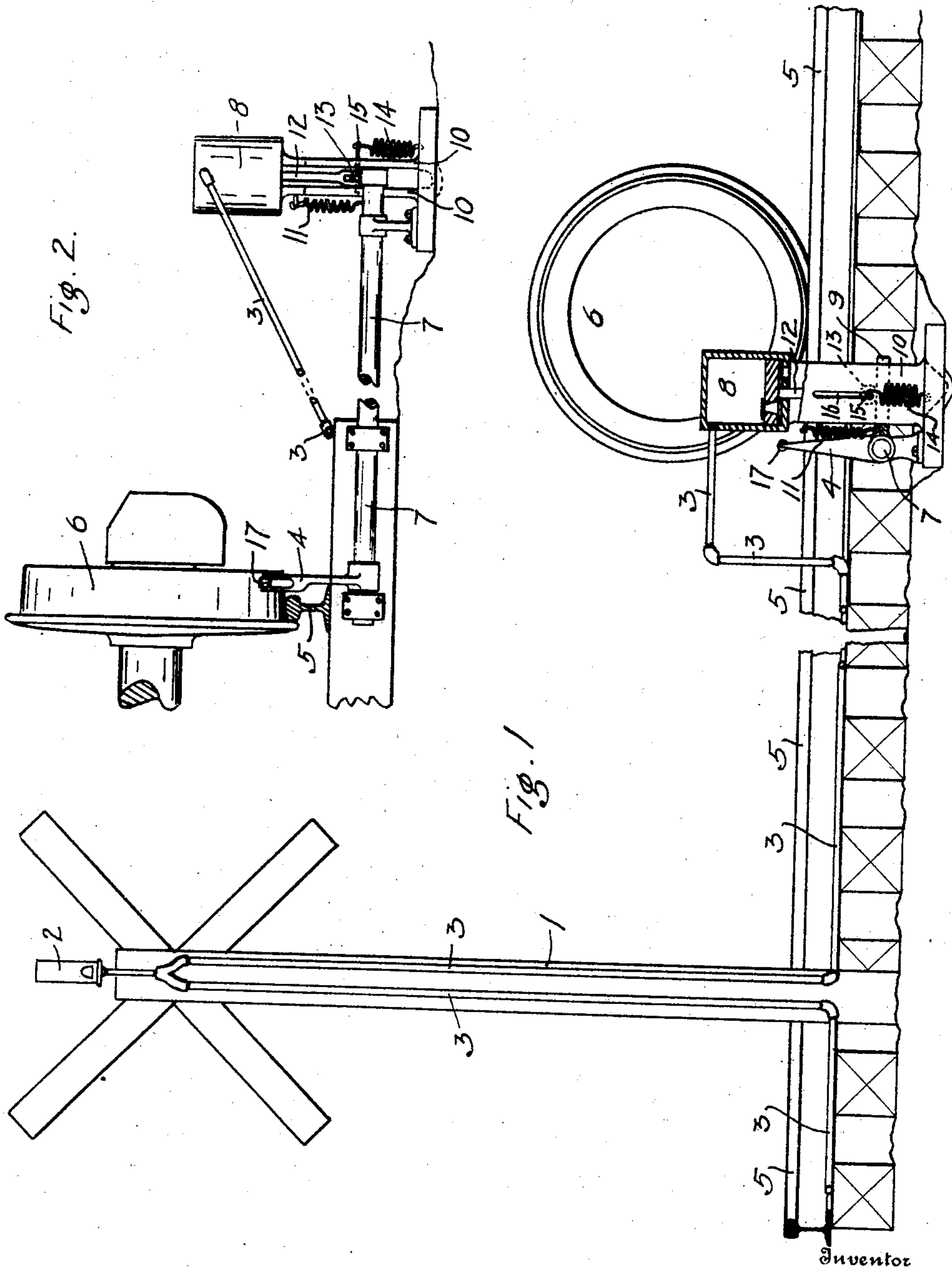


No. 866,789.

PATENTED SEPT. 24, 1907.

W. F. HOPKINS.
RAILROAD CROSSING SIGNAL.

APPLICATION FILED DEC. 27, 1906.



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WILLIAM F. HOPKINS, OF MILTON, WASHINGTON.

RAILROAD-CROSSING SIGNAL.

No. 866,789.

Specification of Letters Patent.

Patented Sept. 24, 1907.

Application filed December 27, 1906. Serial No. 349,634.

To all whom it may concern:

Be it known that I, WILLIAM F. HOPKINS, a citizen of the United States of America, residing at Milton, in the county of Pierce and State of Washington, have
5 invented certain new and useful Improvements in Railroad-Crossing Signals, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to sound signals placed at
10 road crossings of a railroad and operated by an approaching train, and has for its object to cause each wheel of the train, as it passes the apparatus, to force a blast from a horn or whistle located at the distant crossing toward which the train is moving. I accom-
15 plish this object by the mechanism illustrated in the accompanying drawing in which

Figure 1 represents a side view of the apparatus and crossing signal, and Fig. 2 represents an end view thereof.

20 Similar numerals of reference refer to similar parts throughout the several views.

At the road crossing is erected the usual crossing sign-post 1, to which is secured a whistle 2, or other pneumatic sound instrument, connected by pipes 3
25 running down the post 1 and on or in the ground to the compression end of the air pump of the operating apparatus located at each side of the post 1 at any desired distance therefrom. The operating apparatus consists of a vertical lever 4 placed adjacent to the rail
30 5 so as to be pushed in either direction by the wheels 6 of the trains as they pass; a torsional rod 7 secured to the vertical lever 4 and extending therefrom in suitable bearings at right angles to the track a sufficient distance so that the air pump 8 is removed from
35 proximity thereto; a horizontal lever 9 secured to the torsional rod 7 and engaging the slot between the legs 10 of the air pump 8 and being pulled upward by a spring 11 secured thereto and to said legs 10; an air
40 pump 8 having a piston therein adapted to compress air in the inner part of the pump on the upward stroke thereof, said piston having a rod 12 with a roller 13 at its end engaging the upper surface of the horizontal lever 9, all said parts being drawn downwards by the
45 spring 14 secured to the legs 10 and to the pin 15 on which the roller 13 is mounted, the said pin 15 traveling in a slot 16 in the sides of the legs 10, said slot only extending down to the point where the pin is at the bottom of its stroke, so that if the lever 9 is moved below its normal position it simply leaves the roller 13
50 suspended over it. Thus the apparatus is arranged so

that the air pump is operated by wheels passing toward the crossing, but is not operated by wheels passing away therefrom. The lever 4 is provided with a roller 17 so that it will more readily be pushed by the car wheels instead of crushed thereby. The pipes 3 from
55 each of the apparatus on the sides of the crossing extend separately up the post 1 and are not joined until the whistle 2 is almost reached, and said joint is made with a Y-joint so that the air pressure from one pipe 3 will not simply pass to the other pipe and apparatus, 60
but will preferably pass to the whistle 2 and so that said whistle will be operated equal well from either one of the pipes 3.

I have illustrated my invention as applied to a crossing and as having a permanent location, but it is
65 evident that a special portable form may be made which would have special use in warning section gangs or other workmen of the approach of a train, or a slightly different form could be made which would be used as a warning in a switch tower of the approach of
70 a train in which case different tracks could be connected so as to sound different toned whistles. The device can also be used to sound warning at a bridge when a train is approaching it.

Having described my invention, what I claim is: 75

1. In a railroad crossing signal, the combination of a normally vertical lever adapted to be actuated in either direction by the wheels of a passing train, a normally horizontal lever secured to but distant from said first lever, a fixed air cylinder, a piston therein with a piston
80 rod projecting therefrom and adapted to be engaged and operated by said second lever when it is moved to one side of its normal position but disengaged therefrom when it is moved to the other side thereof, a pneumatic sound emitting instrument at the crossing, and a pipe joining
85 said air cylinder to said instrument whereby said instrument is caused to sound when said piston is moved in said cylinder.

2. In a railroad crossing signal, the combination of two air pumps, one at each side of the crossing and each
90 adapted to be actuated only by a train passing thereover toward the crossing but not being actuated by a train passing thereover from the crossing, a pipe joining said air pumps, and a pneumatic sound emitting instrument at the crossing between the pumps and connected to said pipe
95 and operated by the pressure therein caused only by an approaching train.

3. In a railroad crossing signal, the combination of two air pumps one at each side of the crossing and each
100 adapted to be actuated by a train passing in the direction of the other, a pipe joining said air pumps and having a parallel sided bend therein at the crossing between the pumps, a pneumatic sound emitting instrument supported beyond the end of said bend, and a Y-connection joining
105 said instrument with both sides of said bend.

4. In an air compressor, the combination of a fixed cylinder, a reciprocating air compressing piston therein and having a piston rod extending therefrom, a spring engaging said reciprocating parts and adapted to pull said piston toward one end of said cylinder, a lever engaging and actuating said piston rod against the action of said spring when it is moved in one direction, but disengaged therefrom when moved in the other direction, and a lever secured to but distant from said first lever and

5

adapted to be actuated by passing bodies and to actuate said piston only when the passing body is moving in one direction. 10

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

WILLIAM F. HOPKINS.

Witnesses:

M. H. COREY,
P. F. AMES.