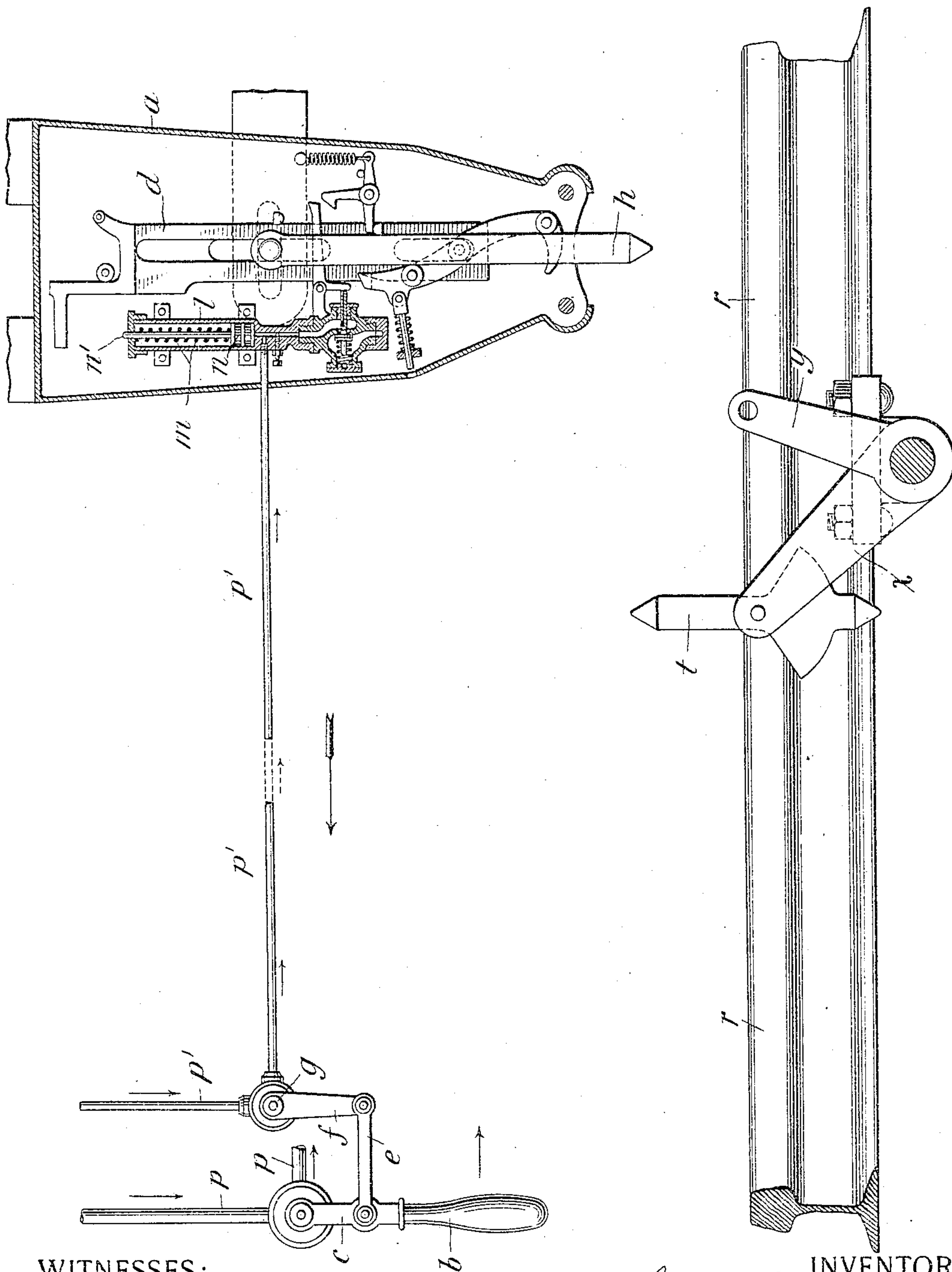


No. 778,559.

PATENTED DEC. 27, 1904.

G. G. WACKER.
SAFETY DEVICE FOR RAILWAYS.
APPLICATION FILED MAR. 19, 1904.



WITNESSES:

C. E. Ashley
M. F. Keating

INVENTOR

Geo. G. Wacker
By his Attorney,
Charles J. Kintner

UNITED STATES PATENT OFFICE.

GEORGE G. WACKER, OF NEW YORK, N. Y., ASSIGNOR TO THE AUTOMATIC SAFETY STOP COMPANY OF AMERICA, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

SAFETY DEVICE FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 778,559, dated December 27, 1904.

Application filed March 19, 1904. Serial No. 198,970.

To all whom it may concern:

Be it known that I, GEORGE G. WACKER, a citizen of the United States, residing at New York, borough of Manhattan, county and State of New York, have made a new and useful Improvement in Safety Devices for Railways, of which the following is a specification.

My invention is directed particularly to means for controlling the movements of railway vehicles or trains in such manner as to effect a variation of speed or the actual stoppage thereof automatically or manually when a signal has been set indicating the fact that the train should either be slowed down or brought to a dead stop, and has an especial utility when combined with apparatus like that disclosed in United States Patent to Jakob Graber, No. 736,382, granted August 18, 1903.

For a full and clear understanding of the invention, such as will enable others skilled in the art to construct and use the same, reference is had to the accompanying drawing, which is a part side elevational, part sectional view illustrating my improvement as applied to the apparatus disclosed in the before-mentioned patent, the latter being sufficiently illustrated at the right-hand side of the drawing to enable one to understand the nature and use of the combined apparatus.

Where devices like that disclosed in the before-mentioned patent are used, an objectionable feature arises in that where block-signals in the nature of home and distant signals are displayed the tripping apparatus will always be actuated for the displayed distant signal when the train passes the same, thus bringing it to a dead stop or sounding the whistle or alarm, or both, when, in fact, such a result is not absolutely required and necessarily involves loss of time as well as wear and tear upon the rolling-stock.

My invention has for its object to do away with this objectionable feature; and to this end it consists in providing means whereby the brakes of a train may be gradually manually applied by the engineer or motorman, so as to slow it down, and at the same time the train-stopping apparatus designed to be op-

erated automatically will be so acted upon as to prevent the tripping mechanism beside the track from operating the same, thus avoiding a sudden and often damaging stoppage of a train and also unnecessary delay, the arrangement of the entire apparatus being such that in the event of the engineer or motorman failing to manually perform the operation stated the automatic mechanism will effect the actual stoppage of the train or sound an alarm, or both, as disclosed in the before-mentioned patent.

Referring now to the drawing in detail, *a* represents the casing of an automatic stopping apparatus on the locomotive, (not shown,) and *d* the gravity-acting controlling-plate; *h*, the pivoted tripping-lever adapted to be acted upon by the pivoted weighted lever *t*, secured to one end of one of the operating-arms *x* *y* of the usual semaphore-operating devices located beside the track-rails *r*. *l* is the operating-cylinder, *n* the piston, *n'* the pin for raising the controlling-plate *d*, and *m* the spring for restoring the piston to its normal position, all of these parts being identically like those disclosed in the before-mentioned patent and in which, as above indicated, they are adapted to be operated automatically by roadside tripping devices as trains pass over the route. My improvement consists in combining with such an apparatus retaining means consisting of a branch pipe *p'*, one end of which is connected at a point below the piston *n* and the other to a cock *g*, connected in turn to said pipe *p'*, running to a source of energy, as an air-compression chamber, which supplies air for the brakes in the usual way through an additional pipe *p*, *c* and *f* being arms interconnected by a link *e* and both adapted to be operated through the agency of a brake-control handle *b*, located in close proximity to the engineer or motorman, the arrangement being such that he may gradually slow down the movement of a vehicle or train and simultaneously prevent the too sudden application of the brakes.

The operation is as follows: The semaphore or block signals of the usual home and distant

type are operated in any preferred manner and so arranged that when the distant signal is displayed the weighted pivoted lever *t* will be raised sufficiently above the track-rail *r* to come into mechanical contact with the pivoted tripping-lever *h*. When, therefore, the vehicle or train approaches the distant signal, the engineer noting that it is set to "caution" gradually applies the brakes through the train-pipe *p* by moving the operating-handle *b* in the direction of the arrow. At the same time the cock *g* is opened, thereby allowing air to flow in the direction of the arrows through the pipe *p'* to a point below the piston *n*, so as to lift the same against the influence of the spring *m*, thus gradually lifting the pin *n'* and when at its extreme or upper limit maintaining the controlling-plate *d* in its upper position, so that when the train passes over the weighted lever *t*, although the pawl which holds the plate normally in its upper position may be released, said plate will not fall. As soon as the signal has been passed and the train properly slowed down the engineer may return the operating-handle *b* to its normal position, after which the brakes will be released by the usual exhaust and the air behind the piston *n* will be released through the exhaust disclosed in the apparatus and as pointed out in the before-mentioned patent, thus allowing the spring *m* to restore the piston to its lower position, so as to leave the controlling-plate *d* in its upper or locked position and ready for automatic operation in the event of the engineer or motorman failing to actuate it; as hereinbefore described. It will be seen, therefore, that with my improvement it is possible to regulate the speed of a train in accordance with the requirements or rules of the management as to cautionary and danger signals, so that if the engineer does not apply his brakes as he approaches either the cautionary or danger signal in the manner described the automatic apparatus will instantaneously apply them, it being understood that the application of air to the controlling apparatus may be so adjusted that the controlling-plate *d* can only be held in its upper position after the brakes have been gradually and properly applied.

Although I have shown and described apparatus as applicable in connection with air-brake systems, it is obvious that any source of power, such as steam generated on the locomotive or hot air or any equivalent medium, may be used for gradually preventing the automatic mechanism from operating while the brakes are being simultaneously applied. I do not, therefore, limit my invention to the specific details of construction illustrated in the accompanying drawing, nor its application to apparatus like that herein illustrated and described and shown in the before-mentioned patent, my invention being generic in its application with devices designed to automatic-

ally stop trains or cars in the event of a signal having been set demanding such stoppage.

I am aware that it has heretofore been proposed to provide means for automatically actuating the air-brakes of a railway-train through the agency of an extension of the valve-stem connected to an arm the free end of which is located normally in the path of a swinging pivoted semaphore-arm beside the track and to combine the same with the usual valve-controlling handle located in close proximity to the engineer, the arrangement being such that if the engineer fails to apply the brakes as the train approaches the exposed semaphore-arm or a stationary arm or post located in the path of the free end of the aforesaid pivoted arm the brakes will be automatically applied and to the full extent thereof, and I make no claim hereinafter broad enough to include such a structural apparatus, my invention being directed to means for gradually applying the brakes when it is deemed necessary to pass an exposed signal and simultaneously prevent the operation of automatic tripping mechanism which is actuated by stationary tripping devices located beside the track.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a railway-vehicle a safety device adapted to be operated by apparatus located beside the track; retaining means carried by the vehicle and under control of the engineer or motorman for manually preventing the operation of the safety device; in combination with brake-controlling devices connected therewith, the arrangement being such that the engineer or motorman may gradually slow down the movement of a vehicle or train and simultaneously prevent the operation of the safety device.

2. In a railway-vehicle a safety device operatively connected with means for applying the brakes; in combination with means located beside the track for automatically effecting the operation of said device; together with retaining means under control of the engineer or motorman for simultaneously gradually applying the brakes and preventing the automatic action of the safety device.

3. A safety device for railway-vehicles consisting of automatic means for applying the brakes and a tripping device located beside the track for actuating said automatic means; in combination with manually-controlled retaining means operatively connected to the safety device and to the brakes, the arrangement being such that an engineer or motorman may gradually apply the brakes and simultaneously prevent the automatic operation of the safety device.

4. In a railway-vehicle a source of energy operatively connected with means for utilizing said source of energy in stopping the ve-

hicle; in combination with a tripping or actuating device therefor adapted to be acted upon by means located beside the track; together with manually-operated retaining means operatively connected with the same source of energy for applying the brakes and simultaneously preventing the action of the automatic device.

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

GEO. G. WACKER.

Witnesses:

C. J. KINTNER,
M. F. KEATING.