

No. 794,034.

PATENTED JULY 4, 1905.

J. H. MILLETT & F. A. HANNAH.

STEAM SAFETY VALVE.

APPLICATION FILED DEC. 19, 1904.

Fig. 1

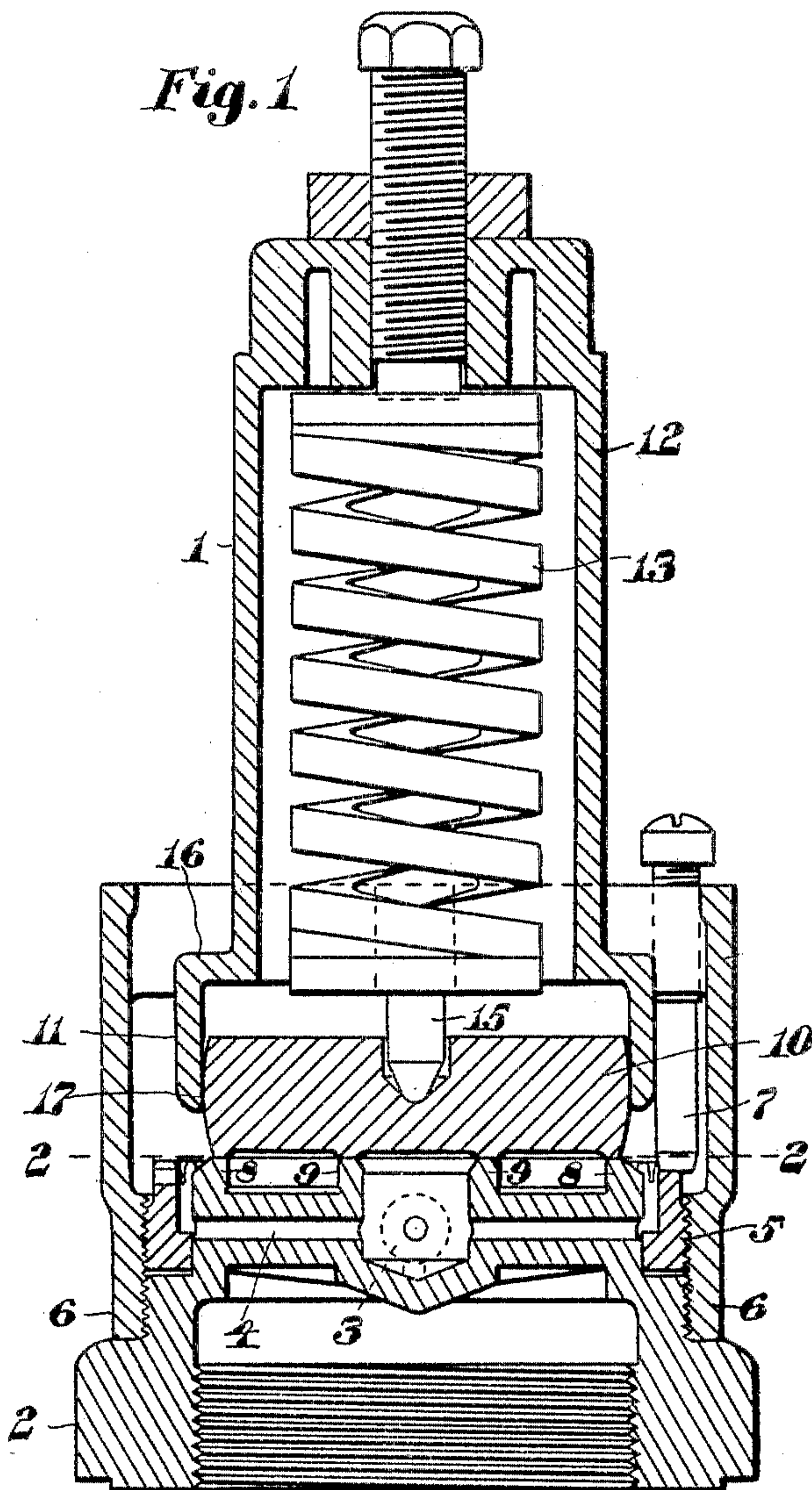
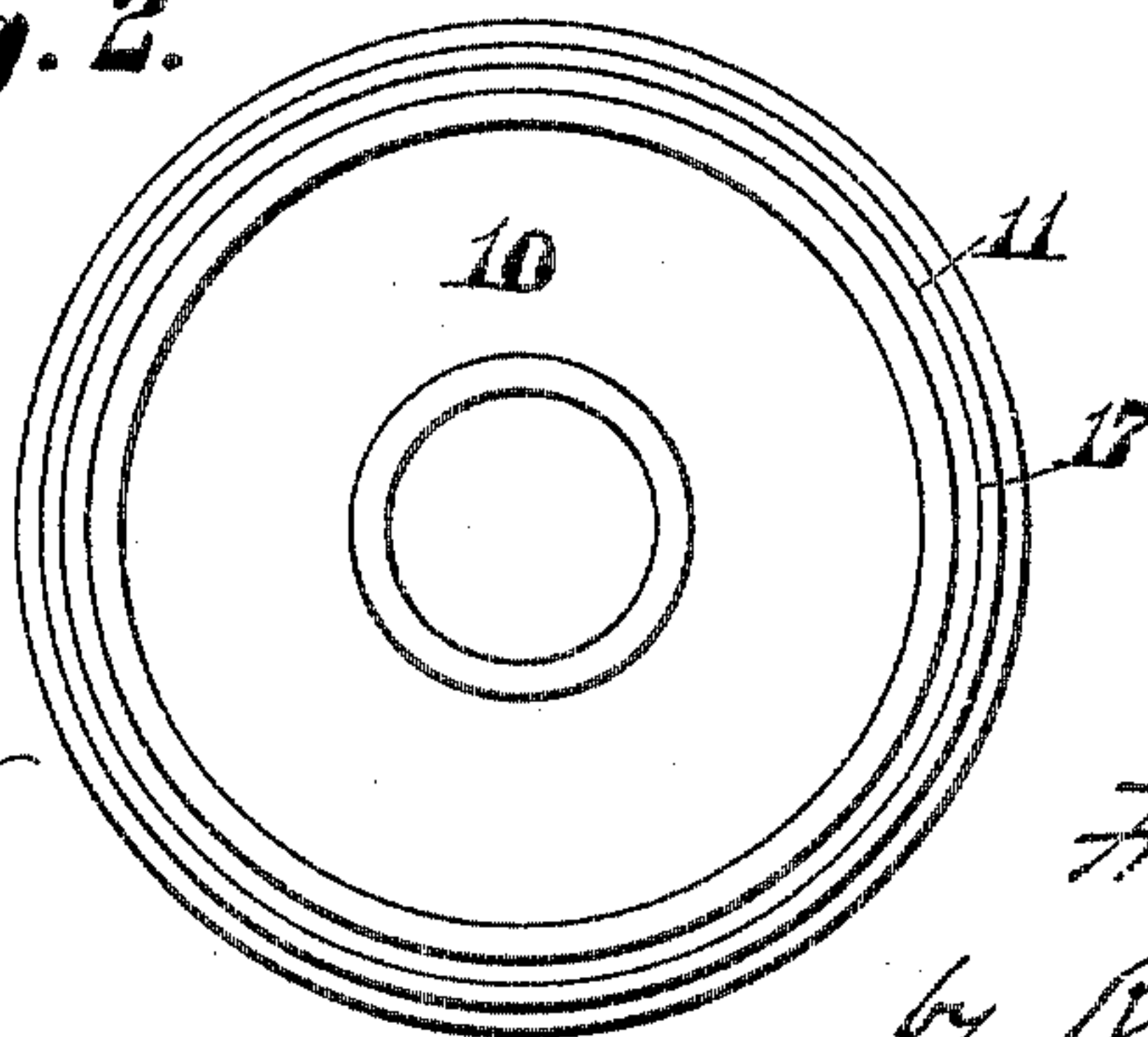


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSHUA H. MILLETT, OF MALDEN, AND FREDERICK A. HANNAH, OF MEDFORD, MASSACHUSETTS, ASSIGNORS TO CROSBY STEAM GAGE AND VALVE COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

STEAM SAFETY-VALVE.

SPECIFICATION forming part of Letters Patent No. 794,034, dated July 4, 1905.

Application filed December 19, 1904. Serial No. 237,365.

To all whom it may concern:

Be it known that we, JOSHUA H. MILLETT, residing at Malden, and FREDERICK A. HANNAH, residing at Medford, in the county of Middlesex and State of Massachusetts, citizens of the United States, have invented certain new and useful Improvements in Steam Safety-Valves, of which the following is a specification.

Our invention relates to steam safety-valves, and is an improvement upon the invention described in the application for Letters Patent filed by us June 29, 1904, and now pending, Serial No. 214,632.

The improvement consists in certain novel features of construction, arrangement, and combination of parts and is illustrated by the accompanying drawings, in which—

Figure 1 is a vertical central section of a valve embodying our improvement. Fig. 2 is a plan view on the line 2 2, Fig. 1.

1 is a valve furnished with the base 2, in which is located the pop-chamber 3, with its outlets 4 controlled by the ring 5 in threaded engagement with the valve-casing 6 and locked in place by the bolt 7. In the base 2 are located also the annular valve-seats 8 and 9, on which is seated the valve proper, which we call the "disk," 10. This disk constitutes the middle frustum of a sphere. The frustum of a sphere is any part of a sphere comprised between two parallel sections, and the middle frustum of a sphere is that frustum whose ends are equal circles. We extend the use of the term "middle frustum" to include a frustum composed of the adjoining parts of the two hemispheres, though these parts be not absolutely similar. This disk 10 we arrange in the cylinder 11, which forms a guideway therefor and which is projected from or forms the lower portion of the spring-chamber 12, which surrounds the spring 13 and is fixed to or preferably cast with the valve-casing 6. The disk 10 is held to its seat by the spring 13 and pintle 15, arranged between said spring and disk.

The disk 10, having spherical sides, as de-

scribed, can rotate, but cannot wobble, tilt, cock, or bind. It is always in circumferential linear contact with the cylinder in a plane 17 parallel to that of the valve-base. The cylinder 11 is preferably made of larger diameter than the spring-chamber 12, thereby forming an annular flange 16, which limits the upward travel of the disk and preserves the contact described. The disk thus arranged and guided forms a movable bottom to the spring-chamber and prevents the steam from reaching said chamber and also from collecting above the disk itself and creating an undesirable back pressure.

In actual operation in a valve properly constructed a disk of the relative size shown in the drawings will never rotate enough to force it against the flange at the top of the guiding-cylinder.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a safety-valve the combination, with the valve-casing, spring and spring-chamber, of a disk constituting the middle frustum of a sphere and a guideway therefor in the form of a cylinder projected from said spring-chamber, said disk forming the bottom of said spring-chamber and being held to its seat by said spring; substantially as described.

2. In a safety-valve the combination, with the valve-casing, spring and spring-chamber, of a disk constituting the middle frustum of a sphere, said spring-chamber being extended to inclose said disk and form a guideway therefor, said disk forming the bottom of said spring-chamber and being held to its seat by said spring; substantially as described.

In testimony whereof we have hereto affixed our signatures in presence of two witnesses.

JOSHUA H. MILLETT.
FREDERICK A. HANNAH.

Witnesses:

EDWARD C. BATES,
RALPH W. FOSTER.