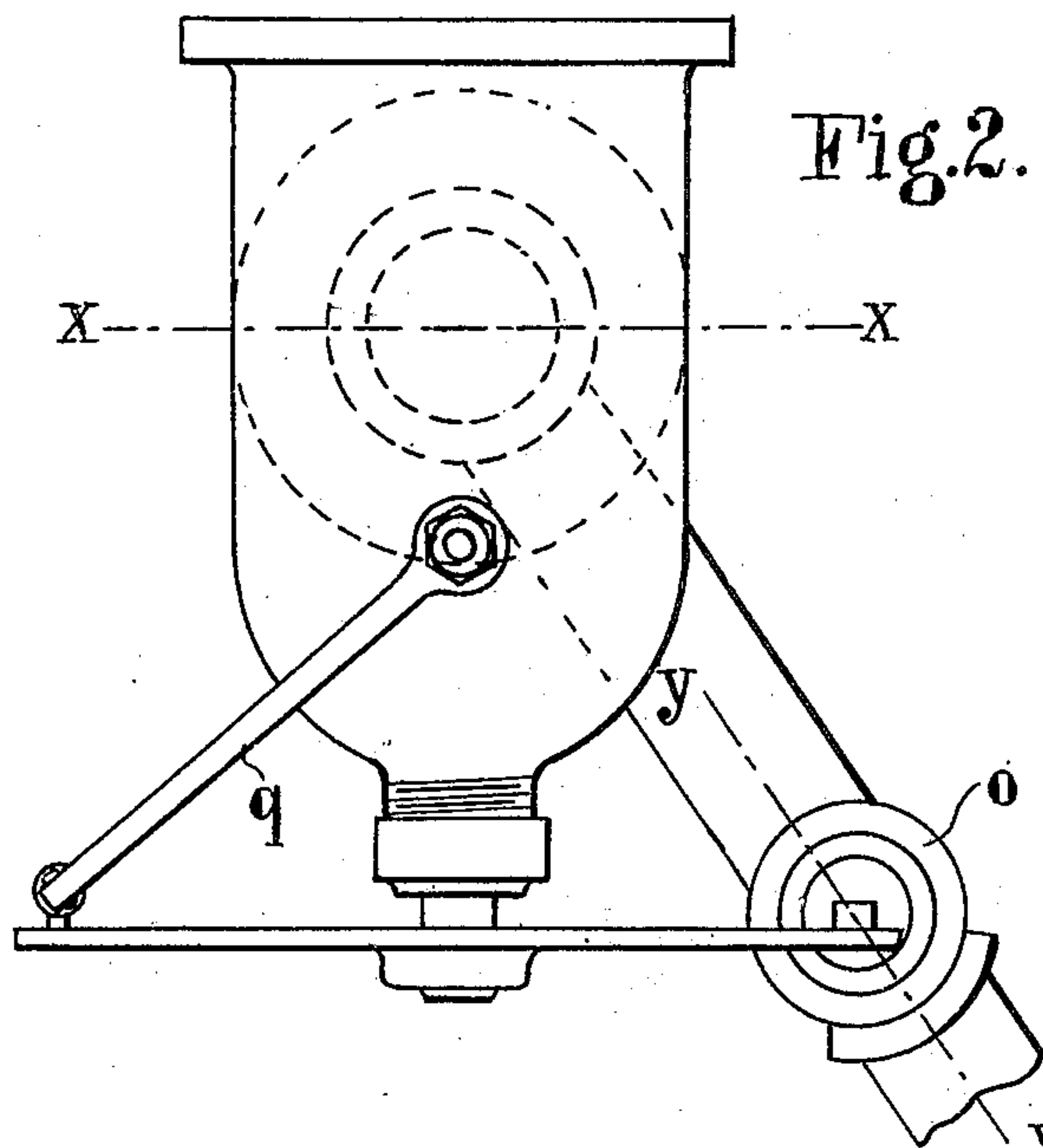
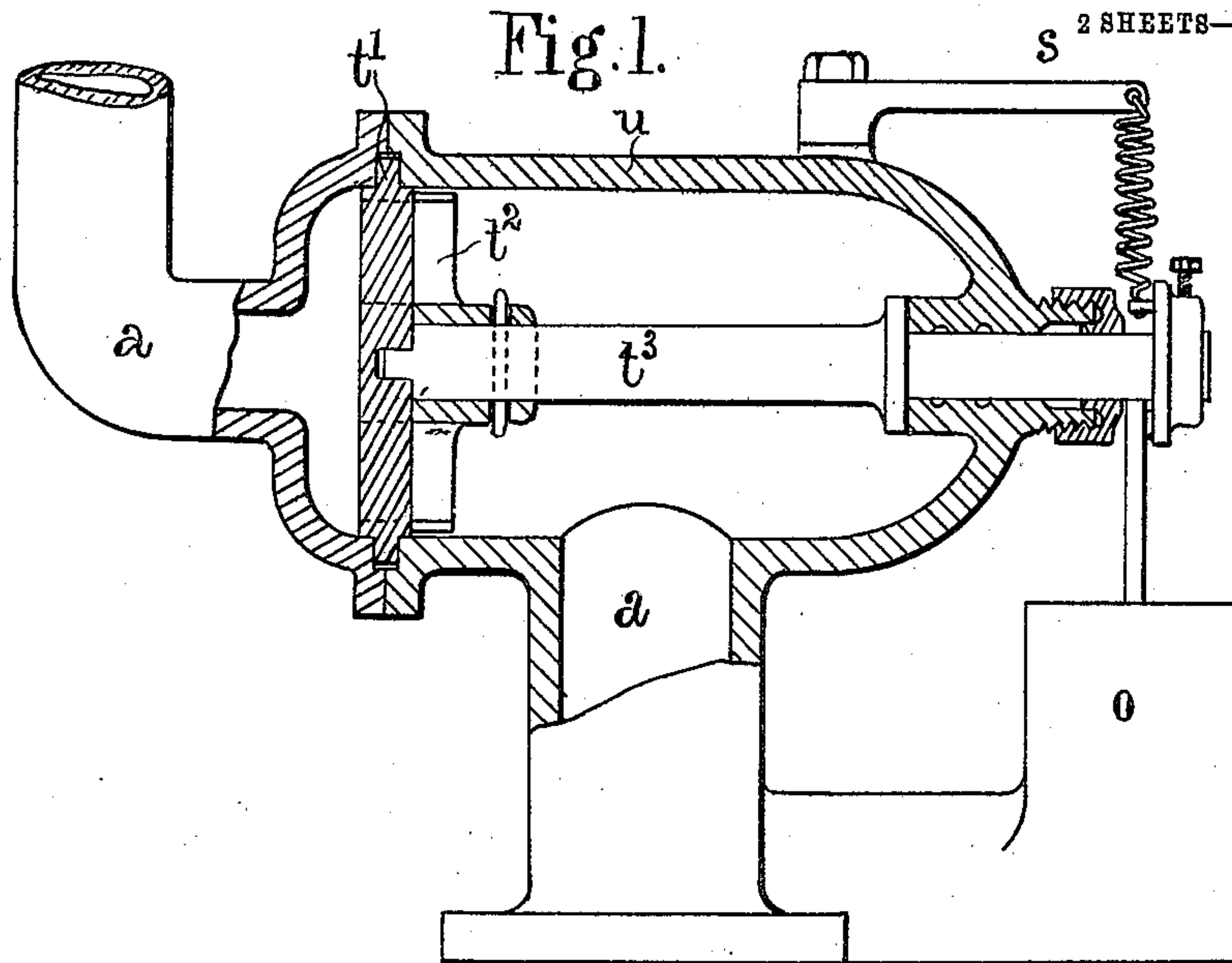


H. ROUX.
 SAFETY VALVE FOR STEAM ENGINES AND THE LIKE.
 APPLICATION FILED JULY 20, 1908. Patented Apr. 6, 1909.
 917,143. 2 SHEETS—SHEET 1.



Witnesses:
 R. E. Barkley.
 L. A. Sands.

Inventor:
 Henri Roux,
 by Frank S. Appleman,
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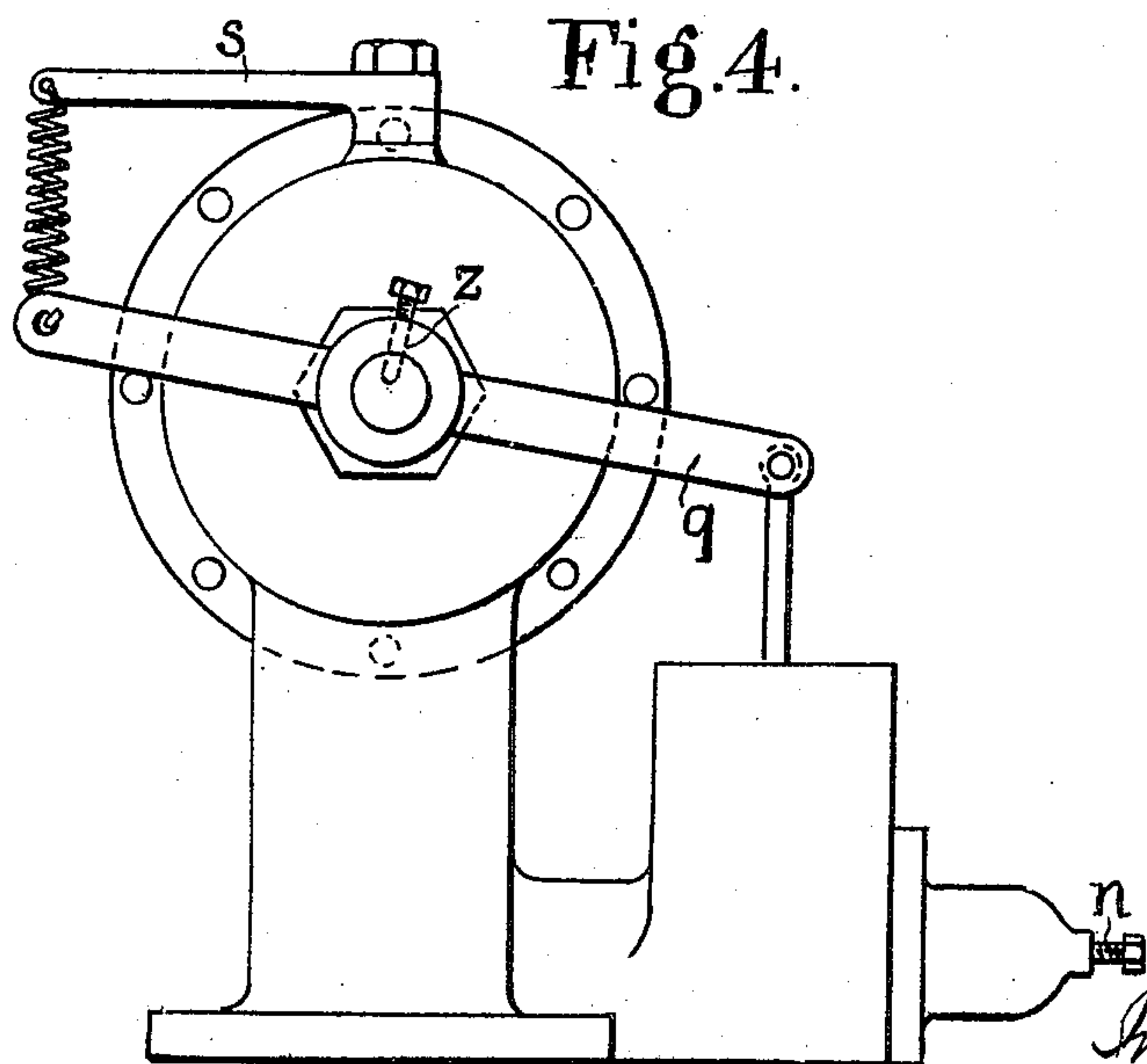
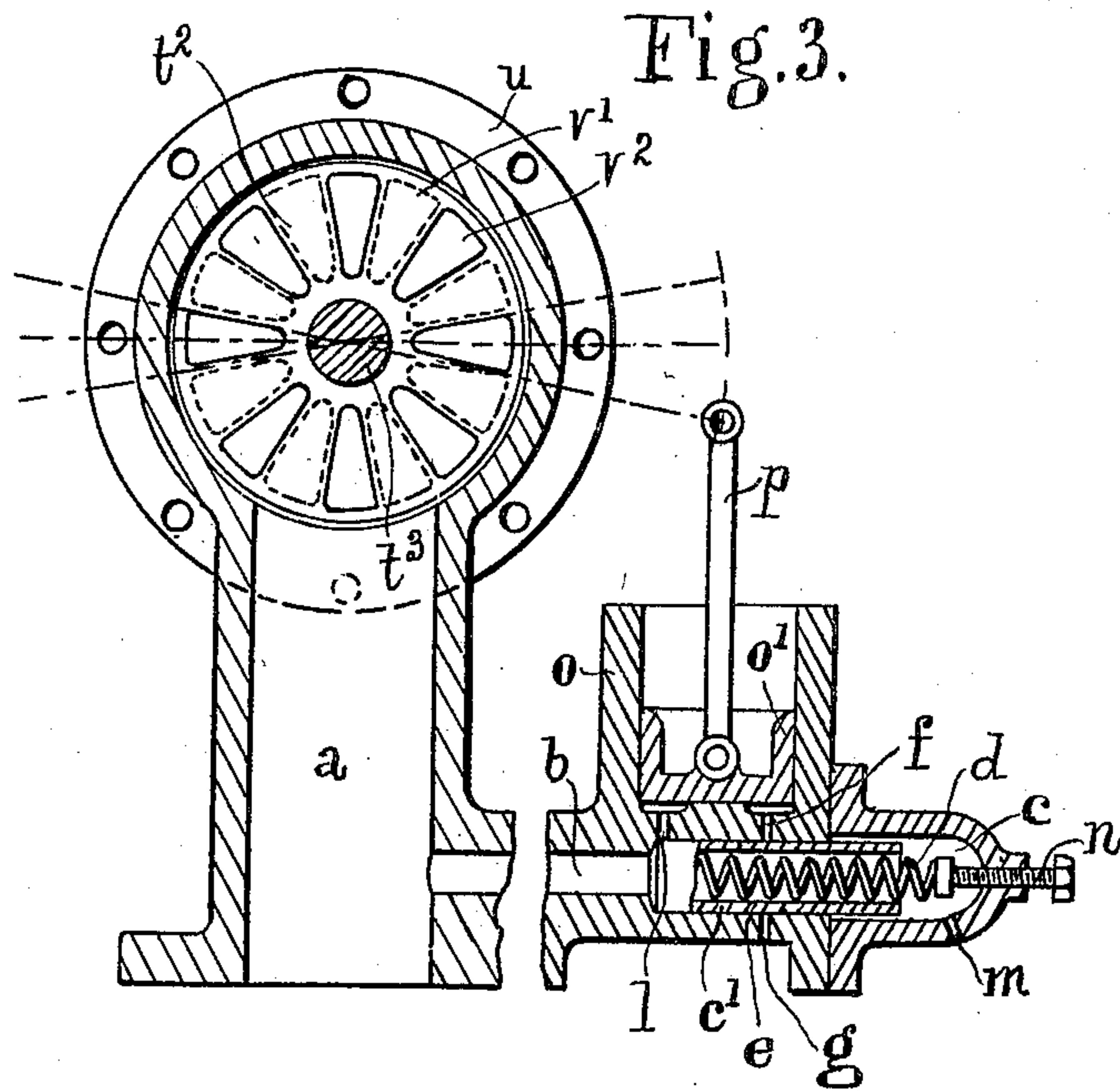
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Inventor:

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UNITED STATES PATENT OFFICE.

HENRI ROUX, OF MARSEILLE, FRANCE.

SAFETY-VALVE FOR STEAM-ENGINES AND THE LIKE.

No. 917,143.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed July 20, 1908. Serial No. 444,454.

To all whom it may concern:

Be it known that I, HENRI ROUX, a citizen of the French Republic, and resident of 13 Rue Albrand, Marseille, France, engineer, have invented certain new and useful Improvements in and Relating to Safety-Valves for Steam-Engines and the Like, of which the following is a specification, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved safety-valve for steam and the like fluid pressure engines and consists essentially in the arrangement of a valve chamber in the eduction- or outlet-pipe, said valve-chamber containing a disk or other valve, which is operated by means of a piston working in a cylinder, which is connected with and disconnected from the boiler by a slide-valve, controlled by a spring the power of which corresponds to a certain pressure of steam, at the excess of which the spring will yield, and allowing steam to flow into the auxiliary cylinder and operate the auxiliary piston, will cause the opening of the valve.

I will now describe my invention with reference to the accompanying drawings in which my invention is shown by way of example and in which—

Figure 1. shows an elevation of the invention, partly in section. Fig. 2. shows a plan of same. Fig. 3. shows sections of same on lines $x-x$ and $y-y$ of Fig. 1. Fig. 4. shows an end-view of the invention.

A valve-chamber u is inserted into the eduction or outlet pipe a of a steam engine, which chamber can be closed by two disks, t' , t'' adjacent to each other, of which disks t' is arranged firmly in the casing of the chamber u and t'' is keyed or otherwise firmly mounted on a spindle t^3 which can be rotated in its bearings. The disks t' and t'' are provided with a number of segmental cut outs or recesses v' and v'' respectively, which are arranged radially and in distances of more than their own width. The arrangement is such that in the shut position, or position of rest the recesses of one disk will be covered by the intermediate spaces of the other, and that when the spindle is given a turn the cut outs of both disks will coincide and allow the steam coming from the boiler to flow through the openings thus created.

A channel b is provided so as to form a communication between the part of the eduction or outlet pipe a and an oblong

chamber c in which a hollow plunger c' controlled by a spring d works. A duct l forms a communication between chamber c and a cylinder o in which a piston o' works. Under ordinary circumstances the plunger will be held by spring d against the steam pressure in such a position as to cover duct l . As soon however as the steam pressure becomes excessive the plunger will be pressed back against the action of the controlling spring and thus uncover duct l , allowing steam to flow into the cylinder o and to push the piston o' upward which by means of its rod p and the lever q , pivoted to the latter and keyed or otherwise fastened to spindle t^3 at z turns the latter, so that the cut outs of disk t' , t'' coincide with each other and form openings through which the steam coming from the boiler is allowed to flow out. The flow of steam will diminish the pressure in the part of pipe a connecting boiler and valve-chamber u , so that spring d will be able to return plunger c' to its original position. Duct l will then be covered, while a duct f leading from chamber c to cylinder o will communicate by means of an annular groove e in the plunger with an exhaust port g , thus allowing the contents of the cylinder o to be exhausted and the piston to drop, the latter causing by its return movement the disk-valve t' , t'' to be shut by means of rods p , q and spindle t^3 . The other end of lever q is connected to a tension spring r arranged on an arm s , said tension spring assisting in holding spindle t^3 and plunger o' in the position of rest. A screw n may be arranged for adjusting the springs d for different pressures.

m is an open-air port.

Other means such as a counter-weight may be arranged instead of spring r .

Modifications may be made without thereby deviating from the principle of this invention.

What I claim and desire to secure by Letters Patent is:—

1. In a safety valve, a valve casing adapted to be connected to a boiler and having an outlet, an apertured plate in the casing, an apertured disk adapted to rotate in contact with the plate, a shaft on which the disk is mounted, a pressure controlled valve, a cylinder having a port controlled by the valve, a piston actuated by the pressure of fluid for unseating the valve, means for communicating the motion of the piston to the

shaft, and means for exhausting the fluid from the cylinder when the valve is seated.

2. In a safety valve, a valve casing adapted to be placed in communication with a boiler or the like, said casing having an exhaust port, an apertured disk stationed in the casing in position to guard the port, an apertured disk rotatable with relation to the stationary disk, a shaft for carrying the rotatable disk, a cylinder having means of communication with the boiler, a valve for controlling the means of communication, means for holding the valve seated to prevent communication between the cylinder and boiler under normal pressure, the said valve being unseated by abnormal pressure in the boiler whereby the fluid in the boiler is permitted to enter the cylinder, a piston in the cylinder, means for communicating the motion of the piston to the shaft, and means for exhausting the fluid in the cylinder when the valve is seated.

3. In a safety valve, a casing adapted to be placed in communication with a boiler or

the like, said casing having an exhaust port, an apertured disk stationed in the casing, an apertured disk rotatable with relation to the stationary disk whereby the movable disk controls the opening in the stationary disk, a cylinder having a port in communication with a boiler or the like, a spring pressed valve for controlling the communication between the boiler and the cylinder, a plunger for the valve having a groove, said cylinder having an exhaust port adapted to communicate with the groove, means for permitting the discharge of the expansible fluid from the groove, a piston in the cylinder, and means for communicating the motion of the piston to the shaft for carrying the movable disk.

In witness whereof I have hereunto set my hand in presence of two witnesses.

HENRI ROUX.

Witnesses:

ALPHONSE LE FAURE,
MARIUS MARQUIEV.