(No Model.) 2 Sheets—Sheet 1.

N. C. BASSETT.

SAFETY GUARD FOR CARS.

No. 492,932. Patented Mar. 7, 1893.

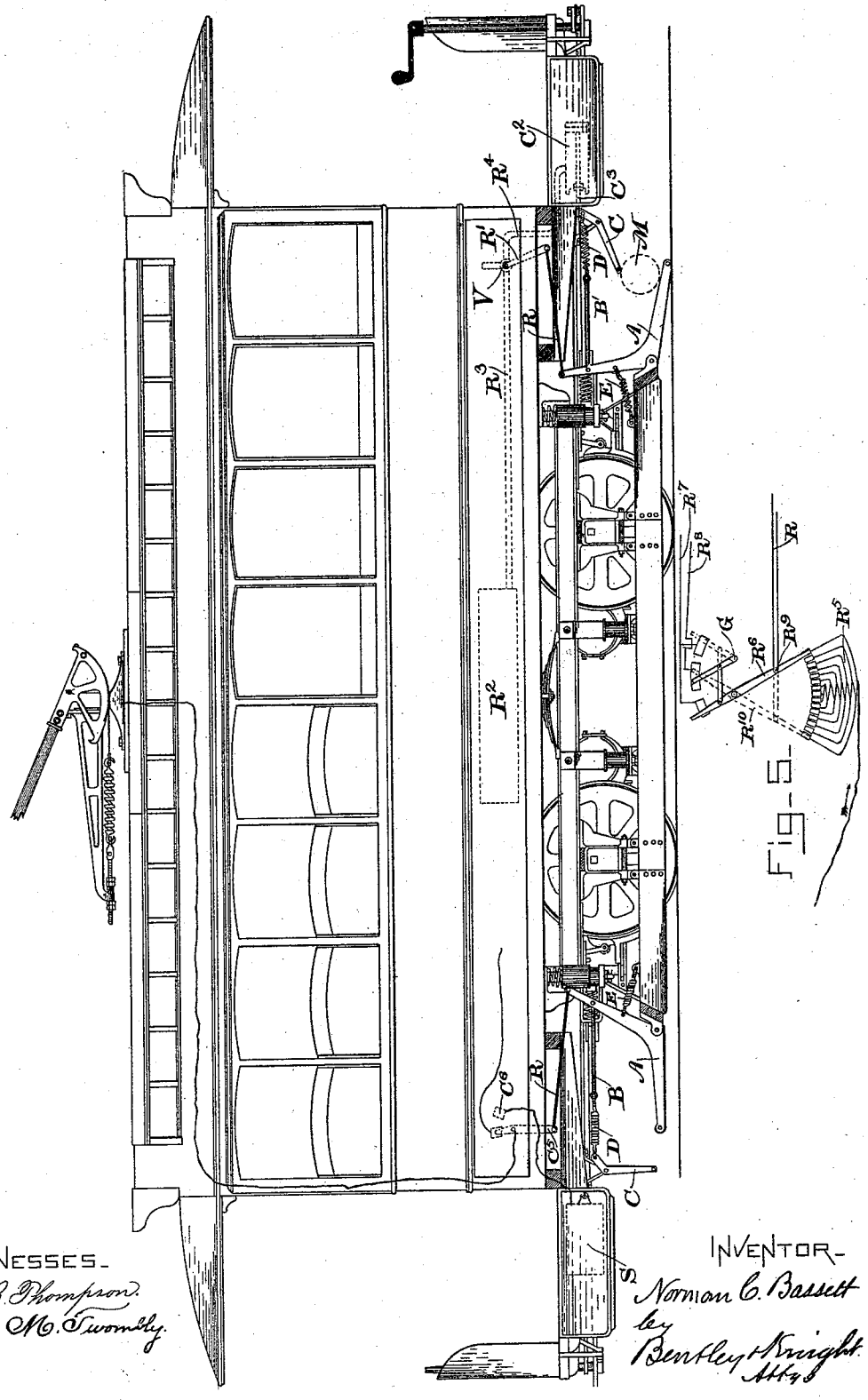

Fig. 1.

Fig. 5.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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Fig. 2.

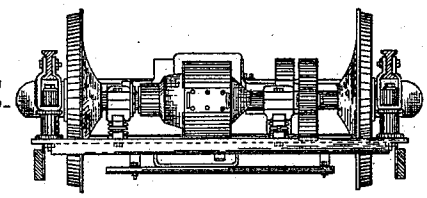


Fig. 4.

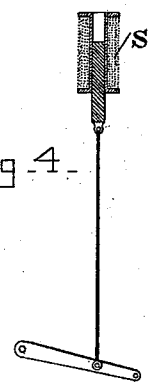
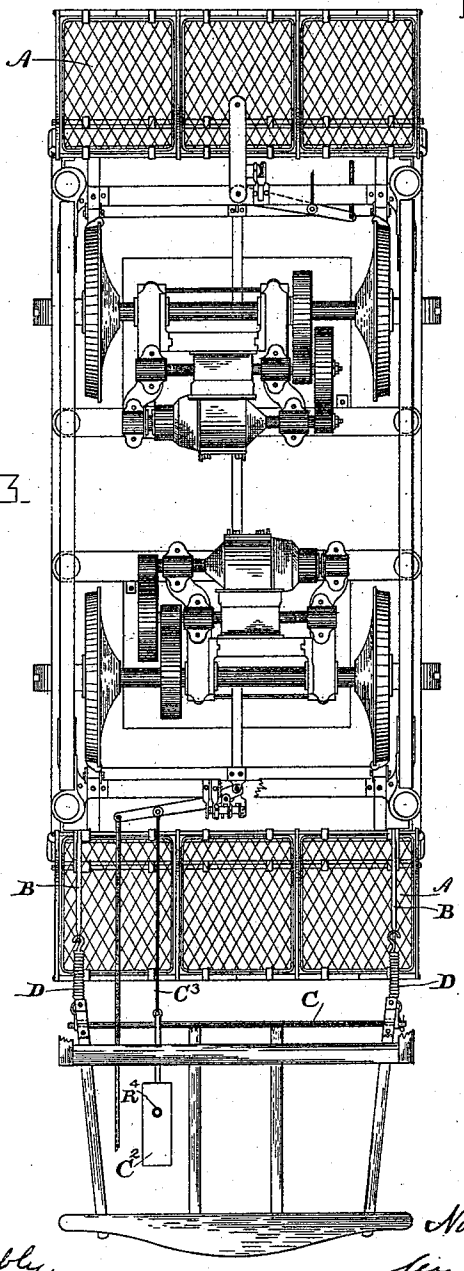


Fig. 3.



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UNITED STATES PATENT OFFICE.

NORMAN C. BASSETT, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE THOMSON-HOUSTON ELECTRIC COMPANY, OF CONNECTICUT.

SAFETY-GUARD FOR CARS.

SPECIFICATION forming part of Letters Patent No. 492,932, dated March 7, 1893.

Application filed September 22, 1890. Serial No. 365,853. (No model.)

To all whom it may concern:

Be it known that I, NORMAN C. BASSETT, a citizen of the United States, residing at Lynn, in the county of Essex, State of Massachusetts, have invented a certain new and useful Improvement in Safety-Guards for Cars, of which the following is a specification.

The invention relates to apparatus adapted to automatically pick up any obstruction on the track so as to prevent the car from running over the same. It is illustrated in the accompanying drawings in which

Figure 1 represents a side view of a car equipped with the improvement. Fig. 2 is an end view of the truck of the car. Fig. 3 is a plan of the truck. Fig. 4 is a detail of the electric brake. Fig. 5 is a diagram view of the electric reversing switch.

The invention consists primarily, of a life guard, A, pivoted to the end of an ordinary fender used on electrically propelled street cars (see Figs. 1 and 3) and connected with the motor switch, or controller so as to arrest or even reverse the movement of the motor automatically. It is provided, as shown in Fig. 3, with wire screens along the horizontal portion and also along the vertical portion.

At the upper end are attached rods B, which are connected to a curtain or apron C, through springs D. This curtain C, is pivoted on brackets supported by the car body. The springs D and E, serve to pull the guard A, and curtain C, back to the normal position.

In Fig. 1 at the right hand end of the car, the device is shown in operation: M, representing a man who has been knocked down by the car and fallen across the track, and as the car runs forward toward him, curtain or apron C, strikes the man and is thrown back, thus forcing the point A downward against the ground and scooping under the man M, lifting him up on the guard A, and carrying him along. When the man M, is thrown far enough back on the guard A, to allow curtain C to drop back to its normal position, it will go back to that position partially, but not entirely, as the spring E, is not made sufficiently strong to lift the guard A back to its normal position with any weight on it, the intention being to allow the point of the guard A to push along on the ground; and there are rolls made of short pipe sections on the front rod of this guard A, which will roll along on the ground or over the stones and thus prevent the point of the guard A from catching. Under ordinary circumstances the car would continue to run until the operator had shut off the current and applied the brakes. In Fig. 1 to the right is shown an attachment connected to the top of the guard A, consisting of a rod R, which is pivoted on the arm R′, operating the valve of an air brake. R^2 is a reservoir containing compressed air. A pipe R^3 leads to the valve V, and from thence a pipe R^4 passes to the cylinder C^2, located underneath the car platform. This cylinder C^2, Fig. 3, is connected by the rod C^3, with the operating lever of the brakes.

It is evident from the figure that when a man falls underneath the car and the apron C strikes him, the guard will be thrown down and through the rod R will operate the air brake so as to stop the car immediately. At the left hand of the car, Fig. 1, is shown a device connecting the guard with the motor so as to control the movement of the latter. C^5 is a circuit breaker which is connected with the car by rod R. When the point of the guard is thrown downward, the current passing from the trolley wire through the circuit breaker, and to the motor through the wire will therefore be stopped. The same motion of the circuit breaker arm, C^5, will make connection through the point, C^6, with a solenoid S, attached to the brake operating lever, as shown in Fig. 4. Should any obstruction of any kind strike curtain C, the guard would be thrown down to scoop it up, and at the same time would throw off the current and set the brakes.

In Fig. 5 one step more is taken in addition to throwing off the current to stop the motor, it is thrown on again in the reverse direction to reverse the car and back it away from the obstruction; so that in case the car should run partially up on a man, the current would be reversed and the car back down in time to save him.

This device shown in Fig. 5, consists simply of a combination of the ordinary reversing switch with a double rheostat. The current from the trolley passes, as indicated by the

arrow, through the resistance R^5, and as shown in the figure in full lines, the position of the contact breaker is such that the full current passes into the motor through the contact breaker R^6, and the wire R^7, and thence returns through the wire R^8, and through the reversing switch, to the ground, G.

Rod R, as shown in Fig. 1, is connected at the point R^9, as shown in Fig. 5, and it is evident that when the guard A is thrown down, through the rod R, the contact breaker, R^6, will be thrown in the position indicated in the dotted lines by R^{10}, thus reversing the current through the motor, and reversing the motion of the car.

What I claim as new and as my invention is—

1. The combination with an electric vehicle, a safety guard supported by the same and adapted to be lowered into position so as to pick up an obstruction on the road, of a circuit breaker in the motor circuit operated by said safety guard.

2. The combination with an electric vehicle of a safety guard pivoted thereto, a device adapted to be struck by an obstruction on the road and connected with the safety guard so as to lower the same in order to pick up the obstruction, and a circuit breaker in the motor circuit operated by said guard or curtain so as to break the circuit when the obstruction is encountered.

3. The combination with an electric vehicle of a safety guard and a motor reversing switch connected therewith whereby the motor is automatically reversed when an obstruction is encountered.

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Witnesses:
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ALEC F. MACDONALD.