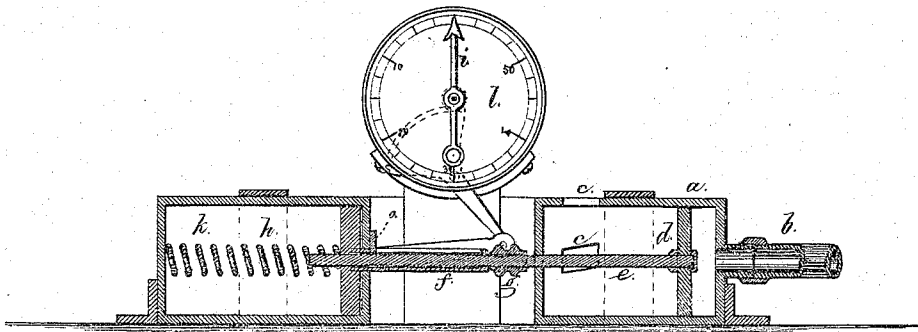


ROBERT P. STAATS.

Improvement in Safety-Valves for Boilers.

No. 127,198.

Patented May 28, 1872.



Witnesses,

Chas. H. Smith
Geo. T. Pritchney

Robert P. Staats
L. W. Serrell atty

UNITED STATES PATENT OFFICE.

ROBERT P. STAATS, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND
JOHN T. STAATS, OF SAME PLACE.

IMPROVEMENT IN SAFETY-VALVES FOR BOILERS.

Specification forming part of Letters Patent No. 127,198, dated May 28, 1872; antedated May 14, 1872.

To all whom it may concern:

Be it known that I, ROBERT P. STAATS, of the city and State of New York, have invented an Improvement in Safety-Valves for Boilers, &c., and the following is declared to be a correct description of the same.

This invention is for indicating the pressure of the steam as well as for opening an escape, and the parts are constructed so that the safety-valve can be varied to open at any desired pressure without changing the indication of the pressure, according to the actual force exerted upon the safety-valve.

I make use of a cylinder containing slots near one end, and within this is a moving piston, the rod of which extends to and is adjustably connected with a spring that resists the movement of the sliding piston, and the spring is connected with an indicator. By this construction the distance between the spring and the moving piston is changed when the safety-valve is adjusted, and hence the piston will have to move a greater or less distance before opening the slots to allow the steam to blow off, and in this manner the safety-valve will open at a greater or less pressure, and that pressure will be accurately indicated.

In the drawing I have shown, by a longitudinal section, the said invention.

The cylinder *a* is connected by a pipe at *b* with the boiler or other source of pressure. In this cylinder *a* are slots *c*; I prefer that these should be slightly diagonal to the length of the cylinder as represented, and around these slots a suitable case may be fitted to convey away the steam that is blown off. The piston *d* fits the cylinder *a*, and the rod *e*

passes into a tube, *f*, and a nut, *g*, serves to vary the distance between the end of the pipe *f* and the piston *d*, the rod *e* having upon it a screw-thread. The helical spring or springs *h*, within the case *k*, act as a power that resists the movement of the piston with an augmented force; hence the point at which the steam will blow off will vary according to the adjustment by the nut; for when a considerable movement, from a point of rest, is given to the piston *d*, before it reaches the slot *c*, the spring *h* will exert a larger resisting power, and the pressure will be greater than it will when the movement of the piston *d* is but short. The indicator *l* with its hand *i* denotes the power of the spring, the said hand *i* being moved by a sector and pinion actuated as the spring is compressed; or a wheel and cord may be employed for that purpose. The key *o* entering a groove in the tube *f* prevents the latter turning as the nut *g* is revolved to adjust the parts.

I claim as my invention—

1. The slotted cylinder *a*, piston *d*, and rod *e*, in combination with the tube *f*, nut *g*, and spring *h*, constructed and arranged substantially as set forth.

2. And in combination with the foregoing, the indicator *l* to denote the pressure, for the purposes and as set forth.

Signed by me this 30th day of September,
A. D. 1871.

ROBERT P. STAATS.

Witnesses:

GEO. P. PINCKNEY,
CHAS. H. SMITH.