No. 754,847. PATENTED MAR. 15, 1904.

J. H. CLARK.

AUDIBLE ALARM FOR AIR BRAKING SYSTEMS.

APPLICATION FILED MAY 22, 1902.

NO MODEL.

Fig. 1.

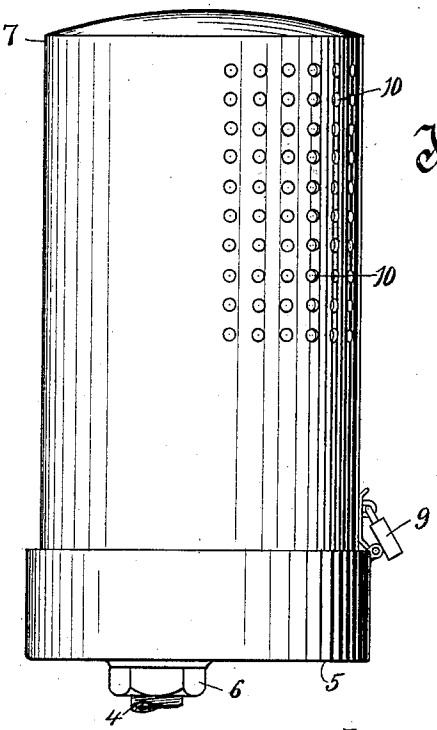


Fig. 2.

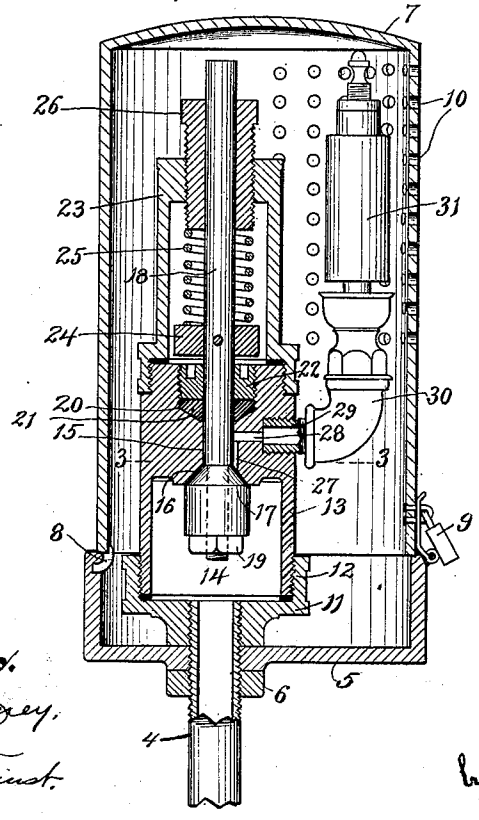
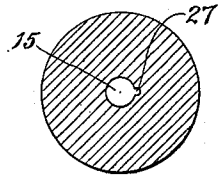


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES H. CLARK, OF PORTAGE, WISCONSIN, ASSIGNOR TO THE J. H. CLARK COMPANY, OF PORTAGE, WISCONSIN, A CORPORATION OF WISCONSIN.

AUDIBLE ALARM FOR AIR-BRAKING SYSTEMS.

SPECIFICATION forming part of Letters Patent No. 754,847, dated March 15, 1904.

Application filed May 22, 1902. Serial No. 108,479. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. CLARK, residing at Portage, in the county of Columbia and State of Wisconsin, have invented a new and useful Improvement in Audible Alarms for Air-Braking Systems, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

This invention relates to improvements in devices for use with air-braking systems, and more particularly to improvements in alarms, signals, or indicating devices for indicating the condition of the air-pressure in such systems.

The object of this invention is to produce a device for audibly indicating the condition of the air-pressure in an air-braking system, and a further and more particular object is to produce a device employing an audible alarm, such as a whistle, for automatically, persistently, continuously, and audibly signaling or indicating to the engineer when the pressure in the air-braking system or the train-pipe thereof falls below normal or a predetermined point and to so signal him as long as it remains below said point.

A still further and more limited object is to produce a housing provided with a lock for inclosing said device and sealing or locking the same against tampering, so that an inspector or other proper person only may have access thereto.

These and other objects I attain in a device constructed as described in the specification and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a device embodying this invention. Fig. 2 is a side sectional elevation of said device. Fig. 3 is a cross-sectional view of a portion of the device, taken on line 3 3 in Fig. 2.

Throughout the several views like elements are denoted by like characters.

For the sake of simplicity in the drawings let 4 indicate a branch of the train-pipe or a pipe connected to the train-pipe or some other portion of the air-braking system subject to the same pressures as the train-pipe.

The device is adapted to be inclosed in a housing consisting of a base 5, threaded to the train-pipe and locked in position by means of a lock-nut 6, and a cover or housing 7, fitting onto said base and locked thereto by means of a suitable hook 8 and a locking device 9. The housing at a portion of its upper half is provided with perforations 10, extending therethrough to permit of the escape of air and sound from said housing. Within the housing and threaded to said train-pipe is a base-plate 11, having an annular flange 12, extending therearound and internally threaded to receive a valve-casing 13. Said valve-casing is provided with an air-chamber 14 and a cylindrically-formed passage 15 for a valve-stem. The lower end of passage 15 is counterbored or faced to form a valve-seat 16 for a valve 17 of the piston variety, which is provided with a stem 18, preferably extending through said valve and locked thereto by a nut 19. The valve-stem extends up through passage 15 into the upper portion of the housing, and surrounding said stem in the upper part of the valve-casing a stuffing-box 20 is formed, in which suitable packing 21 will be forced into position by means of a stuffing-nut 22.

The exterior of valve-casing 13 at its top is threaded to receive a spring-containing casing 23, and valve-stem 18, a slight distance above the stuffing-nut, has a collar 24 pinned thereto. A spiral spring 25 rests on collar 24 and surrounds valve-stem 18, and the tension of said spring is adjusted by means of an adjusting-nut 26, threaded into casing 23 and surrounding the valve-stem.

The passage 15 for the valve-stem, at one side and extending from a point below the stuffing-box to the top of the valve-seat, is enlarged, as shown at 27 in Fig. 3, to form an

air-passage. An air-channel 28 is formed in the side of the valve-casing and extends from its exterior into the air-passage 27, and the outer end of said air-channel 28 is counterbored, and the walls thereof are threaded to receive a short nipple 29, to which an elbow 30 is threaded, and to the other end of said elbow a suitable air-operated whistle 31 is secured.

The operation of the device is as follows: The spring tends to force the valve away from its seat, and when moved away from its seat an air-passage exists from the train-pipe to the whistle, and as long as said passage exists the whistle will persistently and continuously audibly signal the engineer. The tension of the spring will be adjusted so that the normal air-pressure in the train-pipe and in chamber 14 of the valve-casing acting against said valve will hold said valve to its seat and close the air-passage from the train-pipe to the whistle.

The adjustability of the tension of the spring by means of nut 26 allows the device to be set so that the alarm will operate when the air-pressure falls below a predetermined or certain point, which point on different roads operating under different conditions may vary.

The lockable or sealable housing permits the device to be sealed or locked against tampering, so that when the spring is adjusted properly by an inspector or other proper person the device will always and immediately signal the engineer when the pressure falls below the point for which the device is set. The perforations through the casing allow the sound of the alarm to be heard without the casing.

It will be understood that the construction shown may be varied in many details; that a bell operated by air-pressure may be substituted for the whistle; that a weight may be substituted for the spring and that a suitable yielding diaphragm may be substituted for the valve, and that any and all of these changes may be made without departing from the spirit of my invention.

Having thus described my invention, what I claim is—

1. The combination with the train-pipe of an air-braking system, of a valve-casing, a valve in said casing exposed to the pressure in said pipe and adapted to be held to its seat by said pressure, an audible alarm in communication with said valve-casing, a stem for said valve, a stop on said stem, regulable means carried by said casing between said stop and said valve for limiting the movement of said valve, and a spring unexposed to the pressure in said pipe for operating said valve in opposition to said pressure.

2. The combination with the train-pipe of an air-braking system, of a casing in communication with said pipe, a whistle in communication with said casing, a valve interposed between said pipe and said whistle and exposed to the pressure in said pipe, a stem for said valve extending beyond said casing, a collar on said stem, regulable means surrounding said valve-stem for limiting the movement of said valve, a spring surrounding said stem for operating said valve in opposition to the pressure in said pipe, and a nut for varying the tension of said spring.

3. The combination with the train-pipe of an air-braking system, of a valve-casing in communication with said pipe, a whistle in communication with said valve-casing, a valve in said casing between said pipe and said whistle, a stem for said valve extending beyond said valve-casing, a collar on said stem, a nut threaded into said casing and surrounding said valve-stem between said valve and said collar, a spring surrounding said valve-stem, and means for varying the tension of said spring.

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

JAMES H. CLARK.

Witnesses:

GEORGE W. MORRISON,

J. M. RUSSELL.