

(No Model.)

2 Sheets—Sheet 1.

E. P. McKAIG.
PILOT FOR RAILWAY CARS.

No. 553,787.

Patented Jan. 28, 1896.

Fig. I.

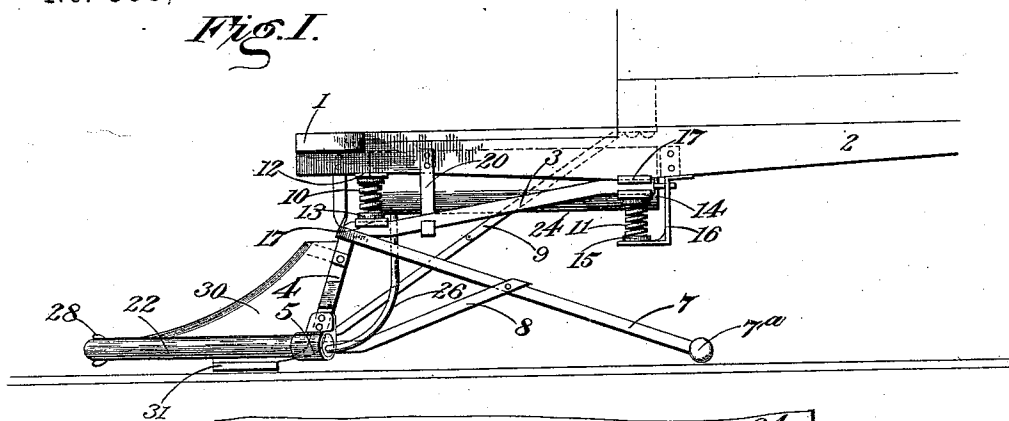


Fig. II.

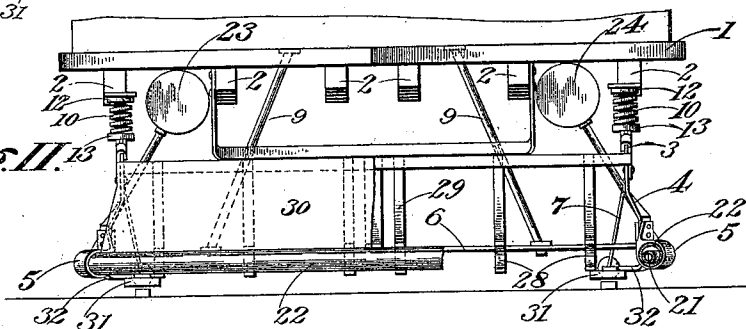
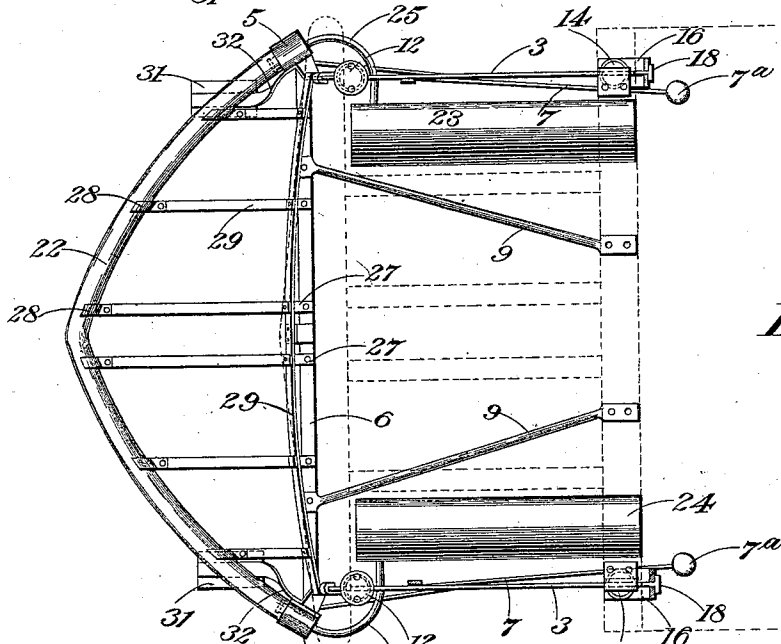


Fig. III.



WITNESSES

McFouler
McKer

INVENTOR

Elthera P. McKaig
By Joseph L. Atkins

E. P. McKAIG.
PILOT FOR RAILWAY CARS.

No. 553,787.

Patented Jan. 28, 1896.

Fig. IV.

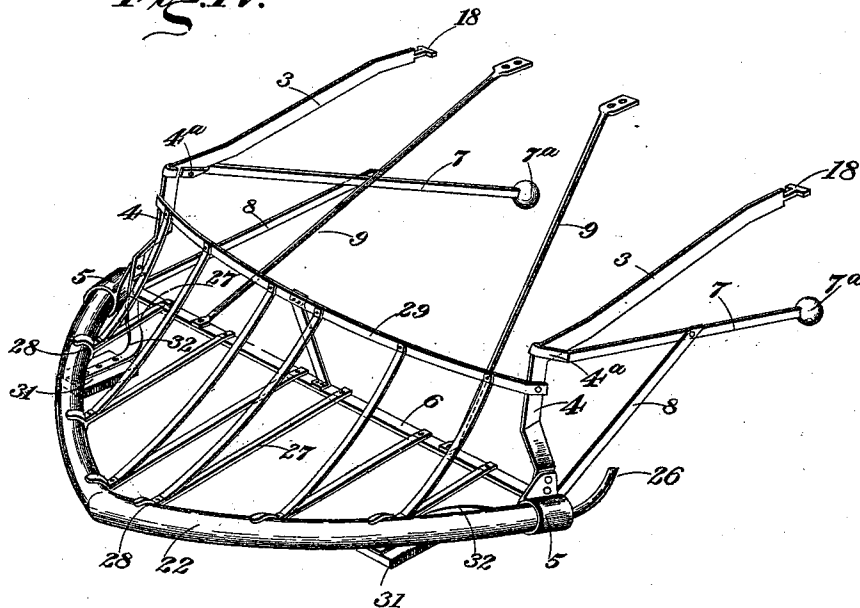


Fig. V.

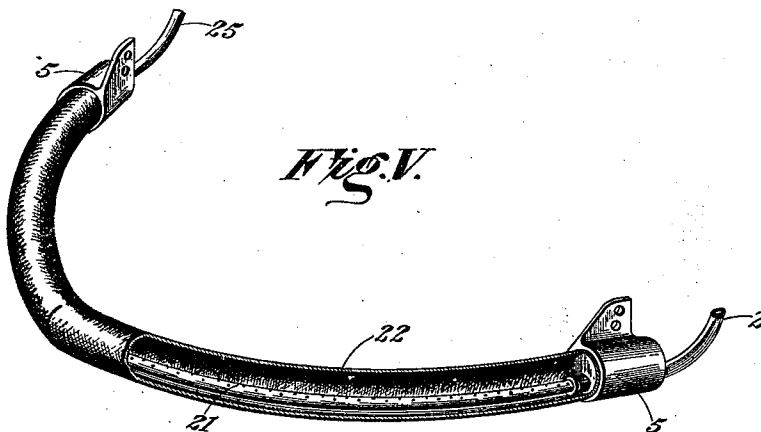
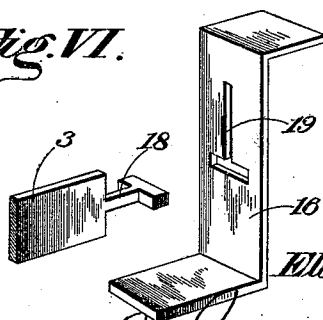


Fig. VI.



WITNESSES

M. E. Fowler
S. Wacker

INVENTOR

Ellithera P. McKaig
By Joseph W. Atkins

UNITED STATES PATENT OFFICE.

ELTHERA P. MCKAIG, OF RICHMOND HILL, NEW YORK.

PILOT FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 553,787, dated January 28, 1896.

Application filed June 17, 1895. Serial No. 553,095. (No model.)

To all whom it may concern:

Be it known that I, ELTHERA P. MCKAIG, of Richmond Hill, county of Queens, State of New York, have invented certain new and useful Improvements in Pilots for Railway-Cars, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to produce a pilot for railway-cars having a pneumatic peripheral cushion braced by an internal unyielding air-supply pipe for inflating the pneumatic cushion when desired, and to produce certain new and useful devices for sustaining the pilot while permitting of such movement as is necessary in this class of devices.

In the accompanying drawings, Figure I is a side elevation; Fig. II, a front elevation, partially broken away, and Fig. III is a top plan view, of my pilot shown supported below the sill of the car. Fig. IV is a detail view of the supporting-frame, jointed brace-rods, limiting brace-rods, and the pilot-fender. Fig. V is a detail view of the pilot-cushion and air-supply pipe and their supporting-castings. Fig. VI is a detail view of the rear ends of the supporting-rods and the rear spring-hangers.

Referring to the figures on the drawings, 1 indicates the sill of the platform of a car or similar vehicle provided with longitudinal supporting-bars 2.

3 3 indicate the pilot-frame supporting-bars located immediately below the outside bars 2 and having their forward extremities bent downwardly, as indicated at 4, and supporting, respectively, pipe-castings 5 5 connected by a transverse horizontal brace-rod 6.

7 indicates rearwardly-extending limiting brace-rods secured at their forward ends to the main supporting-bars, as at 4^a, and provided upon their rearward extremities adjacent to the ground with metallic, preferably iron or steel, balls or buffers 7^a.

8 8 indicate brace-bars extending from and preferably integral with the lower forward extremities of the bars 3 and connected at their rear extremities to an intermediate point of the bars 7.

9 9 indicate a plurality of jointed brace-rods secured at their forward extremities to

the horizontal rod 6 and at their opposite ends by suitable means—as, for instance, bolts—to the floor-frame of the car.

The elements described combine to constitute what I will call the “main pilot-supporting frame,” and I shall now proceed to describe the mechanism I employ for supporting the frame upon the car.

10 and 11 indicate equalizing-springs supported respectively above and below the front and rear ends of the substantially-horizontal part of the bars 3.

The springs 10 are retained, as shown, between spring-blocks 12 and 13, secured respectively to the bars 2 of the sill and to the bars 3, the springs 11 being supported between similar blocks 14 and 15, secured respectively to the rear ends of the bars 3 and to the right-angular supporting-arms of spring-hangers 16, which are supported in any suitable manner by the bars 2.

In order to permit of slight longitudinal movement of the supporting-frame to decrease the shock to the same when the car is stopped or started suddenly, and to augment the yielding action of the pneumatic cushion, hereinafter described, the spring-blocks 13 and 15 are provided with grooves 17 for the reception of the bars 3, and the rear extremities of said bars are provided with elongated T-lugs 18 designed to pass through inverted T-shaped slots 19 in the hangers 16.

In order to insert the lugs 18 into the slots 19 it is necessary to depress the spring 11 sufficiently to bring the horizontal extremity of the lug in line with the horizontal portion of the slot, when the lug may be passed through and locked by the recovery of the spring.

The horizontal movement of the supporting-frame is by the construction just described limited to the length of the lug 18.

20 indicates hangers having supporting-hooks passing underneath the bars 3 and limiting the movement of the frame.

The arrangement of the springs in opposition to each other, as shown, is designed to yieldingly compensate for the movement of the frame, the vertical movement thereof being limited in the downward direction by the hanger 20 and in the opposite direction by the limiting brace-rods 7, which, after the

frame has been raised a predetermined distance, are brought into contact with the ground and form fulcrums at such a distance from the front of the pilot as to render its further movement practically impossible.

21 indicates a hollow metallic pilot brace-bar or numerous-perforated pneumatic supply-pipe bent to substantially semielliptical or other suitable form and having its opposite ends screwed into the castings 5.

The pipe or bar 21 is preferably eccentrically located with respect to the castings and is surrounded by an expansible air-receptacle, which, when inflated, constitutes a preferably-cylindrical air-tight pneumatic cushion 22 having its opposite ends secured concentric with the castings, as by a thimble-and-band connection.

Suitably located—as, for instance, underneath the sill adjacent to the pilot—I provide pneumatic reservoirs 23 and 24, communicating through pipes 25 and 26 with the castings 5 and supply-pipe 21.

Suitable means—as, for instance, cocks—may be employed for opening or closing the pipes 25 and 26, or the pipes may be arranged to be constantly open, and the pneumatic pressure within the reservoirs may be constantly exerted within the pneumatic cushion, if desired.

27 indicates brace-rods secured at their rear ends to rods 6 and provided with crotches 28 at their forward extremities partially surrounding the pneumatic cushion and holding its rear contour closely against the rear side of the pipe 21, the purpose of this construction and the location of the pipe 21 eccentric to the casting and cushion being to throw the greatest possible air-space toward the upper front side of the pneumatic cushion, at which point contact would be made in case of an accident.

29 indicates an apron-frame, and 30 an apron secured above the pilot and between it and the pilot-frame.

31 indicates shoes or fenders located between the tracks and the pneumatic cushion for the purpose of protecting the latter, and are preferably secured to the supporting-frame by brace-rods 32, as indicated.

I am aware that pilots for railway-cars having pneumatic cushions at their front edges are old, and I do not claim such broadly to be my invention.

What I claim is—

1. In a pilot, the combination with a pneumatic cushion, of an inflexible perforated supply-pipe therein, and means for supplying fluid under pressure to the supply-pipe, substantially as specified.

2. In a pilot, the combination with a pneumatic cushion, of an inflexible perforated supply-pipe within the cushion and arranged eccentric thereto, and means for supplying fluid

under pressure to the supply-pipe, substantially as specified.

3. The combination with a pilot-frame, of a pair of substantially cylindrical castings, a brace-rod terminally screwed eccentrically into said castings, and a substantially cylindrical flexible tube entirely surrounding the brace-rod, substantially as specified.

4. The combination with a platform, of a pilot-supporting frame carried between oppositely-disposed equalizing-springs carried by the platform adjacent to the opposite ends of the pilot-frame, said pilot-frame being supported by the platform and having vertically-yielding connection therewith, substantially as specified.

5. The combination with a pilot-supporting frame, and car-sill, of a spring hanger depending from the sill at one end of the frame, a spring between the hanger and the frame, and a second spring between the opposite end of the frame and the sill, a hanger depending from the sill adjacent to the second spring and limiting the downward movement of the frame, and a rearwardly-extending limiting-brace, substantially as specified.

6. The combination with a platform, of a vertically and horizontally movable pilot-supporting frame connected to the platform by a vertically-yielding connection, opposed equalizing-springs above and below the pilot-supporting frame, and mechanism for limiting the vertical and horizontal movement of the pilot-supporting frame with respect to the platform, substantially as specified.

7. The combination with a car-sill and pilot-supporting frame, of jointed brace-rods secured at their opposite ends to the frame and sill, respectively adapted to permit of the vertical movement of the frame and to brace the frame when opposed by direct resistance, substantially as specified.

8. The combination with a platform, supporting-frame and pilot having a pneumatic cushion, of brace-rods projecting from the frame, and a shoe or fender supported by each brace-rod intermediate of each track and the adjacent pneumatic cushion, substantially as specified.

9. The combination with a car-sill, of a pilot provided with a pneumatic cushion, spring-supported pilot-frame, and an inflexible perforated supply-pipe secured at its opposite ends to the frame and extending through said pneumatic cushion, and means for supplying fluid under pressure to said supply-pipe, substantially as specified.

In testimony of all which I have hereunto subscribed my name.

ELTHERA P. MCKAIG.

Witnesses:

E. J. HAMLET,
CHAS. C. MARSHALL.