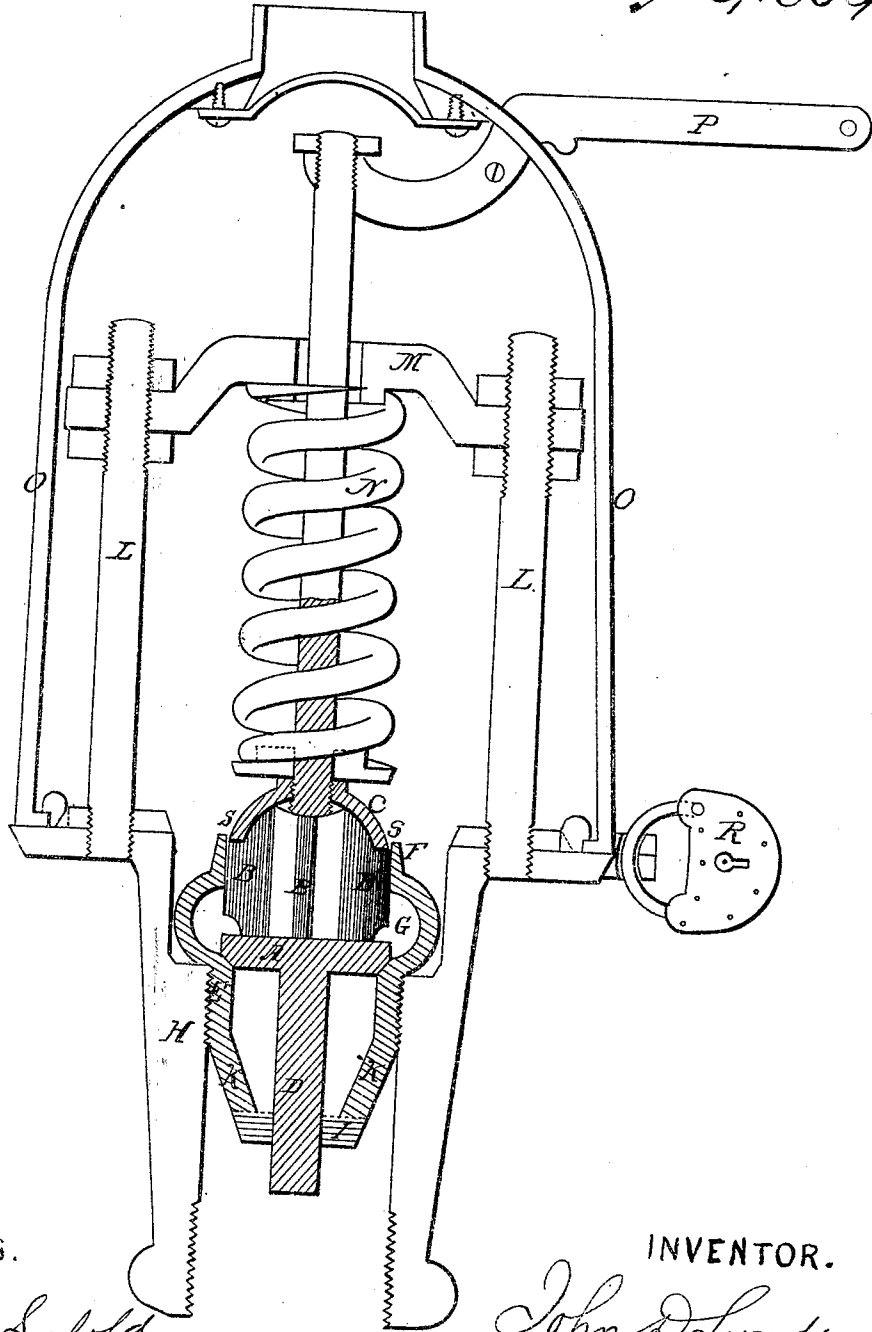


J. D. Lynde.

Steam Safety Valve.

No. 90,279. Patented May 18, 1869.



WITNESSES.

John H. Sebald
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INVENTOR.

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UNITED STATES PATENT OFFICE.

JOHN D. LYNDE, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN SAFETY-VALVES.

Specification forming part of Letters Patent No. 90,279, dated May 18, 1869.

Be it known that I, JOHN D. LYNDE, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Steam Safety-Valves; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification, in which the shaded portion is a longitudinal elevation of the subject of this invention, the lined part showing the necessary surroundings of the valve when in use.

A is a valve, having a guide-pin, D, below and guide-wings B B B above. C is a concave disk at a convenient distance above the valve, resting on the guide-wings and attached firmly thereto. E is the valve-seat, screwed into the holder H. The guide-nut I is suspended by the braces K K, leaving a clear passage for the steam to the valve. The top of the seat E is extended above the valve outwardly and upward, and then in again, so as to form the annular steam-passage G of a capacity sufficient to allow the steam to pass by the valve when raised in "blowing off," and also to form a chamber above the valve with vertical sides, against which the guide-wings may have a bearing. The rim F will be high enough so that when the valve is shut down the lower edge of the disk C will be a little, perhaps a sixteenth of an inch, below the upper edge of the rim. The diameter of the disk will be a little less than the guide-wings, so as not to touch the sides of the steam-chamber above the valve. By means of the bolts L L, cross-head M, and spring N the valve is held down to its seat.

O O is the cover, P the try-lever, and R the lock.

Thus it is a complete locked-up safety-valve, and cannot be tampered with without picking the lock or violating some of the parts.

The operation is as follows: When the pressure rises to the point at which the valve is set to "blow," the steam commences to pass out, first entering the annular passage G; then, being turned suddenly upward, it strikes against the disk C with great force and velocity, carrying it upward, thus opening the valve wider, also overcoming the increased compression of the spring. The steam then blows off rapidly until the pressure falls enough so that the spring can overcome the force against disk C, (which, so far as tried, is about two pounds,) when the valve will be suddenly closed.

The object is to overcome the increased compression of the spring as the valve rises, which is done by the velocity of the escaping steam, as above described.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The valve A, with its concave disk C, ribs B, and guide-pin D, constructed and combined substantially as herein set forth.

2. The disk C, combined with the valve A, annular passage G, and rim F, substantially as herein described.

3. The combination and arrangement of the valve A, disk C, ribs B, guide-pin D, guide-nut I, valve-seat E, braces K, holder H, annular passage G, rim F, spring N, bolts L, cross-head M, lever P, and cover O, substantially as herein made known.

JOHN D. LYNDE.

Witnesses:

JOHN H. SEBOLD,
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