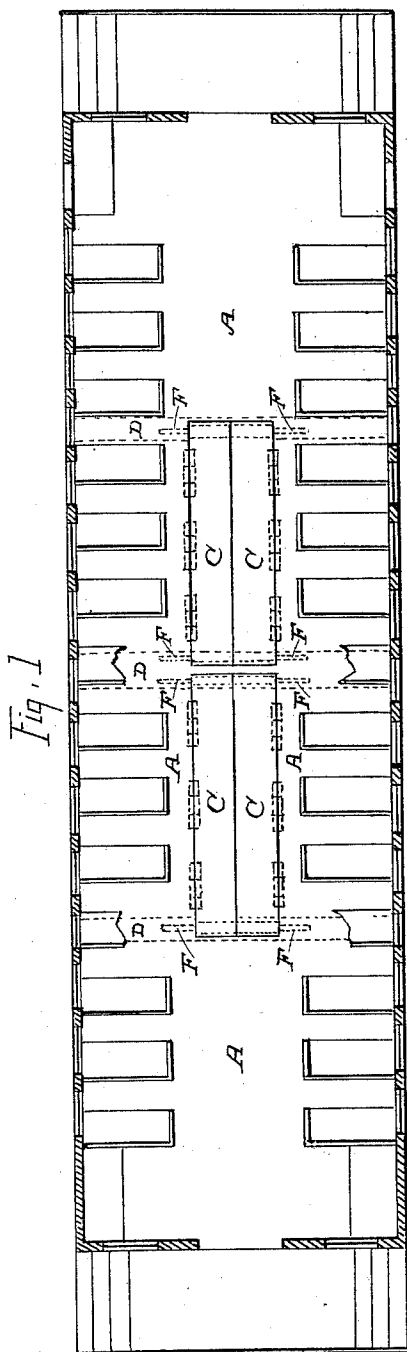
(No Model.)

2 Sheets—Sheet 1.

W. SKYRME.
SAFETY CAR.

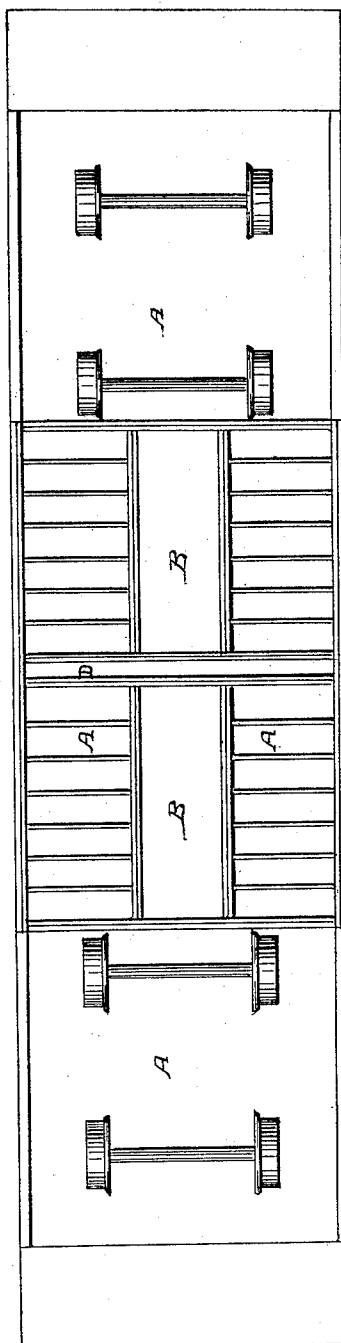
No. 477,075.

Patented June 14, 1892.



Witnesses,
J. A. Baryless

Fig. 2



Inventor,
William Skyrme
By Dewey & Co. atty.

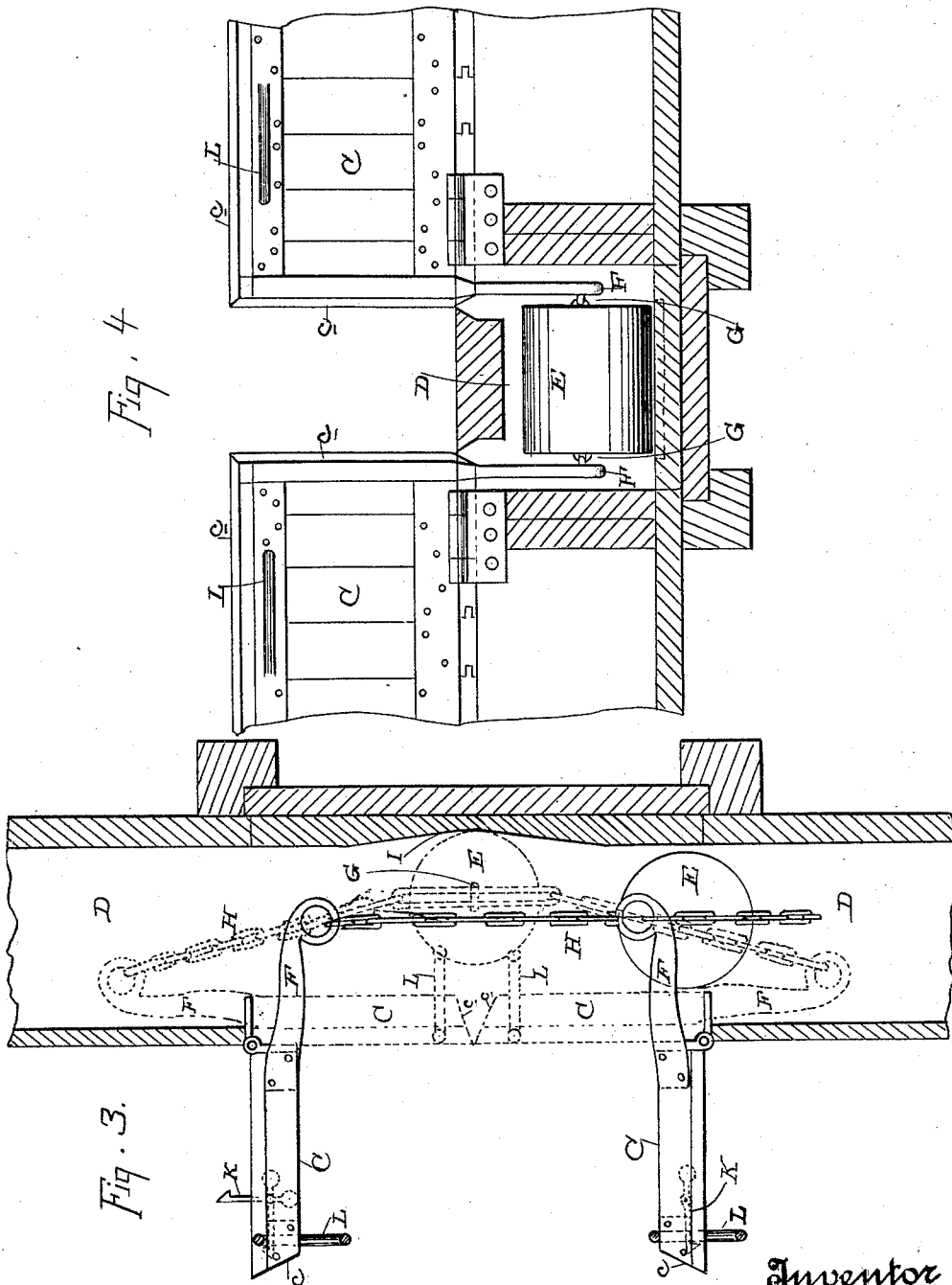
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UNITED STATES PATENT OFFICE.

WILLIAM SKYRME, OF SAN FRANCISCO, CALIFORNIA.

SAFETY-CAR.

SPECIFICATION forming part of Letters Patent No. 477,075, dated June 14, 1892.

Application filed February 26, 1892. Serial No. 422,930. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SKYRME, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Escape Attachments for Cars; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a device which I call "an accident-escape attachment for railway-cars."

It consists of a series of door-openings formed in the floors or roofs of the cars, doors by which said openings are normally closed, and means by which the doors are automatically opened whenever an accident occurs by which the car is overset, so as to leave free egress to the passengers.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a plan view showing the floor of a car with the openings. Fig. 2 is a bottom view. Fig. 3 is an enlarged transverse section taken through one of the channels intermediate between the door openings. Fig. 4 is a longitudinal section of the channel with the doors raised.

The object of my invention is to provide an easy means for the escape of passengers from cars which may be overturned by reason of accident, and where the ordinary windows or doors of the coach are not available for this purpose.

A represents the floor of any passenger-coach, having openings B made along the floor between the seats of the car and in such relative positions as to avoid the trucks at either end of the car, so that these spaces open into the comparatively clear space between the trucks. Similar openings may also be made in the roof of the car, and these openings are all provided with doors C, which normally remain closed, so that the floor or roof of the car is complete and continuous during its ordinary use.

In describing the invention and its manner of operation I have here shown it as applied to the floor of the car, but it will be manifest that a similar arrangement will make it equally applicable to the roof, whichever may be found desirable.

The doors C are strongly hinged along their outer edges. They are made in pairs, closing toward the center on a line extending longi-

tudinally through the car. The meeting edges and also the ends of the doors are preferably beveled, as shown at c, so that in case the frame-work of the car is badly twisted these edges will not bind together to prevent the opening of the doors. Between each pair of doors, at their adjacent ends, is made a transverse channel D, and within this channel is arranged an operating mechanism which will insure the opening of both doors. In the present case I have shown this as consisting of a heavy cylindrical weight E, adapted to move from one end of the transverse channel to the other.

F F are lever-arms fixed to the outer sides of the doors to which the hinges are attached, these levers projecting in opposite directions beneath the floor of the car when the doors are closed and at such a point relative to the transverse channel and weight that they may both be connected with this weight. The weight has eyes or other means of attachment upon opposite sides, and to these eyes G are connected the chains H. When the doors are closed, the lever-arms project outwardly beneath the floor, as shown in dotted lines in Fig. 3, and the chains are of such length that when the weight is in the center of the transverse channel the chains will be extended between the weight and the outer ends of the lever-arms without any slack or loose chain when the doors are closed. The central portion of the channel is slightly depressed, as shown at I, so that the weight will normally rest in this depression and will not be moved to one side or the other by the ordinary swaying of the cars upon the track. If, however, by accident or otherwise, the car becomes upset, so as to fall upon its side, the lowermost of the doors will fall open by gravitation, so as to lie alongside of the seats upon each side of the passage-way in the center of the car. At the same time the weight E will fall by gravitation toward the lower side of its channel, and, pulling upon the chain which connects it with the lever of the upper door, it will immediately open this upper door, so as to cause it to stand parallel with the seats, in the same manner as the lower door opens by gravitation. It will be seen that the falling of the weight will slacken the chain upon the lower side, so that the levers upon that side are free to swing when that door opens by the action of gravity, and they

will be in no way impeded by the weight or chain.

If desired, each of the doors may be provided with a latch K, which is swiveled just beneath the door and weighted so that under ordinary conditions the latch lies flat and concealed in the floor; but when the door swings open the weight will cause this latch to turn up at right angles with the door, and it will then be in position to engage with the corresponding catch fixed in line with it upon the seats at either side. This insures the door remaining open when it is once thrown open, so that there will be no difficulty experienced in getting out through the opening.

I prefer to fix the levers F upon the door so that they either lie within or are in close proximity with the transverse channel before described, and the levers upon the ends of two adjacent doors may be connected with the single intermediate weight. It will thus act upon that end of both doors at once. The opposite ends of the doors are similarly acted upon by corresponding weights in the channels at that end, and thus the doors will be caused to open promptly as soon as the car is overturned. When the car is in this position upon the side, it is often difficult for a passenger to extract himself and get up to a point where he could pass out through the opening. For this purpose I have shown the rectangular links L fitted into grooves in the doors, so that when the doors are closed the upper horizontal part of the link lies in the groove and flush with the top of the floor. The ends of the link pass down loosely through holes in the floor, and the lower horizontal bar of the link is sufficiently distant from the floor to be entirely clear of its lower side.

Whenever the doors fall open, as previously described, it will be manifest that the links upon the lower doors will slip through the holes, so that the part which was below the door in its normal position will slide against the bottom of the door, while the upper part will move away from the door in a downward direction, thus making a sort of a handle, which the passenger may grasp to steady and help himself out of the wreck. When once upon a level with the doors, it will be comparatively easy to pass out through these openings, whether they be in the floor or the roof, and if the windows upon the lower side of the car are embedded in the earth or mud, the upper ones too high from that side to be reached by the passenger, the end doors and available windows being also bound and locked in place by the twisting of the framework of the cars, still these openings which I have described leave an ample and available escape for everybody within the car and a means for ingress for outsiders to assist them when necessary.

It will be manifest that the doors may be operated in various ways; but the means which I have here described provide an automatic and promptly-acting device which is

easily available and not liable to get out of order.

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

1. The combination, with a car, of doors in its floor or roof connected with each other and hinged upon opposite sides of central longitudinally-disposed openings made in said floor or roof and meeting upon a central line with closed transverse channels adjacent to the ends of the doors, and mechanism for opening said doors automatically by the overturning of the car, substantially as herein described.

2. The combination, with a car, of longitudinally-disposed oppositely-opening doors, correspondingly-shaped openings made in the floor or roof of the car, and mechanism comprising movable weights and connections from one door to the other, whereby said doors are opened automatically by the overturning of the car, substantially as herein described.

3. The combination, with a railway-car, of doors hinged upon opposite sides of central longitudinally-disposed openings made in the floor or roof of the car and meeting upon a central line, with closed transverse channels adjacent to the ends of the doors, lever-arms projecting into said channels from the ends of the doors, weights movable within said channels, and chains connecting the weights with the lever-arms, whereby the uppermost door will be opened by the action of the weight when the car is overturned and the lowermost will fall open by gravitation, substantially as herein described.

4. The combination, with a railway-car, of doors hinged upon opposite sides of openings longitudinally disposed in the floor or roof of the car, transverse channels adjacent to the meeting ends of said doors, weights adapted to move to the lowermost ends of the channels when the car is overturned, lever-arms projecting from the ends of the doors, and chains connecting the ends of said arms with the weights, whereby the lowermost door is opened by gravitation and the uppermost door by the action of the weight upon its levers, and swinging latches and catches, whereby the doors are engaged and prevented from closing, substantially as herein described.

5. The combination, with a railway-car, of doors hinged upon opposite sides of openings longitudinally disposed in the floor and roof of the car, said doors closing toward each other upon a central line midway of the openings and having their meeting edges and the ends which fit into the openings inclined or beveled to prevent their binding so that they cannot be opened when the car is overturned, substantially as herein described.

In witness whereof I have hereunto set my hand.

WILLIAM SKYRME.

Witnesses:

S. H. NOURSE,
J. H. BAYLESS.