

No. 753,114.

PATENTED FEB. 23, 1904.

G. J. BERBERT.  
AIR BRAKE OPERATING DEVICE.

APPLICATION FILED JAN. 8, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

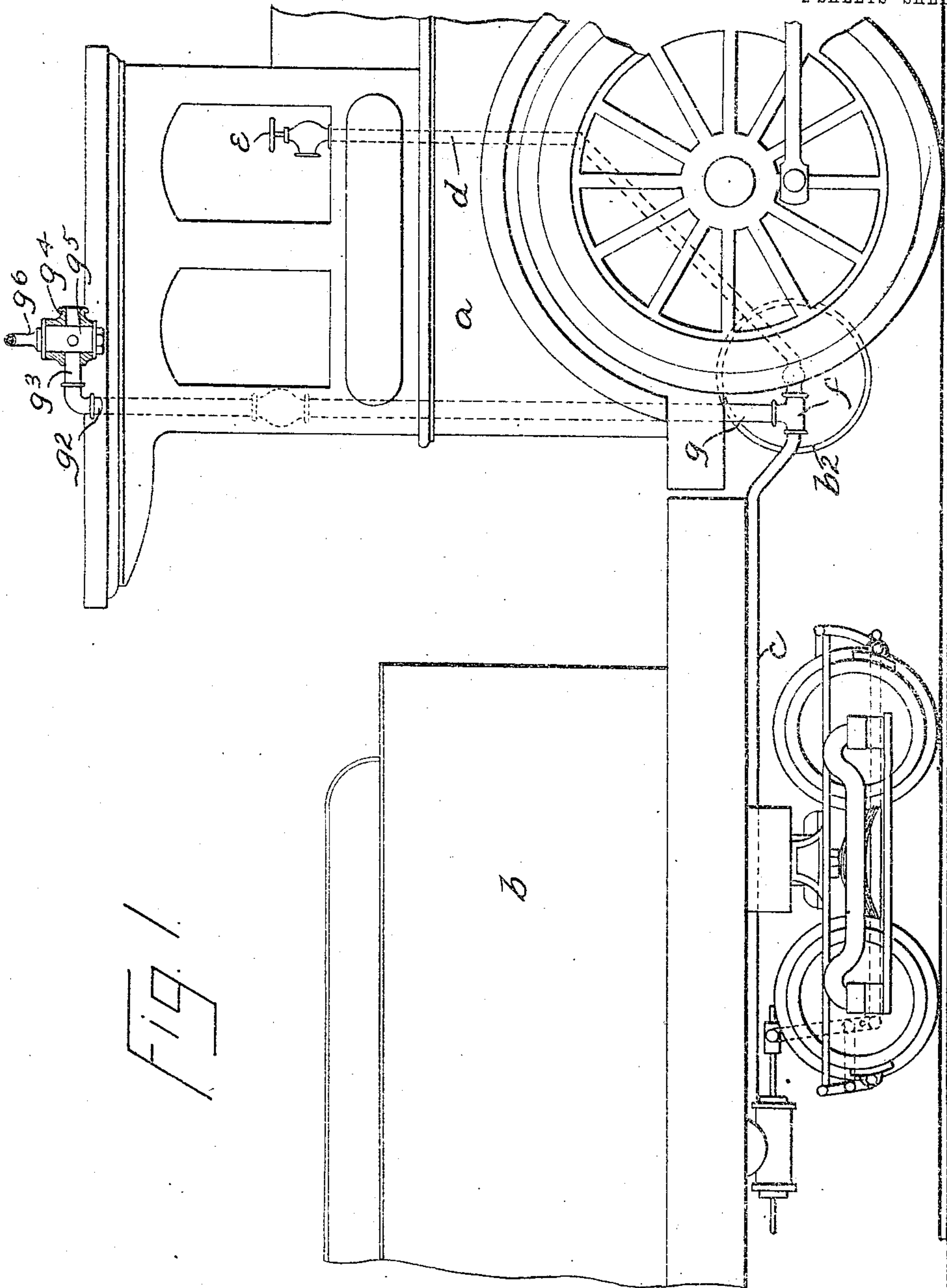


FIG. 1

WITNESSES

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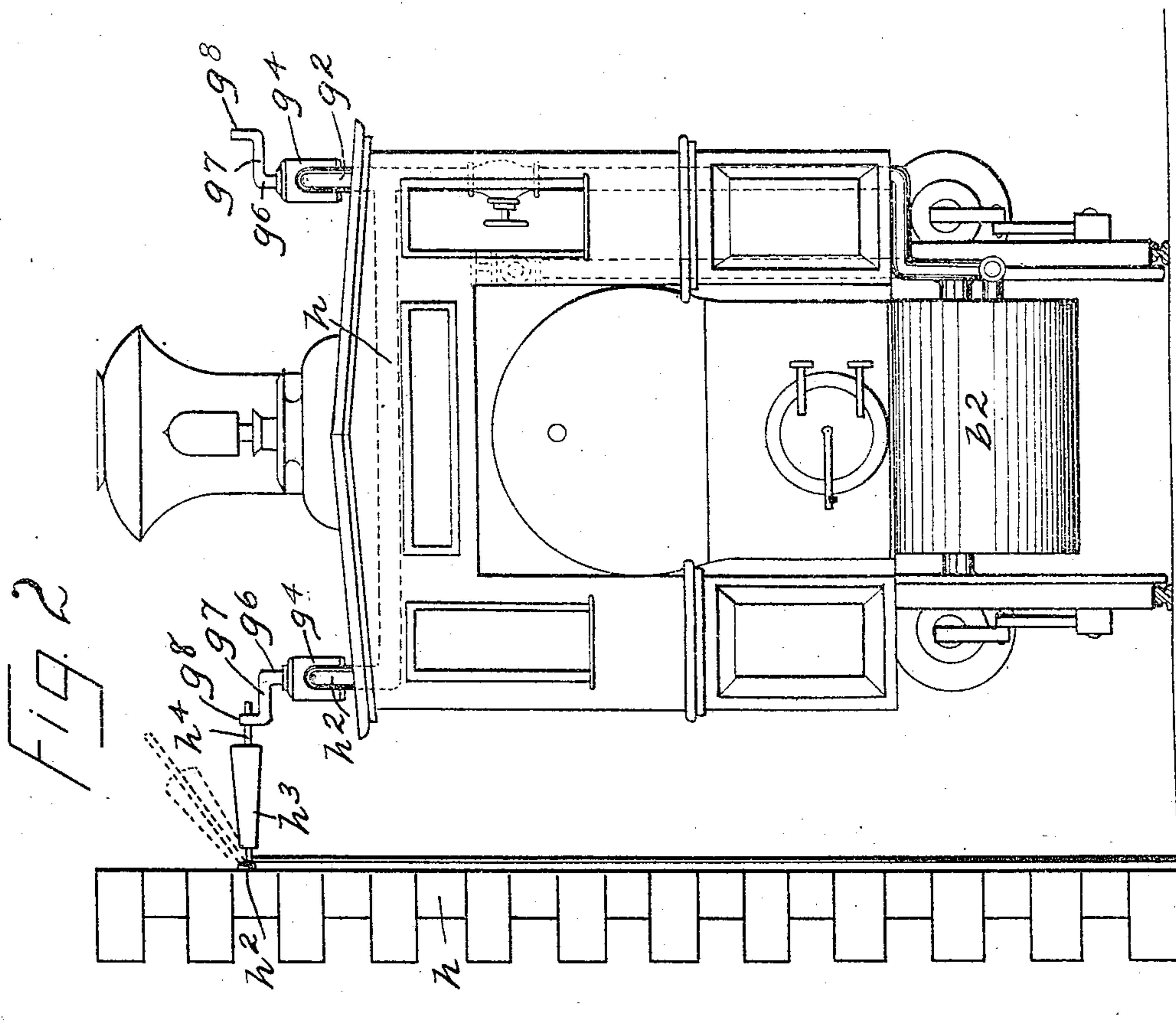
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## UNITED STATES PATENT OFFICE.

GEORGE J. BERBERT, OF NEW YORK, N. Y.

## AIR-BRAKE-OPERATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 753,114, dated February 23, 1904.

Application filed January 8, 1903. Serial No. 138,190. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE J. BERBERT, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Air-Brake-Operating Devices, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved automatic device for operating the air-brakes of a railway-train if at any time such trains should pass a danger-signal which is for any reason not seen or observed by the engineer, a further object being to provide an automatic air-brake-operating device or devices particularly adapted for use in railway-tunnels, but which may be employed at any point along a railway track or line, part of the device or devices being connected with the cab of the engine and the other part consisting of a semaphore-signal or other device such as is now usually employed.

In the drawings forming part of this specification, in which the separate parts of my improvement are designated by the same reference characters in each of the views, Figure 1 is a side view of the rear portion of a railway-engine and the front portion of the tender provided with my improved brake-operating device, and Fig. 2 a rear view of the engine and showing the semaphore or signal device which forms a part of the apparatus which I employ.

My improvement is in practice applied to an ordinary air-brake apparatus such as is now employed on railway-trains, and in the drawings forming part of this application I have shown at *a* the cab of a railway-engine and at *b* a portion of the tender.

The engine *a* is provided with the usual compressed-air tank *b*<sup>2</sup>, which is in communication, by means of a pipe *c*, with the brake-operating apparatus beneath the tender and beneath all the cars of the train, said cars being not shown, and a pipe *d* is also in communication with the air-cylinder *b*<sup>2</sup> and leads up into the cab of the engine and is under the control of the engineer by means of a valve

*e* or in any other way, all these parts being of the usual form and construction; but the pipe *d* and valve *e* form no part of this invention, all that is necessary being to connect the pipe *g* with the air-pipe *c* of the air-brake apparatus. I also connect with the pipe *c* by means of a coupling *f* or in any other preferred manner a pipe *g*, which extends upwardly through one corner of the cab of the engine and out at the top thereof, as shown at *g*<sup>2</sup>, and this pipe is provided with a branch *g*<sup>3</sup>, with which is connected a valve-casing *g*<sup>4</sup>, in which is placed a valve *g*<sup>5</sup>, the upper end of which is provided with a stem *g*<sup>6</sup>, having a horizontal arm *g*<sup>7</sup> and an upwardly-directed crank member *g*<sup>8</sup>. Another pipe *h* is connected with the pipe *g* near the upper end thereof and extends horizontally across the cab under the roof thereof and passes up through the roof of the cab at the side opposite the pipe *g*, as shown at *h*<sup>2</sup>, and this pipe is also provided with a valve-casing *g*<sup>3</sup>, in which is placed a valve similar to the valve *g*<sup>5</sup>, this valve being also provided with a stem *g*<sup>6</sup>, having a horizontal arm *g*<sup>7</sup>, at the end of which is an upwardly-directed crank member *g*<sup>8</sup>.

In Fig. 2 of the drawings I have shown at *h* one of the side walls of a tunnel, or this may represent any suitable support, and connected therewith at *h*<sup>2</sup> is a semaphore-arm *h*<sup>3</sup>, which is adapted to be operated in the usual manner, so as to signal the engineer in case of danger ahead, and, as is usual with this class of devices, when said semaphore-arm is at "danger," or in the position to indicate danger, it is in a horizontal position, as shown in Fig. 2, and when not in the position to indicate danger it is in a vertical or raised position. The semaphore-arm *h*<sup>3</sup> is provided with a finger or supplemental arm *h*<sup>4</sup>, and if at any time it should be in a horizontal position, or in the position to indicate danger, and the engineer should for any reason fail to observe said signal the finger or arm *h*<sup>4</sup> will strike the member *g*<sup>8</sup> of the valve-stem *g*<sup>6</sup> and will turn the valve *g*<sup>5</sup> in the corresponding valve-casing *g*<sup>4</sup>, and the air from the air-cylinder will escape and the brakes of the train be operated in the usual manner.

The arms *g*<sup>7</sup> of the valves *g*<sup>5</sup> in the corre-

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sponding valve-casings  $g'$  are when in position for use always directed outwardly, and the engine is always provided with two of these valve-casings and valves, one being located at each side thereof, and the arrangement of the semaphore arm or arms  $h^3$  is always such that as the train passes the valve will be operated as herein described, providing the signal or semaphore is in the position to indicate danger.

It will be understood that the connections of the air-cylinder  $b^2$  with the pipe  $c$  are the same as those usually employed, and an air-tank may be connected with each of the cars of the train, and it will also be understood that the connections of the pipes  $g$  and  $h$  and the valve-casings  $g^4$  and  $h^3$  and the valve  $g^5$  may be of any preferred form, all that is necessary in this connection being that the valve or valves employed in this position be such in form and construction that they may be operated by the semaphore-arm  $h^3$  when the latter is in position to indicate danger.

Although I have shown and described my improvement as applied to a railway-engine, it will be apparent that the same may be applied to any sort of a motor car or vehicle

used in connection with a train of cars employing air-brakes or brakes operated either by air or steam or any other gas or liquid under pressure.

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

The combination with a railway-engine provided with the usual air-brake apparatus, of pipes connected with said apparatus and extending upwardly through the top of the cab at the opposite sides thereof, and valve-casings connected with said pipes above the top of the cab and provided with valves having laterally-directed arms adapted to be operated by a semaphore arm or signal located at the side of the track when in a position to indicate danger, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 6th day of January, 1903.

GEORGE J. BERBERT.

Witnesses:

F. A. STEWART,  
C. E. MULREANY.