

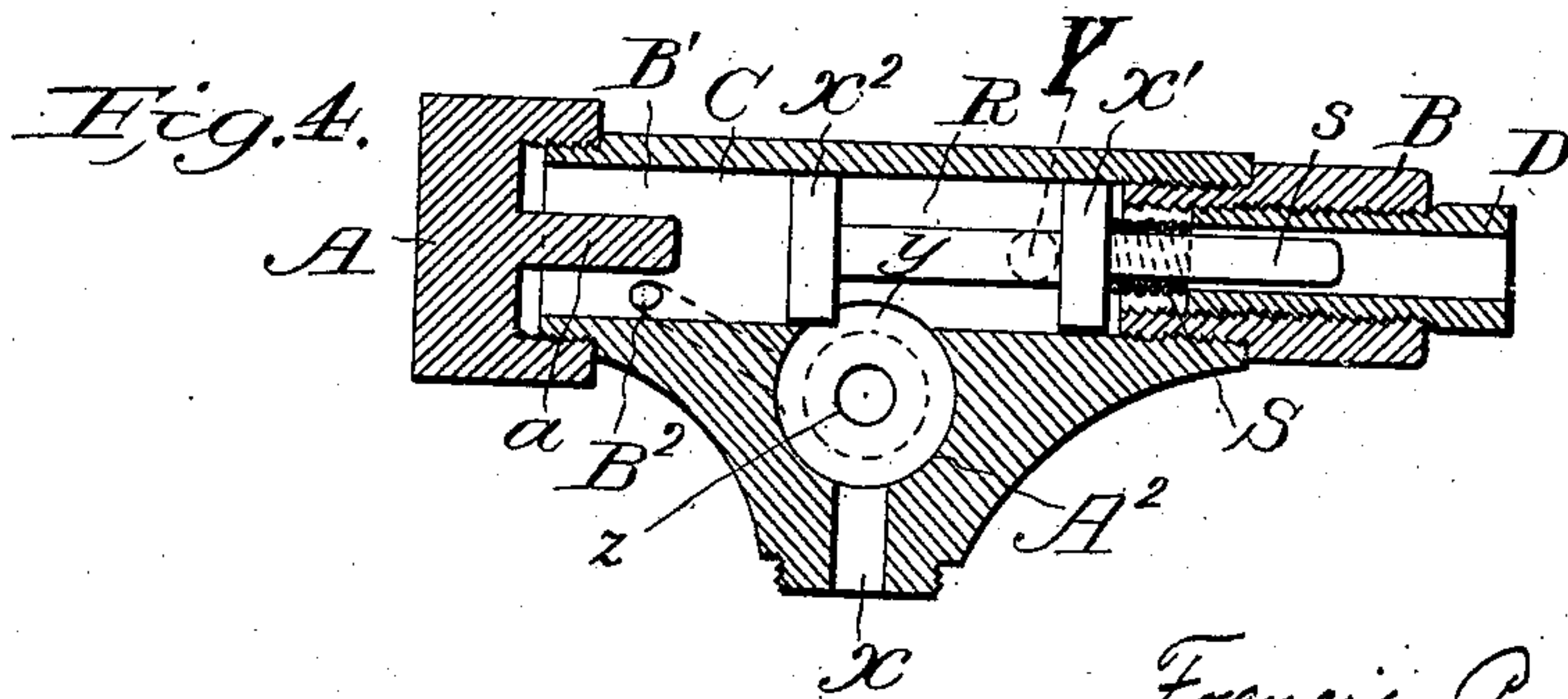
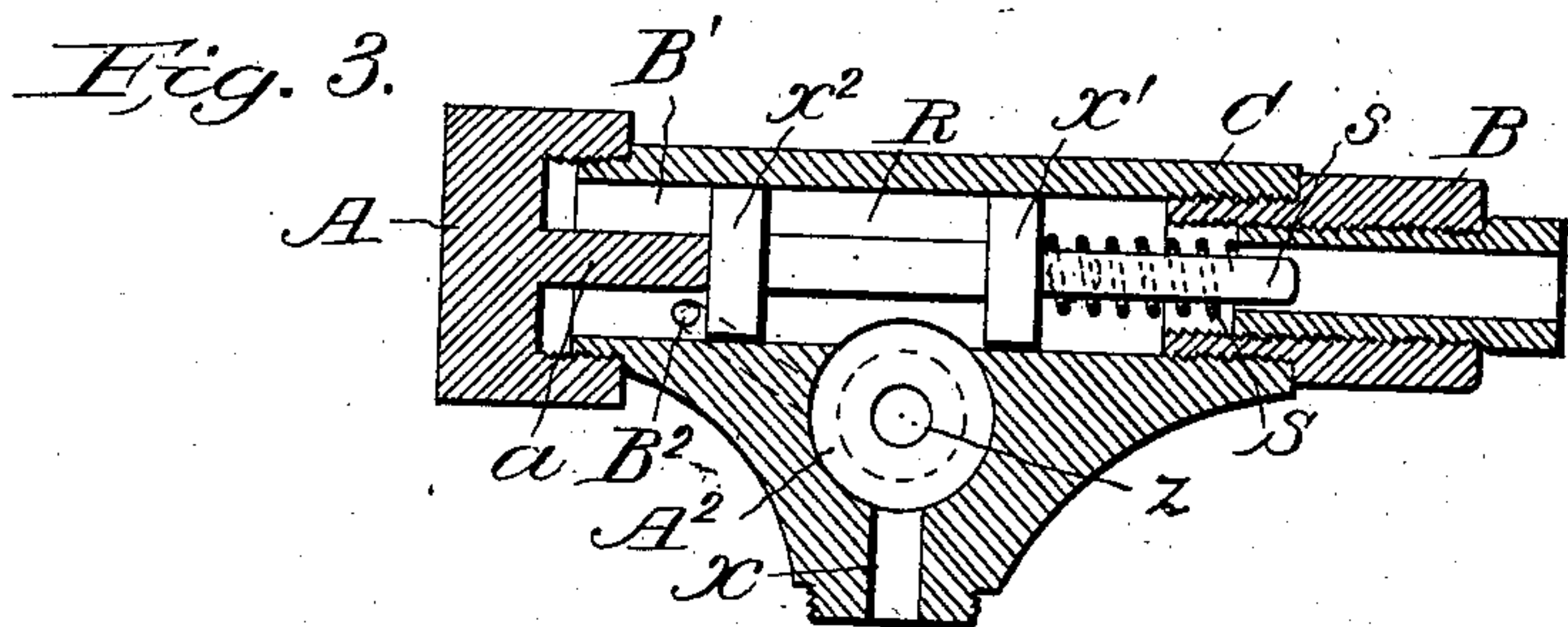
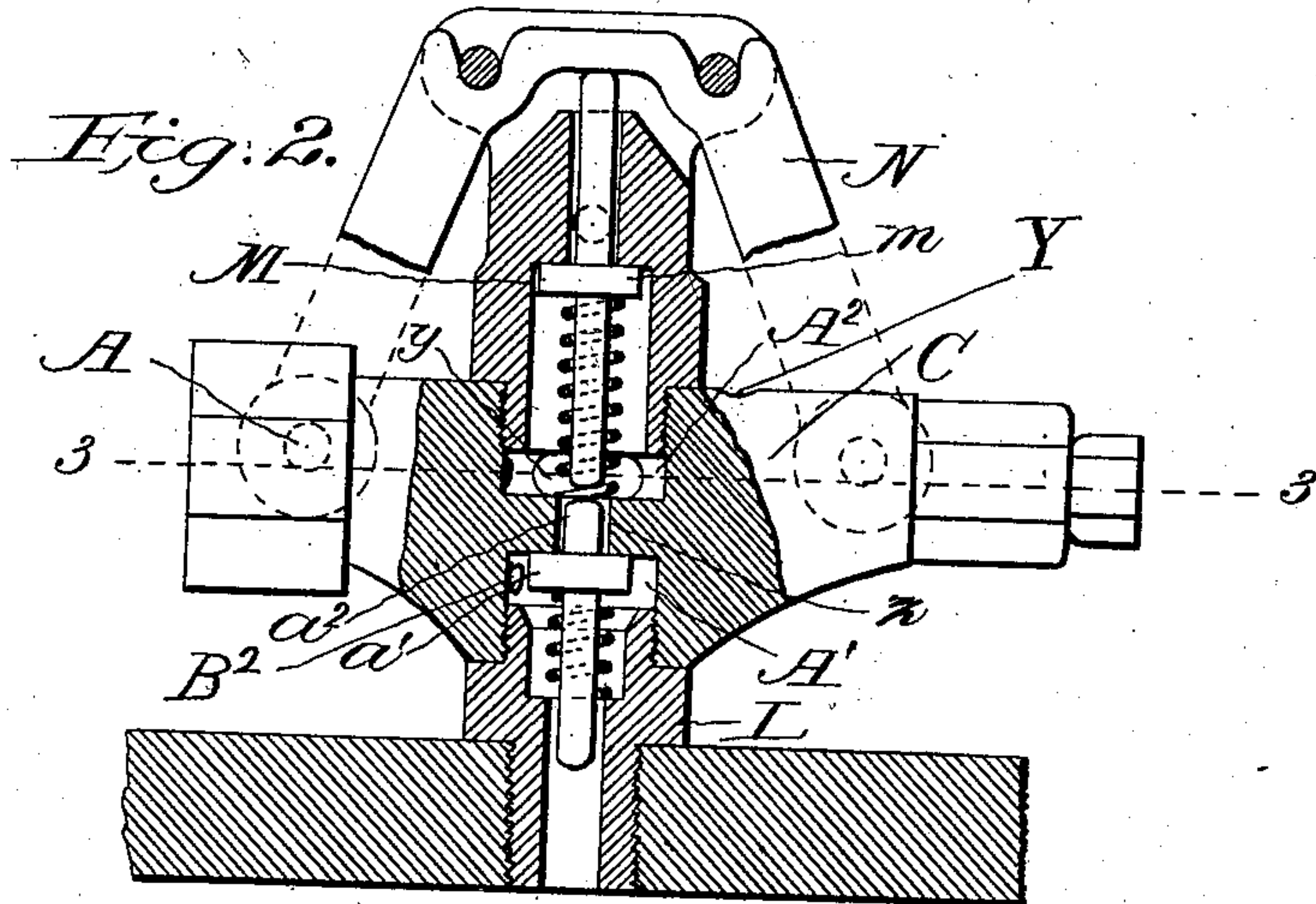
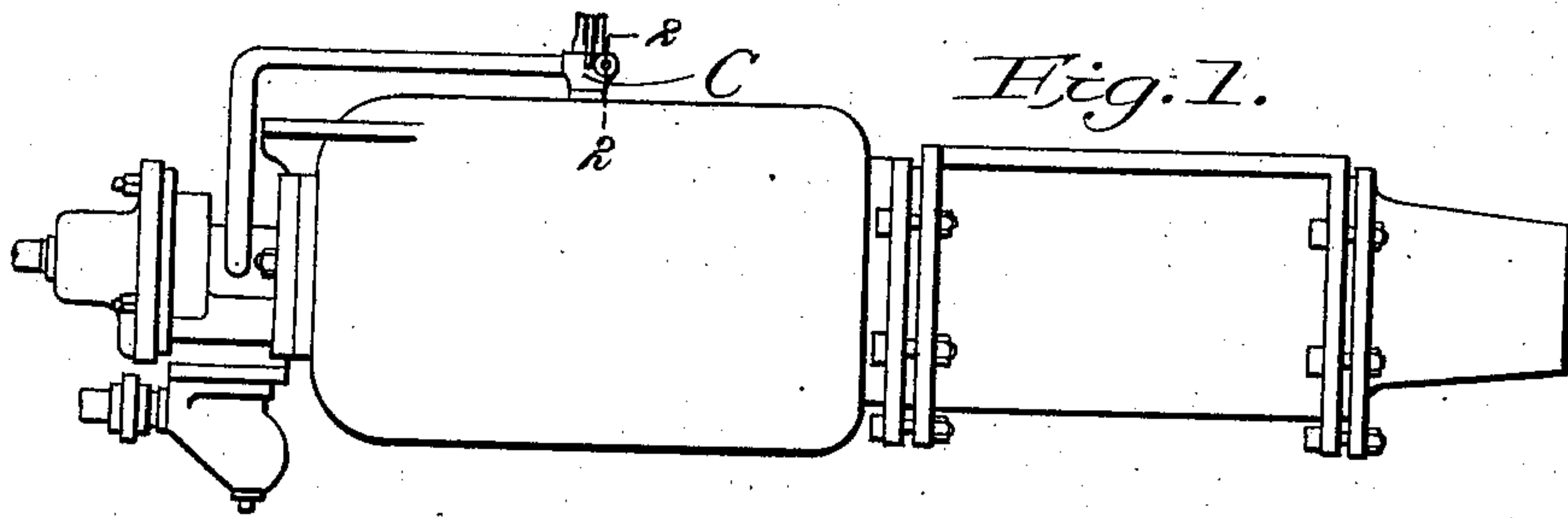
No. 747,656.

PATENTED DEC. 22, 1903.

F. P. SKEFFINGTON.
PRESSURE RETAINING VALVE.

APPLICATION FILED AUG. 3, 1903.

NO MODEL.



Witnesses

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UNITED STATES PATENT OFFICE.

FRANCIS P. SKEFFINGTON, OF SPOKANE, WASHINGTON.

PRESSURE-RETAINING VALVE.

SPECIFICATION forming part of Letters Patent No. 747,656, dated December 22, 1903.

Application filed August 3, 1903. Serial No. 168,055. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS P. SKEFFINGTON, a citizen of the United States, residing at Spokane, in the county of Spokane and State of Washington, have invented new and useful Improvements in Pressure-Retaining Valves, of which the following is a specification.

This invention relates particularly to pressure-retainers used in connection with air-brakes to retain the full pressure on the brakes until the auxiliary reservoir is recharged.

The object of the invention is to produce an improved valve for the purpose indicated and also to produce a combined pressure-retaining and bleed valve.

Further advantages of operation and construction will be apparent from the following description and from the accompanying drawings, in which—

Figure 1 is an elevation of the auxiliary reservoir of a freight-car brake with my valve applied thereto. Fig. 2 is a vertical section through the valve on the line 2 2 of Fig. 1. Fig. 3 is a horizontal section on the line 3 3 of Fig. 2; and Fig. 4 is a section similar to Fig. 3, showing the valve in a different position.

The invention is characterized particularly by the combination of a pressure-retaining valve and a bleed-valve in one casing and so arranged that when the bleed-valve is operated the pressure is released from both the auxiliary reservoir and the chamber and valve controlling the triple-valve exhaust or brake-release.

Referring specifically to the drawings, C indicates a casting containing the valves, having a cylindrical bore producing two chambers (indicated at B' and R) on opposite sides of the piston X² of a piston-valve, which is slidable in the bore. At substantially a right angle to the cylinder just mentioned the casting is bored to produce chambers A' and A², which are connected by a port z. The chamber A' communicates with the auxiliary reservoir through a screw-plug L and contains a valve a', normally seated over the port z. The stem of the valve projects partly through the port, as indicated at a². This chamber A' is in communication with the chamber B' through the oblique port B², which opens into the chamber B' beyond the piston

X². The end of the chamber B' is closed by a screw-cap A, which has a central stem a, which projects into the cylinder and prevents the piston X² from moving beyond the port B². The chamber B' and piston X² thus receive constantly the pressure of the auxiliary reservoir.

The chamber A² is closed by the bleed-valve casing M, which is screwed therein and contains a valve m, the stem of which extends upwardly through the discharge-port to contact with the bleed-cock lever N. On the other side of the valve m the valve-stem extends downwardly into the port z and almost in contact with the stem a² of the valve a'. The chamber A² also communicates with the chamber R through a comparatively wide opening or port produced in the side of the cylinder, as indicated at y. At Y is a port leading from the cylinder to the atmosphere. The rod of the piston X² carries also a piston X', fitting the cylinder and so positioned that it will cover or uncover the port Y and connect the port y and the chamber A² therewith. The stem of the piston-valve is continued or projects beyond the piston X', as indicated at s, into the bore of the adjusting-nut D, and between said nut and the piston X' is a spring S, coiled around said stem. The pressure of this spring is adjustable by means of the nut D, which works in the inside nut B in the end of the cylinder. The chamber A² is in communication with the triple-valve exhaust or brake-release port through the pipe X.

In operation the spring S is set at the desired tension, according to the pressure in the auxiliary reservoir, so that when said pressure is below the normal the spring will force the piston-valve to the position shown in Fig. 3, where the exhaust-port Y is cut off from the chamber A² and pipe X, and consequently the exhaust from the triple valve is prevented, whereby the brakes are held set until the auxiliary reservoir is recharged to the normal pressure. Then, said pressure passing into the chamber B', it forces the piston-valve to the position shown in Fig. 4, uncovering the port Y and allowing the exhaust from the triple valve to flow through the pipe X, chamber A², and ports y and Y. There is thus no exhaust from the triple valve until

the pressure in the auxiliary reservoir exceeds the tension of the spring S, which, as said before, is set at normal pressure—say sixty-five pounds.

- 5 The action of the bleed-cock is as follows: When the lever is pulled, it forces down and opens the valve *m*, the stem of which presses against the stem *a*² and opens in turn the valve *a'* or port *z*. This bleeds the auxiliary
10 reservoir and also through the port B² bleeds the chamber B', triple valve, and brake-cylinder, and thereby releases the brakes after all the air is drawn off. This is particularly serviceable in preparing cars for switching
15 when the air-brakes are not in use.

By the construction shown a combined retaining and bleed-valve is produced having manifest advantages of simplicity and effectiveness.

- 20 What I claim as new, and desire to secure by Letters Patent, is—

1. In an air-brake system, the combination with an automatic pressure-retaining valve connected to the auxiliary reservoir and the
25 triple-valve exhaust, of a bleed-valve controlling and in communication with the pressure-retaining valve and the auxiliary reservoir.

2. In an air-brake system, the combination
30 with a pressure-retaining valve receiving on opposite sides the pressure from the auxiliary reservoir and a spring, and controlling the triple-valve exhaust, of a bleed-valve controlling the exhaust from the auxiliary res-
35 ervoir, the pressure-retaining valve and the triple valve.

3. In an air-brake system, the combination with a pressure-retaining valve controlling the exhaust from the triple valve, of a bleed-
40 valve controlling the pressure-retaining valve.

4. In an air-brake system, the combination with the auxiliary reservoir and triple valve, of a bleed-valve controlling exhaust from the
45 reservoir and from the triple valve.

5. In an air-brake system, the combination with a pressure-retaining valve controlling the exhaust from the triple valve and controlled by the pressure in the auxiliary res-
ervoir, of a bleed-cock in communication with 50 the triple-valve exhaust, whereby said exhaust may be directly controlled.

6. In an air-brake system, the combination with an auxiliary reservoir, triple valve, and pressure-retaining valve, of a bleed-cock hav- 55 ing two valves, one of which controls the air escape from the auxiliary reservoir retaining-valve, and the other the air escape from the triple valve.

7. In an air-brake system, a combined pres- 60 sure-retaining and bleed valve, comprising a cylinder having an exhaust-port to the atmosphere, a spring-pressed piston-valve in the cylinder adapted to cover or uncover the port, a passage from the auxiliary reservoir 65 to one side of the piston, a passage from the triple-valve exhaust to the other side of the piston, a port connecting said passages, and a bleed-valve controlling said port.

8. In an air-brake system, the combination 70 with a triple valve, having two exhaust-vents, of an automatic pressure-retaining valve controlling one vent, and a bleed-cock controlling the other.

9. The combination with an auxiliary res- 75 ervoir and triple valve, of a cylinder having an atmospheric vent at one end, a passage at the other end to the auxiliary reservoir, and an intermediate passage to the triple-valve exhaust, a spring-pressed piston-valve slid- 80 able in the cylinder, controlling the atmospheric vent, a port between said passages, and a bleed-valve controlling said port.

In testimony whereof I have signed my name to this specification in the presence of 85 two subscribing witnesses.

FRANCIS P. SKEFFINGTON.

Witnesses:

HARRY C. PECK,
MAURICE P. WILKINS.