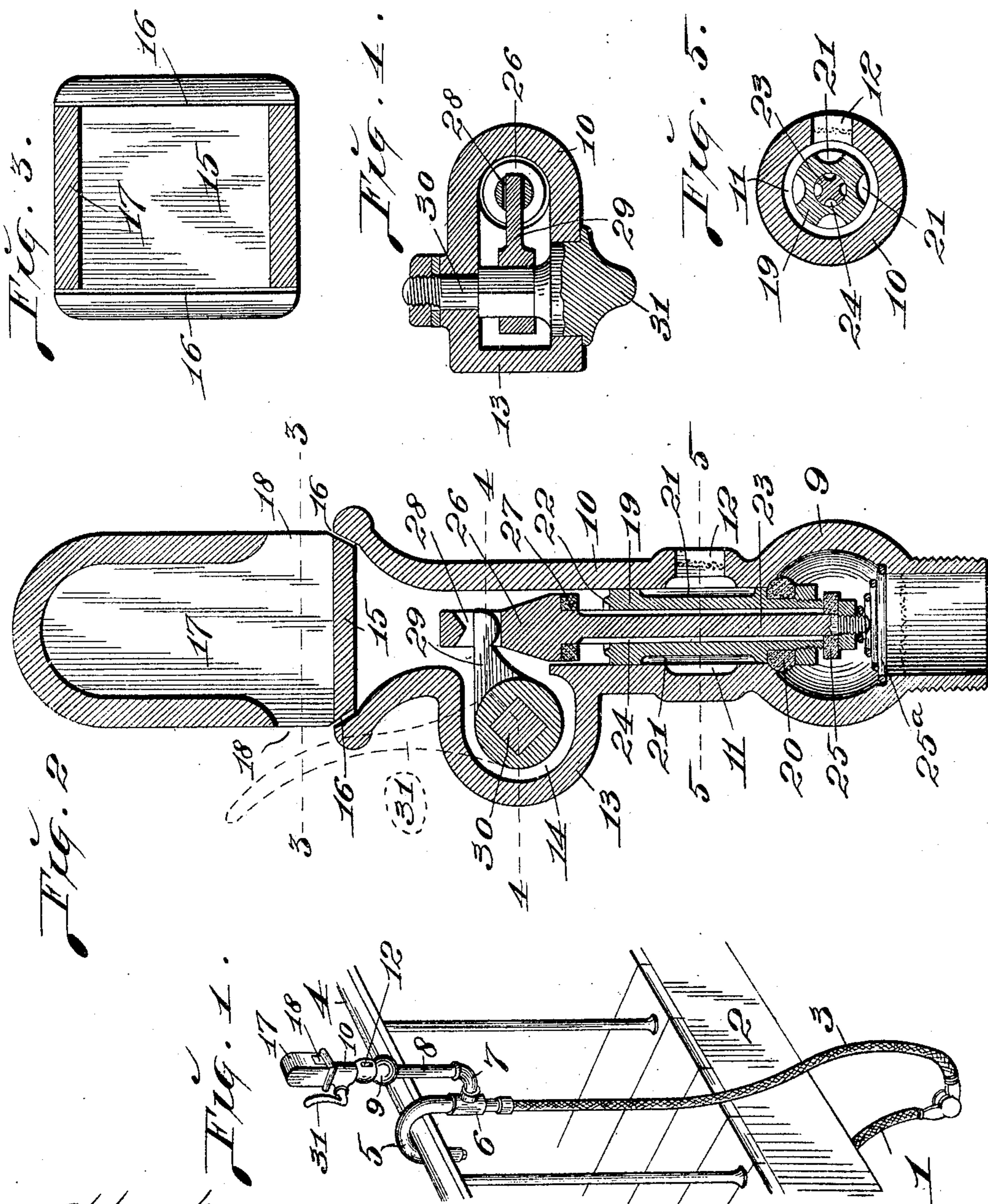


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R. E. ADREON & F. M. STAMBAUGH.
COMBINED AIR BRAKE SETTING DEVICE AND ALARM.

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UNITED STATES PATENT OFFICE.

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COMBINED AIR-BRAKE-SETTING DEVICE AND ALARM.

No. 808,711.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, ROBERT E. ADREON and FRANCIS M. STAMBAUGH, citizens of the United States, and residents of the city of St. Louis, Missouri, have invented certain new and useful Improvements in a Combined Air-Brake-Setting Device and Alarm, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to a combined air-brake-setting device and alarm for the air-brake systems now in general use upon railway-trains, and is intended to be connected to the air-brake coupling at one end of a car in a train which is to be stopped by the application of the air-brakes.

Our invention is particularly intended for use upon trains that are being backed into a station or yard and where a trainman is stationed upon the front platform of the car farthest from the engine to operate a valve which sets the brakes of the train and also to sound an air-whistle or similar alarm while the train is in motion.

It is the present practice to have a brake-operating valve separate from the whistle-operating valve, thus necessitating the employment of both hands of the trainman stationed to set the brakes and sound the whistle, and where the train is rounding a curve or jolting over crossings and switches the trainman in attending to his duty is working at a disadvantage and as a result does not always open the valve to set the brakes or sound the whistle at the proper time. To obviate these difficulties, we propose to make use of a double valve, or, more specifically, one valve operating within the other, both of which valves are operated by a single handle. This construction permits the trainman to sound the alarm or set the air-brakes by a single movement, thus permitting said trainman to steady himself by grasping the platform-railing with one hand while manipulating the valve with the other. By thus arranging the valves and providing a single operating-handle the danger of operating either one of the valves at the wrong time is greatly lessened.

To the above purposes our invention consists in certain novel features of construction and arrangement of parts, as will be herein-

after more freely described, pointed out in the claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a car-platform and showing our improved device positioned thereon and attached to the air-brake coupling. Fig. 2 is a section taken on a vertical line through the center of the valve-casing and whistle. Fig. 3 is a horizontal section taken on line 3 3 of Fig. 2. Fig. 4 is a horizontal section taken on line 4 4 of Fig. 2. Fig. 5 is a horizontal section taken on line 5 5 of Fig. 2.

Referring by numerals to the accompanying drawings, 1 indicates the air-brake hose or coupling beneath the platform 2 of the car. Detachably connected to the coupling 1 is a flexible tube 3, that extends upwardly and has secured to its upper end one arm of a tube 5, bent in an inverted-U shape in order that it may be hooked over or hung upon the rail 4. The opposite end of this tube 5 is closed in any suitable manner. Located in the tube 5 is a T connection 6, into which is screwed one end of an elbow 7, to which is secured a short vertical tube 8, the upper end thereof terminating at a point slightly above the rail 4. Detachably secured to the upper end of the tube 8 is the combined valve-casing and whistle. This member comprises a hollow bulb 9, from which extends upwardly a tubular body 10, in the lower portion of which is formed an annular chamber 11, and leading therefrom is an exhaust-port 12. Formed integral with and extending outwardly from the upper portion of the body 10 is a wall 13, inclosing a chamber 14, that receives the valve-operating finger, hereinafter described.

The body 10 is closed at its upper end by a square flat plate 15, there being slots 16 formed through said plate at the front and rear, which act as exhaust-ports for the air that is emitted to sound the whistle. Above the plate 15 is a rectangular housing 17, the front and rear walls of which are cut away at their lower ends above the slots 16, as indicated by 18, said housing being the whistle portion of the device.

Arranged to slide freely through the body 10 is a cylindrical valve 19, bearing on its lower end a washer or ring 20, of rubber or analogous material, that normally seats on the inner annular shoulder at the juncture of the bulb 9 with the body 10. Formed in the

exterior surface of the valve 19 is a series of longitudinally-extending grooves 21, the ends of which terminate at points a short distance from the ends of the valve 19. On the top surfaces of the valve 19 is formed an annular rib or flange 22.

Arranged to slide through the tubular valve 19 is an inner valve, rod, or stem 23, having in its outer surface the longitudinally-extending grooves 24. The lower end of this valve 23 bears a ring or washer 25, of rubber or analogous material, which normally seats against the lower end of the valve 19.

25^a indicates an expansive coil-spring that is seated within the lower end of the bulb 9, and its upper end engages beneath the nut that retains the washer 25 in position, this coil-spring being for the purpose of normally retaining both of the valves in elevated positions.

The upper end of the valve 23 is enlarged, as indicated by 22, at a point above the upper end of the valve 19, and beneath the shoulder formed by said enlargement is a ring 27, of rubber or analogous material, that is adapted when the valve 23 is slid downwardly to seat on the annular rib 22, and thus prevents escape of air through whistle-ports 16. Formed through the upper end of the valve 23 is a horizontal aperture 28, through which passes the free end of an operating-finger 29. This finger 29 is detachably seated upon a shaft 30, that is journaled in the side walls surrounding the chamber 14, and said shaft is provided outside the wall 13 on the right-hand side with an operating-handle 31.

The finger 29, located in the aperture 28, has an additional function to that of forcing the valve downwardly, as by its use the operator has mechanical control of the valve both ways and can operate the same even though the air-supply is depleted or the spring 25^a becomes inoperative for any reason. If desired, strainers of fine wire-mesh may be located over the exhaust-port 12 and beneath the coil-springs 25^a, which strainers are for the purpose of excluding any foreign matter from the valve-casing.

The whistle-casing 17 is shown and described as being a part of the valve-casing 10; but it will be readily understood that this whistle can be a separate part fixed to the valve-casing, or it may be entirely detached therefrom with the exception of a tubular connection, such as a hose, which leads the air from the valve-casing to the whistle-casing.

A device constructed and positioned as seen in Fig. 1 is operated as follows: The trainman stands on the platform and with one hand engages the handle 31 as the train moves forward or, rather, is backed into a station or to its proper place, the whistle is sounded as a warning by moving the handle 31 slightly forward, which depresses the free

end of the finger 29 and correspondingly lowers the valve-rod 23, which, together with the valve 19, is held elevated and closed by the air-pressure in the air-brake pipes and connection 3. As said valve-rod 23 is depressed and the ring 25 leaves the lower end of the valve 19 a small amount of air will escape through the grooves 24 and pass through the upper portion of the body 10 and finally escape through the slots 16 and blowing across the openings 18 will thus sound the whistle. When the train has reached the desired point and it is desired to set the brakes, the operator merely moves the handle forward until the ring 27 of the valve-stem 23 bears upon the top of the tubular valve 19, and together said valves are forced downwardly against the air-pressure, which as soon as the ring 20 unseats will exhaust through the grooves 21 into the annular chamber 11 and from thence outwardly through the port 12. As soon as the air-pressure is sufficiently decreased in the air-brake pipes the brakes will be set and the train consequently stopped. If desired, the operator can at the commencement of operations move the valve-stem 23 downwardly until the ring 27 seats on the rib 22, and when this is done and it is desired to allow the air to escape to sound the whistle the pressure or hold upon the handle is relaxed sufficiently to allow the air-pressure to lift the valve-stem 23 to escape from between the ring 27 and rib 22.

A device so constructed is extremely simple, requires the use of but one hand for operation, is positive in action, has a minimum number of parts, therefore is not liable to get out of order easily, can be cheaply manufactured, and assembled or taken apart.

We claim—

1. In a device of the class described, a valve-casing having inlet and exhaust ports; a valve normally closing the inlet-port; a second valve operating through the first-mentioned valve and adapted to seat on either end of said first-mentioned valve; and an operating-handle for said valves; substantially as specified.

2. In a device of the class described, a valve-casing; a whistle attached thereto, there being inlet and exhaust ports in the valve-casing, and there being ports into the whistle-casing, a valve operating in the valve-casing and normally closing the inlet-port; a second valve operating through the first-mentioned valve for controlling the flow of air to the ports in the whistle; and a single operating-handle for both valves; substantially as specified.

3. In a device of the class described; a valve-casing provided with inlet and exhaust ports; a whistle attached to said valve-casing; a valve located in said valve-casing and normally closing the passage between the in-

let and exhaust ports; a second valve operated through the first-mentioned valve and which second valve is adapted to seat at each end of the first-mentioned valve, there being
5 an aperture formed in the upper end of said second valve; and a valve-operating finger passing through said aperture; substantially as specified.

4. In a device of the class described, the
10 combination with the air-brake mechanism of a train, of a tubular connection from one end of the air-brake pipes; a valve-casing connected to said tubular connection, in which valve-casing is formed inlet and ex-
15 haust ports; an alarm connected to said

valve-casing; a suitable connection from said valve-casing to the alarm; a valve closing the passage from the inlet-port to the exhaust-port; a second valve operating through the first-mentioned valve and adapted to seat
20 at each end thereof, and a handle for actuating both valves; substantially as specified.

In testimony whereof we have signed our names to this specification in presence of two subscribing witnesses.

ROBERT E. ADREON.

FRANCIS M. STAMBAUGH.

Witnesses:

MARTIN P. SMITH,

EDW. M. HARRINGTON.