

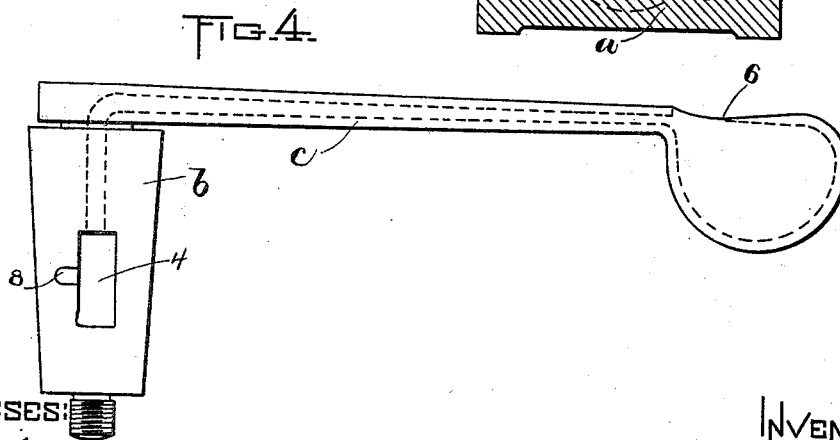
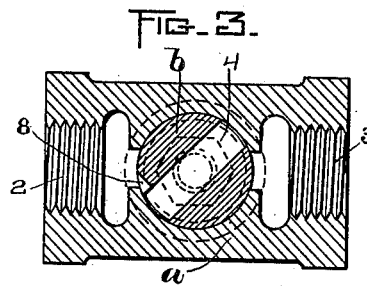
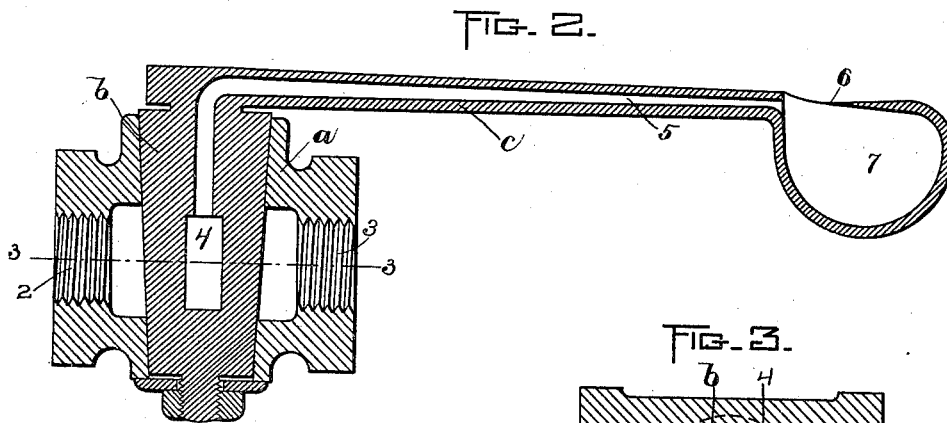
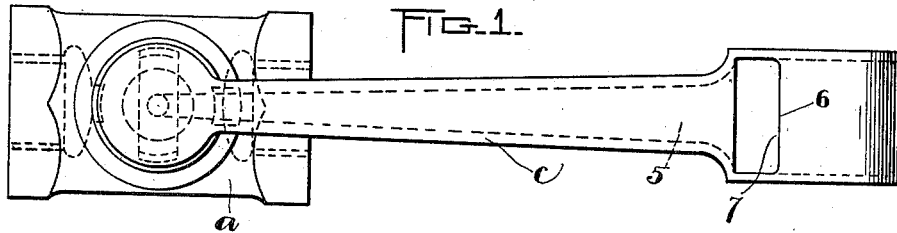
No. 649,297.

B. J. GRAHAM.
SIGNAL COCK.

Patented May 8, 1900.

(Application filed Nov. 1, 1899.)

(No Model.)



WITNESSES:
A. S. Harrison
O. W. Dwyer

INVENTOR:
Benj. J. Graham
by *Myrtle B. Dwyer*
Attys.

UNITED STATES PATENT OFFICE.

BENJAMIN J. GRAHAM, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF TWO-THIRDS TO CHARLES W. SHERBURNE, OF SAME PLACE, AND FRANCIS A. BARBEY, OF CAMBRIDGE, MASSACHUSETTS.

SIGNAL-COCK.

SPECIFICATION forming part of Letters Patent No. 649,297, dated May 8, 1900.

Application filed November 1, 1899. Serial No. 735,465. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN J. GRAHAM, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Signal-Cocks, of which the following is a specification.

This invention relates to cocks such as are used in the couplings connecting the air-brake pipes of a train of cars.

The object of the invention is to provide a cock having a plug-operating handle or lever adapted to serve also as a whistle, so that the cock may be used as a signal or alarm when, for example, a train of cars is moving backward and it is desired to warn a person on the track, this being accomplished by adjusting the cock-plug so that compressed air from the brake system will be liberated through the plug-operating arm or handle, thus sounding the whistle with which said arm is provided.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a plan view of a signal-plug cock embodying my invention. Fig. 2 represents a section lengthwise of Fig. 1 and through the center thereof. Fig. 3 represents a section on line 3 3 of Fig. 2. Fig. 4 represents a side view of the plug and a part of its operating-arm.

The same letters and numerals of reference indicate the same parts in all the figures.

In the drawings, *a* represents the casing of a plug-cock, having the inlet 2 and the outlet 3, said inlet and outlet being adapted for connection with suitable pipes or conduits.

b represents the plug, which is formed to close the passage through the casing and has a main port 4, which connects the inlet 2 with the outlet 3 when the plug is in its open position. To the plug is affixed an operating arm or handle *c*, by which the plug may be turned to open and close it. The arm *c* is here shown as provided with a fluid-duct 5 and with a sharp edge 6, forming one side of a chamber 7, to which fluid is delivered by the duct 5, the whole forming a whistle. The plug *b* is provided with a whistle-port 8, which when the plug is in the position shown in Fig. 3 communicates with the inlet 2 of the casing.

The said whistle-port communicates with the fluid-duct 5, preferably through the main port 4, into which said duct and the whistle-port open.

It will be seen that when the plug is in the position shown in Fig. 3 it closes the passage through the casing and at the same time permits fluid from the inlet end of the casing to pass through the whistle, thus sounding the latter. The form and arrangement of the whistle-port are such that when the plug is turned to bring the main port 4 at right angles with the passage through the casing or thereabout the whistle-port will be shut off from the inlet, so that there will be no operation of the whistle. When the plug is opened, the fluid-pressure will escape through the outlet of the casing to such an extent that it will not operate the whistle.

It will be seen that if the described signal-cock be used in an air-pipe at the rear end of a train of cars when the train is backing it can be readily adjusted to give an alarm or warning to a person walking on the track.

The above-described signal-cock is intended to be used only at the rear end of a train, where it is attached to the end of the train-pipe hose, the valve at the end of said hose-coupling being then opened. In order that the signal-cock may be brought into a more convenient position for operation by the brakeman, a short section of pipe may be interposed between the coupling at the end of the train-pipe hose and the casing *a* of the signal-cock, said short section of pipe being detachably connected by any suitable means with the railing of the rear platform. When the plug is turned to the position shown in Fig. 3, it permits of the passage of only sufficient fluid to sound the whistle without reducing the pressure in the train-line sufficiently to operate the brakes; but when the plug *b* is turned so as to open a free communication between the ports 2 and 3 the brakes will be operated without sounding the whistle.

I do not limit myself to the details of construction nor to the particular form of whistle here shown. The signal may be operated by

compressed air, as when used in an air-brake system, or by steam or any other suitable fluid under pressure.

I claim—

- 5 1. A signal-cock comprising a casing, a plug having a whistle-port, a whistle attached to the plug and movable therewith, and a fluid-conduit connecting the whistle-port with the whistle, the arrangement being such that the
10 whistle-port connects the whistle with the receiving end of the conduit when the plug is in one of its closed positions.

2. A signal-cock comprising a casing, a plug having a whistle-port, an operating arm or lever attached to the plug and provided with 15 a whistle, and a fluid-conduit connecting the whistle-port with the whistle.

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

BENJAMIN J. GRAHAM.

Witnesses:

C. F. BROWN,
A. D. HARRISON.