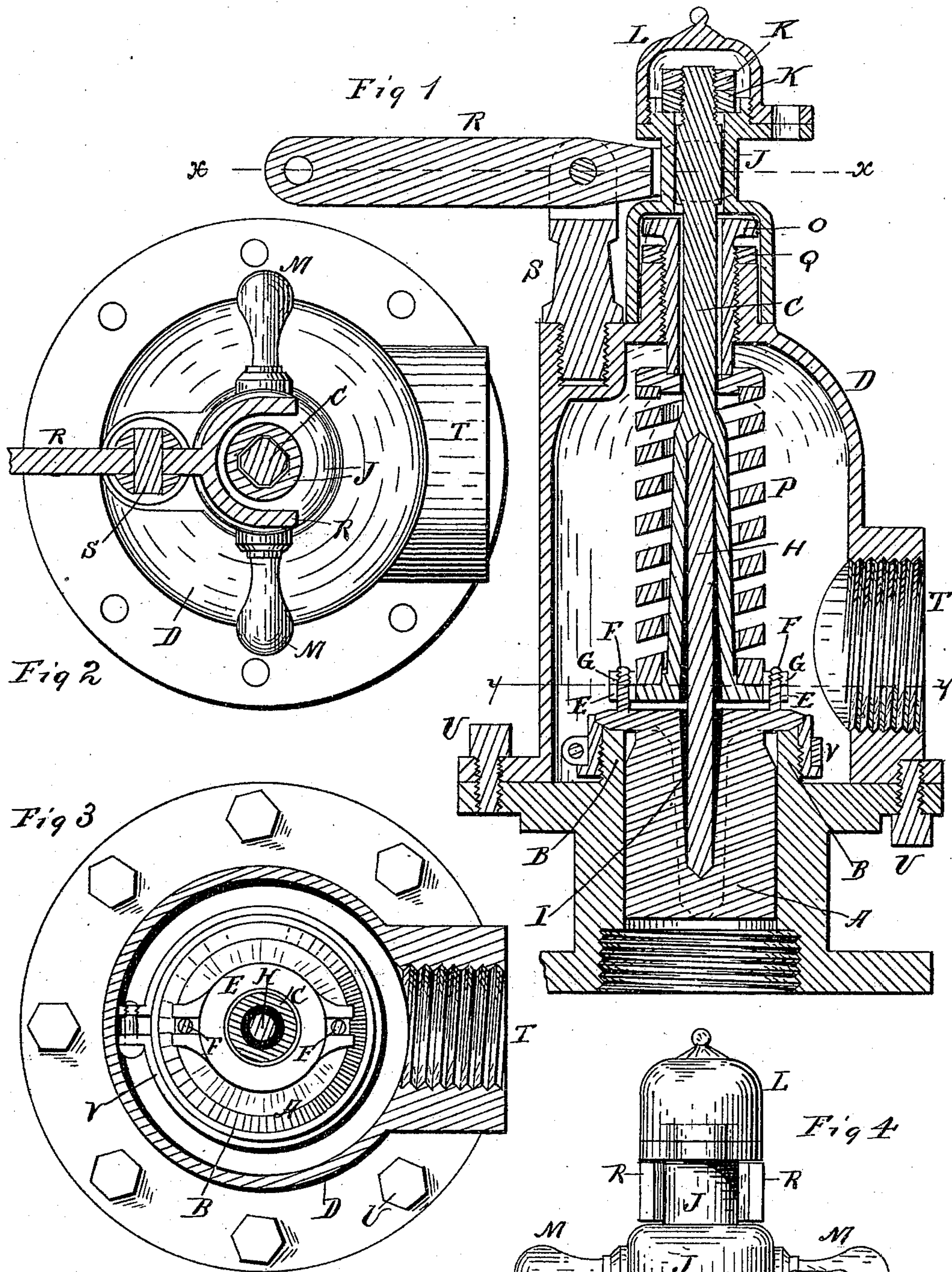


(No Model.)

A. ORME.
SAFETY VALVE.

No. 286,148.

Patented Oct. 2, 1883.



Witnesses
N. C. Corlies
A. M. Put.

Inventor
Alexander Orme
By Robert T. Thacher
Attorneys

UNITED STATES PATENT OFFICE.

ALEXANDER ORME, OF CHICAGO, ILLINOIS.

SAFETY-VALVE.

SPECIFICATION forming part of Letters Patent No. 286,148, dated October 2, 1883.

Application filed July 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER ORME, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Safety-Valves, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a vertical central section of my improved safety-valve; Fig. 2, a transverse section taken on the line *x x*, Fig. 1; Fig. 3, a transverse section taken on the line *y y*, Fig. 1; and Fig. 4, a side view of the detached portion of the top of my improved safety-valve.

The object of my invention is to make a safety-valve in which the valve can be turned on its seat, so as to displace any scales or other obstructions that may lodge on the valve-seat without opening the valve-case, and also raise the valve from its seat and allow the steam to escape without opening the valve-case, and to make an efficient, effective, and cheap safety-valve.

My invention consists in the mechanisms which hold the valve to its seat against the pressure of the steam in the boiler, and also in the mechanism, hereinafter explained, by means of which the valve is raised off its seat, thereby allowing the steam to escape from the boiler; also, in the mechanisms whereby I am enabled to turn the valve upon its seat from the outside of the main casing, and also in the arrangement of the parts employed for locking up the operative parts to prevent them from being reached or tampered with.

In the drawings, A is the valve; B, the valve-seat, which is attached to the steam-boiler in the ordinary manner.

C is a spindle, which projects through the upper end of the case D and is attached at its lower end to the valve A by means of its flange E, passing over the posts F, and is held down by means of nuts G, which screw upon said posts.

H is a socket spindle, the lower end of which fits loosely in the cavity I in the valve A, and the upper end fits also loosely in the cavity in the spindle C, which is clearly shown in Fig. 1 of the drawings. The socket-spindle makes the downward pressure between the spindle C

and the valve A to hold the valve down to its seat. This connection between the spindle C and valve A admits of the valve A being held firmly down to its seat regardless of the direction of accuracy of the fitting of the spindle C in its bearing at the top.

J is a cap, which fits over the top of the case D. The spindles C pass through the cap J, but in such a manner as not to turn therein, but turn with it.

K is a nut, and K' a lock-nut, which screws on the top of the spindle C, having a bearing in the cap J, as is clearly shown in Fig. 1 of the drawings. These nuts are covered by a cap, L, which may be locked in position.

M are handles secured to the cap J, by which it may be turned upon the case D and at the same time turn the valve-spindle C, and by means of its connection to the valve A through the posts or studs F to turn the valve A on its seat and remove any scale or other obstruction from said valve-seat without opening the case of the valve or taking it apart.

O is a screw-threaded piece, that is secured into the upper end of the case D, and carries a flange at its lower end, against which the coil-spring P rests. Q is a lock-nut on the upper end of this screw-threaded piece. The lower end of the coil-spring P rests upon the flange E on the spindle C. The spindle C passes loosely through the screw-threaded piece O, so that the downward pressure of the spring P holds the valve A down to its seat. The pressure of this spring can be regulated by means of a screw-threaded piece, O.

R is a lever, one end of which is connected to the cap J, and it has its fulcrum or bearing S supported on the case D. By means of this lever R the cap can be raised, and by means of the nuts K it will raise the spindle C, and through it the valve A will be raised from its seat, when the steam will escape from the boiler.

T is the ordinary opening in the side of the safety-valve, through which the blow-off steam escapes.

U are the bolts by which the case D is attached to the valve-seat part of the safety-valve, and V is the nut which passes over the valve-seat and forms a part of the same, which can be adjusted.

My safety-valve is cheap, simple, efficient,

readily adjusted, and the valve adjusts itself readily on the seat, and can be turned on the seat without opening the valve-case, and can be raised from the seat to allow the steam to
5 escape without opening the valve-case.

Having thus described my invention, what I claim as new, and wish to protect by Letters Patent, is—

1. The case D, in combination with the cap
10 J, the spindle C, and valve A, the cap J being connected with the case so as to turn thereon and turn the spindle C and valve A, substantially as and for the purpose specified.

2. The case D, in combination with the cap
15 J, nut K, spindle C, and valve A, and lever R

for raising the valve from its seat to blow off the steam in the boiler, as specified and shown.

3. The combination of the case D, cap J, and cap L, and the valve-spindle C, as and for the purposes specified.

4. The valve A, in combination with the continuous spindle C, extending through the spring and top of the case, the socket-spindle H, and the spring P, substantially as and for the purpose set forth.

ALEXANDER ORME.

Witnesses:

W. C. CORLIES,
M. J. HAMMILL.