C. E. GIERDING.

AUTOMATIC WHEEL GUARD.

APPLICATION FILED JUNE 7, 1909.

935,491.

Patented Sept. 28, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

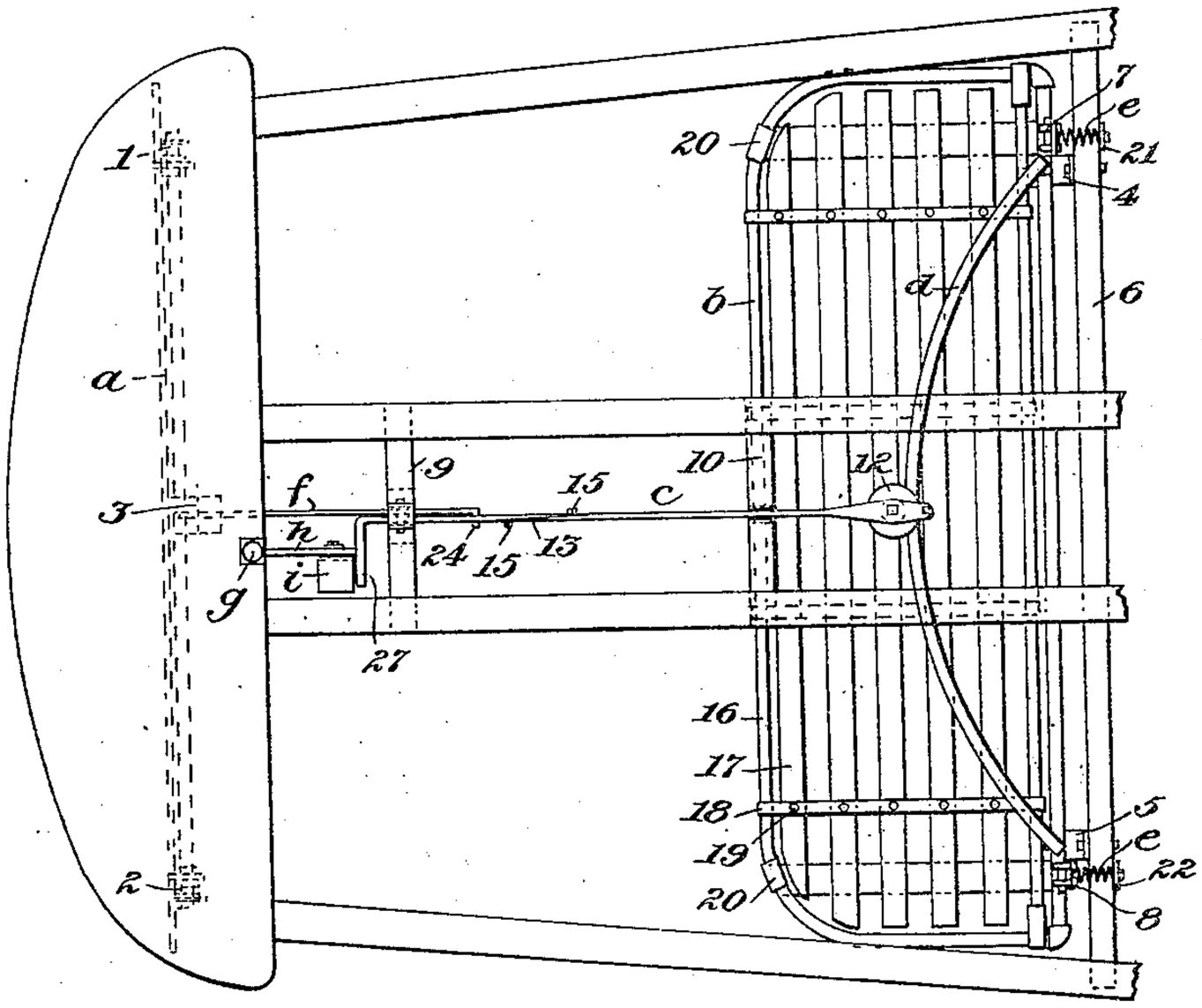


Fig. 2.

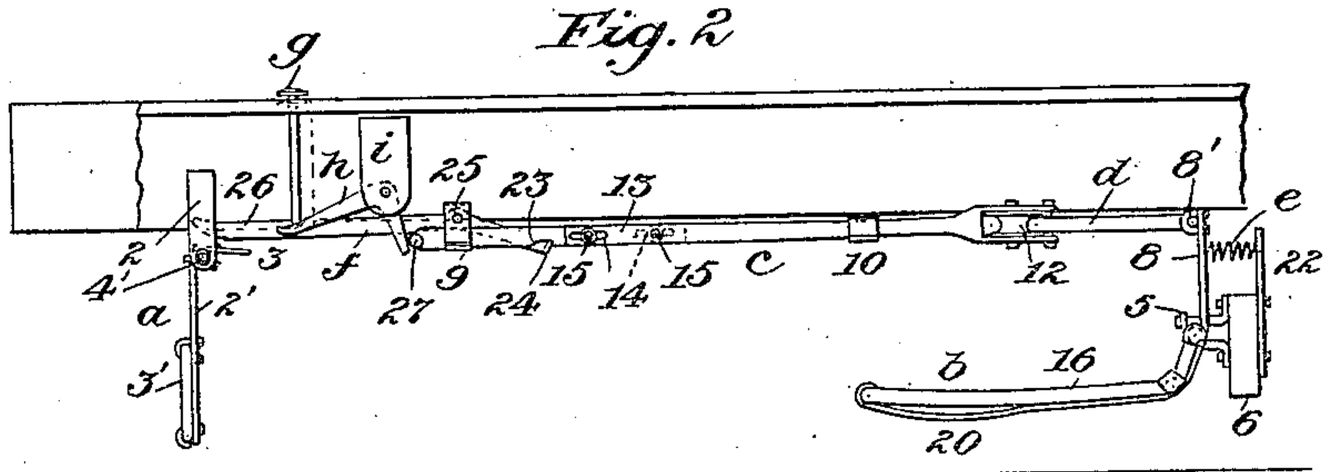
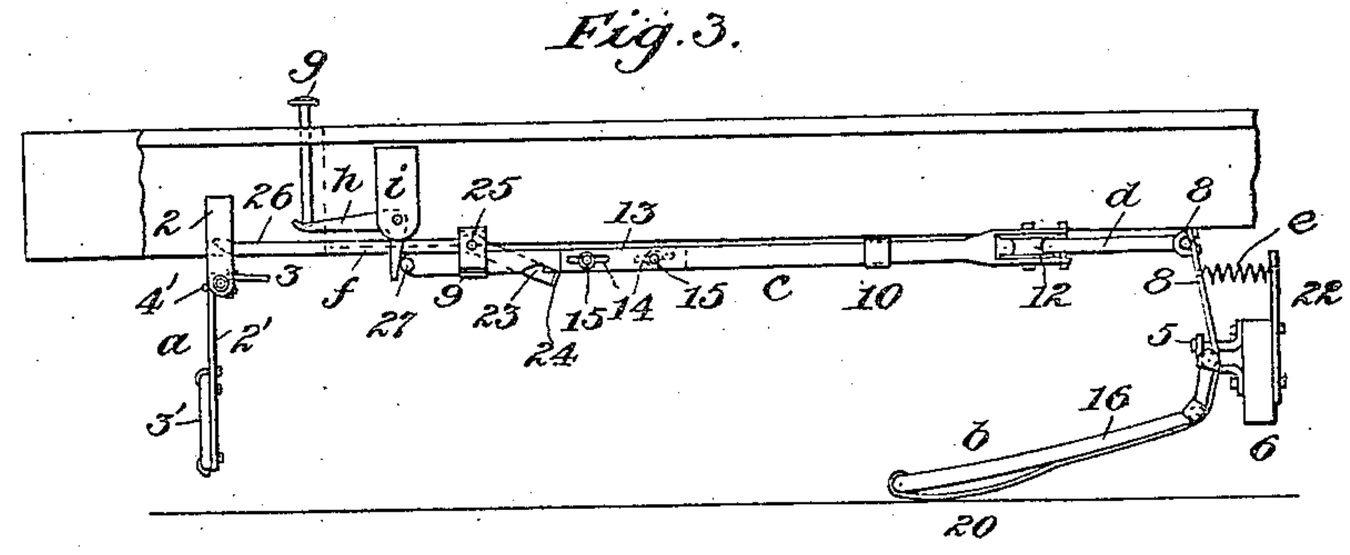


Fig. 3.



Witnesses:

H. C. Gaulle

M. E. Smoot.

Inventor:

Charles E. Gierding

by his attorney

D. L. Lowe.

C. E. GIERDING.

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2 SHEETS—SHEET 2.

Fig. 4.

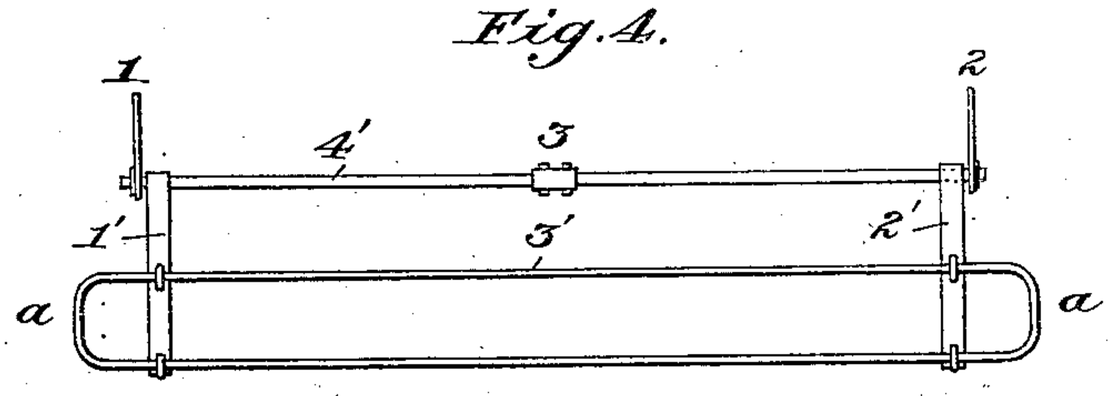


Fig. 5.

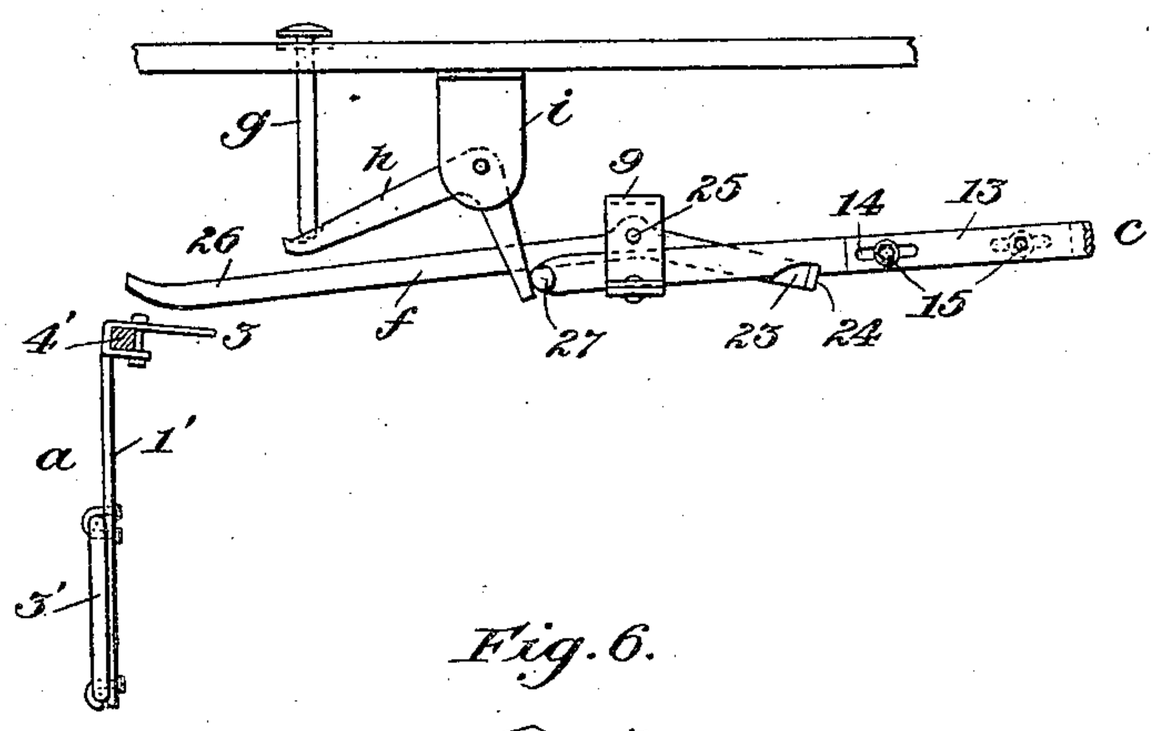


Fig. 6.

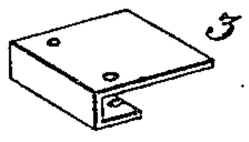
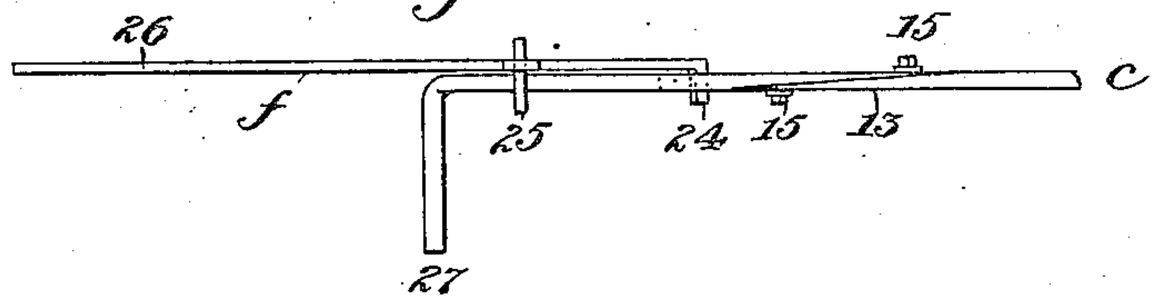


Fig. 7.



Witnesses:

H. E. Gaulett

M. E. Smoot

Inventor:

Charles E. Gierding

by his attorney

E. L. Irwin.

UNITED STATES PATENT OFFICE.

CHARLES E. GIERDING, OF NEWARK, NEW JERSEY.

AUTOMATIC WHEEL-GUARD.

935,491. Specification of Letters Patent. **Patented Sept. 28, 1909.**

Application filed June 7, 1909. Serial No. 500,488.

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 primarily 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 invention is in part additional to a previous improvement in automatic wheel guards set forth in a companion specification forming part of my application for United States Letters Patent filed February 6, 1909, Serial No. 476475.

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 more particularly described and claimed.

The leading objects of the present improvement are to render the securing device more sensitive and instantaneous in its action; to provide for raising the cradle or scoop from the platform, and to simplify the construction of the tripping gate without loss of effectiveness.

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"; Fig. 4 is a front view of the tripping gate detached; Fig. 5 is a fragmentary side view of the improved securing and scoop-raising devices and tripping gate on a larger scale and partly in section; Fig. 6 is a perspective view of the tripping tappet detached; and Fig. 7 is a fragmentary top view projected from Fig. 5.

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

As in said previous improvement, 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 locking bar, *c*, supported by brackets, 9 and 10, fixedly attached to the sills of the car, 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 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, one of which is shown at 8′ in Figs. 2 and 3; and all of said hinges having horizontal axes. Said locking bar *c*, as in said previous improvement, 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. This 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 frame, 16, of the drop scoop *b*, as in said previous improvement, is preferably constructed wholly of iron pipe and ordinary pipe couplings, 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 common stove bolts, 19; and 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.

In the present construction, the tripping gate *a* is composed of a pair of malleable iron hangers, 1′ and 2′, a horizontally extended loop, 3′, of iron pipe attached at its top and bottom to each of said hangers and having its upper horizontal member at mid-

height of the gate, and a horizontal hinge shaft, 4′, angular in cross section between the hinge brackets 1 and 2, to which angular embracing portions of the hangers 1′ and 2′ and tappet 3 are fitted.

The drop scoop *b* is or may be of the same construction as heretofore, except that, in order to reduce the weight of the scoop proper the lever arms 7 and 8 are preferably adapted to interact with a pair of drop expediting springs, *e*, which are interposed between the respective lever arms and abutments, 21 and 22, attached behind them to the pilot board 6, or its equivalent.

The locking bar *c* in the present construction is provided at bottom with a locking notch, 23, behind the front bracket 9, and this notch interacts with a laterally bent locking end, 24, at the rear end of a dog or locking lever, *f*, movable on a horizontal pivot, 25, which is conveniently supported by said bracket 9; and the heavier front end, 26, of said locking lever extends forward above the tripping gate *a* to interact with the tappet 3. It will be understood that said locking end 24 of the locking lever *f* is interlocked with said notch 23 of the locking bar *c* when the scoop *b* is in its normal or "raised" position (Fig. 2) and that by the upward movement of the front end 26 of said lever *f* through the backward swinging movement of the gate *a*, said locking end 24 is disengaged downward from said notch 23, permitting the locking bar *c* to move freely forward with the bar *d* as the front edge of the scoop *b* drops to its lowered position (Fig. 3).

The present means for restoring the locking bar *c* and scoop *b* to their normal positions from the platform of the car consist of a vertically movable pedal or foot plunger, *g*, a bell-crank lever, *h*, interacting with the lower end of said foot plunger, a fulcrum bracket, *i*, for said bell-crank lever attached to the bottom of the platform, and a rigid horizontal arm, 27, on the locking bar *c* at its front extremity, immediately in front of the front bracket 9, against which the other member of said bell-crank lever presses in raising the scoop from its lowered position, Fig. 3, to its raised position, Fig. 2. Compare Fig. 5 where these parts are shown on a larger scale. Other details of the locking bar *c* are more fully described in said companion specification, and form no part of the present invention.

All patentable combinations common to the present wheel guard and that set forth in said companion specification are hereby disclaimed in favor of said companion specification.

The improved tripping gate and the improved locking and raising means hereinbefore specified may obviously be embodied in other drop-scoop wheel guards, 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. 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 tripping tappet, a drop scoop hinged at its rear edge to a support beneath the car, and means for securing said scoop in its raised position including a longitudinally movable locking bar connected with said scoop at its rear end and constructed with a locking notch at its bottom, a locking lever having a projection at its rear end arranged to interlock with said notch and a heavier front end extending forward above said tappet to interact therewith and a bracket supporting said bar and the pivot of said lever; the axes of said hinges and said pivot being horizontal and transverse with reference to said locking bar.

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 and provided with a tripping 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 at the sides of the truck, a curved bar hinged at its ends to the upper ends of said lever arms, and means for securing said scoop in its raised position including a longitudinally movable locking bar interacting with said curved bar at its rear end and constructed with a locking notch at its bottom, a locking lever having a projection at its rear end arranged to interlock with said notch and a heavier front end extending forward above said tappet to interact therewith and a bracket supporting said bar and the pivot of said lever; the axes of said hinges and said pivot being horizontal and transverse with reference to said locking 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 and provided with a tripping 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 hinged at its ends to the upper ends of said lever arms, and means for securing said scoop in its raised position including a longitudinally movable locking bar interacting with said curved bar, provided with means whereby said scoop is adjusted as to height in its normal position by lengthening or shortening said bar and constructed with a locking notch at its bottom, a locking lever having a projection at its rear end arranged to interlock with said notch and a heavier front end extending forward above said tap-

pet to interact therewith and a bracket supporting said bar and the pivot of said lever; the axes of said hinges and said pivot being horizontal and transverse with reference to said locking 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 and provided with a tripping tappet, a drop-scoop hinged to a support beneath the car at its near edge, means for securing said scoop in its raised position including a longitudinally movable locking bar connected with said scoop at its rear end and constructed with a locking notch at its bottom, a locking lever having a projection at its rear end arranged to interlock with said hinge and a heavier front end extending forward above said tappet to interact therewith, and means for restoring the parts to normal position from the car platform including a foot plunger and a subjacent bell-crank lever arranged to interact with said foot plunger, the front end of said locking bar having a rigid projection arranged to interact with said bell-crank lever, and the axes of said hinges and of the fulcrums of said levers being horizontal and transverse with reference to said locking bar.

5. A 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 constructed with a pair of rigid hangers, a laterally extended loop attached to said hangers with its upper horizontal member at mid-height, and a horizontal hinge shaft angular in cross-section between the hinges to which angular embracing portions of said hangers are fitted, a tripping tappet having an angular portion embracing said hinge shaft, a scoop locking lever extending rearward from above said tappet and interacting therewith, a drop-scoop hinged at its rear edge to a support beneath the car, and a locking bar connected with said scoop at its rear end and constructed with a locking notch at its bottom arranged to interact with said locking lever, substantially as hereinbefore specified.

CHARLES E. GIERDING.

Witnesses:
EDWARD LEONARD,
ELLA J. LEONARD.