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E. L. CRIDGE.

AUTOMATIC TRIP BRAKE.

APPLICATION FILED APR. 23, 1902.

NO MODEL.

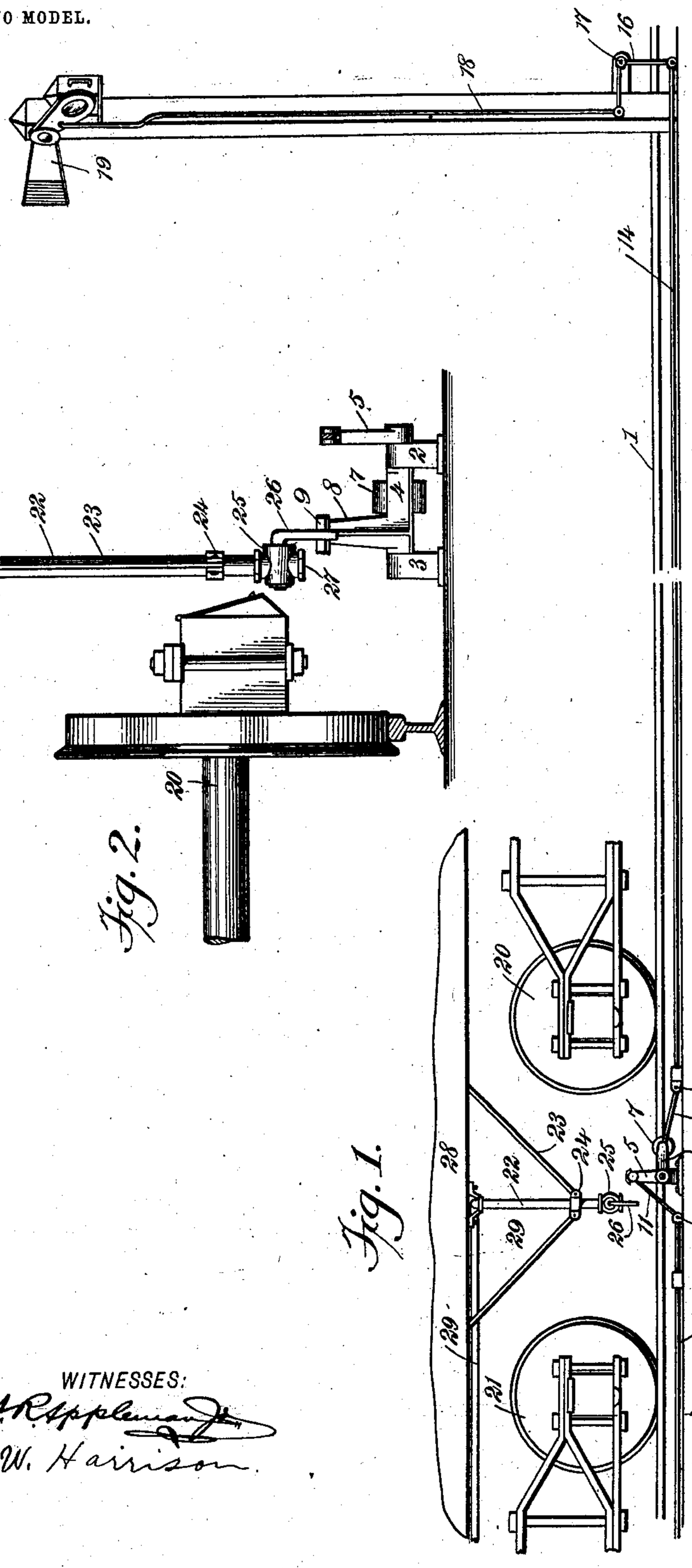

Fig. 1.

Fig. 2.

Fig. 3.

WITNESSES:

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EDMUND LOMAX CRIDGE, OF PASSAIC, NEW JERSEY.

AUTOMATIC TRIP-BRAKE.

SPECIFICATION forming part of Letters Patent No. 721,503, dated February 24, 1903.

Application filed April 23, 1902. Serial No. 104,289. (No model.)

To all whom it may concern:

Be it known that I, EDMUND LOMAX CRIDGE, a citizen of the United States, and a resident of Passaic, in the county of Passaic and State of New Jersey, have invented new and useful Improvements in Automatic Trip-Brakes, of which the following is a full, clear, and exact description.

My invention relates to an automatic trip-brake for railway-vehicles, the object being to stop such vehicles automatically in case the engineer for any reason disregards the danger-signal.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation showing my invention as applied to a railway. Fig. 2 is a fragmentary rear elevation of the same, somewhat enlarged; and Fig. 3 is a side elevation of the tripping mechanism, also somewhat enlarged.

Immediately adjacent to the rails 1 of the track are mounted bearings 2 3, on which is a rocking bracket 4, provided with arms 5 6, the arm 6 carrying a weight 7. The bracket is also provided with an arm 8, having a shoe 9. The arms 6 and 8 are integral and practically constitute a bell-crank. By means of links 10 11 the arms 5 and 6 are connected at the pivotal points 12 13 with the longitudinal sliding rods 14 15, these rods being connected with appropriate signals in the usual manner. A bell-crank 16 is pivotally mounted at 17 and is connected with a vertical rod 18, this rod in turn being connected with the semaphore-arm 19. The trucks of the railway-car are shown at 20 21. A tube 22, extending downward from the car, is provided with braces 23 and the collar 24. The lower end of this tube is provided with a valve 25, which is actuated by the radially-movable lever 26 and is also provided with an air-discharge 27. The tube 22 is connected with the train-pipe 29, which is supported upon the vehicle 28 and connected with air-brakes in the usual manner.

The operation of my device is as follows: When the trip mechanism is set in the position indicated in Fig. 3, the weight 7 being elevated, as shown, the train may pass by without the lever 26 striking against any obstruction. This is the normal position of the apparatus when the track is safe. If, however, owing to the presence of another train and the danger consequent thereupon, it is desired to stop an incoming train, my device is arranged as indicated in Fig. 2—that is to say, the weight 7 is lowered so that the arm 6 is horizontal, the arms 5 and 8 then being vertical. When the apparatus is in this position, the shoe 9 obstructs the path of the lever 26. When the bracket 4 is arranged in the position to accomplish this result, the semaphore-arm 19, actuated by means of the rod 14, the bell-crank 16, and rod 18, assumes a horizontal position, indicating "danger." If the engineer heeds the signal and stops his train, all is well; but if he fails to heed the same and his train still moves ahead the lever 26 encounters the shoe 9 and is thereby moved radially, so that the valve 25 is opened and the compressed air in the train-pipe escapes through the aperture 27, thus applying the brakes and stopping the train. The weight 7 when lowered to its position of greatest stability, as indicated in Fig. 1, tends to maintain the semaphore-arm 19 in a horizontal position, indicating "danger," the idea being that any uncertainty of position has a tendency to cause the weight 8 to descend, and thus to flag the train. The weight also tends to maintain the shoe 9 in the path of the lever 26 as against any accidental cause tending to disturb the position of the shoe before the arrival of the train.

When the apparatus is in the position indicated in Fig. 3, the semaphore-arm 19 is of course inclined at an angle to the horizon, thus indicating "safety."

It will thus be observed that I have produced an efficient device for preventing railway collisions.

I do not deem it necessary to describe air-brakes and the train-pipe for operating the same, as these parts are old and well known. Suffice it to say that in practically all forms of rolling-stock in which air-brakes are employed the brakes are automatically applied when the air from the train-pipe is allowed to escape.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

An automatic trip-brake for railway-vehicles, comprising a tube mounted upon a car and connected with a train-pipe thereon, a valve connected with said tube and free to open and close the same, a radially-movable lever connected with said valve for operating the same, a bell-crank lever pivotally mounted adjacent to the railway-track, one arm of said bell-crank lever being provided with a shoe movable into and out of the path of said lever, and the other arm being provided with a weight for preventing the accidental displacement of said shoe from said path of said lever, links pivotally connected with the ends of said lever, and slide-rods connected with said links for the purpose of actuating the semaphore-signals, the arrangement being such that when said shoe obstructs the path of said lever, said weight tends to maintain said semaphore-signals in predetermined positions, indicating danger.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDMUND LOMAX CRIDGE.

Witnesses:
ALBARD VAN RIPER,
JOHN V. FOLKESSON.