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W. A. ASHTON & J. C. HOOPER.

COMBINED EMERGENCY AND SERVICE VALVE FOR TRACK SANDING APPARATUS.

APPLICATION FILED JULY 31, 1903.

NO MODEL.

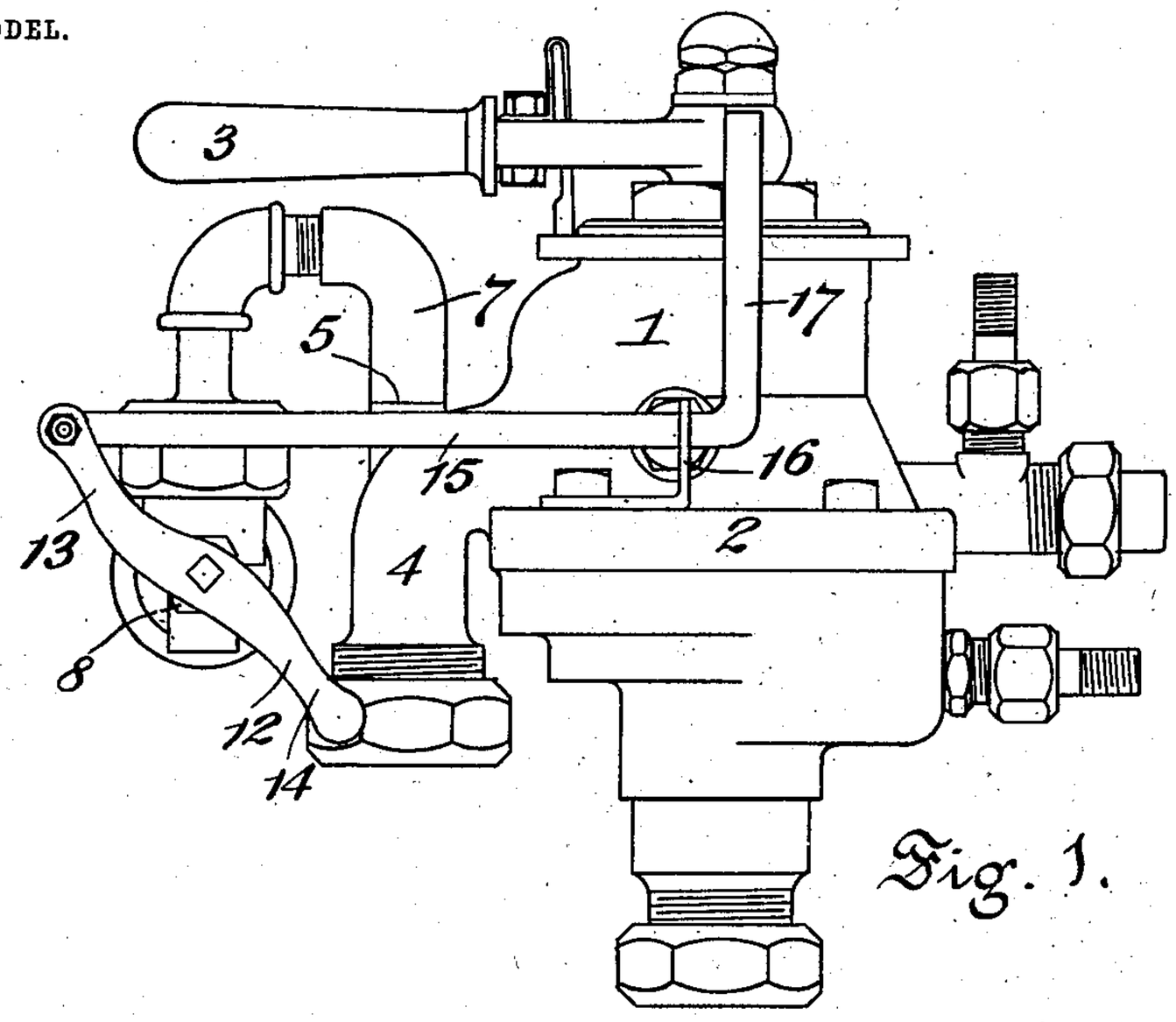

Fig. 1.

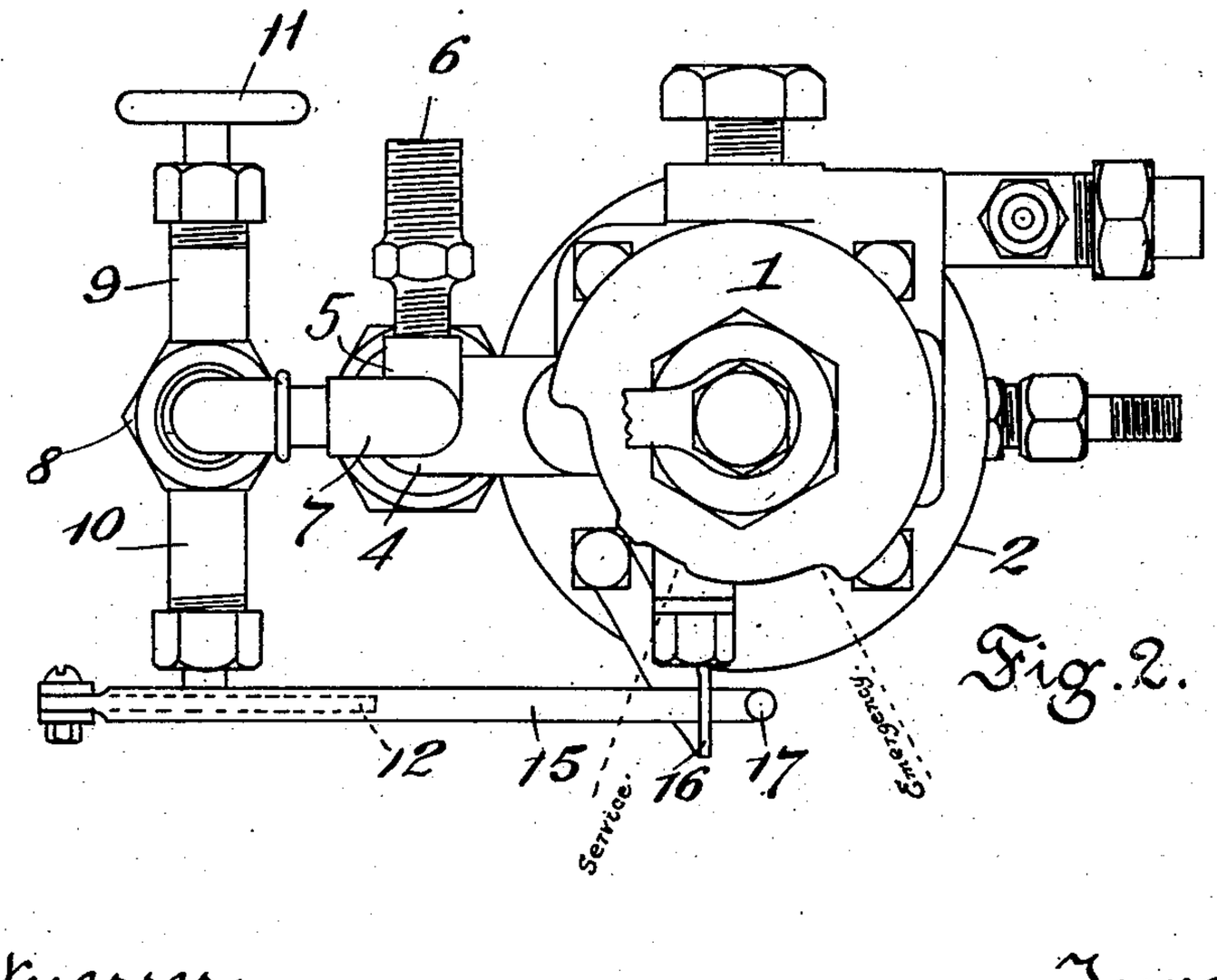

Fig. 2.

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UNITED STATES PATENT OFFICE.

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COMBINED EMERGENCY AND SERVICE VALVE FOR TRACK-SANDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 747,839, dated December 22, 1903.

Application filed July 31, 1903. Serial No. 167,722. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM A. ASHTON, of Saratoga Springs, county of Saratoga, and State of New York, and JOHN C. HOOPER, of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in a Combined Emergency and Service Valve for Track-Sanding Apparatus; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in that class of track-sanding apparatus operated by fluid-pressure controlled by a fluid-pressure valve under the manipulation of the engineer in the locomotive-cab; and its object is to provide an improved fluid-pressure valve of this character of simple construction so arranged and combined with the engineer's brake-valve which controls the air-brake system, without any material alteration in the latter, that said brake-valve and said fluid-pressure sanding-valve may be operated each independently of the other for ordinary or service application of the brakes and for ordinary or service applications of sand to the track-rails, either in front of the driving-wheels or in rear of the same or in both front and rear under certain conditions, and that furthermore serves as an appliance for safety by providing means whereby the brake-valve handle cannot be moved to the "emergency" position to make an emergency application of the brakes without at the same time automatically actuating the fluid-pressure sanding-valve to profusely sand the track-rails, which is a desideratum when, as in an emergency application, it is important to bring the train to a full stop at the earliest possible moment.

For a full understanding of the principles of our invention as at present embodied reference is to be had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of an engineer's brake-valve with our combined emergency and service fluid-pressure sanding-valve applied thereto, and Fig. 2 is a plan view of the same.

Referring to the drawings, the numeral 1 designates an engineer's brake-valve, in this instance of the Westinghouse type, provided with a body 2, handle 3, and main-reservoir connection 4, tapped in its upper side to receive a gage-pipe fitting. In substitution for the ordinary one-way gage-pipe fitting of elbow formation usually employed our invention contemplates the employment of a two-way gage-pipe fitting 5, one of whose members extends horizontally and is attached to a coupling 6, arranged for connection with the usual main-reservoir gage, and to the other member, 7, of said fitting 5 is connected, as shown in the drawings, a valve-casing 8, containing two valves 9 10, the one valve, 9, controlling the passage of main-reservoir air to the sanders for applying sand in the rear of the rear driving-wheels and provided with a disk handle 11 and the other valve, 10, controlling the passage of main-reservoir air to the sanders for applying sand in advance of the front driving-wheels.

As the sand-discharge pipes, sand-box, and fluid-pressure nozzles, with their connection to the valve-casing 8, may all be of any desired construction so far as this invention is concerned and as their construction and arrangement are obvious to and can be readily devised by those skilled in the art to which this invention appertains, it is deemed unnecessary to herein illustrate or describe such parts.

To the stem of the valve 10 is rigidly secured a lever 12, attached at a point intermediate its ends to produce an upper arm 13 and a lower arm 14, and a horizontally-extending link-rod 15 is pivotally secured at one end to the upper arm 13 of the lever and extends through a guide 16 in the form of an apertured plate attached to the brake-valve body 2, the free end 17 of said link-rod extending upwardly with its extremity terminating within the plane of movement of the brake-handle 3.

The link rod 15, it is to be noted, extends

in a horizontal plane beneath the plane of movement of the brake-handle 3 to a point beyond the "service-application" position of the latter, as indicated in dotted lines, Fig. 2, and thence extends, preferably at right angles to the main portion of the link-rod, into the path of the brake-handle at a point short of the emergency position of the same. Hence in practical operation the brake-handle can always be actuated for a service application of the brakes independently of the sanding-valve and without the necessity of first arranging or changing any of the parts of either the brake-valve or sanding-valve for such independent movement, and the latter may always be actuated independently of the former to apply sand to the track-rails in either small or large quantities in front or in rear of the driving-wheels by manually operating the handle 11 or lever 12 so as to admit main-reservoir air to the sanders; but when the engineer's brake-valve handle is moved to the emergency position, in which event it is necessary to also apply sand profusely to the track-rails, the said handle will automatically actuate the sanding apparatus, whether or not the same has been previously actuated by hand, and this action of the brake-handle will be effected without any predetermination or prearrangement on the part of the engineer, thereby relieving him of all thought or action in respect to the sanding apparatus, which would result in loss of time. Moreover, our invention does not interfere in any way with the usefulness or working of the brake-valve nor necessitate in its attachment thereto any material changes of construction, for it can be readily attached by merely unscrewing the ordinary gage-pipe fitting and substituting therefor the two-way gage-pipe fitting 5 and then making the necessary connections between the valve-casing 8 and the sanders.

We claim as our invention—

1. A combined emergency and service valve for track-sanding apparatus, comprising a valve arranged for connection with a source of fluid-pressure supply and designed to control the passage of the fluid under pressure to the sanding apparatus, a lever secured to said valve to actuate the same and designed for manual engagement, and a link-rod connected to said lever, said rod being designed to extend into the path of an engineer's brake-valve handle only between the positions of the latter for service and emergency applications, whereby the said handle and said lever may, without preadjustment, each be actuated independently of the other except when the former is moved to the emergency position, in which event the said handle will automatically actuate said lever.

2. A combined emergency and service valve for track-sanding apparatus, comprising a valve-casing designed for attachment to the main-reservoir connection of an engineer's brake-valve and provided with a valve arranged to control the passage of main-reservoir air to the sanders, a lever attached to said valve and designed for manual engagement, a longitudinally-movable link-rod attached to said lever at one end, the free end of said rod extending into the path of movement of the brake-valve handle between the service and emergency positions of the same and the remaining portion of said rod being out of such path, and a guide through which said rod extends, said guide being arranged for attachment to the brake-valve body, substantially as set forth.

3. A combined emergency and service valve for track-sanding apparatus, comprising a valve-casing designed for attachment to a source of fluid-pressure supply and provided with two valves for the control of fluid-pressure passages leading to the rear and front sanders respectively, a handle for manually operating the valve for the rear sanders, a lever secured to the other valve and also arranged for manual engagement, and a longitudinally-movable link-rod connected to said lever and designed to extend into the path of an engineer's brake-valve handle only between the positions of the latter for service and emergency applications of the brakes.

4. A combined emergency and service valve for track-sanding apparatus, comprising a two-way gage-pipe fitting designed to be secured to the main-reservoir connection of an engineer's brake-valve, a valve-casing connected to one member of said fitting and provided with a valve arranged to control the passage of main-reservoir air to the sanders, a manually-operable lever secured to said valve, and a longitudinally-movable link-rod secured to said lever at one end and having an angularly-bent free end designed to extend into the path of movement of the brake-valve handle only between the positions of the same for service and emergency applications, the remaining portion of the link-rod being out of such path, as set forth.

In testimony whereof we have signed this specification in the presence of the subscribing witnesses.

WILLIAM A. ASHTON.
JOHN C. HOOPER.

Witnesses as to signature of William A. Ashton:

KATHERINE E. FRANEY,
MARY A. FITZPATRICK.

Witnesses as to signature of John C. Hooper:

MILLARD LEONARD,
JOHN S. BRIDGES.