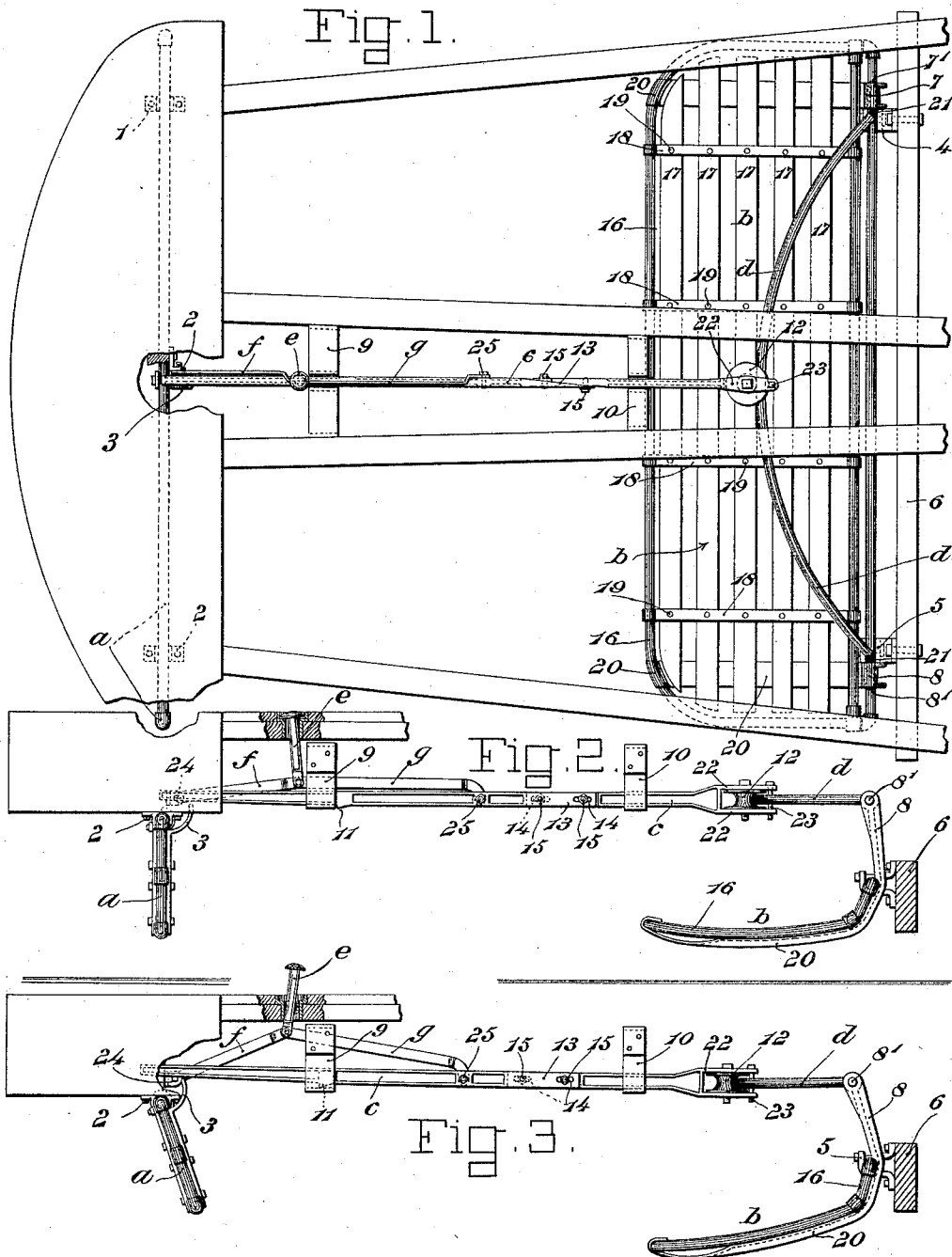


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 AUTOMATIC WHEEL GUARD.
 APPLICATION FILED FEB. 6, 1909.

1,018,898.

Patented Feb. 27, 1912.

2 SHEETS—SHEET 1.



WITNESSES

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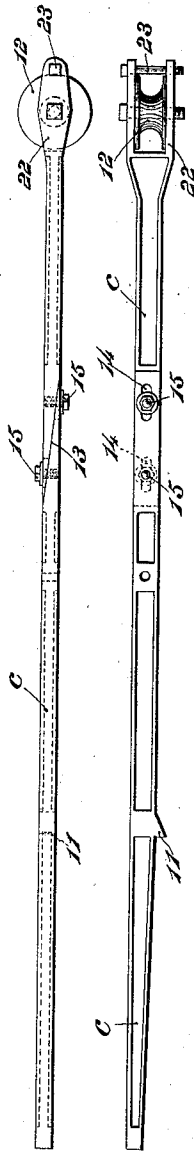


Fig. 4

Fig. 5

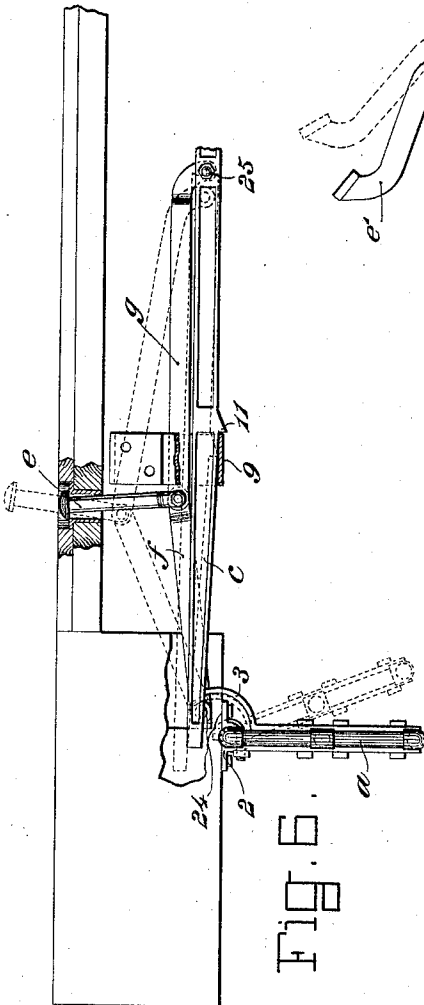


Fig. 6

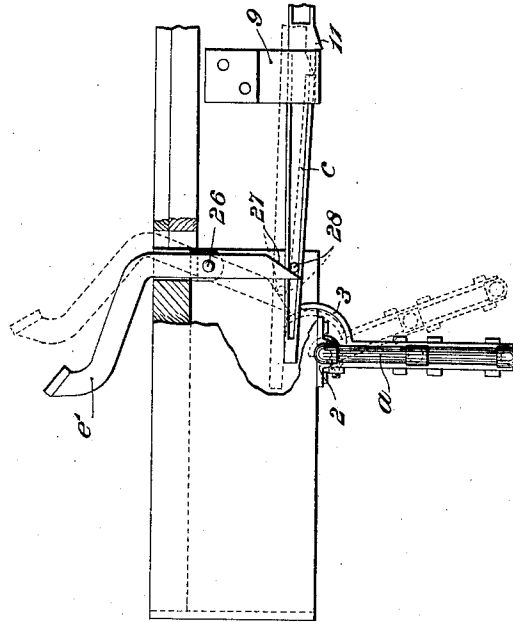


Fig. 7

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UNITED STATES PATENT OFFICE.

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AUTOMATIC WHEEL-GUARD.

1,018,898.

Specification of Letters Patent.

Patented Feb. 27, 1912.

Application filed February 6, 1909. Serial No. 476,475.

To all whom it may concern:

Be it known that I, CHARLES E. GIERDING, a citizen of the United States of America, and a resident of Newark, in the State of New Jersey, have invented a new and useful Improvement in Automatic Wheel-Guards, of which the following is a specification.

This invention relates to those street-car fenders known as automatic wheel guards of the "trip and drop-scoop" type, and particularly to those in which the cradle or scoop is attached to the truck, where there is the minimum of oscillation, adapting the scoop to be carried as close to the track as the condition of the pavement will permit.

The present invention consists in certain novel combinations of parts, and in an improved automatic wheel guard embodying such combinations or any of them, all as hereinafter particularly described and claimed.

The leading objects of the invention are to insure the effective control of the drop scoop by the tripping gate, and so as to drop the scoop when the gate strikes an obstacle on curves as well as on straight tracks.

Other objects will be set forth in the general description which follows.

Two sheets of drawings accompany this specification as part thereof.

Figure 1 is a top view of the improved wheel guard and portions of the car platform and sills above the same; Figs. 2 and 3 are side views projected from Fig. 1, showing the parts of the wheel guard respectively in their normal position and with the scoop "dropped"; Figs. 4 and 5 are top and side views respectively of the locking bar detached, on a larger scale; Fig. 6 is a view of the trip end of the apparatus on the same scale as Figs. 4 and 5, showing the parts in their respective positions by full and dotted lines; and Fig. 7 is a view similar to Fig. 6, illustrating a modification.

Like reference characters refer to like parts in all the figures.

The principal parts of the improved wheel guard are a tripping gate, *a*, hinged at its upper edge beneath the car platform by a pair of brackets, 1 and 2, and provided with a rigid centrally located tappet, 3; a cradle or drop scoop, *b*, hinged at its rear edge by a pair of brackets, 4 and 5, bolted to a pilot board, 6, which is attached to the front of the adjacent truck, said scoop being

provided with a pair of upwardly projecting rigid lever arms, 7 and 8, near the sides of the truck; a longitudinally movable and gravitating locking bar, *c*, extending rearward from above the gate *a*, supported by brackets, 9 and 10, fixedly attached to the sills of the car, the front end of this bar being arranged to interact with said tappet 3 on the gate *a* when the latter is swung on its hinges by striking an obstruction on the track, and constructed with a shoulder, 11, on its bottom to interact with the foremost of said brackets 9 and 10, and the rear end of the bar being provided with a wheel, 12, having a vertical axis; and a bar, *d*, curved on a radius extending from the swiveling center or axis of the truck and which presses forward against said wheel 12 at the rear end of the locking bar *c*, when the front edge of the scoop *b* is in its elevated position, as in Fig. 2; said curved bar *d* being attached to the upper ends of said lever arms 7 and 8 by hinges, 7' 8', and all of said hinges having horizontal axes. Said locking bar *c* is further constructed with a lap joint, 13, at midlength and longitudinal slots, 14, Figs. 2, 3 and 5, for the reception of a pair of cap screws, 15, by which the two parts of the bar are clamped together in their different relative positions; which construction renders the bar extensible or adjustable lengthwise to adjust the front edge of the scoop *b* to any height above the rails when up, according to the type of pavement and the desire of the management of the road. The adjustment from one height to another is quickly accomplished by loosening and tightening said cap screws 15, and the adjustment can be made while the car is in service. This is important on a street railway, as on one line there may be rough cobble pavements and on another asphalt, and if it is desired to change a car from one line to the other the wheel guard can be adjusted if necessary without any material delay. Said tripping gate *a*, apart from said tappet attachment 3 may be and preferably is constructed wholly of iron pipe and ordinary pipe couplings, as represented. The frame, 16, of the drop scoop *b* may also be of like construction, as represented, and the scoop is preferably and conveniently "filled in" by means of wooden slats, 17, parallel with the hinges, supported by straps, 18, of band-iron bolted with com-

mon stove bolts, 19. The scoop *b* is further provided with a pair of iron runners 20 which are preferably and conveniently integral with the lower ends of said lever arms 7 and 8, and attached therewith to the frame 16 of the scoop.

The hinge brackets 1, 2, 4, and 5 of the gate *a* and scoop *b* in common, are preferably malleable castings, and interact with horizontal portions of the pipe frame work. The lever arms 7 and 8 of the scoop are preferably malleable castings, as are also the main parts of the locking bar *c*. The curved bar *d* is preferably and conveniently of pipe, with hinge castings, 21, at its ends, and the wheel 12 of the locking bar, appropriate to this construction, is constructed with a deep peripheral groove as shown, and is mounted within a fork, 22, at the rear end of the locking bar *c*, closed behind the curved bar by a vertical bolt or pin 23.

It will be understood that by the upward movement of the bar *c* through the backward swinging movement of the trip *a*, the shoulder 11 of said bar is lifted clear of the interlocking portion of the bracket 9, and the weight of the scoop *b* then tilts it to the ground; said bar *c* moving freely forward with the bar *d*.

The means for restoring the locking bar *c* and scoop *b* to their normal positions from the platform of the car represented in Figs. 1, 2, 3 and 6 consists of a vertically movable pedal, *e*, and a pair of toggle links, *f* and *g*, the latter pivotally attached to the lower end of said pedal, to a fixed support, 24, in front of said pedal and to the top of the locking bar *c* at 25, so as to press the locking bar downward, and thus insure interlocking its subjacent shoulder 11 with the contiguous supporting bracket 9 in the act of forcing the locking bar *c* rearward and turning the scoop *b* on its hinges into its elevated position, represented in Fig. 2 and by the full-line position in Fig. 6, through the medium of the curved bar *d*.

In the modification represented by Fig. 7, a lever shaped pedal, *e'*, is substituted for said vertically movable pedal *e*, and turns on a fixed horizontal pivot, 26, while the back of its lower end below said pivot is constructed with a bevel, 27, to interact with a stud pin, 28, on the locking bar *c* so as to press the same simultaneously rearward and downward in restoring the parts to their normal (full line) position.

The mechanical construction of the tripping gate *a*, the scoop *b* and other parts of the improved wheel guard may obviously be changed without departing from the invention; and other like modifications will suggest themselves to those skilled in the art.

Having thus described said improvement, I claim as my invention and desire to patent under this specification:

1. A springless trip-and-drop-scoop wheel guard for street cars having, in combination, a tripping gate hinged at its upper edge to the bottom of the car platform and provided with a rigid tappet, a drop scoop hinged at its rear edge to a pilot board carried by the car truck and provided with a pair of upwardly projecting lever arms near the sides of the truck, a longitudinally movable and gravitating locking bar extending rearward from above said gate arranged to interact with said tappet, and provided with a locking shoulder on its bottom near its front end and with a wheel at its rear end having a vertical axis, a bracket attached to the sills of the car and interacting with said shoulder, and a curved bar engaged by said wheel and attached at its ends to the upper ends of said lever arms by hinges having a horizontal axis.

2. The combination, in a wheel guard for street cars, of a tripping gate hinged at its upper edge to the bottom of the car platform, a drop scoop hinged at its rear edge to a pilot board carried by the car truck and provided with a pair of upwardly projecting lever arms near the sides of the truck, a curved bar attached at its ends to the upper ends of said lever arms by hinges having a horizontal axis, and a longitudinally movable locking bar tripped by said gate and provided at its rear end with a wheel having a vertical axis and arranged to interact with said curved bar.

3. The combination, in a wheel guard for street cars, of a tripping gate hinged at its upper edge to the bottom of the car platform, a drop scoop hinged at its rear edge to a pilot board carried by the car truck and provided with a pair of upwardly projecting lever arms near the sides of the truck, a curved bar attached at its ends to the upper ends of said lever arms by hinges having a horizontal axis, and a longitudinally movable locking bar tripped by said gate and provided at its rear end with a wheel having a vertical axis and arranged to interact with said curved bar and further provided with means whereby said scoop is adjusted as to height in its normal position by lengthening or shortening said bar.

4. The combination, in a wheel guard for street cars, of a tripping gate hinged at its upper edge to the bottom of the car platform, a drop scoop hinged at its rear edge to a pilot board carried by the car truck and provided with a pair of upwardly projecting lever arms near the sides of the truck, a curved bar attached at its ends to the upper ends of said lever arms by hinges having a horizontal axis, and a longitudinally movable locking bar tripped by said gate and provided at its rear end with a wheel having a vertical axis and arranged to interact with said curved bar and further

provided at midlength with a lap joint, screws by which said joint is normally tightened and longitudinal slots through which said screws extend to provide for lengthening or shortening said bar and thereby adjusting said scoop as to height in its normal position.

5. The combination, in a wheel guard for street cars, of a tripping gate hinged at its upper edge to the bottom of the car platform and provided with a centrally located tappet, a drop scoop hinged at its rear edge to a pilot board carried by the car truck and provided with a pair of upwardly projecting lever arms near the sides of the truck, a curved bar attached at its ends to the upper ends of said lever arms by hinges having a horizontal axis, a longitudinally movable locking bar interacting with said tappet extending rearward from above said gate and provided at its rear end with a wheel having a vertical axis and arranged to interact with said curved bar,

locking means carried by said locking bar and by the car sills, and means for restoring the parts to normal position from the car platform, substantially as hereinbefore specified.

6. The combination with a car body and swiveled truck frame of a movable bar carried by the car body, a scoop pivotally carried by the truck frame, a curved bar carried by the truck frame, an anti-friction wheel carried by said movable bar and against which said curved bar presses forward when the front edge of the scoop is in its elevated position, means for normally holding the movable bar against movement, and tripping means for releasing the bar from said holding means, substantially as hereinbefore specified.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."