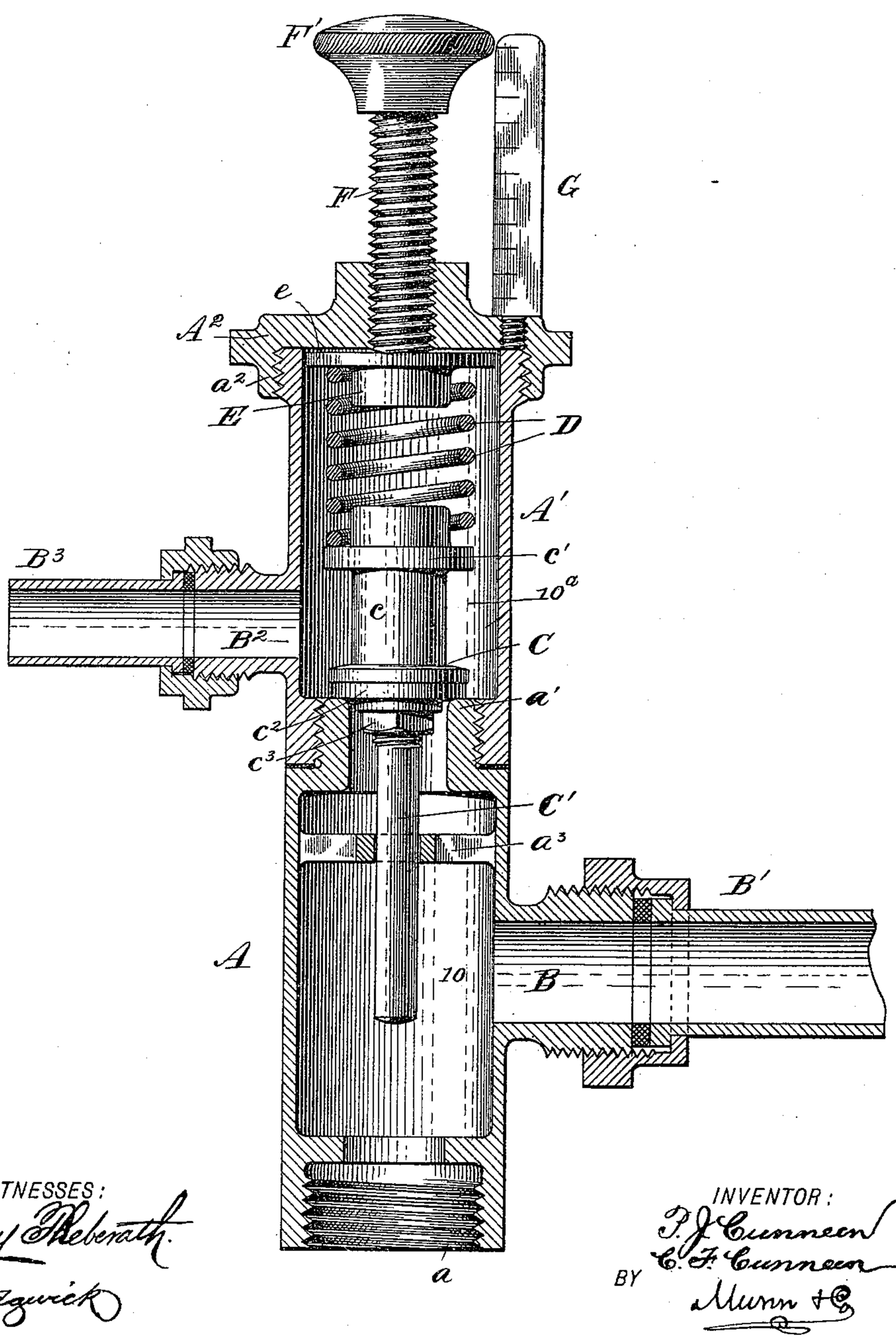
(No Model.)

P. J. & C. F. CUNNEEN.

SAFETY VALVE.

No. 438,471. Patented Oct. 14, 1890.



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SAFETY-VALVE.

SPECIFICATION forming part of Letters Patent No. 438,471, dated October 14, 1890.

Application filed May 7, 1890. Serial No. 350,897. (No model.)

To all whom it may concern:

Be it known that we, PETER J. CUNNEEN and CORNELIUS F. CUNNEEN, both of New Rochelle, in the county of Westchester and State of New York, have invented a new and Improved Safety-Valve for Kitchen-Boilers, of which the following is a full, clear, and exact description.

The object of the invention is to provide a safety-valve for kitchen-boilers, especially such boilers as receive their water-supply through a meter, in connection with which a check-valve is arranged between the boiler and meter, which prevents any undue pressure that may be developed in the boiler from expending its energy on the water in the main.

The invention consists in the novel form of valve hereinafter described and claimed, which is cheap and stable in construction and may be readily adjusted without special skill, and to the interior of which ready access may be had for examining or renewing its parts.

Reference is to be had to the accompanying drawing, forming part of this specification, in which the figure represents a vertical sectional elevation of a safety-valve embodying my invention.

The shell or case of the valve is formed in two sections A A′, having threaded connections, the lower member A of which is threaded at its lower end *a* for attachment to the boiler-spud and formed with a branch or outlet B, which in practice is connected by a suitable union with the hot-water-delivery pipe B′.

The upper member A′ of the shell is provided with an outlet or branch B^2, which in practice is connected by a suitable union with an auxiliary outlet-pipe B^3, which leads to a sink, trap, or other escape.

The upper reduced end of the member A forms a seat *a′*, on which is seated a valve C, that controls communication between the lower and upper chambers 10 10^a of the shell.

On the stem *c* of the valve C is formed an annular flange *c′*, which forms a seat for a spiral spring D, which tends normally to maintain the valve on its seat. The upper end of the spiral spring D abuts against the under side of the annular flange *e* of a plunger or follower E, against which follower pressure is exerted through the medium of a screw rod or stem F, which works in a threaded aperture in the cap A^2 of the shell and bears by its inner end on the upper side of the follower E. The cap A^2 is formed with an internally-threaded flange a^2, which engages the threaded upper end of the member A′ of the shell.

A knob F′, having a milled edge, serves to turn the stem F to exert the desired pressure on the valve C.

A gage-standard G is secured to or formed upon the cap A^2 and extends parallel with the screw-stem F in close proximity to the knob F′ thereof, which standard in practice bears graduations indicating the pressure exerted by the spring in the various positions of the stem F.

Below the valve-seat the shell is formed with a radial frame or guide a^3, through which passes a guide stem or extension C′, that projects downwardly from the valve C, whereby the valve will be guided in its movements.

A packing-ring c^2 is clamped against the under side of valve C by a nut c^3.

In operation should the pressure in the boiler exceed the predetermined pressure exerted on the valve through the medium of the screw-stem and spring the valve will be raised from its seat and the water will pass into the upper chamber 10^a and out through outlet B^2 and pipe B^3 until the normal pressure in the boiler is restored.

The two-part shell and the screw-cap permit ready access to the interior for examining and renewing any of the parts.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a safety-valve, the combination, with the shell formed in two parts A A′, each having a branch, the member A being formed with a valve-seat, of the screw-cap A^2, closing the end of the member A′, carrying the gage-standard G, the valve C, having the flange *c′*, the spring D, bearing at one end against said flange, the follower E, against which the other end of said spring abuts, and the screw-stem F, working in a threaded aperture in the screw-cap and bearing against the follower E,

the said screw-cap affording access to the interior of the shell without the removal of the branch outlets or their connections, substantially as described.

2. In a safety-valve for kitchen-boilers, the combination, with the shell comprising the two members connected by a threaded connection, the one having a valve-seat and each having a branch or outlet, of a valve having an annular flange on its stem, a spiral spring seated on said flange, a follower above said spring and having a flange against which the upper end of the spring abuts, a screw-cap on the upper member of the shell, a headed screw-stem working in said cap and bearing by its inner end against the said follower for exerting pressure on the spring, and a gage-standard extending from the screw-cap of the shell parallel with the screw-stem, or approximately so, and passing in close proximity to the head of said stem, substantially as described.

3. The combination, with a shell comprising the two members A A′, connected by a threaded connection, each having an outlet B B^2, the member A′ having a screw-cap A^2 and the member A having a reduced upper end that forms a valve-seat a', of a valve C, a spiral spring D, seated on said valve, a follower E at the opposite end of said spring, a screw-stem F, working in the cap A^2 and bearing by its inner end against the follower E for exerting pressure on the spring D, and a gage-standard G, projecting from the cap A^2 at one side of the screw-stem F, substantially as described.

4. In a safety-valve for kitchen-boilers, the combination, with the shell comprising the two members A A′, connected by a threaded connection, each having an outlet B′ B^2, the member A′ having a screw-cap A^2 and the member A having a valve-seat a', of a valve C, having a downwardly-extending guide-stem C′, that is guided in a radial guide-frame a^3 in the member A of the shell, a spiral spring D, seated on the annular flange c' of valve-stem c, the said valve-stem extending within the spring and centering its lower end, a follower E, extending within the upper end of the spring for centering the same and formed with a flange e, against which the spring abuts, a screw-stem F, working in the screw-cap A^2 and bearing by its inner end against the follower E and provided with a knob or head F′, and a gage-standard extending from the cap A^2 at one side of the stem F and passing in close proximity to the head F thereof, substantially as described.

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Witnesses:
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