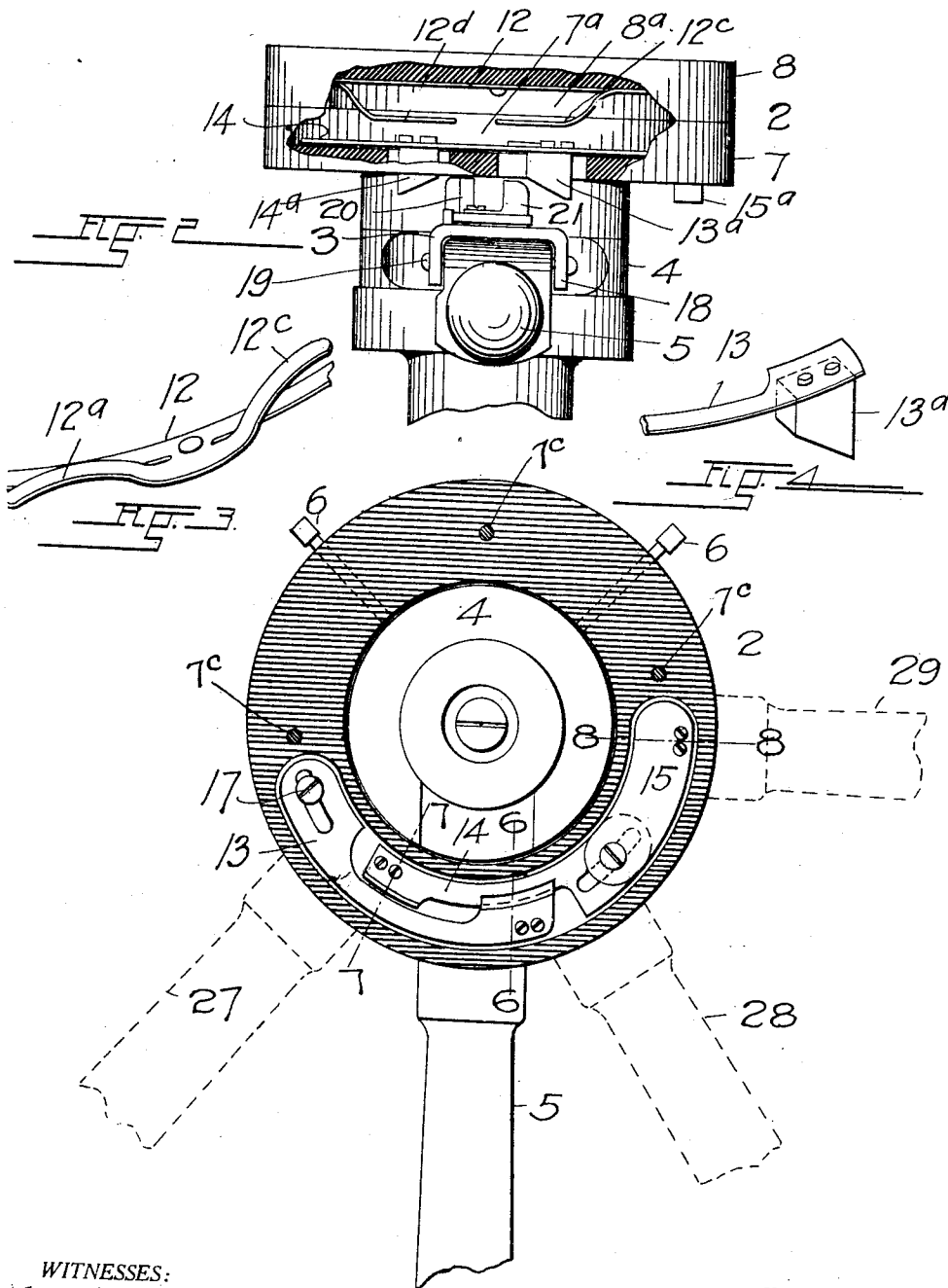


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 ALARM ATTACHMENT FOR BRAKE VALVES.
 APPLICATION FILED MAR. 31, 1909.

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Patented Aug. 9, 1910.

2 SHEETS—SHEET 1.



WITNESSES:
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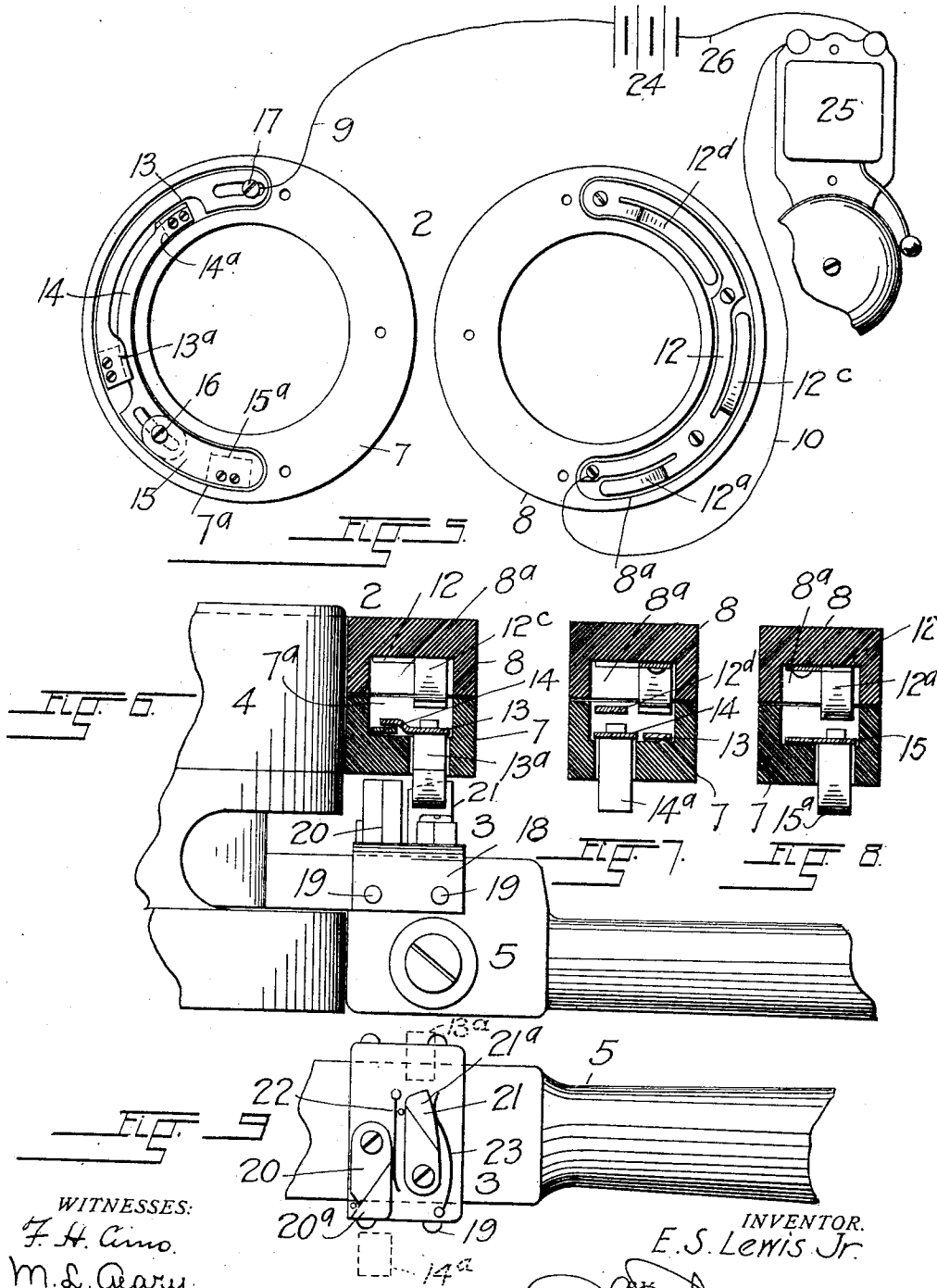
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 ATTORNEY.

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ALARM ATTACHMENT FOR BRAKE-VALVES.

966,694.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed March 31, 1909. Serial No. 486,912.

To all whom it may concern:

Be it known that I, ELWIN S. LEWIS, JR., a citizen of the United States of America, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Alarm Attachments for Brake-Valves, of which the following is a specification.

My invention relates to improvements in means for the sounding of an alarm on a street car or other public conveyance to warn pedestrians and others of its approach and the object of the invention resides in the provision of a contrivance which when attached to the engineer's valve of an air brake system, is adapted to close an electric circuit by action of the valve handle when moved to any one of a plurality of predetermined positions.

The conductors in the electric circuit may be connected with an independent source of electricity or with the current by which the vehicle upon which the contrivance is installed, is propelled, and the said circuit includes a gong such as is commonly used on public conveyances of the kind to which my invention is adapted.

The above mentioned circuit closing contrivance is constructed so that the circuit will be closed temporarily when the valve handle is moved from its normal position, either to the position in which air is taken into the system to set the brakes, or to the position in which the air is exhausted and the brakes released, while it will be closed continuously when the handle is moved to the so called emergency position when the full pressure of the air contained in the reservoir included in the system, is brought to bear upon the brakes.

By the use of my invention, the operator of the car will thus automatically sound the gong during an arbitrary period of time when reducing the speed of the car or when releasing the brakes prior to starting the vehicle after it has been at rest, while when the brakes are set suddenly to avoid accidents, the gong will sound incessantly until the car has come to a stop and the handle is moved to the releasing point.

An embodiment of my invention is shown in the accompanying drawings in the various views of which like parts are similarly designated and in which—

Figure 1 represents a top-view of the engineer's valve of an air brake-system with the lower half of the attachment in its operative position, Fig. 2 a side elevation of the said valve showing the attachment partly in section, Figs. 3 and 4, fragmentary, perspective views of the coöperative contacts included in the circuit closing contrivance, Fig. 5, a face view of the two sections of which said contrivance is composed, together with the gong and the electric circuit by which the latter is actuated. Fig. 6, a fragmentary side elevation of the valve showing the circuit closing device in section taken along a plane 6—6 Fig. 1, Figs. 7 and 8, transverse sections through the said device respectively along the lines 7—7 and 8—8 Fig. 1, and Fig. 9, a fragmentary top view of the valve handle with the therewith connected element of my invention.

My attachment as shown in the drawings, comprises two coöperative elements 2 and 3, the former of which is secured upon the upper portion of the engineer's valve housing 4, and includes normally separated contacts of an electric circuit, while the other is carried upon the valve handle 5, and is adapted to bring said contacts into engagement, when the handle is moved from its normal position to one in which the brakes are either set or released.

The element 2 comprises an annular body composed of fiber or other insulating substance and horizontally divided into two sections 7 and 8 secured together by means of screws 7^c. The annular body is, in practice, placed around the top of the valve housing and held in position by the use of set screws 6 or other suitable means.

The two sections of which the element 2 is composed, are formed in their inner, contacting faces with corresponding recesses 7^a and 8^a which, respectively, contain electric contacts in which the conductors 9 and 10 of the electric circuit, terminate.

The contact-member 12, disposed within the recess of the upper section 8, is composed of a segmental metallic strip longitudinally cut to form three connected, resilient contacts 12^a, 12^b and 12^c which, being bent outwardly, project into or in close proximity to the recess 7^a of the lower section 7. The recess 7^a of the lower section 7 is occupied by three resilient, segmental blades 13, 14,

and 15, the latter two of which are secured at their lapping ends by means of a screw 16 while their free ends are provided with buttons 14^a and 15^a which project through slots in the bottom of the recess.

The third member 13 is secured at one of its extremities, by means of a screw 17, which connects with the conductor 9, and its free end, lapping over the adjacent portion of the blade 14, carries a button 13^a which like the others, projects through a slot in the bottom of the recess.

The fixed ends of the blades 13 and 14 have been formed with slots through which the screws 16 and 17 project, and which permit adjustment of the said blades so as to vary the position of the buttons at their free extremities, in relation to the valve upon whose housing the element 2 is secured.

The buttons 13^a, 14^a and 15^a which protrude below the lower surface of the section 7 of the element 2, are beveled at one of their sides to compel their upward motion, when said sides are engaged by an impingent agent and when the two sections 7 and 8 are assembled, the free extremities of the blades 13, 14, and 15, upon which said buttons are secured, extend respectively, below the three resilient contacts 12^a, 12^b and 12^c of the strip 12 so as to be engaged thereby when the respective buttons are moved upwardly.

The element 3 through instrumentality of which the above described action is effected, is composed of a U-shaped saddle 18 which is secured upon the upper surface of the valve handle 5, below the annular element 7, by means of screws 19.

Pivotaly mounted upon the saddle 18 are two oppositely directed dogs 20 and 21 which are movable in opposite directions and are resiliently held in their normal position by means of springs 22 and 23.

When the two elements 2 and 3 are adjusted in their proper position with relation to each other, the protruding buttons on the upper element, project in the paths of the dogs on the lower element, so that when the handle 5 is moved about its pivotal axis in one direction, the innermost dog 20 will engage the button 14^a while, when said handle is moved in the opposite direction, the outer dog 21 will successively engage the buttons 13^a and 15^a. The dogs have, to this purpose, been formed with upwardly projecting noses 20^a and 21^a whose substantially vertical points will, by engagement with the beveled faces of the respective buttons, impel the latter upwardly. The faces of the noses opposite to said points have been beveled so that, when the handle is moved in a direction opposite to that in which said impellent action takes place, the engagement of the noses 20^a and 21^a will not affect the respective button but will cause the dogs of which they form part to move laterally about their

pivots against the springs 22 and 23 which subsequently return them to their original positions.

In Fig. 8 of the drawings, which illustrates the electric circuit used in the operation of the invention, the reference character 24 designates the source of electricity, 25 the gong or other alarm-device and 26 the conductor leading from one of the poles of said source to a terminal of the gong, the hereinbefore mentioned conductors 9 and 10 being employed to connect the opposite pole of the source 24 and the other terminal of the gong, with the respective contact members on the annular element 2.

In Fig. 1 of the drawings I have illustrated, in full lines, the normal position of the valve handle in which the air is retained in the brake system but not applied to the brakes. The broken-lines at 27 indicate the position of the handle when after the brakes have been set, the air is exhausted to release the same; in the position of the handle shown by the broken lines at 28, air is applied to the brakes to bring them in contact with the wheels, and when the handle has reached the position shown by the broken lines 29, the full pressure of the air in the reservoir comprised in the brake system, is applied to set the brakes instantaneously in case of an emergency. It will thus be observed that to move the handle 5 from its normal position to either of the positions 27 and 28, the gong will be sounded by the closing of the electric circuit through the contacts 14 and 12^a or 13 and 12^c, the length of time during which the alarm is given being dependent on the speed with which the handle is moved.

In case the operator desires to sound the gong without affecting the brakes, he brings the handle to the position in which the end of the contact 14 engages the superposed resilient contact 12^a, and in case an emergency requires the immediate stopping of the car, the handle is moved to the position 29 and the gong is sounded incessantly until, after the car is at rest, said handle is moved to the position 27 in which the air is exhausted.

Attention is called to the fact that when the handle is moved from either of its operative positions to its normal position, the gong is not sounded and that, while the contact blades 13, 14 and 15 are independently movable when actuated by means of the dogs 20 and 21 on the element 2, they are at all times electrically connected with the conductor 9 by which the screw 17 is connected with the source of electricity 24.

While I have shown my invention in the best form now known to me, it will be understood that variations in the form and arrangement of the parts comprised therein, may be availed without departing from its principle and that, if so desired, the circuit

closing device may be adapted for use on electric car controllers or other devices in which an operating handle is employed to control the movements of the car.

5 Having thus described my invention, what I claim is:—

1. The combination with a support and a handle pivotally mounted thereon, of an element secured upon the former and including
10 normally separated contacts one of which has an outwardly projecting button, an electric alarm in a circuit with said contacts and a spring-held dog upon said handle, adapted to engage said button so as to move the contact connected therewith in engagement
15 with the other when the handle is moved in one direction and to leave it undisturbed during the return movement.

2. The combination with the housing and
20 valve handle of the engineer's valve in an air-brake system, of an annular element adapted to surround said housing and to be detachably secured thereto, two normally separated series of electrically connected
25 contacts carried on said element, the contacts in one series being independently movable to separately engage those in the other and projecting beyond the lower surface of the element, an alarm in an electric circuit
30 with said series, an element detachably secured upon the handle and including spring-held dogs adapted to engage said movable contacts so as to bring them in engagement
35 with those in the other series, said movable contacts being arranged so as to be respectively engaged by said dogs when the handle is moved from its normal position to those in which the brakes included in the system, are affected.

40 3. The combination with the housing and the handle of the engineer's valve in an air brake system in which the brakes are affected when the valve handle is moved from its normal position to points at opposite
45 sides thereof, of normally separated electric contacts placed on said housing intermediate the place of normal position of the han-

dle and the above points, an alarm in an electric circuit with said contacts and an element on the handle adapted to engage said
50 contacts so as to close the circuit in which they are disposed, said contacts being located as stated to permit closure of said contacts by said element independently of the operation of the brakes.

4. The combination with the housing and the handle of the engineer's valve in an air brake system, of normally separated contacts secured upon the former, an alarm in an electric circuit with said contacts, and
60 an element connected with said handle and adapted to engage said contacts so as to close the circuit in which they are disposed, said contacts being placed with relation to the housing so as to close the circuit temporarily when the handle is moved from its
65 normal position to one in which the brakes in the system are ordinarily affected, and continuously when said handle is moved into the position in which all the air stored in the
70 system is applied to the brakes.

5. The combination with the housing and handle of the engineer's valve in an air brake system in which the air in said system is taken in or exhausted when the handle is
75 moved from its normal position to points at opposite sides thereof and all the air stored in the system is applied to the brakes when said handle is moved to a point beyond one of the first named points, of normally separated contacts disposed upon the housing
80 intermediate the place of normal position of the handle and the points of intake and exhaust and at the third point, an alarm in an electric circuit with said contacts, and an
85 element connected with said handle and adapted to engage said contacts so as to close the circuit in which they are disposed.

In testimony whereof I have affixed my signature in presence of two witnesses.

ELWIN S. LEWIS, JR.

Witnesses:

G. J. ROLLANDET,
S. C. PETITT.