

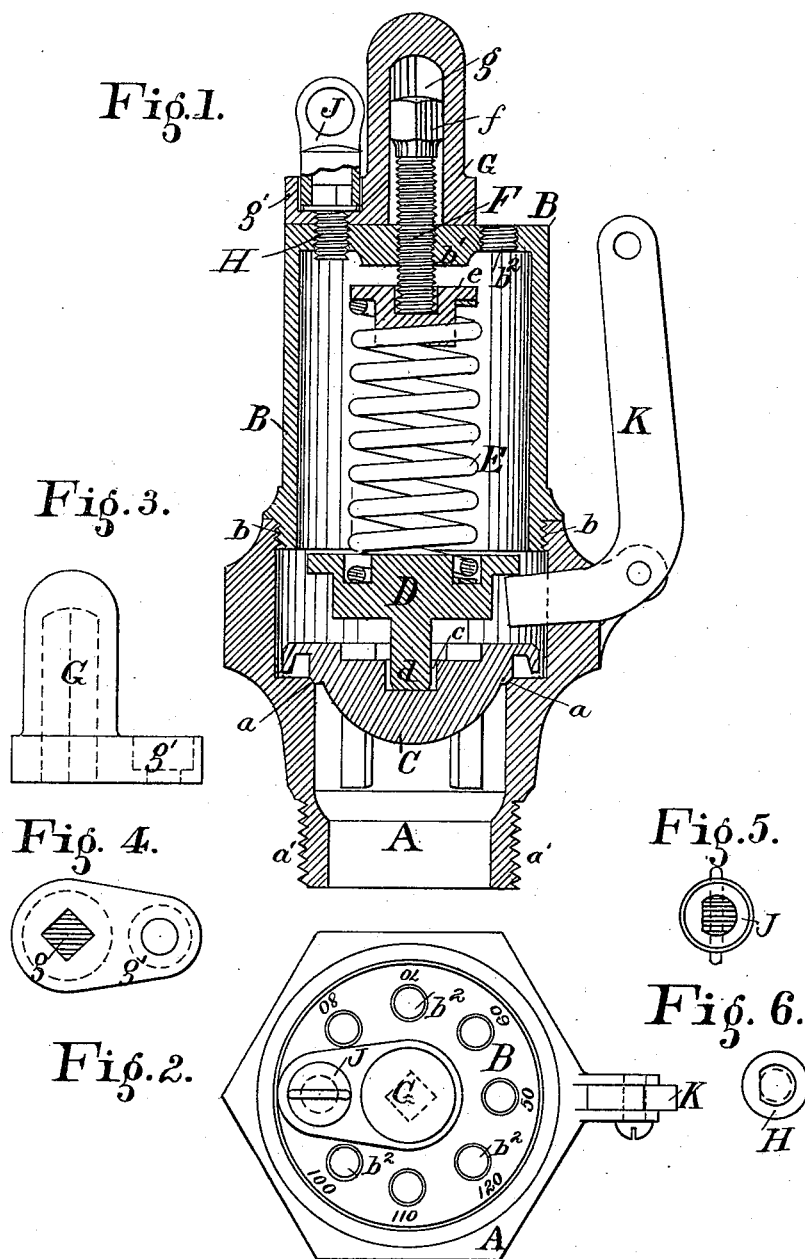
(No Model.)

E. LUNKENHEIMER.

SAFETY VALVE.

No. 304,271.

Patented Aug. 26, 1884.



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UNITED STATES PATENT OFFICE.

EDMUND LUNKENHEIMER, OF CINCINNATI, OHIO.

SAFETY-VALVE.

SPECIFICATION forming part of Letters Patent No. 304,271, dated August 26, 1884.

Application filed April 30, 1884. (No model.)

To all whom it may concern:

Be it known that I, EDMUND LUNKENHEIMER, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Safety-Valves, of which the following is a specification.

My invention relates to spring-loaded safety-valves in which the point of lifting or blowing off is regulated by the compression of (usually) a spiral spring placed above the valve-disk; and it consists of certain novel devices for the easy and quick adjustment of the "load" by increasing or diminishing the power of the spring, which devices are a permanent part of the valve, and also serve as a means of preventing a change in the load upon the valve, either by accident or design, all of which will be fully explained hereinafter.

In the accompanying drawings, Figure 1 is a sectional elevation of a safety-valve containing my improvement. Fig. 2 is a plan view of the valve shown in Fig. 1. Figs. 3 and 4 are an elevation and plan upon under side of the cap; Fig. 5, a plan of the under side of key, and Fig. 6 a plan of binding-screw.

Similar letters of reference indicate similar parts.

A is the base of the valve, containing the seat *a*, and provided with the screw-thread *a'*, for attachment to a suitable connection with a steam-boiler or other apparatus requiring a relief-valve.

B is the case of the valve, united to the base A by screw-thread, as shown at *b*.

C is the valve-disk, which may be, as shown, of the "pop" variety, provided with the counterbore *c*, to receive the pintle *d* of the spring-seat D.

E is the spring; *e*, a plug fitting the spring E, and bored centrally to receive the point of adjusting-screw F, which latter passes through the head of the case B, which is provided with a central screw-threaded perforation to receive the same.

G is a cylindrical cap, the central bore, *g*,

of which is square, to loosely fit over the square head *f* of screw F, and provided with an arm or wing, *g'*, drilled and counterbored to receive the binding-screw H.

Through the top of case B are drilled a series of holes, *b'*, which holes are concentric with axis of case, and are tapped to receive the threaded end of binding-screw H. The holes *b'* *b'* are, moreover, equidistant, and the movement of the arm or wing *g'* from one hole to the next represents some convenient increase or diminution of compression of spring E. By reference to the drawings it will be seen that the movement of the arm through any given arc produces a corresponding angular movement of cap G and adjusting-screw F, and if the spring E and thread of screw F are so constructed that the angular motion of arm *g'* from one hole to the next represents an increase or reduction of load of ten pounds then these holes, when suitably marked, become permanent indexes, by which the valve may be set, and when so set and secured by the binding-screw H no possible change in the load can occur, because the screw F is securely locked against rotation by the square recess in the cap G, and the cap G is prevented from turning by the arm *g'*. The head of screw H, which latter is shown in Fig. 6, is cut away on one side to correspond with the opening or socket of key J, as shown in Fig. 5, by means of which construction the binding-screw H cannot be conveniently removed, excepting the key J is used for this purpose.

All the parts excepting key J are permanently attached to the valve and always ready for use.

K is a lever for easing the valve on its seat.

It is obvious that any other form to the head of adjusting-screw F and of recess *g* in cap G which will prevent said screw from turning, excepting the cap G be first turned, will answer my purpose as well as the square form shown, the purpose being to fit the cap G to head of screw F in such a manner that the former will serve as a wrench to turn the lat-

ter, and as a lock to prevent it from turning when the cap has been made secure in any desired position.

Having described my invention, what I
5 claim is—

In a safety-valve, the combination, with the case B, provided with threaded holes b^2 b^2 , the spring E, and adjusting-screw F, of the cap G, provided with the recess g , which cor-
10 responds with the head of the adjusting-

screw, and provided with the arm g' and the binding-screw H, arranged and operating substantially as described.

In testimony whereof I have signed my name to the foregoing specification in the presence 15 of two subscribing witnesses.

EDMUND LUNKENHEIMER.

Witnesses:

JOHN W. HILL,
W. H. MILLER.