No. 848,079. PATENTED MAR. 26, 1907.

F. WEISS.

STEAM CYLINDER DRAIN VALVE.

APPLICATION FILED AUG. 20, 1906.

Fig. 1.

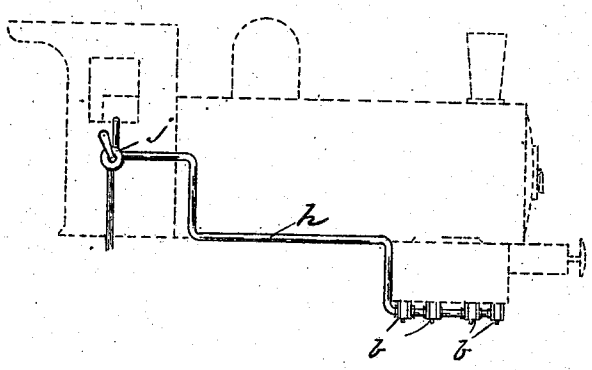
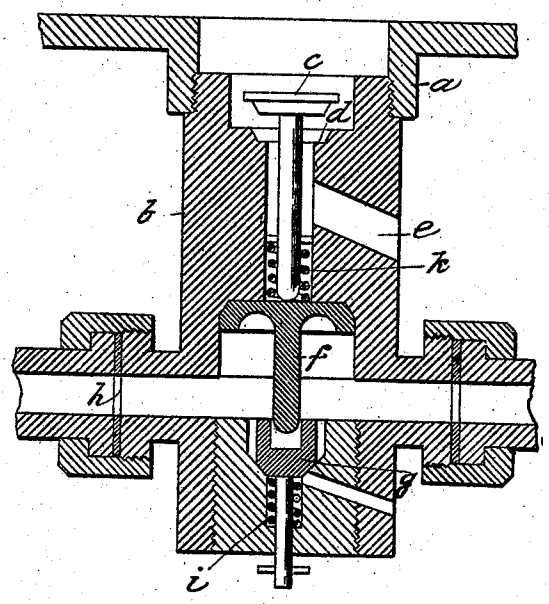


Fig. 2.



Witnesses
Harry Pausch
S. Ford

Inventor
Friedrich Weiss
per R. Hadden
Attorney

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRIEDRICH WEISS, OF RICKLINGEN, GERMANY.

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 alined 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.