

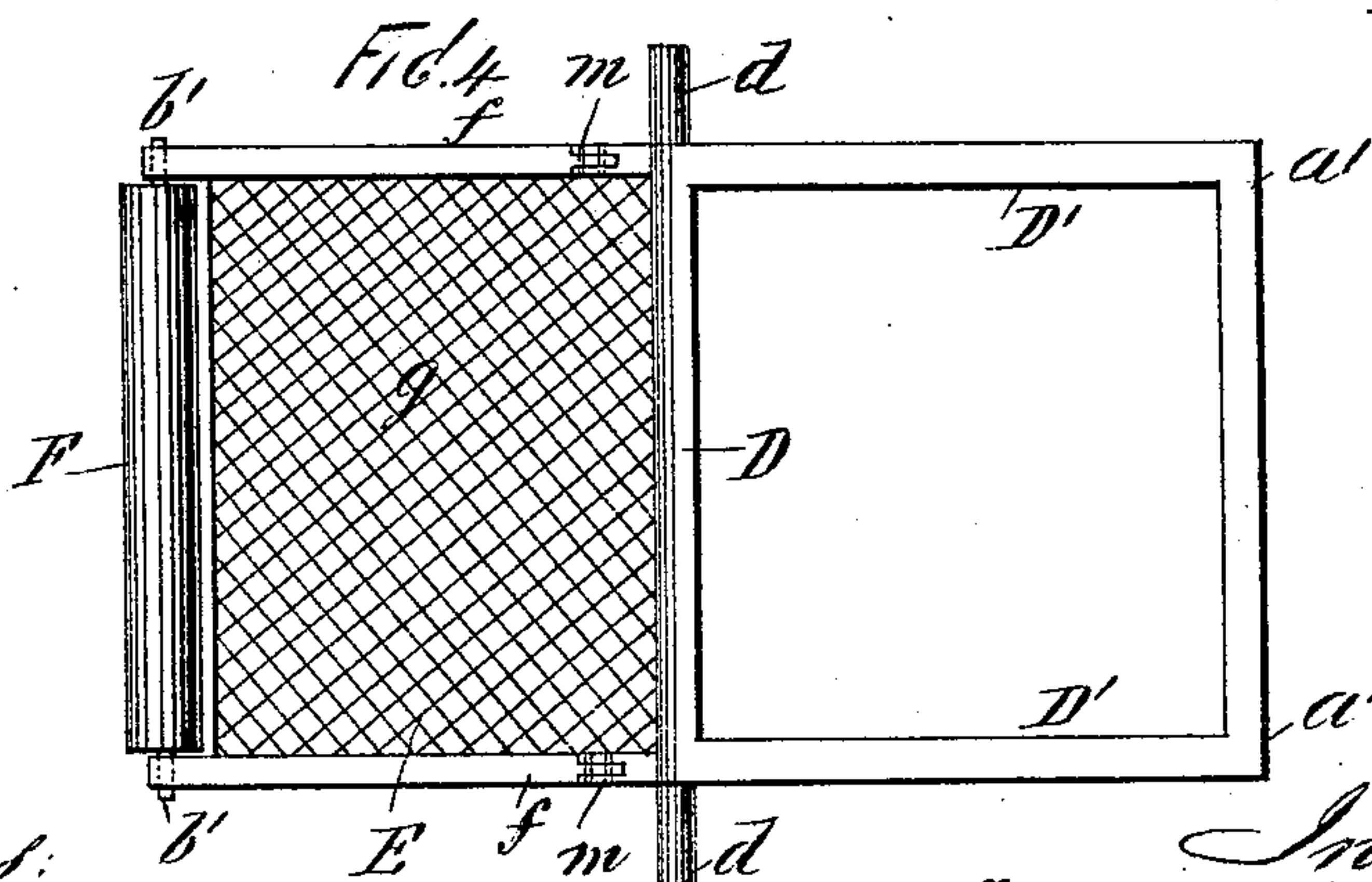
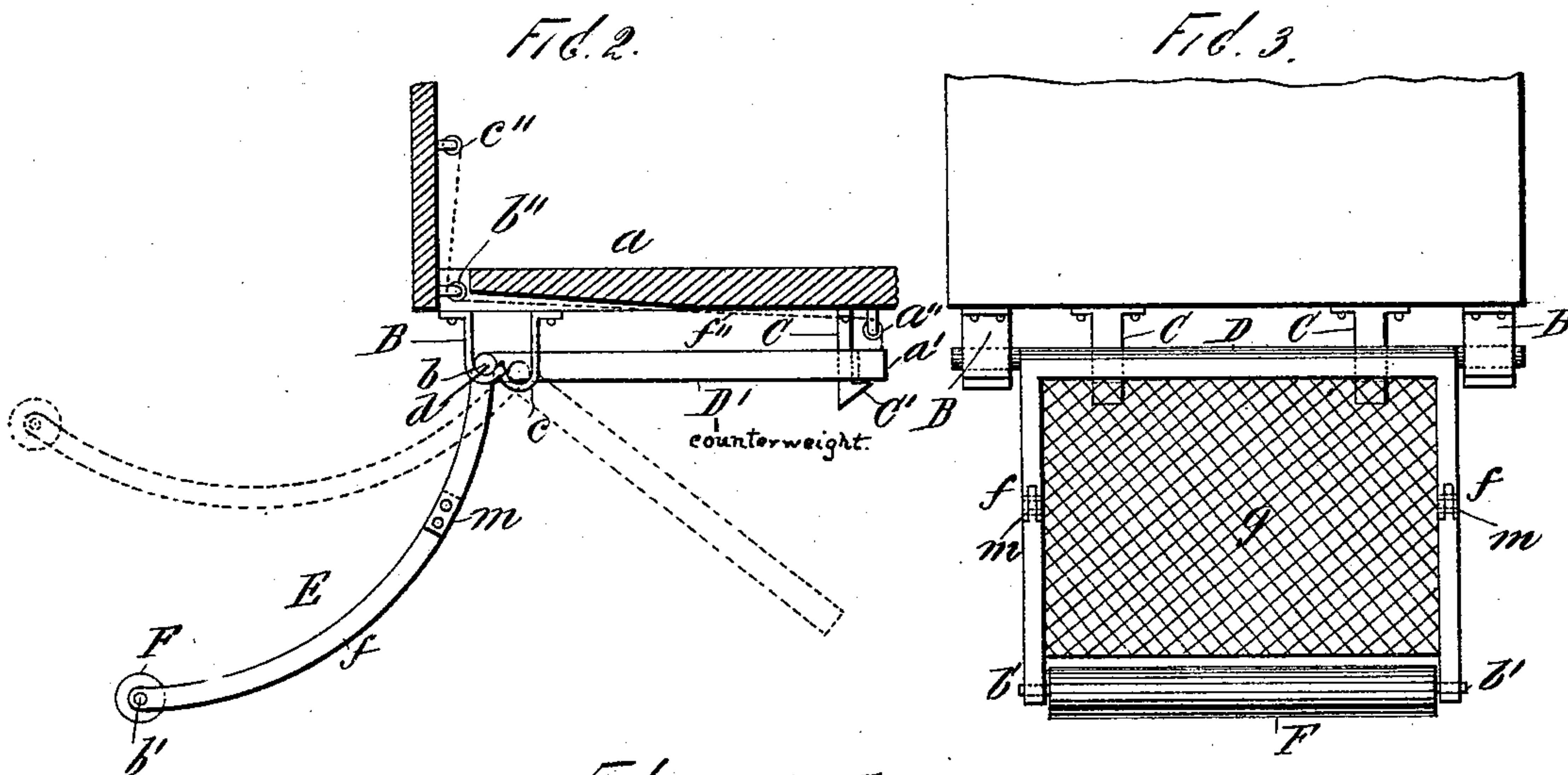
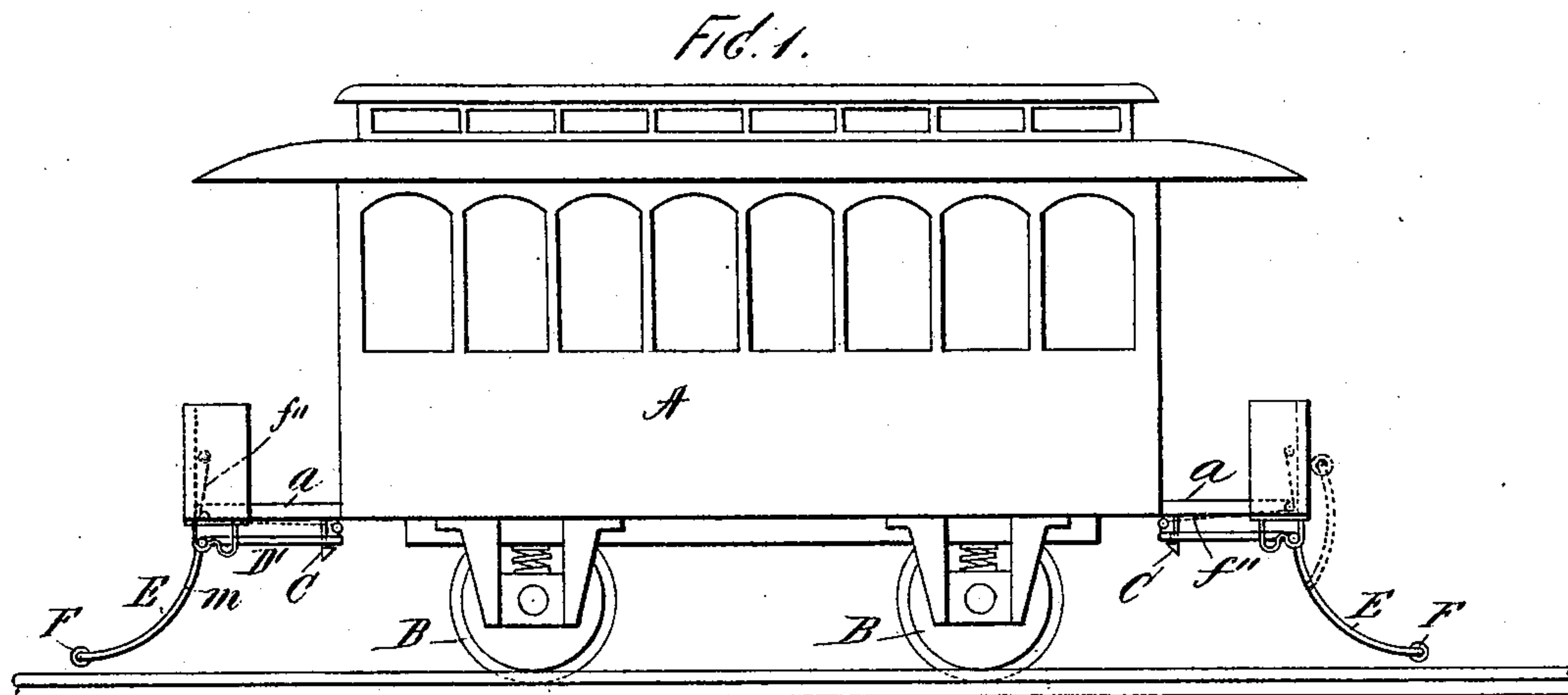
(No Model.)

O. R. ROUTH.

SAFETY APPLIANCE FOR STREET RAILWAY CARS.

No. 521,477.

Patented June 19, 1894.



Witnesses:  
John Buckler,  
Richard Routh

Inventor  
Oswald R Routh  
per  
James A Whitney  
Attorney.



# UNITED STATES PATENT OFFICE.

OSWALD R. ROUTH, OF JERSEY CITY, NEW JERSEY.

## SAFETY APPLIANCE FOR STREET-RAILWAY CARS.

SPECIFICATION forming part of Letters Patent No. 521,477, dated June 19, 1894.

Application filed December 16, 1893. Serial No. 493,858. (No model.)

*To all whom it may concern:*

Be it known that I, OSWALD R. ROUTH, of Jersey City, in the county of Hudson and State of New Jersey, have invented certain  
5 new and useful Improvements in Safety Appliances for Street-Railway Cars, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of a street railroad car provided with my invention. Fig. 2 is a side view and partial vertical sectional view,  
15 on a larger scale, illustrating my said invention. Fig. 3 is a front view and Fig. 4 is a plan view of certain parts of the apparatus shown in Fig. 2.

This invention belongs to that class of  
20 safety devices intended for use upon, or in connection with, street cars and the like, propelled by means other than draft animals, as, for example, trolley cars propelled by electricity, cable cars propelled by cables,  
25 and cars propelled by motors driven by storage batteries, &c. Such cars as employed in cities and other localities are, as is well known, a fruitful cause of casualties often fatal in their results.

30 The object of my invention is to provide simple and efficient means, capable of automatic action, by which a person struck by the advance of a car of the character indicated will, instead of being run over or crushed, be  
35 lifted up and away from the track and prevented from passing underneath the car, thereby insuring safety in the event of accidents, such as, heretofore, have in numerous instances resulted in maiming and death,

40 A is the body of a car, as, for example, a trolley or a cable car, so called. This body, which may be of any ordinary or suitable character is supported upon wheels, shown at B, in Fig. 1 in any appropriate manner.

45 At, a, are shown the car-platforms one at each end of the car-body in the usual way.

It is intended that, in practice, one of the apparatuses made according to my invention shall be provided at each end of the car as  
50 indicated in Fig. 1 to provide for the running of the car in either direction, in other

words, either end foremost in the manner common in the use of street railway cars.

The description of the apparatus as applied at one end of a car is, of course, equally  
55 a description of that employed at the other.

At opposite sides of the platform, a, and at or near the outer or front end thereof are two hangers, B. Each of these hangers is formed with a socket, b, at its forward part. Immediately behind each socket, b, but at a lower level is another similar socket, c. Each  
60 socket is open at the top so that the bearings, d, hereinafter described, may pass from one to the other as presently herein explained.

Behind the hangers, B, and at suitable distance therefrom are suspension bars, C, each of which has an inwardly or rearwardly extended shoulder, C', as represented in Figs. 70 1 and 2. These shoulders, C', are fixed in their relation with the car-body, as, also, are the hangers, B, with their sockets, b, and, c. Arranged to work in the said sockets are the bearings, d, which may be constructed by  
75 the two ends of a transverse shaft, D. Extended rearward from these bearings is a weighted or loaded frame, D', which, when the bearings, d, are in the forward or outer sockets, b, as shown in Figs. 1 and 2, rests at  
80 its rear end upon the shoulders, C', and is thereby held horizontally. When the said bearings are in the innermost or rearward sockets, c, the bearing surfaces, a', of the rear part of the frame are brought away from  
85 said shoulders and permit the frame to swing downward around the bearings, d, as upon a pivot. In front of the bearings, d, projects forward a scoop, E, which may comprise two parallel arms, f, fast to the said bearings and  
90 connected by a web of wire or other netting, a woven fabric, or other material to form the bottom or receiving surface, g, of the scoop. At the front or outer end of this scoop is a transverse roller, F, the gudgeons, b', of  
95 which work in suitable bearings in the ends of the arms, f. In its normal position for use the front end of the scoop is depressed to within a short distance of the ground while its rear end is elevated as shown in the drawings.  
100

Assuming the parts to be, preparatory to



action, in the positions shown in Fig. 1 and also in the full outline of Fig. 2, with the bearings, *d*, in the forward sockets, *b*, and with the bearing surfaces, *a'*, of the frame, *D'*, resting upon and supported by the shoulders, *C'*, it will be observed that any obstacle to the advance of the car of a size, weight, and character sufficient to push back the scoop and the frame, *D'*, until the bearings, *d*, pass back from the sockets, *b*, into the sockets, *c*, will bring the rear end of the frame, *D'*, clear of its supports, thereby permitting said frame to swing downward and correspondingly swinging upward the scoop around the pivots provided by the bearings, *d*, in the sockets, *c*, as shown in the dotted outline of Fig. 2. The frame, *D'*, is of such weight as to more than counterbalance the weight of a person who may be thrown or brought upon the scoop. Instead of being of the rectangular form shown in the drawings, as, for example, in Fig. 4, the frame, *D'*, may be of any configuration consistent with its due weight as just explained and consistent with its support at its rear end preparatory to disengagement at said end for the purpose herein explained. In like manner the structure of the scoop may be varied within wide limits so long as its co-operative relation with the counterweighting frame, *D'*, and its due relation with a roller at its front end is maintained. In the event of meeting an obstruction such as a person standing upon or crossing the track in front of the advancing car, the person thus struck will first receive upon the lower limbs the impact of the roller, *F*, and falling will come upon the upper surface thereof. The roller thereupon will turn with its said upper surface moving rearward with a tendency to carry the person bodily upon the scoop. Simultaneous with this the obstruction to the advance of the scoop drives the latter, and consequently the frame, *D'*, backward until the bearings, *d*, are driven from the sockets, *b*, back into the sockets, *c*, and the rear end of the counterbalancing frame, *D'*, is released in the manner hereinbefore explained. The resultant downward swing of the said frame moves upward the scoop to the position illustrated in the dotted outline of Fig. 2, suspending the person clear of the track as in a basket carried by the car and consequently out of harm's way.

When, as contemplated, the apparatus at one end of the car is duplicated at the other, it is desirable that the apparatus at what may be, for the time being, the rear end of the car, should be reduced in compass. To this end I provide in each of the arms, *f*, a hinged joint, *m*, of such character that the said arms will be rigid against backward flexure when brought to the position shown in Figs. 1 and 2 but capable of bending upward away from its normal relation with regard to the counterbalance and into the position shown in dotted outline at the right hand of Fig. 1. When

brought to this position the free end of the scoop may be hooked or attached to the platform by any suitable device until, the car being run in a reversed direction, it is desired to bring the scoop with the other parts of the apparatus into renewed operative position.

To enable the attendant, as for example, the motorman to replace the frame, *D'*, the scoop, &c., in operative position after action or operation as described, a chain, *f''*, or the like may be extended from the rear end of the frame, *D'*, over pulleys, *a''*, *b''*, to the car platform and there to a fixture, *c''*, of any suitable kind for holding the extremity of the chain when not in operation. By drawing upon the chain when the counterbalance is depressed the draft on the chain lifts said counterbalance and forces it, with the scoop, forward until the bearings, *d*, resume their original place in the sockets, *b*, thus bringing the apparatus to its original position and condition for a repetition, on occasion, of its operation.

It is preferred in practice to provide upon each of the bearings, *d*, a revoluble sleeve or anti-friction roller to diminish friction of said bearings upon the sockets, *b*, and, *c*, and to facilitate ease of movement of said bearings from the sockets, *b*, to the sockets, *c*, in the use and operation of the invention.

What I claim as my invention is—

1. In a safety appliance of the class specified, the combination of a pivoted scoop capable of a horizontal movement, a roller at the front of said scoop, a counterbalance at the rear of said scoop, pivotal movable bearings or supports for said scoop and means for normally holding suspended the said counterbalance and for releasing it to raise the scoop when the latter is moved backward, substantially as and for the purposes herein set forth.

2. In a safety appliance of the class specified the combination of the scoop, *E*, roller, *F*, bearings, *d*, hangers, *C*, having sockets, *b*, and, *c*, the frame, *D'*, arranged to counterbalance the scoop, and the shoulders, *C'*, arranged to support the rear or inner end of said frame when the bearings, *d*, are in the sockets, *b*, and to release the same when said bearings are brought back to the sockets, *c*, all substantially as and for the purpose herein set forth.

3. In a safety appliance of the class specified the combination of a pivoted scoop capable of a horizontal movement, a counterbalance at the rear of said scoop, pivotal movable bearings or supports for said scoop, and a joint, *m*, provided in said scoop to permit it to be turned upward away from its normal position with reference to the counterbalance when not in use, substantially as and for the purpose herein set forth.

4. In a safety appliance of the class specified, the combination with a pivoted scoop capable of a horizontal movement, a roller at the front of said scoop, a counterbalance at



the rear of said scoop, pivoted movable bearings or supports for said scoop and means for normally holding suspended the said counterbalance and for releasing the same from such  
5 suspended position, of a chain for replacing the parts after such release and a pulley or pulleys for guiding said chain in its opera-

tion, substantially as and for the purpose herein set forth.

OSWALD R. ROUTH.

Witnesses:

RICHARD ROUTH,  
T. F. KEHOE.