

No. 632,207.

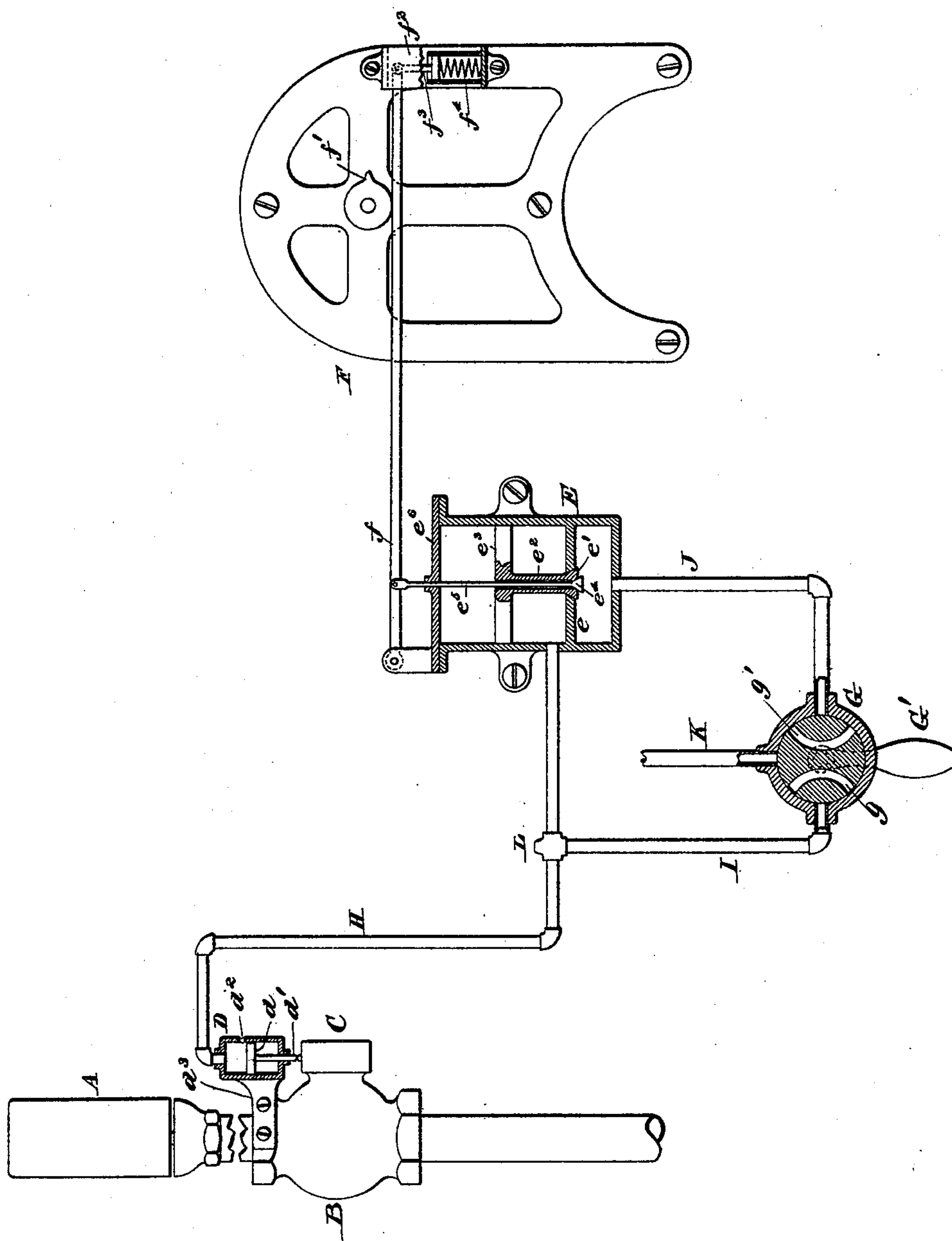
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G. J. SCHOEFFEL & J. J. AYLWARD.

VALVE CONTROLLER.

(Application filed Dec. 17, 1897.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE J. SCHOEFFEL AND JOHN J. AYLWARD, OF NEW YORK, N. Y.,
ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO THE SIGNAL
AND CONTROL COMPANY, OF SAME PLACE.

VALVE-CONTROLLER.

SPECIFICATION forming part of Letters Patent No. 632,207, dated August 29, 1899.

Application filed December 17, 1897. Serial No. 662,257. (No model.)

To all whom it may concern:

Be it known that we, GEORGE J. SCHOEFFEL and JOHN J. AYLWARD, citizens of the United States, residing at New York, (Brooklyn,) in the county of Kings and State of New York, have invented a certain new and useful Improvement in Valve-Controllers, of which the following is a specification.

The object of our invention is to provide a valve-controlling device for steam-whistle valves which may be readily and effectively operated from a distance either at will or automatically at regular intervals and which device will not possess the disadvantages of the electromagnetic controlling devices now in use. Such apparatus is mainly designed for marine use, although applicable for other purposes.

It has been found in practice that electromagnetic controlling devices are objectionable for various reasons—such, for instance, as the grounding of the circuits, decrease in the strength of the electric current, and the difficulty in protecting the electromagnets and controlling-switches from moisture. Furthermore, it has been found in practice that the magnets must be quite large, hence requiring a large number of cells to supply the current. To overcome these difficulties, we provide instead of an electromagnetic valve-controller a pneumatic valve-controller which is capable of operation at will to effect the opening of the main valve and produce a blast of the whistle for signaling or automatically at regular intervals to effect a periodic operation of the whistle-valve to give periodic blasts of the whistle as a warning signal during fogs. Our pneumatic valve-controller is controlled by a hand-valve located at any desired place; but when employed on ships the hand-valve will usually be located on the bridge.

The accompanying drawing is a diagrammatic illustration of the application of our invention as a controller for whistle-operating valves, and in which—

A represents the steam-whistle; B, the main valve for controlling the flow of steam to the whistle; C, the auxiliary valve for controlling the main valve B; D, the pneumatic operator for the auxiliary valve; E, a valve for control-

ling the pneumatic operator by means of the automatic device F, which may be a clock mechanism or other suitable device, and G the hand-valve for controlling the pneumatic operator at will or for placing the automatic controller in operative position.

The main valve B and the auxiliary valve C may be of any suitable construction—such, for instance, as that shown in Letters Patent No. 602,429, issued April 19, 1898.

The pneumatic controller comprises a cylinder D, having a piston d and a piston-rod d' , which engages with the valve-stem of the auxiliary valve C. The cylinder D is provided with a small vent-hole d^2 above the piston to relieve the pressure upon the piston when the air-supply is cut off either at the automatic valve E or at the hand-valve G. Cylinder D is supported from the main valve B by a bracket d^3 . From the cylinder extends a pipe H to the valve E, and from pipe H and valve E extend, respectively, pipes I and J, which lead to the hand-valve G, and from the hand-valve extends a pipe K to the source of air-supply, which may be a tank containing compressed air.

The automatic valve comprises a cylinder E, having a partition e , which divides the cylinder into two chambers and in which is formed a seat for the valve e' . This valve is carried by a tubular stem e^2 , at the upper end of which is a piston e^3 , working in the upper part of the cylinder. In the valve e' is formed a valve-seat for the valve e^4 , carried by a rod e^5 of small diameter passing through the tubular valve-stem e^2 and projecting through the top plate e^6 . Pivoted upon the top plate is a lever f , which rests upon the end of the valve-stem e^5 and extends under the cam f' , rotated by the clock mechanism or other motor F. The free end of the lever f extends between the frame of the clock mechanism and the guide-plate f^2 , and this end of the lever has a pivoted arm f^3 , having a head which rests upon a coiled spring f^4 . It will be seen that for each revolution of the cam f' the lever f will be depressed, and this movement of the lever will move the valve e^4 from its seat and permit the air from the lower part of cylinder E to pass through the tubular stem

e^2 to the upper side of the piston e^3 , and since the area of this piston is greater than that of the valve e' the air-pressure will force the piston downward and move the valve e' from its seat. This action will open communication between the pipes H and J and permit the flow of air to the pneumatic operator D. As the cam f' moves away from the lever f spring f^4 will return the lever to its normal position, and the air-pressure from pipe J will reseal valves e' and e^4 and shut off the air-pressure from the operator D. Thus it will be seen that as the cam f' is revolved by the clock mechanism or other motor the automatic valve will be periodically operated to permit the flow of air-pressure to the operator D, resulting in a periodical blast of the whistle A.

The air-supply through the automatic valve to operator D and direct to the operator is controlled by hand-valve G, by means of which the whistle-valve may be caused to operate at will or periodically, as above stated. This valve may be of any suitable construction, the form shown in the drawing being a simple rotary valve having two passages g and g' , the former for controlling communication between pipe I and the air-supply pipe K and the latter for controlling communication between the pipes J and K. At the junction of pipes H and I we preferably provide a normally-closed check-valve L of any suitable form, which will open when air is admitted to pipe I and permit the flow through pipe H, but which will prevent the flow of air into pipe I from pipe H when the automatic valve is operated.

The hand-valve is provided with an oper-

ating-handle G' , (indicated in dotted lines,) which is designed to have three positions— viz., the normal or central position, at which the air-supply is cut off from both the pipes I and J, a right-hand position, at which the port g' opens communication between pipes J and K to permit the flow of air-pressure to the automatic valve E, and a left-hand position, at which the automatic valve is cut out and communication is opened between pipes I and K to permit the flow of air-pressure direct to the operator D to produce a blast of the whistle A at will.

What we claim is—

1. The combination with a valve and an auxiliary controlling-valve, of a pneumatic operator for said auxiliary valve, a hand-valve for controlling the operation of said pneumatic operator from a distance at will, and an automatic valve for effecting a periodic operation of said pneumatic operator.

2. The combination with a valve and an auxiliary controlling-valve, of a pneumatic operator for said auxiliary valve, an automatically-operated valve for permitting a periodic flow of air-pressure to the pneumatic operator, and a hand-valve for cutting out said automatically-operated valve and for controlling the operation of said pneumatic operator at will.

This specification witnessed this 1st day of December, 1897.

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Witnesses:

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