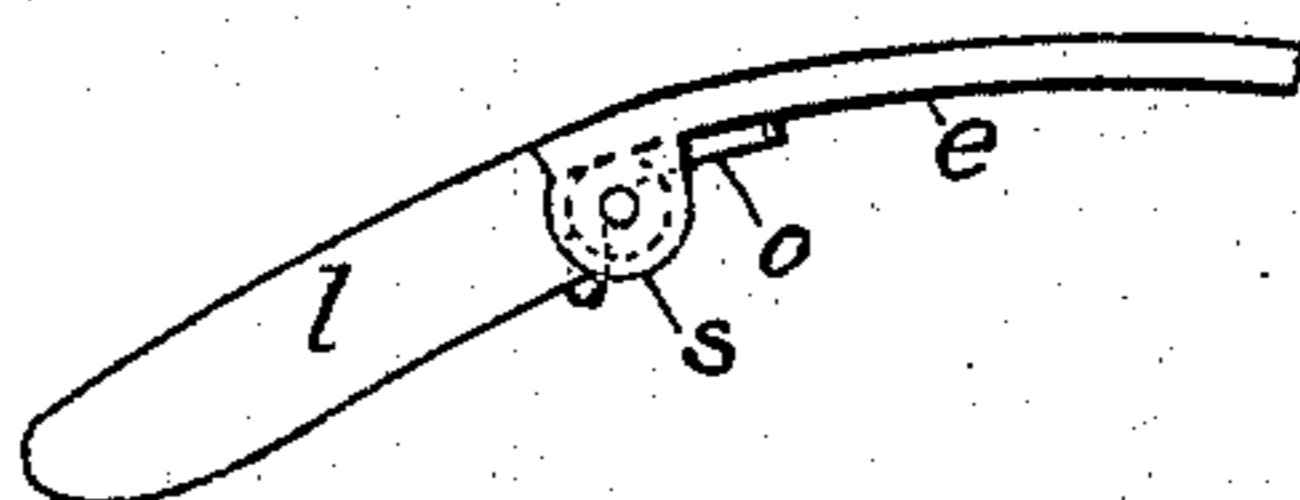
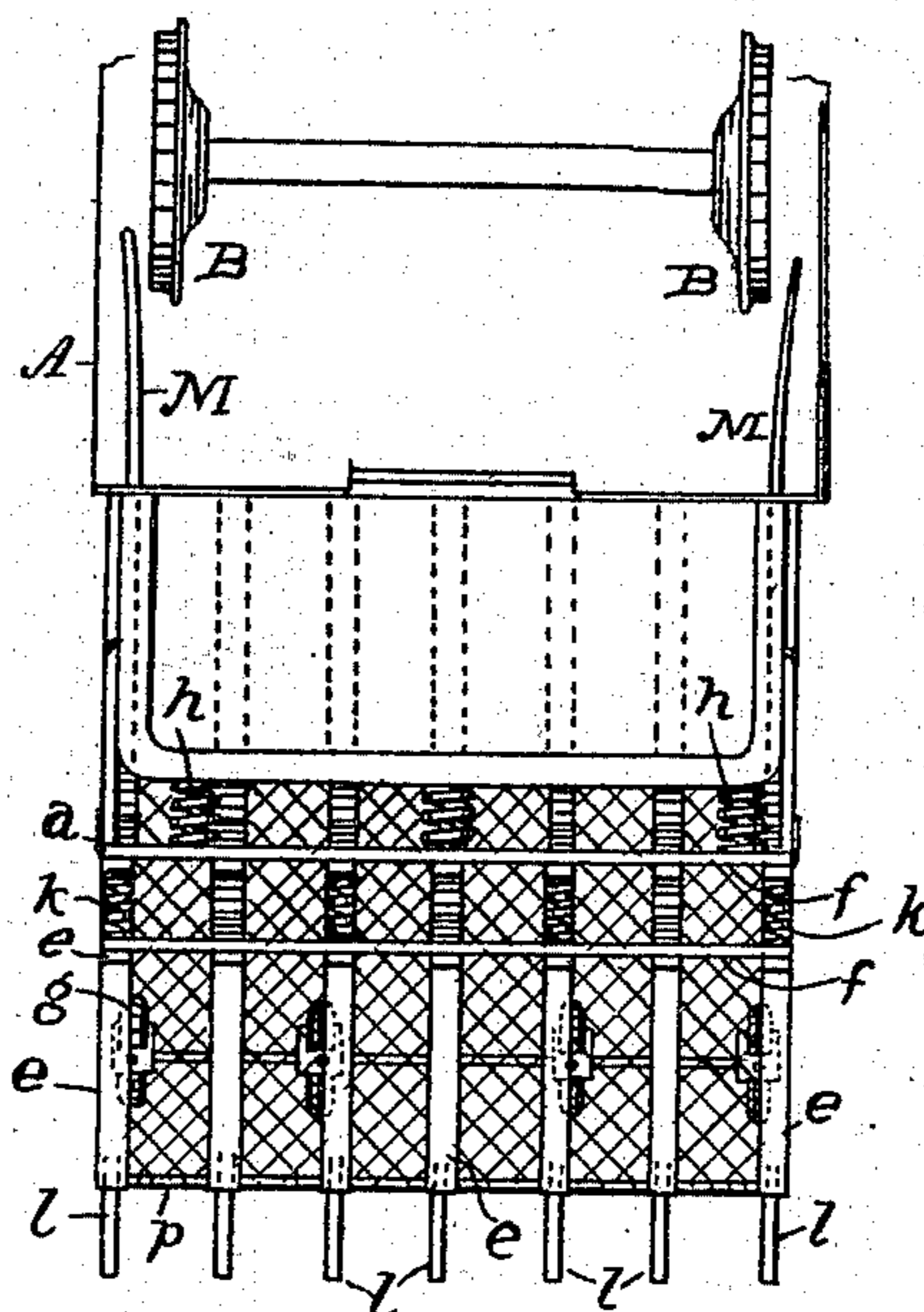
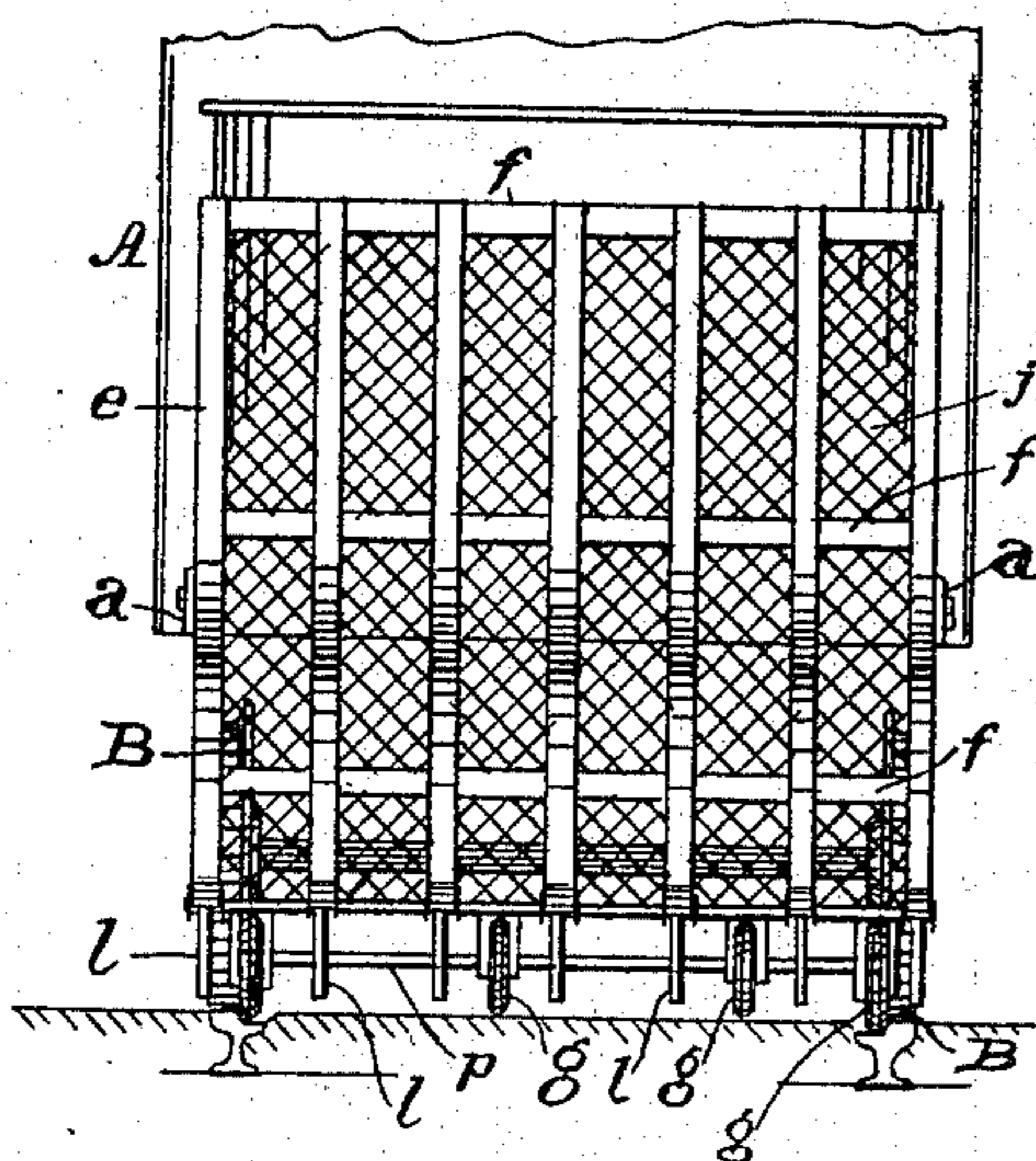
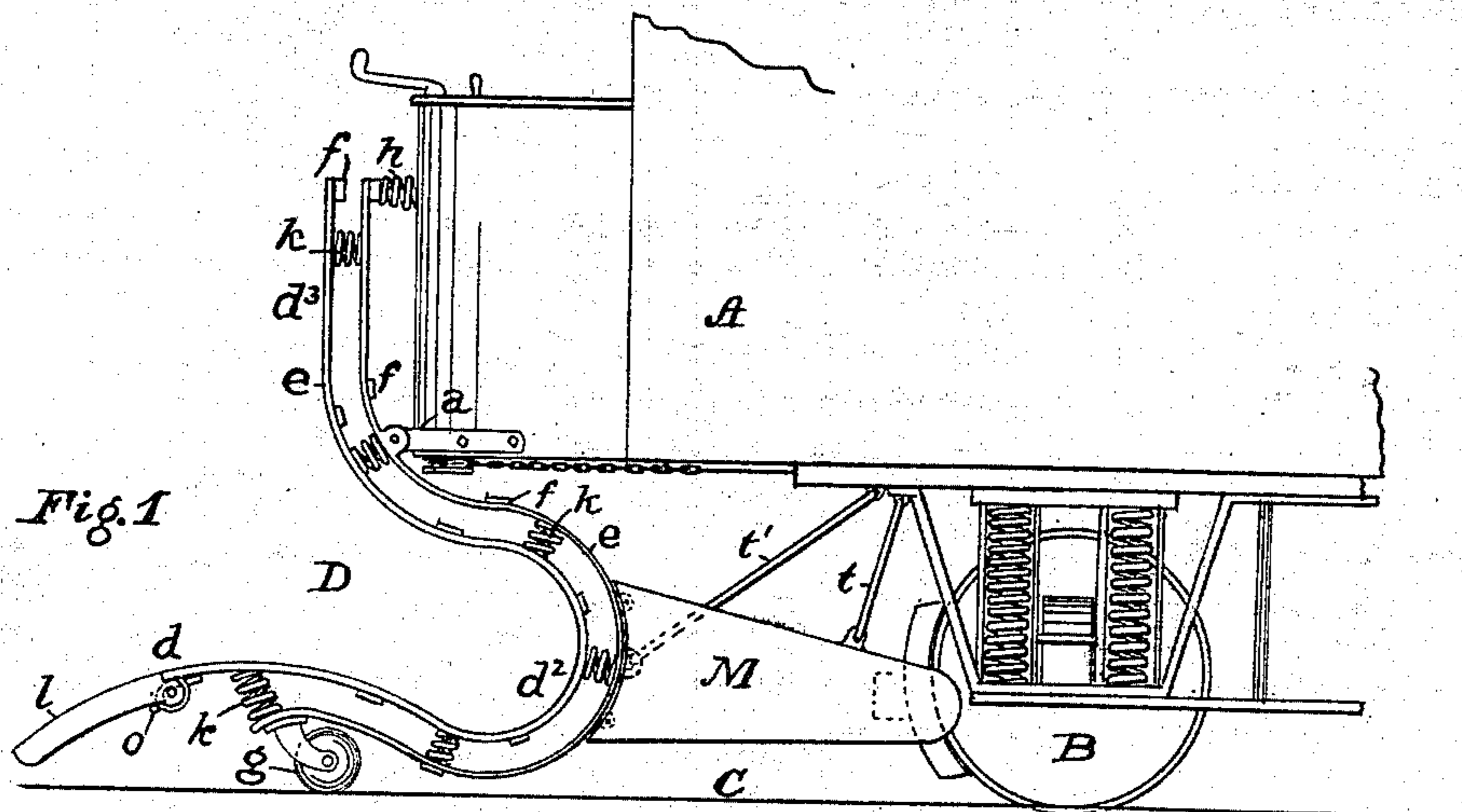


(No Model.)

B. F. SEYMOUR.
STREET CAR FENDER.

No. 573,434.

Patented Dec. 15, 1896.



Witnesses:

Myron B. Vorce
John R. Rydier

Inventor:

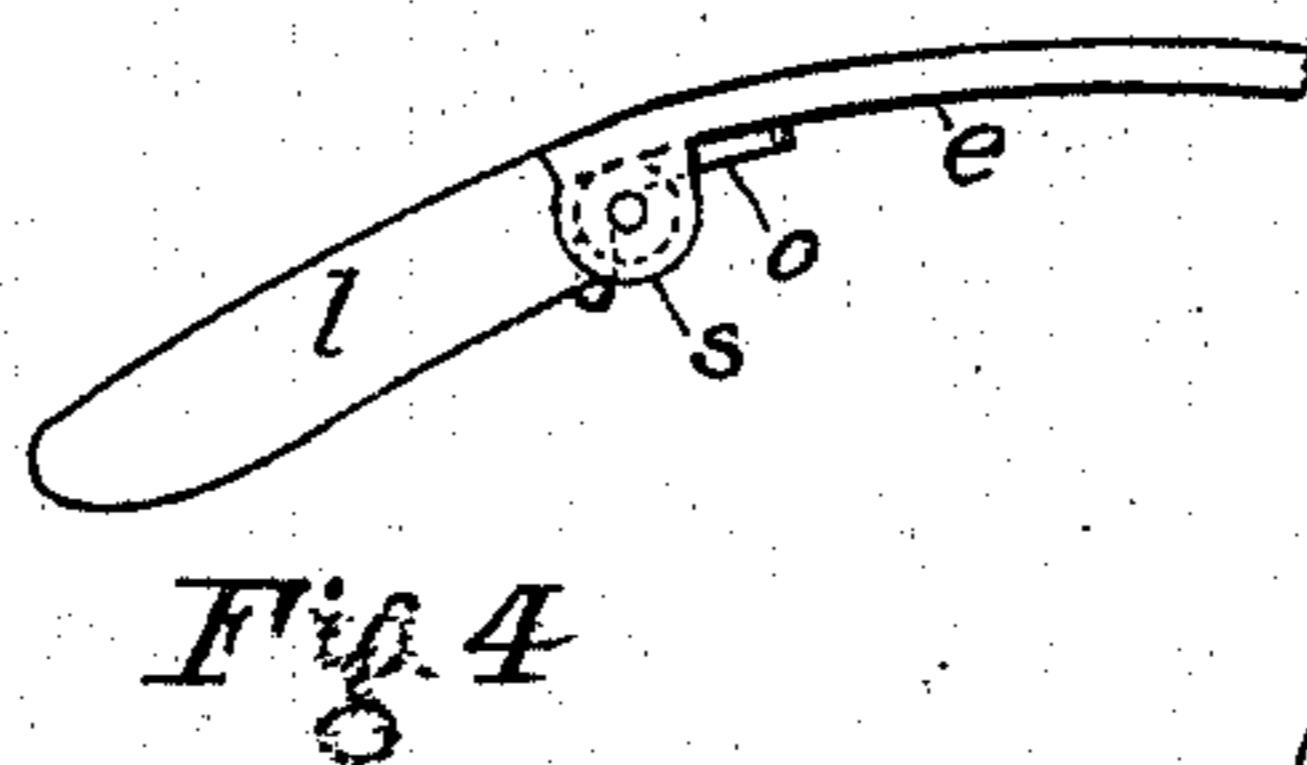
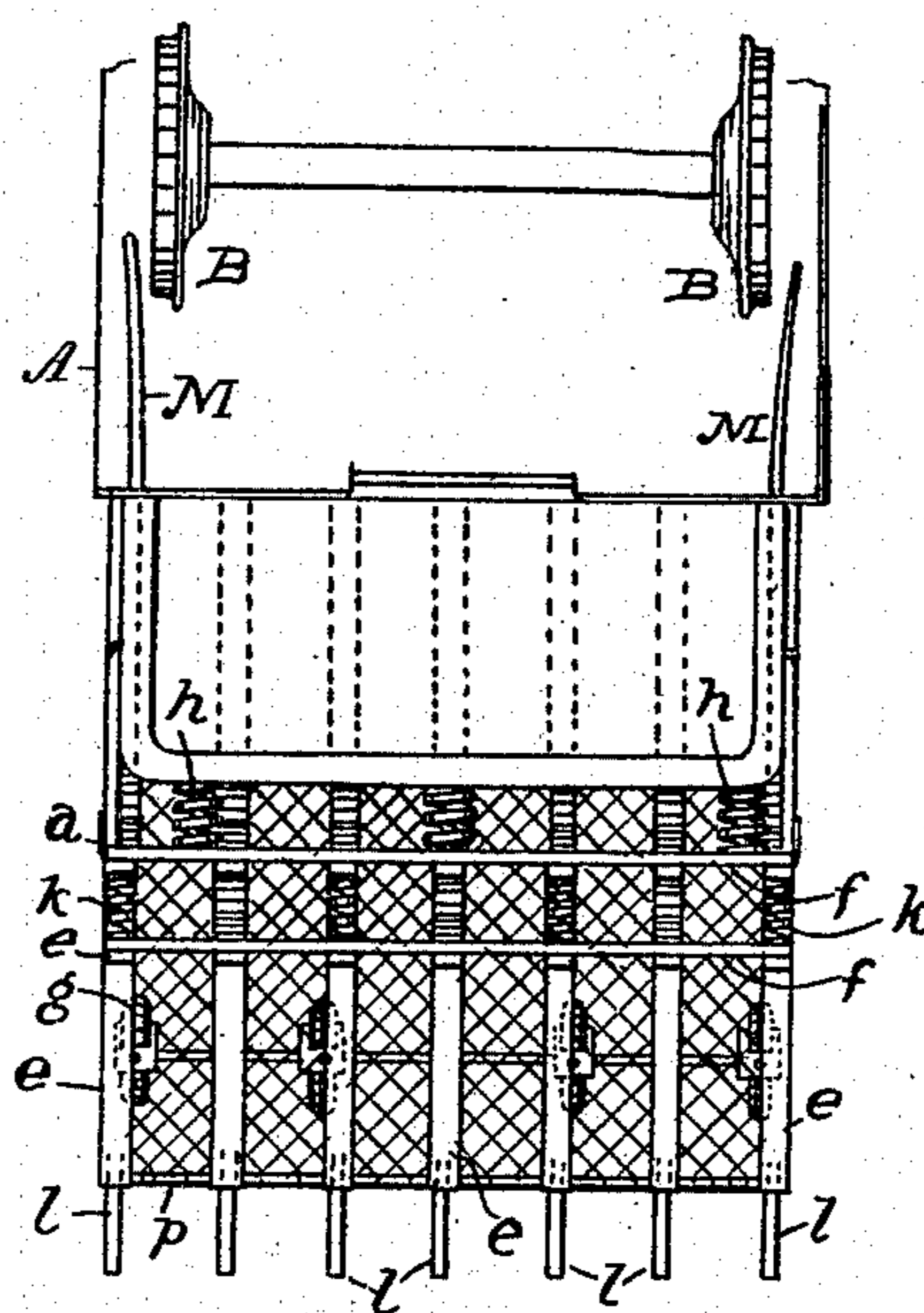
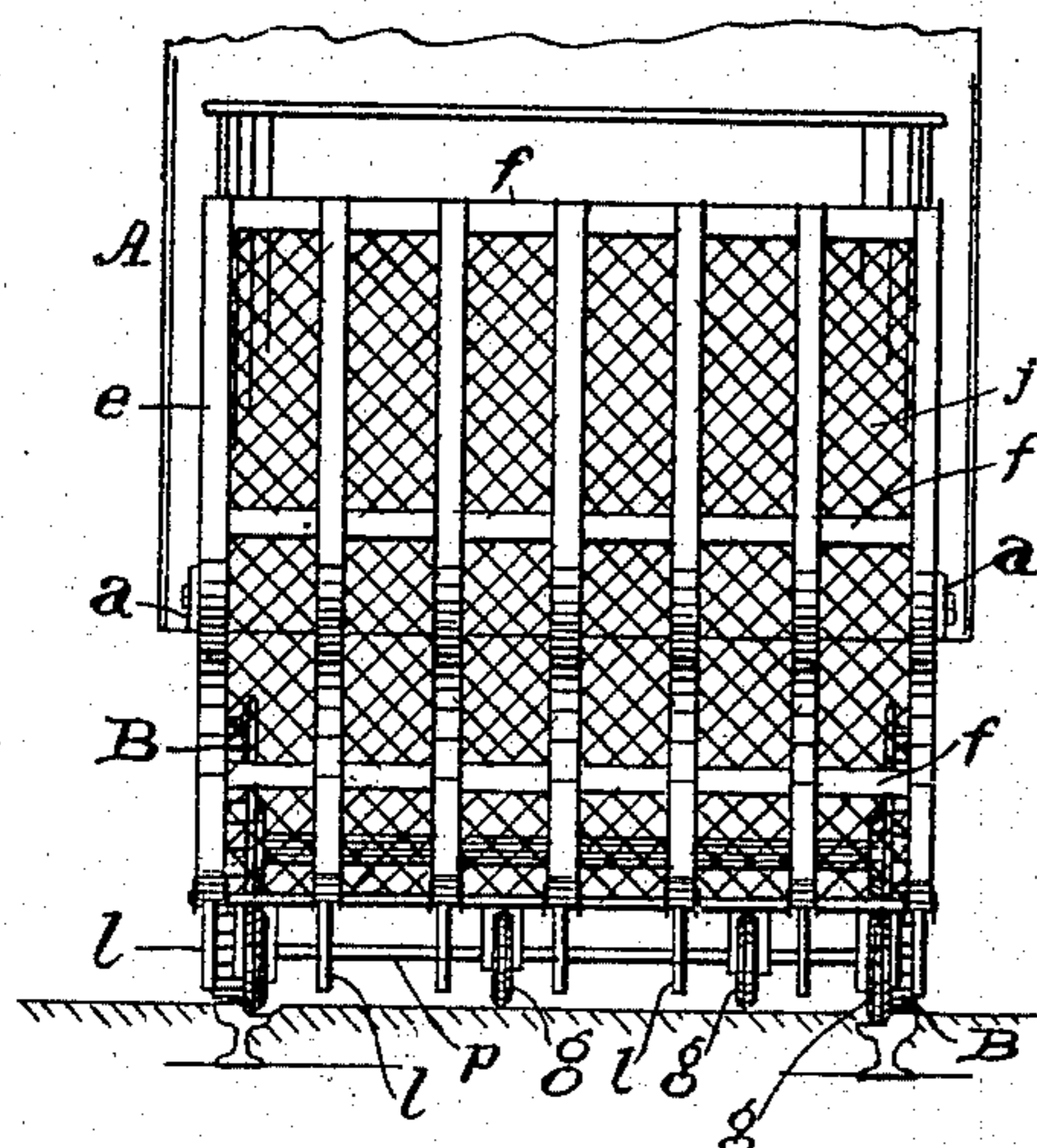
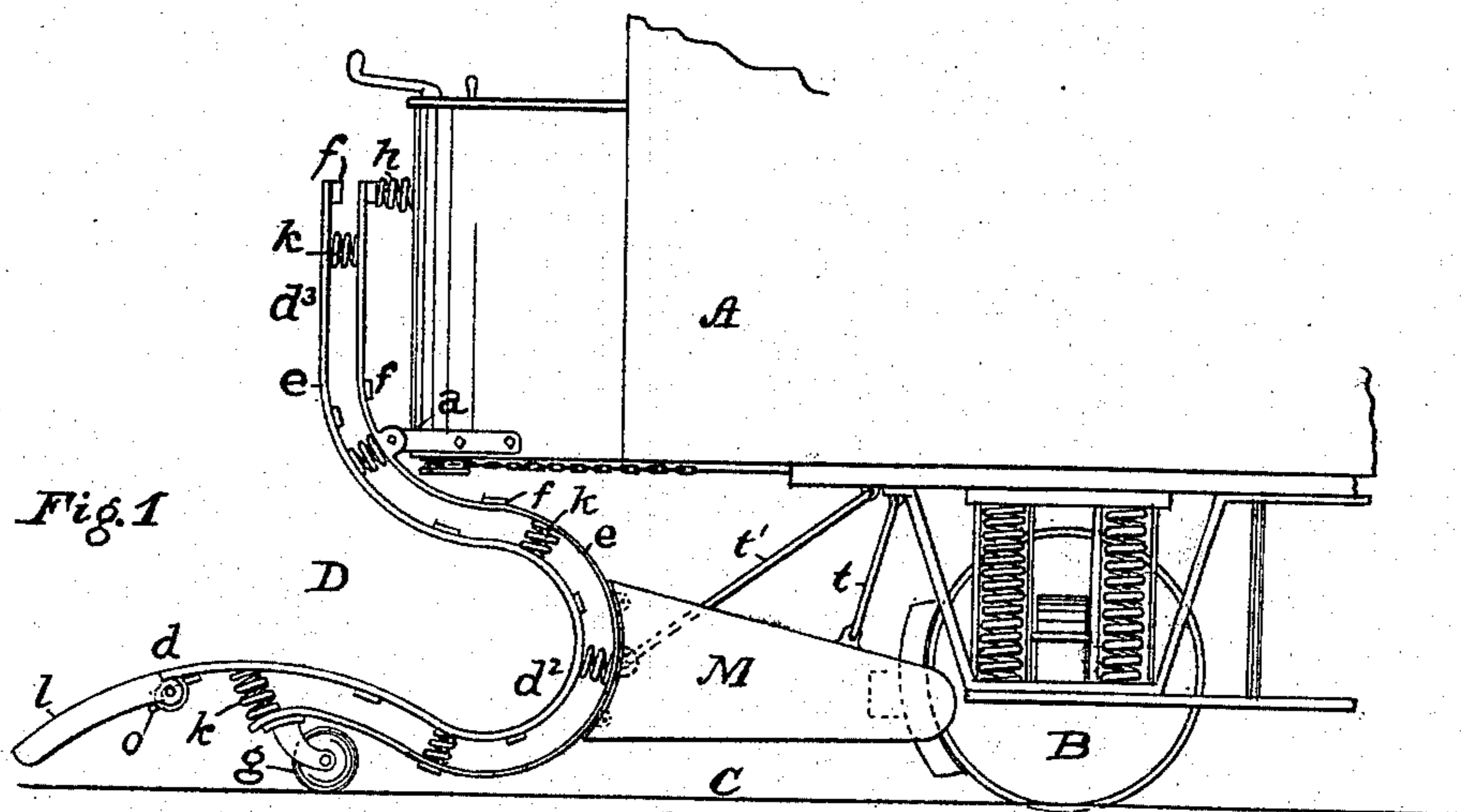
Benjamin F. Seymour
by *W. M. Vorce*
Att'y.

(No Model.)

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UNITED STATES PATENT OFFICE.

BENJAMIN F. SEYMOUR, OF CLEVELAND, OHIO, ASSIGNOR TO BENJAMIN F. SEYMOUR, JR., OF DENVER, COLORADO.

STREET-CAR FENDER.

SPECIFICATION forming part of Letters Patent No. 573,434, dated December 15, 1896.

Application filed January 11, 1896. Serial No. 575,098. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. SEYMOUR, 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 Street-Car Fenders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to means of preventing injury to persons who may fall or be thrown in front of street-cars or similar vehicles or who may be overtaken or struck by cars or like vehicles while crossing the tracks or otherwise.

Various forms of fenders and similar devices have been employed on street-cars to prevent persons getting beneath the wheels. Such devices have taken the form of nets, bars, depending plates, &c., but have usually been rigid or hinged to some rigid part and have uniformly had the effect to more or less seriously bruise or injure the persons falling upon or caught thereby, unless the car was moving at a very slow speed. In cases where the car is moving rapidly, as is almost uniformly the case with electric and cable cars when accidents occur, the blow received by a person caught or struck by any of the forms of fender now in use is itself sufficient to break the bones or seriously injure or even to kill the victim, especially in the case of children and infirm persons, which classes of persons are particularly liable to injury.

To avoid the foregoing and many other objections to the present forms of fenders and safety devices, I employ in place of the fenders in front of the car and of the solid guards around the wheels (although the latter may be retained, if preferred) a resilient pouch-like receptacle attached to the car and hinged or freely movable pivotally in a vertical plane, so as not to be put out of position by the rocking of the car, and which shall at its lower end closely approach the surface of the ground or pavement between the rails and extend laterally beyond the wheels, so as to completely prevent any body lying on the track from getting beneath the wheels. Be-

sides the resiliency of the receptacle itself I provide the same with cushioning-springs between it and the car or supporting parts, so that no part of the same is capable of giving a blow sufficiently violent to injure the person struck.

In the drawings hereto annexed I have shown an effective form of my improved safety-fender, the construction of which may obviously be modified in various particulars without departing from the essential spirit of my invention.

Figure 1 is a side elevation; Fig. 2, a front elevation. Fig. 3 is a diagrammatic plan view of the device, and Fig. 4 is a detail showing the construction of the fingers *l*.

A represents the car; B, its wheels; C, the track or ground-surface, and D the fender or safety attachment, which comprises a front part *d*, closely approaching the ground and sloping upward at a low inclination, and a pouch-like receiving portion *d*², which preferably descends toward the back or bottom portion to prevent the body caught therein from rolling out again, and a nearly vertical top portion *d*³, which rises in front of the car to a height sufficient to cushion any blow upon the head or shoulders of a person who might be struck while standing or walking.

The fender D is constructed of vertically-disposed flat springy steel-bars *e e*, bent, as shown, to form the parts *d d*² *d*³ and connected by cross-bars *f* at suitable points, forming a curved frame or grid, which is pivotally attached at the sides of the car vestibule or platform, as at *a*, so as to be free to oscillate vertically when the car rocks. To keep the fender close to the ground when the car rocks and lifts at the front end, flat or coiled springs *h h* are interposed between the front of the car vestibule or dash and the top part *d*³ of the fender.

At the bottom and near the front of the part *d* of the fender I attach to some or all of the strips or bars *e*, or to a cross-bar *f* joining the same, small wheels *g g*, pivotally attached in the manner of casters, and which wheels I prefer to form with rounded rather than flat faces, so as to enable them to ride easily over the pavement or over the rails, as in case of the car turning corners. These

wheels prevent the front end of the fender from catching against the ground either when the car rocks or when the fender is weighted by a body falling thereon.

5 The fender D may be so shaped and hung that its lower part will be normally clear of the ground, but close above it, and the wheels *g* only be brought into action when weight is brought upon the parts *d d'*, if so preferred;
10 but by having the wheels *g* normally in contact with the ground no possibility is left of a small body or small child to pass under the front edge *d* of the fender.

A common fault of many fenders and
15 guards now in use is that by being kept so far from the ground to prevent their striking it and being broken or injured when the car rocks they permit persons to pass under them when struck and fail to afford the protection
20 they are intended to.

For more complete protection the space between the bars *e* is closed by a strong net, web, or grating *j*, sufficient to sustain the weight of a body and prevent its passing between the bars, and I prefer to provide a
25 double series of bars *e*, the two sets being substantially parallel and kept apart by springs *k k*, interposed between them, the outer or front series of bars *e* being covered
30 or closed in with net, web, or grating, as described, which may, if thought best, be omitted from the series of bars *e* at the inner or rear side.

When the double series of bars *e* is employed, the upper or outer series extends somewhat forward of the lower series, as seen in Fig. 1, and I pivot to the lower end of each of the outer bars a short finger *l*, normally held in direct extension of the bar, to which
40 it is pivoted by a coil or other suitable strong spring *o*, as shown in Fig. 4, and which in case of striking an immovable obstacle, such, for instance, as a projecting paving-stone, will be turned back against the action of the
45 spring *o* and prevent breaking the fender, but will pass under a movable object and force it to slide up upon the fender. Preferably the fingers *l* are all pivoted on a single rod *p*, which passes entirely across the fender, as
50 seen in Fig. 3, and has attached to it the front edge of the netting *j*, lugs *s* (seen in Fig. 4) being formed on the end of the bar *e* to receive the rod which forms the pivot of the fingers *l*. If deemed expedient, the rod *p* may
55 be covered with rubber, leather, or other soft covering to cushion any blow which it might give to the limbs of a person struck while walking or standing and increase the resiliency of the fender as a whole.

60 As an additional safeguard I prefer to attach to the sides of the fender, on each side of the car, a guard-wing M, extending from the side of the fender outwardly past the front side of the car wheel or truck, as indicated in
65 Fig. 3, so that there is no possibility of a person falling or being thrown in front of the wheel between it and the fender, and this

guard-wing, as well as the middle part *d'* of the fender, may be supported and braced by rods *t t'*, extending to the car-body, so as to
70 better enable them to stand the impact of a body coming violently against them without being displaced.

What I claim as my invention, and desire to secure by Letters Patent, is—

75 1. In a street-car fender the combination of resilient ribs formed into a curved pouch-like form and secured together in two series between which springs are interposed, a pivoted attachment of the fender to the car,
80 swiveling wheels under the forward end of the inner series of ribs, springs interposed between the car and fender and tending to depress its forward end, a netting closing the spaces between the ribs of the fender, and
85 spring-actuated fingers pivoted to the extremities of the outer series of ribs, substantially as described.

2. In a street-car fender the combination of resilient ribs formed into a curved pouch-
90 like form and secured together in two series between which springs are interposed, a pivotal attachment of the fender to the car, swiveling wheels under the forward end of the inner series of ribs, springs interposed
95 between the car and fender and tending to depress its forward end, a netting closing the spaces between the ribs of the fender, and spring-actuated fingers pivoted to the extremities of the outer series of ribs, and a
100 support extending from the pouch portion of the fender to the car on each side, substantially as described.

3. In a street-car fender the combination of resilient ribs formed into a curved pouch-
105 like form and secured together in two series between which springs are interposed, a pivotal attachment of the fender to the car, swiveling wheels with rounded periphery under the forward end of the inner series of
110 ribs, springs interposed between the car and fender and tending to depress its forward end, a netting closing the spaces between the ribs of the fender, and spring-actuated fingers pivoted to the extremities of the outer
115 series of ribs, and a support extending from the pouch portion of the fender to the car on each side, substantially as described.

4. In a street-car fender the combination of resilient ribs formed into a curved pouch-
120 like form and secured together in two series between which springs are interposed, a pivotal attachment of the fender to the car, springs interposed between the car and the upper part of the fender, wheels beneath the
125 forward part of the inner series of ribs, spring-actuated fingers pivoted to the extremities of the outer series of ribs, a netting closing the spaces between the outer series of ribs, and a support extending from the pouch
130 portion of the fender to the car on each side, and a guard extending backward from the fender on each side and supported from the car-body, substantially as described.

5. In a street-car fender the combination of resilient ribs formed into a curved pouch-like form and secured together in two series between which springs are interposed, a pivotal attachment of the fender to the car, swiveling wheels with rounded periphery under the forward end of the inner series of ribs, springs interposed between the car and fender and tending to depress its forward end, a netting closing the spaces between the ribs of the fender, spring-actuated fingers pivoted to the extremities of the outer series of ribs, a support extending from the pouch portion of the fender to the car on each side, and a guard extending backward from the fender on each side and supported from the car-body, substantially as described.

6. In a street-car fender the combination of two series of resilient ribs formed into a curved pouch-like portion extending backward beneath the car-platform, and having an upward-extending portion rising in front

of the dashboard and a forward-extending portion terminating near the ground, springs interposed between the two series of ribs, a pivotal attachment of the fender to the car, springs interposed between the car and fender above the pivotal point, swiveling wheels with rounded periphery under the forward part of the inner series of ribs, a netting closing the spaces between the ribs of the fender, spring-supported fingers pivoted to the forward extremities of the outer series of ribs, a support extending from the pouch portion of the fender backward to the car, and a guard extending backward from the fender on each side, substantially as described.

In testimony whereof I hereto affix my signature in presence of two witnesses.

BENJAMIN F. SEYMOUR.

Witnesses:

W. P. DUNLAP,
JOHN R. RYDER.