

No. 804,150.

PATENTED NOV. 7, 1905.

E. H. MILLER.

SAFETY DEVICE FOR CAR BRAKES.

APPLICATION FILED APR. 26, 1904. RENEWED AUG. 21, 1905.

2 SHEETS—SHEET 1.

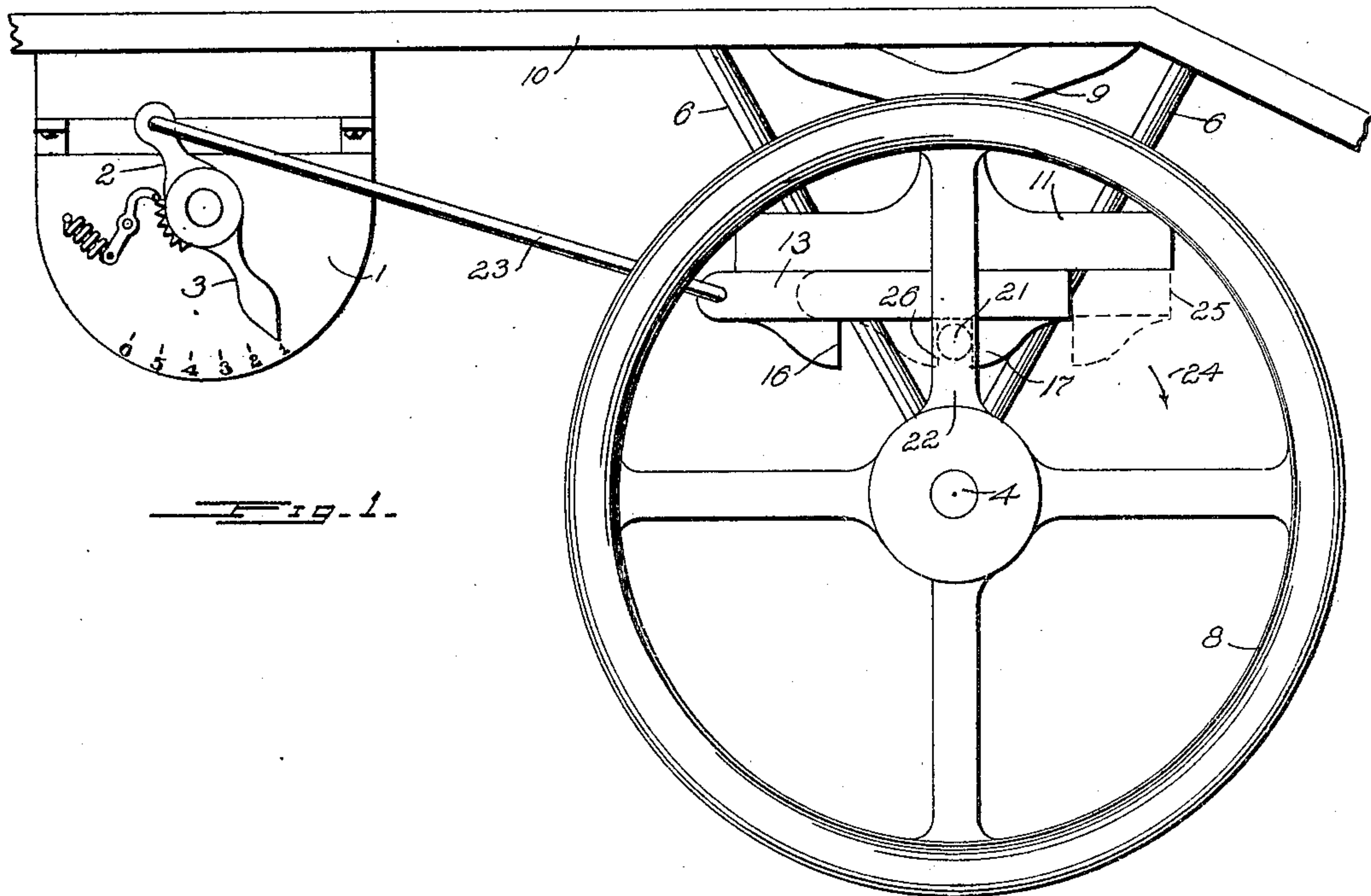


Fig. 1.

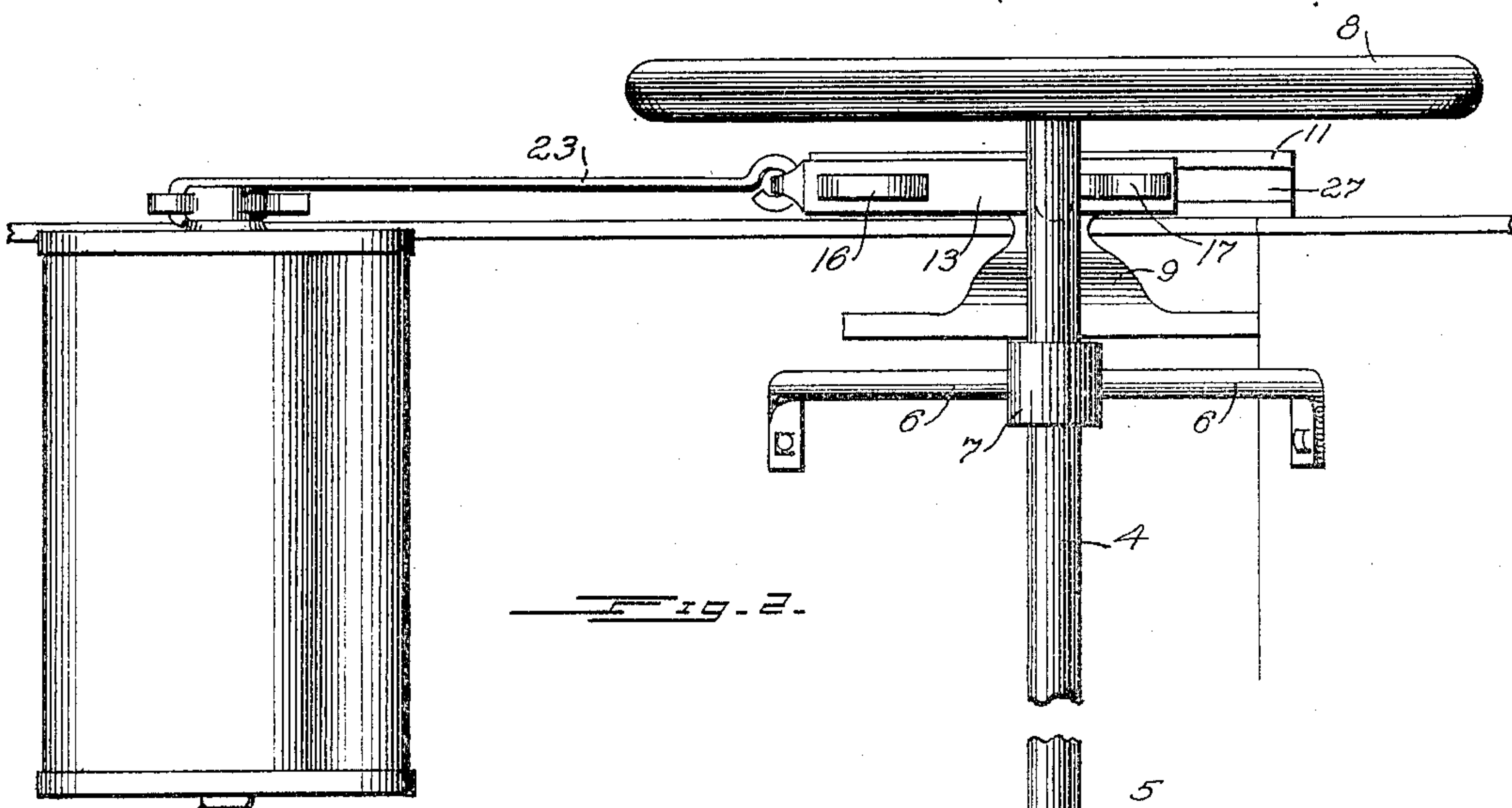


Fig. 2.

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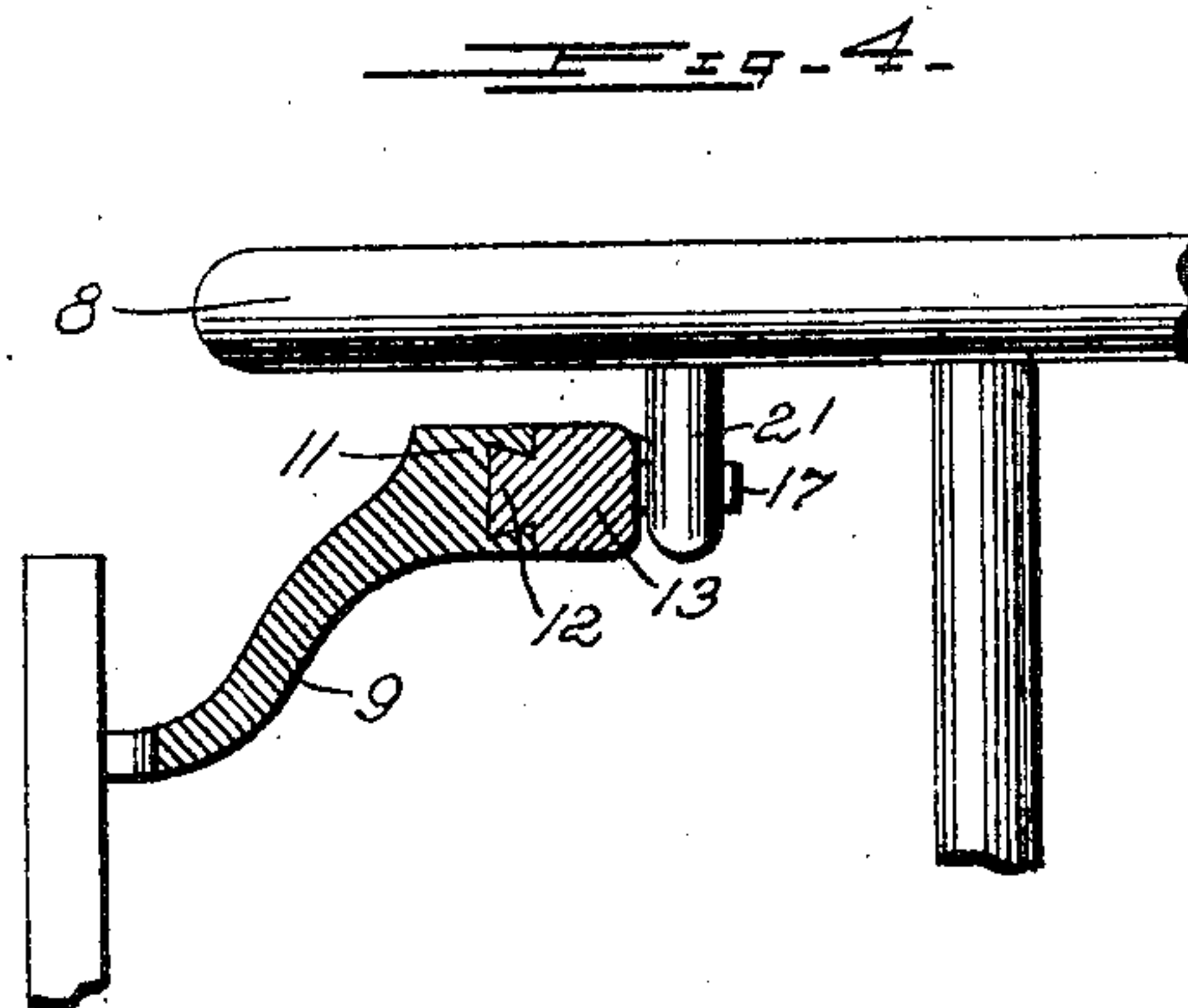
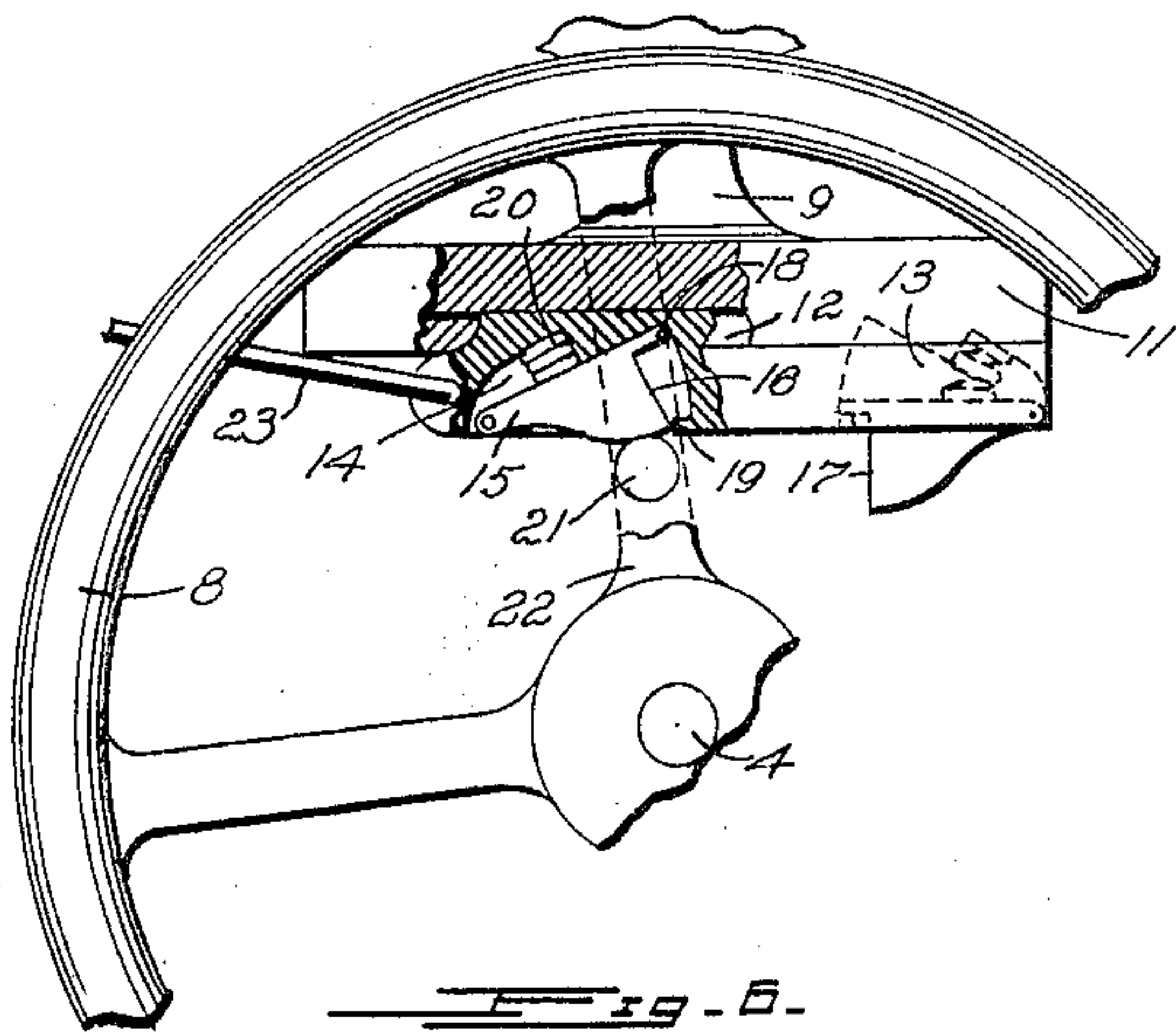
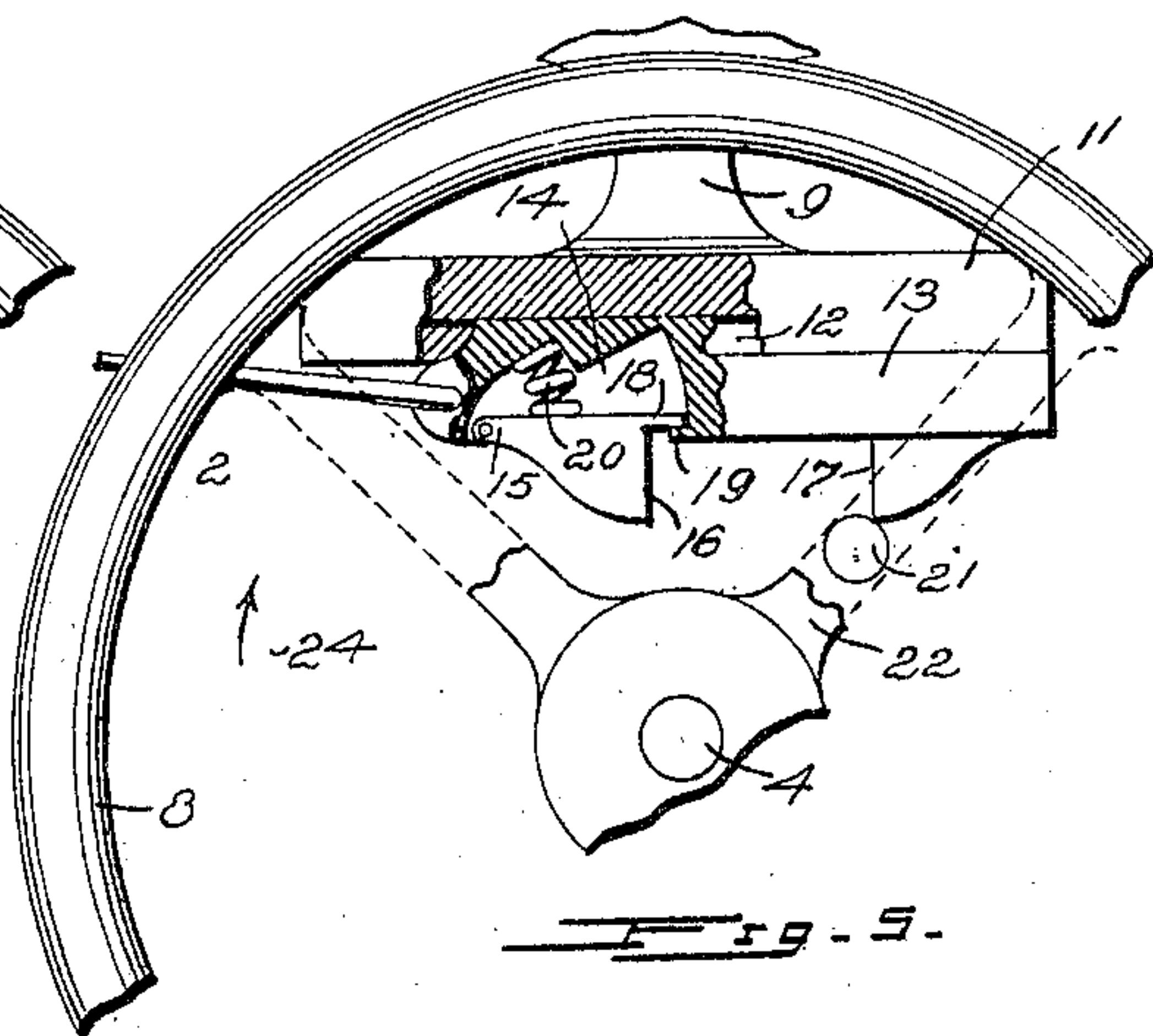
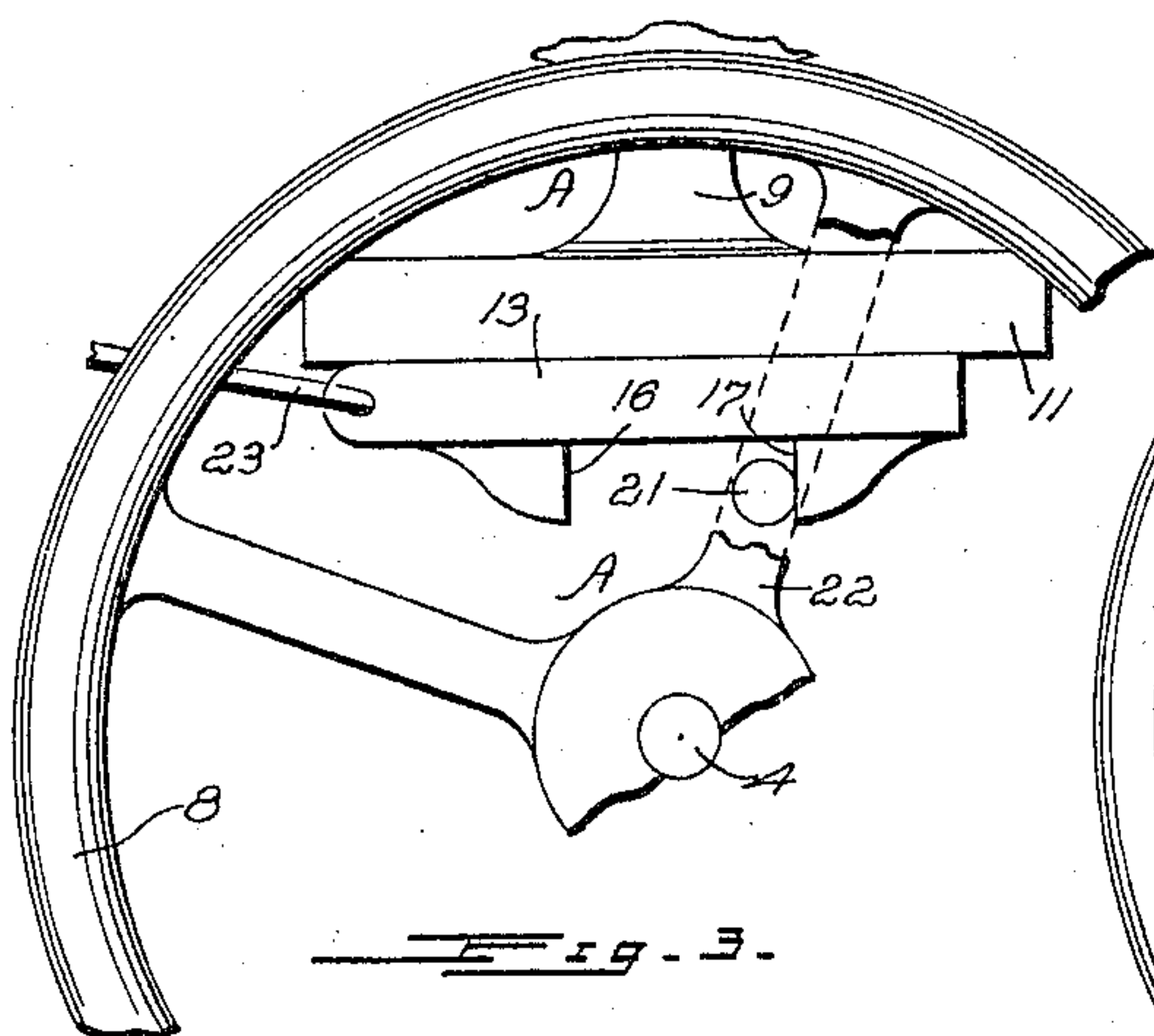
PATENTED NOV. 7, 1905.

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SAFETY DEVICE FOR CAR BRAKES.

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2 SHEETS—SHEET 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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SAFETY DEVICE FOR CAR-BRAKES.

No. 804,150.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed April 25, 1904. Renewed August 21, 1905. Serial No. 275,191.

To all whom it may concern:

Be it known that I, ERNEST H. MILLER, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Safety Devices for Car-Brakes, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to improvements in that class of brakes wherein electrical power is used in applying them and in which the ordinary hand-power may be employed as an auxiliary; and the objects of these improve-
15 ments are, first, to apply both the electricity and the hand-power by means of the same hand-wheel or other device, and, second, upon failure of the electric current to apply the hand-brake.

20 The invention consists in the construction and combination of the various parts, as hereinafter fully described and then pointed out in the claims at the end of the description.

In the accompanying drawings, which
25 form a part of this specification, Figure 1 is a top plan view of a device embodying the invention; Fig. 2, a side elevation thereof; Fig. 3, a top plan view of a portion of the device, showing the hand-wheel turned to apply the
30 electric brake; and Fig. 4, a vertical section on broken line A A of Fig. 3. Fig. 5 is a similar top plan view, but with parts cut away to show the connections of one of the lugs of the draw-bar. Fig. 6 is a detail sectional view
35 showing the pin on the hand-wheel in the act of passing the tapered block having the shoulder 16 without affecting the controller.

Similar numerals indicate the same parts throughout the several views.

40 In the drawings, 1 indicates a controller of any usual construction, 2 the lever through which the controller is actuated, and 3 the pointer indicating the impression on the solenoid of the potential from the source of
45 electric energy. The solenoid, the source of electric energy, and their various connections with each other and the brake are not shown, as they do not form any part of this invention.

50 4 indicates the brake-staff, having attached to the lower end the usual chain 5, through which the brakes are applied by said

staff, which is held upright by the rods 6, carrying the eye 7, wherethrough the staff passes, and on the upper end of which is the
55 hand-wheel 8.

9 is a bracket secured to the dashboard 10 of the car and having on its free end a horizontally-disposed guide-plate 11 parallel with the dashboard, and longitudinally of
60 the guide-plate and in the outer edge thereof is a mortise 27 with receding sides. This mortise is engaged by a dovetail tenon 12 on the inner edge of a draw-bar 13, and said
65 tenon is adapted to move longitudinally in the mortise. In the outer edge of the draw-bar are two recesses 14, in the outer end of each of which is pivoted the smaller end 15
70 of a tapered block extending beyond the edge of said draw-bar, these blocks forming horizontally-disposed shoulders 16 and 17. On
75 the free end of each of said shoulders is a lip 18, adapted to engage a rib 19 in the recess in which the shoulder is pivoted, and bearing against the back of each recess 14 and against
80 the back of each of said shoulder-blocks is a spiral spring 20, holding lips 18 yieldingly against ribs 19. Shoulders 16 and 17 lie in the path of travel of a pin 21, projecting from the lower side of one of the spokes 22 of hand-
85 wheel 8, and one end of the draw-bar is connected with the lever 2 of the controller by a rod 23.

Normally the parts occupy the positions illustrated in Fig. 1, pin 21 resting against
85 shoulder 17. To energize the solenoid so as to apply the brakes by means of the electric mechanism, hand-wheel 8 is moved in the direction of arrow 24, pulling the draw-bar to the right by the pressure of pin 21 on shoulder 17, pushing the draw-bar into the position
90 shown by broken lines 25, Fig. 1. When the brakes are to be taken off, a reverse movement of the hand-wheel engages pin 21 with shoulder 16, as shown by broken lines 26, Fig. 1,
95 and pushes the draw-bar and lever 2 back into their normal positions. Should, however, the hand-wheel push the draw-bar to the extremity of its backward movement and it be found that the electric current was
100 off and that the brakes could not be applied by that means, then, the draw-bar being adapted to be pushed far enough back to permit pin 21 to pass shoulder 17, as shown in

Fig. 5, the movement of the hand-wheel is continued, applying the brakes through the ordinary means. In the continuing movement of the hand-wheel the shoulder 16 lies in the path of travel of pin 21; but said pin throws the shoulder inward by reason of said shoulder's pivoted connection with the draw-bar, as seen in Fig. 6, the spring 20 restoring shoulder 16 to its normal position after the passage of pin 21.

This invention is equally applicable to a hand-brake and means for applying an air-brake or to a hand-brake and means for applying any other kind of brake.

I do not restrict myself to the details of construction herein shown and described, as it is obvious that many alterations may be made therein without departing from the principle of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A brake-staff and a hand-operated device for turning it to apply the brakes, combined with a controller and connections between the controller and said device whereby when the latter is moved the brakes are applied through the action of the controller, and means permitting continued movement of the hand-operated device for applying the brakes by hand, without affecting the controller, together with means for restoring the controller-actuating connections to normal position on the reverse movement of said device.

2. A brake-staff and a hand-operated device for applying the brake combined with a controller and connections for applying the brake through the controller when the hand-operated device is operated, including a part lying in the path of movement of said hand-operated device for actuating the controller when said device is moving in one direction only; said part being adapted to move out of the way on continued movement of said device without affecting the controller.

3. In combination with the brake-staff, a hand-operated device on said staff having a projection, a controller, and connections between said controller and said hand-operated device including means arranged in the path of said projection adapted to be engaged thereby for operating the controller when moved in one direction only, and to recede out of the path of said projection when it is moved in the opposite direction.

4. In combination with the brake-staff and a device for operating it by hand to apply the brakes, the controller and means for operating it when said device is moving in one direction only for automatically applying the brakes, together with independent means for restoring the controller-operating means to normal position on the reverse movement only of said device; said means being adapt-

ed to move out of the way of said device on continued movement of the latter for applying the brakes by hand.

5. The combination, with a car-brake, of a controller wherethrough said brake may be operated, a lever for operating the controller, a brake-staff, a revoluble lever on the brake-staff, a draw-bar connection between the draw-bar and the lever for operating the controller.

6. The combination, with a car-brake, of a controller wherethrough said brake may be operated, a lever for operating the controller, a brake-staff, a revoluble lever on the brake-staff, a pin on the revoluble lever, a draw-bar, a shoulder on the draw-bar and adapted to be engaged by the pin on the revoluble lever, and an operating connection between the draw-bar and the lever for operating the controller.

7. The combination, with a car-brake, of a controller wherethrough said brake may be operated, a lever for operating the controller, a brake-staff, a revoluble lever on the brake-staff, a pin on the revoluble lever, a draw-bar, a shoulder on the draw-bar and adapted to be engaged by the pin on the revoluble lever when said lever moves in one direction and a second shoulder on the draw-bar and adapted to be engaged by said pin when the revoluble lever moves in the other direction, and an operating connection between the draw-bar and the lever for operating the controller.

8. The combination, with a car-brake, of a controller wherethrough said brake may be operated, a lever for operating the controller, a brake-staff, a revoluble lever on the brake-staff, a pin on the revoluble lever, a draw-bar, a shoulder on the draw-bar and adapted to be engaged by the pin on the revoluble lever and to actuate the draw-bar when so engaged by said pin in front and to yield without actuating the draw-bar when engaged by said pin behind, and an operating connection between the draw-bar and the lever for operating the controller.

9. The combination, with a car-brake, of a controller wherethrough said brake may be operated, a lever for operating the controller, a brake-staff, a revoluble lever on the brake-staff, a pin on the revoluble lever, a draw-bar, shoulders having their outer ends pivoted in recesses in the draw-bar, lips on the inner ends of the shoulders and adapted to rest on ribs in said recesses, springs pressing the free ends of the shoulders outward, the shoulders being adapted to be engaged by the pin on the revoluble lever, and an operating connection between the draw-bar and the lever for operating the controller.

10. The combination, with a car-brake, of a controller wherethrough said brake may be operated, a lever for operating the controller, a brake-staff, a revoluble lever on the brake-

staff, a pin on the revoluble lever, a bracket having a guide-plate on the outer part thereof, a draw-bar having thereon a dovetail tenon engaging a similarly-shaped mortise in the guide-plate, a shoulder on the draw-bar and adapted to be engaged by the pin on the revoluble lever, and an operating connection between the draw-bar and the lever for operating the controller.

10 11. The combination, with a car-brake, of a controller wherethrough said brake may be operated, a lever for operating the controller, a brake-staff, a revoluble lever on the brake-staff, a pin on the revoluble lever, a bracket
15 having a guide-plate on the outer part thereof, a draw-bar having thereon a dovetail

tenon engaging a similarly-shaped mortise in the guide-plate, shoulders facing each other and having their outer ends pivoted in recesses in the draw-bar, lips on the inner ends
20 of the shoulders and adapted to rest on ribs in said recesses, springs in said recesses and pressing the free ends of the shoulders outward, the shoulders being adapted to be engaged by the pin on the revoluble lever, and
25 an operating connection between the draw-bar and the lever for operating the controller.

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Witnesses:

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