

(No Model.)

2 Sheets—Sheet 1.

R. DUNNING.  
PILOT FOR CARS.

No. 572,652.

Patented Dec. 8, 1896.

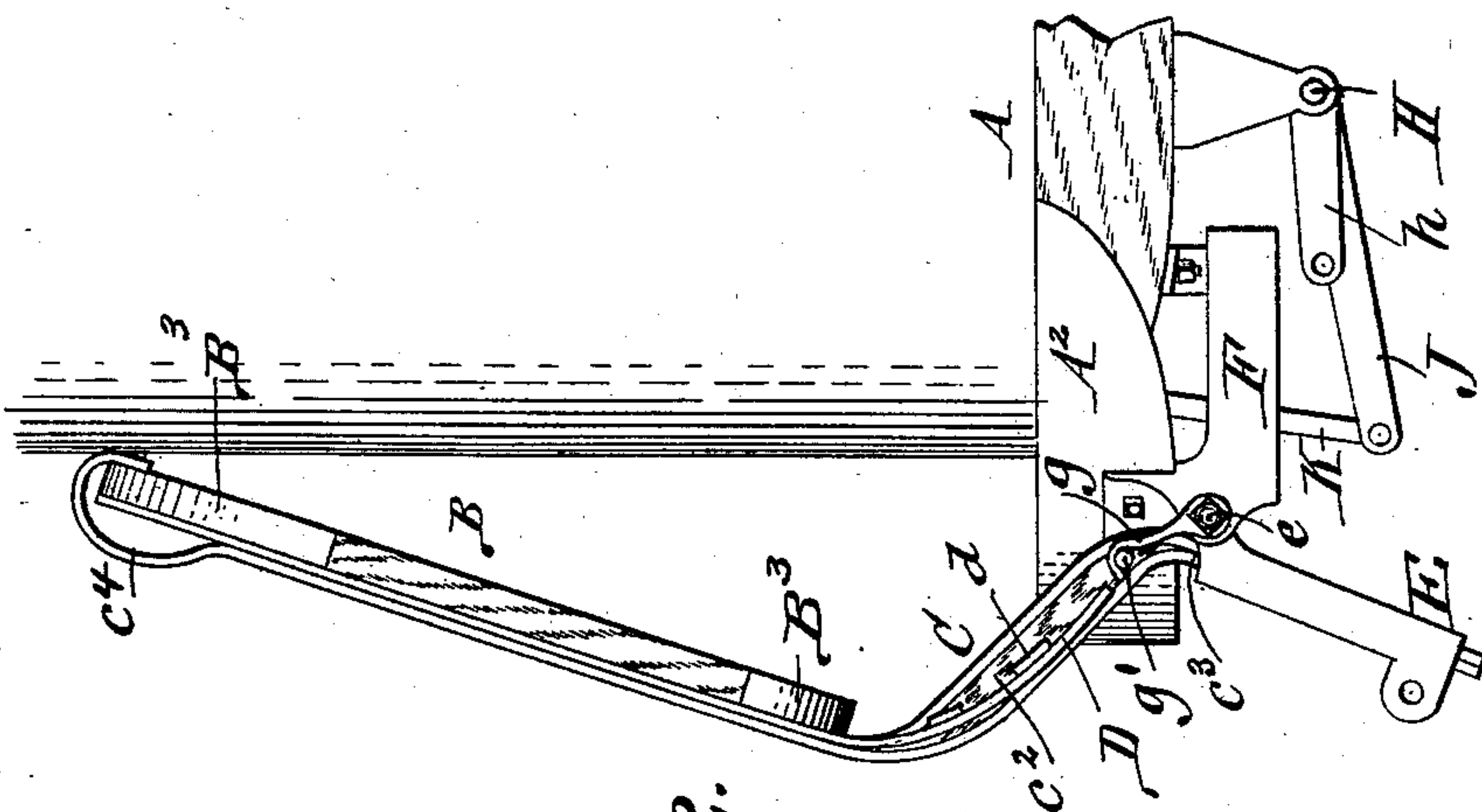


Fig. 2.

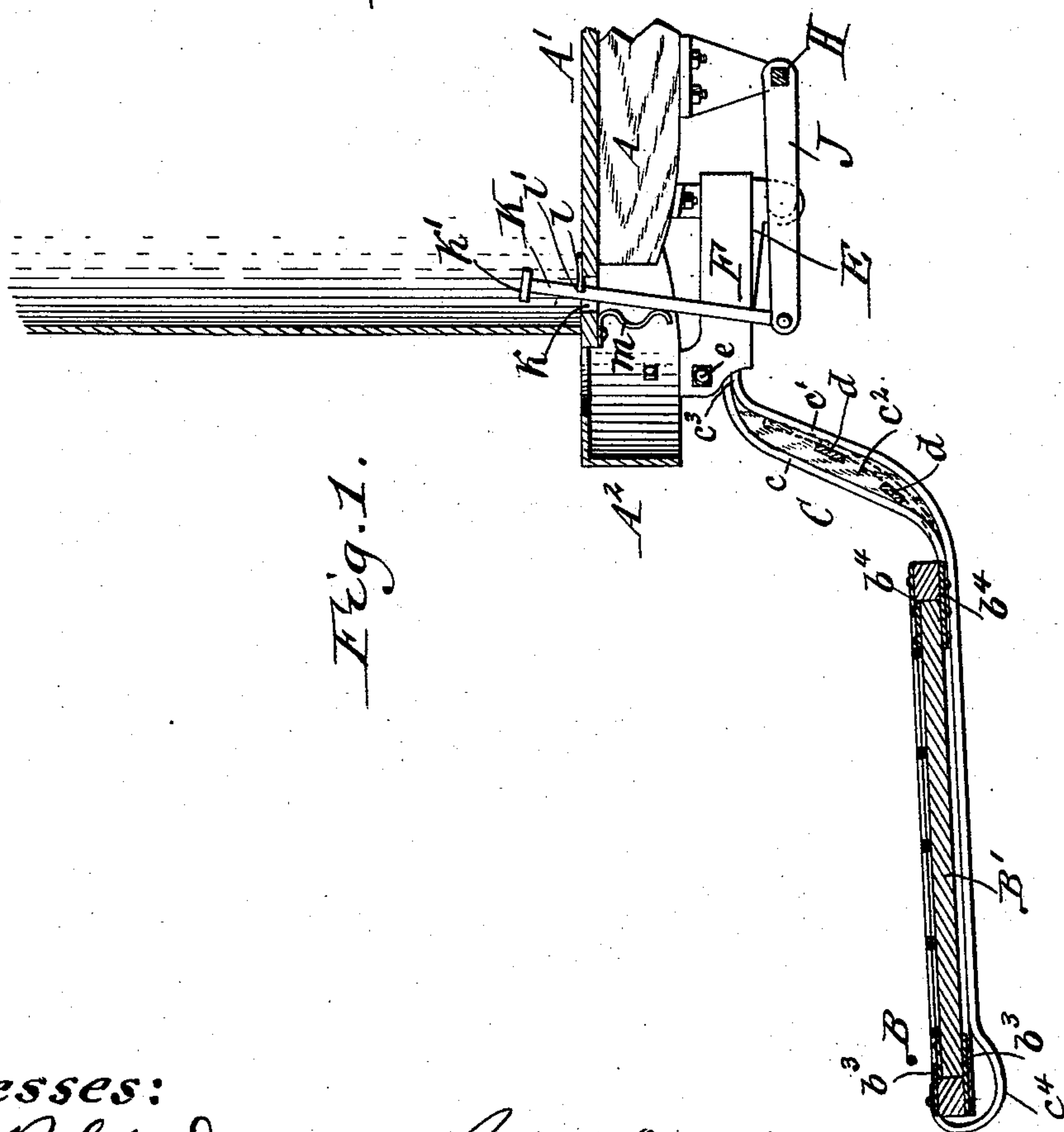


Fig. 1.

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# UNITED STATES PATENT OFFICE.

ROBERT DUNNING, OF BUFFALO, NEW YORK.

## PILOT FOR CARS.

SPECIFICATION forming part of Letters Patent No. 572,652, dated December 8, 1896.

Application filed August 5, 1896. Serial No. 601,760. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT DUNNING, a citizen of the United States, residing at Buffalo, in the county of Erie, in the State of New York, have invented new and useful Improvements in Pilots for Cars, of which the following is a specification.

This invention relates to that class of car-pilots or life-guards which are particularly applicable to electric and cable street-cars.

The principal object of my invention is to produce a simple pilot of this character which is very light and durable and which can be readily attached to and detached from the car or be folded out of the way so that the car can be housed in a smaller space.

My invention has the further object to provide simple means whereby the motorman stationed on the platform of the car can raise the pilot above its normal position for clearing a large stone or other obstruction or lower it more closely to the ground, if desired, to render the same more certain in action.

In the accompanying drawings, consisting of two sheets, Figure 1 is a central longitudinal section of my improved pilot applied to a car, showing the same in its operative position. Fig. 2 is a side elevation of the pilot, showing the same elevated or folded against the dash of the car. Fig. 3 is a top plan view of the pilot and the adjacent portion of the car. Fig. 4 is a fragmentary longitudinal section, on an enlarged scale, in line 4 4, Fig. 3. Fig. 5 is a cross-section in line 5 5, Fig. 4. Fig. 6 is a longitudinal section similar to Fig. 4, showing a modification of the means for locking the pilot in its operative position. Fig. 7 is a cross-section in line 7 7, Fig. 6.

Like letters of reference refer to like parts in the several figures.

A represents the longitudinal sills of a car-platform, A' the flooring, and A<sup>2</sup> the transverse buffer-beam.

The pilot or guard consists, preferably, of an open frame B of oblong or rectangular form, containing a filling or network of rope or other suitable material, the frame being stiffened by a central cross-bar B' and diagonal braces B<sup>2</sup>, extending from the outer corners of the frame to the inner end of the central cross-bar. The several bars of the pilot-frame are preferably constructed of wood,

and the side and end bars are connected by metallic corner-pieces B<sup>3</sup>, provided with end sockets b, in which the adjacent ends of the side and end bars are secured by transverse pins or rivets b'. Each of the outer corner-pieces is provided on its inner side with an intermediate socket b<sup>2</sup> for the reception of the outer end of the adjacent diagonal brace B<sup>2</sup>. The outer end of the central cross-bar B' is united to the outer side bar of the pilot-frame by metallic plates b<sup>3</sup>, while the inner end of this bar and the adjoining ends of the diagonal braces are united to the inner side bar by metallic plates or connections b<sup>4</sup>. This construction forms a very light, strong, and durable pilot which can be cheaply manufactured.

The pilot is provided with two supporting-arms C, which extend upwardly and rearwardly therefrom, and whereby it is attached to the car. Each of these arms is preferably composed of two separated metallic straps or leaves c c' and a wooden filling strip or block c<sup>2</sup>, interposed between the leaves. The two leaves extend rearwardly beyond this filling-strip and are riveted or otherwise secured together, these continuous portions forming horizontal attaching shanks or extensions c<sup>3</sup>. The lower end of the inner strap c is preferably secured to the front and rear bars of the pilot-frame, while the outer strap is extended along the under side of the pilot to the front bar thereof and is provided underneath said bar with an enlargement c<sup>4</sup>, forming a shoe or guard for the front end of the pilot. This construction of the arms renders the same very strong and at the same time affords a certain amount of elasticity at the ends of the filling-block which enables the pilot to yield when whipped against the pavement by the vibrations of the car.

The pilot is preferably provided with an upward and rearward guard extension composed of angular end frames D and horizontal bars d, secured at their ends to said end frames and passing through openings formed in the wooden fillings of the supporting-arms C, as shown in Figs. 1 and 3.

E represents vertically-swinging sockets or pockets which are arranged on the under side of the car-platform, near opposite sides thereof, and which are adapted to receive the



shanks of the pilot-supporting arms C. The front ends of these sockets are pivoted by transverse pins or bolts *e* to hangers or brackets F, secured to the under side of the longitudinal sills and the buffer-beam of the car, as shown, so that the hinged sockets can be swung into the substantially-horizontal position shown in Figs. 1, 3, and 4 for supporting the pilot in its normal position or be swung downwardly and forwardly into the position shown in Fig. 2 for folding the pilot against the dashboard of the car. The brackets F preferably have the form of an inverted trough, as shown, and the hinged sockets fit normally between the side walls of the brackets.

The shanks of the pilot-supporting arms are confined in the hinged sockets E by hooks *g*, pivoted to the outer side of the sockets and engaging with pins *g'*, projecting laterally from the supporting-arms, as shown in Fig. 2. Any other suitable retaining devices may, however, be employed for this purpose.

In the form of my improvement shown in Figs. 1 to 5 the hinged sockets E are retained in their normal horizontal position by the following means: H is a transverse rock-shaft arranged on the under side of the car-platform in rear of the brackets F and journaled in suitable hangers or bearings. *h h* represent arms secured to the rock-shaft H and extending forwardly therefrom and having their front ends attached to the free rear ends of the hinged sockets E by removable pins *i*, passing through the arms and through perforated lugs or ears *i'*, formed at or near the rear ends of the sockets, as shown in Figs. 4 and 5.

J is an actuating arm or lever extending forwardly from the central portion of the rock-shaft H, and K is a treadle or upright rod pivoted at its lower end to the free end of said actuating-arm by a transverse pin and extending upwardly through an opening *k*, formed in the floor of the car-platform, as shown in Fig. 1, the treadle-rod terminating in a head or foot plate *k'*.

*l* is a catch or stop secured to the floor of the platform and engaging in a notch or recess *l'*, formed in the adjacent side of the treadle-rod, so as to lock the same against vertical movement.

*m* is a spring secured to the under side of the car-platform and bearing against the front side of the treadle-rod, whereby the latter is yieldingly held in engagement with its locking-catch *l*.

In the normal position of the parts shown in Figs. 1 and 3 the rock-shaft H is held against turning by the engagement of the treadle-rod K with the locking-catch *l*, and the arms *h* of the rock-shaft in turn hold the pivoted sockets E in their normal position by their connection with the rear ends of the sockets. When it is desired to raise the pilot above this normal position for clearing a stone or other obstruction, the motorman pushes the treadle-rod K forwardly against the pres-

sure of the spring *m* to release the rod, and then depresses the same, by which movement the rock-shaft H is turned in the proper direction to depress its arms *h*, thereby causing the latter to depress the rear ends of the hinged sockets E and swinging the pilot upwardly. Upon releasing the treadle-rod the pilot descends by gravity to its former position, thereby raising the rear ends of the sockets, swinging the rock-shaft and its arms *h* to their former position, and causing the treadle-rod to again interlock with its catch by the action of the spring *m*, which latter forces the rod rearwardly against the catch.

When it is desired to lower the pilot below its normal position for bringing it closely to the ground, the motorman simply pushes the treadle-rod forward to release it from its catch and then removes his foot therefrom. The rock-shaft H now being free to turn, the hinged pilot descends by gravity and swings the rear ends of the sockets E upwardly until they come in contact with the top of the brackets F and are arrested by the latter.

When it is desired to fold the pilot out of the way, preparatory to housing the car, the connecting-pins *i* are removed, when the hinged sockets E are detached from the arms of the rock-shaft and the pilot can be swung upwardly and rearwardly against the dash of the car, as shown in Fig. 2. In thus folding the pilot the shanks of its supporting-arms remain in the pivoted sockets and the latter swing downwardly and forwardly on their pivot-pins *e*. The sockets thus form swinging supports which permit the pilot to be swung out of the way without necessitating its detachment from the sockets.

In order to detach the pilot from the car, the retaining-hooks *g* are simply disengaged from the pins of the pilot-arms C and the shanks of these arms are withdrawn from the pivoted sockets.

In case the vertically-adjustable feature of the pilot is not desired, the rock-shaft H and its actuating and locking devices may be omitted and each of the vertically-swinging sockets E retained in its normal elevated position by any suitable locking means, such, for instance, as a removable pin *n*, arranged in openings formed in the sides of the brackets F and the sockets, as shown in Figs. 6 and 7. In this case the sockets are confined against vertical movement between the top of the brackets and the pins *n*.

I claim as my invention—

1. The combination with a car-platform, of vertically-swinging sockets pivoted at their front ends to the car-platform, whereby their free rear ends are capable of swinging downwardly and forwardly, retaining devices for holding the rear ends of the sockets in their normal elevated position, and a pilot or life-guard having supporting arms or shanks arranged in said sockets, substantially as set forth.

2. The combination with a car-platform, of



vertically-swinging sockets pivoted at their front ends to the car-platform, whereby their free rear ends are capable of swinging downwardly and forwardly, retaining devices for holding the rear ends of the sockets in their normal, elevated position, a pilot or life-guard having supporting arms or shanks removably arranged in said sockets, and means for confining said shanks in the pivoted sockets, substantially as set forth.

3. The combination with a car-platform and brackets of inverted-trough shape secured to the under side of the platform, of vertically-swinging sockets pivoted at their front ends to said brackets and adapted to fit between the side walls thereof, retaining devices for holding said sockets in their normal elevated position, and a pilot having supporting arms or shanks adapted to fit into said sockets, substantially as set forth.

4. The combination with a car-platform, of a vertically-swinging socket or pocket pivoted at its front end to the car-platform, a transverse rock-shaft journaled on the platform and having an arm connected with the free rear end of said socket, and means for retaining said rock-shaft in position, substantially as set forth.

5. The combination with a car-platform, of a vertically-swinging socket or pocket pivoted at its front end to the car-platform, a transverse rock-shaft journaled on the platform and having an actuating-arm, and an arm connected with the free rear end of said socket, and a treadle connected with said actuating-arm and extending upward through the car-platform, substantially as set forth.

6. The combination with a car-platform, of

a vertically-swinging socket or pocket pivoted at its front end to the car-platform, a transverse rock-shaft journaled on the platform and having an actuating-arm, and an arm connected with the free rear end of said socket, a treadle connected with said actuating-arm and extending upward through the car-platform, and a catch interlocking with said treadle, substantially as set forth.

7. A pilot or life-guard comprising an open rectangular frame composed of wooden side and end bars, a central cross-bar of wood, and diagonal wooden braces extending from the outer corners of the frame to the inner end of said central cross-bar, inner metallic corner-pieces having sockets for the reception of the adjacent side and end bars, outer metallic corner-pieces having sockets for the reception of the adjacent side and end bars and the outer ends of said diagonal braces and a filling or covering attached to said side and end bars, substantially as set forth.

8. A pilot or life-guard having upwardly and rearwardly extending attaching-arms, each composed of a pair of separated metallic straps or leaves and a filling-strip interposed between said straps, the front portions of the straps being secured to the pilot-frame and their rear portions extending beyond said filling-strip and forming shanks whereby the pilot is attached to a car, substantially as set forth.

Witness my hand this 22d day of June, 1896.

ROBERT DUNNING.

Witnesses:

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