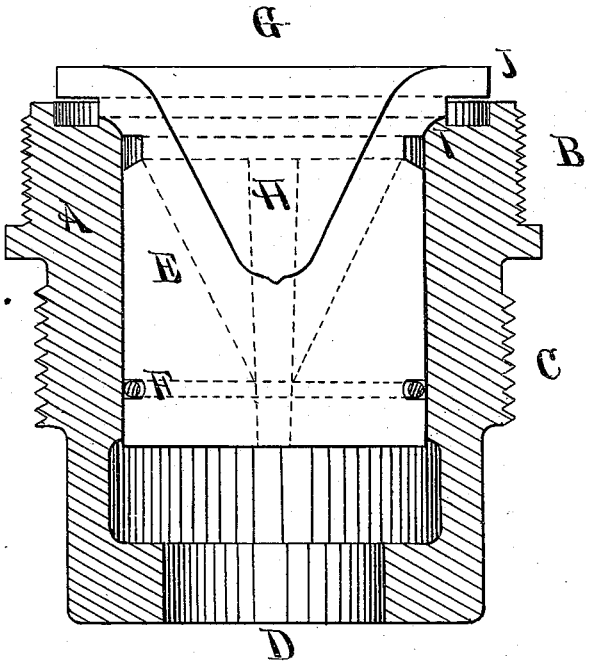
T. SHAW.

SAFETY-VALVE.

No. 193,558. Patented July 24, 1877.



WITNESSES:

Elias J. Shaw

Wm B Hughes

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UNITED STATES PATENT OFFICE.

THOMAS SHAW, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN SAFETY-VALVES.

Specification forming part of Letters Patent No. **193,558**, dated July 24, 1877; application filed July 3, 1877.

To all whom it may concern:

Be it known that I, THOMAS SHAW, of the city and county of Philadelphia, Pennsylvania, have invented a new and Improved Mode of Arresting, Vibrating, and Pounding Motion of Safety-Valves; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My invention consists in the application of slight frictional resistance to the valve, in the manner and for the purpose as hereinafter described.

The object of the invention is to prevent that disagreeable hammering sound that frequently occurs in the class of safety-valves known as "pop-valves."

In order to enable others to use and practice my invention, I will proceed to describe its construction and operation.

On reference to the accompanying drawing, which forms part of the specification, the sketch represents a vertical section through center of valve and valve-seat, &c., of which A is the main body of the valve provided with a screw-thread at C, for attachment to boiler, and with screw-thread at B for attachment to usual spring portion of valve-rigging. D is the central opening for the passage of steam to the valve proper G, which is constructed on the pop-valve principle, having the enlarged face J above the valve-seat I, and is provided with the usual guide-wings E and with the concave top H, for the reception of the cone or lower portion of the ordinary spring. (Not shown.) F is a groove, cut in wings E for the inserting of a wire ring arranged to spring against the walls of the body of the valve A with just enough force to create a slight but constant friction, which I have found sufficient to arrest all hammering or pounding action occasioned by the rapid vibrations of valve, which vibrations are induced by the rapid successive spurts of steam against the enlarged face area of pop-valves.

It will be evident that the spring-action of the wire insures a constant application of frictional resistance, however slight, and that this force may be variously applied to different portions of the valve without any alteration in the result. I therefore do not wish to confine myself to the exact shape or location of the resisting-spring medium for the purpose described; but

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

1. A safety-valve provided with a spring, substantially as described, whereby the hammering of the valve incident upon the escape of high-pressure steam is prevented.

2. In a safety-valve, a spring surrounding the guide-wings of the valve, as and for the purpose set forth.

3. A valve having its guide-wings recessed to receive a spring, as and for the purpose set forth.

4. The combination, in a safety-valve, of the casing A, valve G, having recesses in the guide-wings, and a spring placed within such recess, as and for the purpose set forth.

THOMAS SHAW.

Witnesses:

ELIAS J. SHAW,

WM. B. HUGHES.