

No. 848,079.

PATENTED MAR. 26, 1907.

F. WEISS.
STEAM CYLINDER DRAIN VALVE.
APPLICATION FILED AUG. 20, 1906.

Fig. 1.

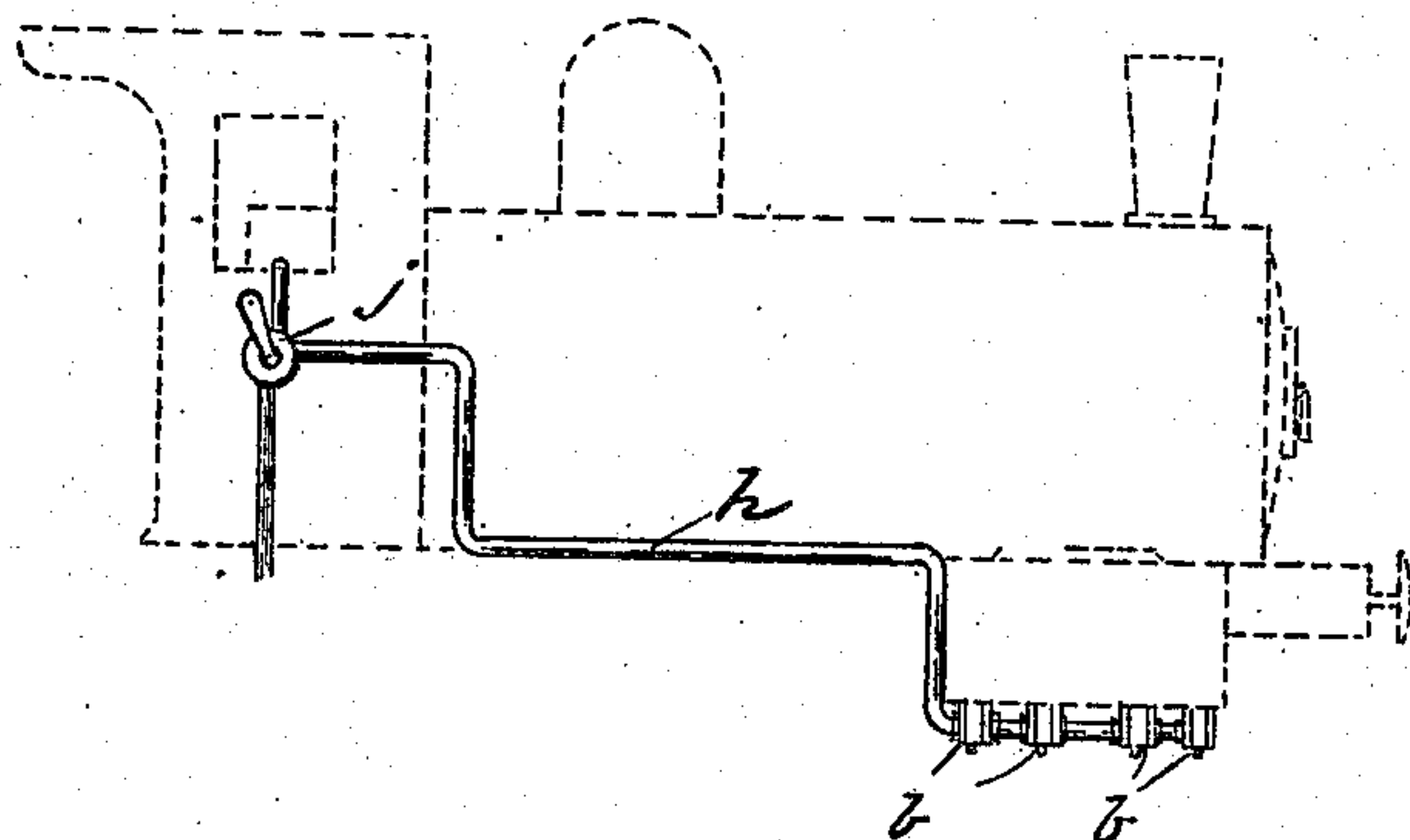
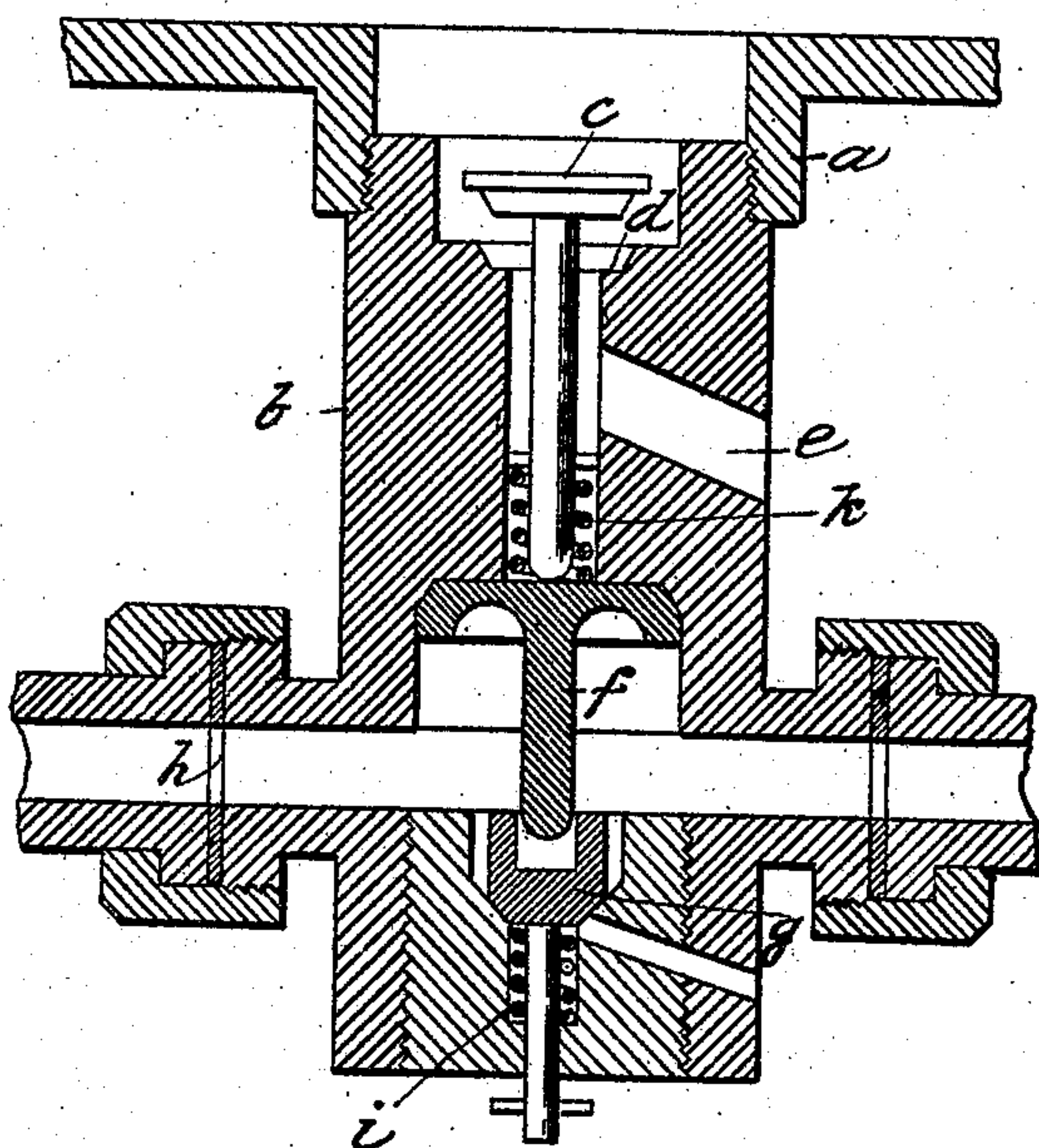


Fig. 2.



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STEAM-CYLINDER DRAIN-VALVE.

No. 848,079.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed August 20, 1906. Serial No. 331,318.

To all whom it may concern:

Be it known that I, FRIEDRICH WEISS, a subject of the German Emperor, residing at Ricklingen, Germany, have invented certain new and useful Improvements Relating to Steam-Cylinder Drain-Valves, of which the following is a specification.

This invention relates to drain-valves for the cylinders of steam and vapor engines, more particularly locomotives, in which the drain-valves are operated from a distance by means of compressed air, steam, or vapor.

The invention substantially consists in constructing drain-valves and parts connected therewith in such a manner that a plurality of such valves can be operated collectively by means of a single pressure-conduit. Connecting-gear and branch pipes are thus dispensed with, and access to the bearings is facilitated.

The invention is illustrated in the annexed drawing, Figure 1 being a diagram showing the arrangement of the drain-valves of a locomotive, and Fig. 2 a section of a drain-valve adapted to be operated by means of steam or compressed air.

The valve-case *b* is screwed to a socket *a* integral with the cylinder, the outer surface of the said case being prismatic to allow of screwing and unscrewing it with the aid of a spanner. The case *b* contains the valve *c* and valve-seat *d*, the valve being normally held open by a spring *k* when there is no pressure in the cylinder or pipe *h*. A duct *e* connects the interior of the case *b* to the outer atmosphere. Below the valve *c* is arranged a piston *f*, movable in the direction of the axis of the valve *c* and having a downward projection, below which is located a valve *g* for the discharge of water of condensation formed in the conduit *h*. The valve *g* is normally kept open by a spring *i*. The conduit *h* communicates with a source of steam or compressed air which serves for operating the drain-

valve. A series of drain-valves are in communication with the conduit *h* and are collectively controlled by means of a three-way cock *j*.

The manner in which this arrangement is used is as follows: When water or steam is to be discharged from the cylinder or cylinders, boiler-steam or compressed air from the air-drum of the pneumatic brake is admitted to the conduit *h*. The piston *f* is thus caused to lift the valve *c* from the seat, so that steam and water can pass from the cylinder to the duct *e*. The pressure in the conduit *h* at the same time closes the valve *g*. When the said pressure is cut off, the pressure in the cylinder closes the valve *c* and interrupts communication between the cylinder and duct *e*, and at the same time the valve *g* opens to discharge water of condensation, if any, from the conduit *h*.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The combination with a steam-engine cylinder of a plurality of drain-valves, a pressure-piston for each drain-valve a single pressure-conduit containing all said pressure-pistons and means for controlling the pressure in said conduit whereby the pistons are operated.

2. The combination with a cylinder drain-valve of a spring for opening it, a piston adapted to open the valve against pressure in the cylinder, a pressure-conduit leading to said piston and a spring-controlled drain-valve to said conduit, said piston and drain-valves being all axially aligned substantially as set forth.

In witness whereof I have signed this specification in the presence of two witnesses.

FRIEDRICH WEISS.

Witnesses:

HENRY J. FULLER,
ANNA DIPPEL.