

W. R. JENKINS, Jr.
Low-Water Alarm for Steam-Boilers.

No. 226,754.

Patented April 20, 1880.

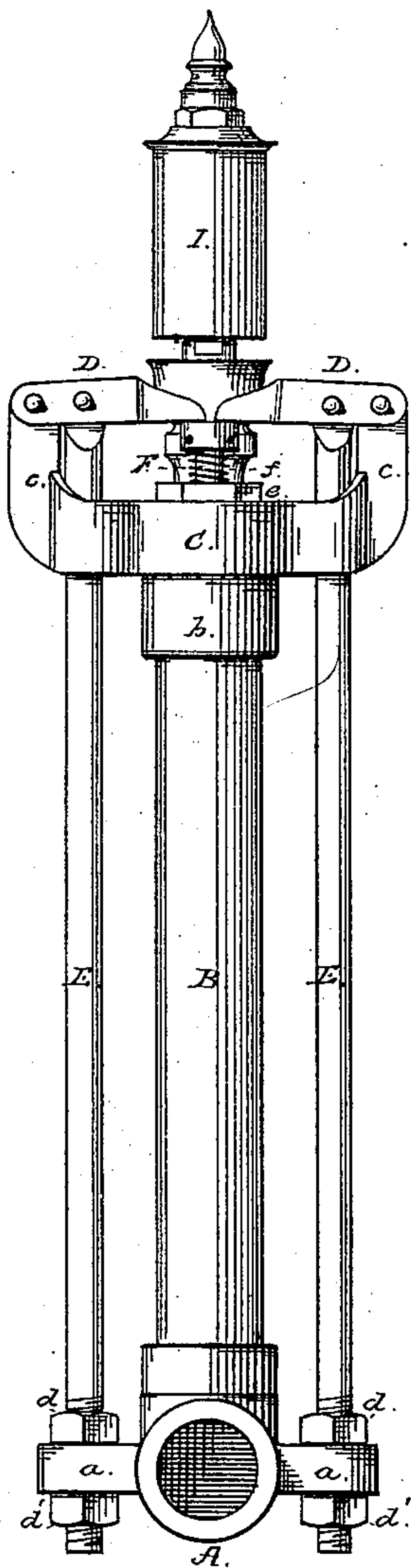


Fig. 1.

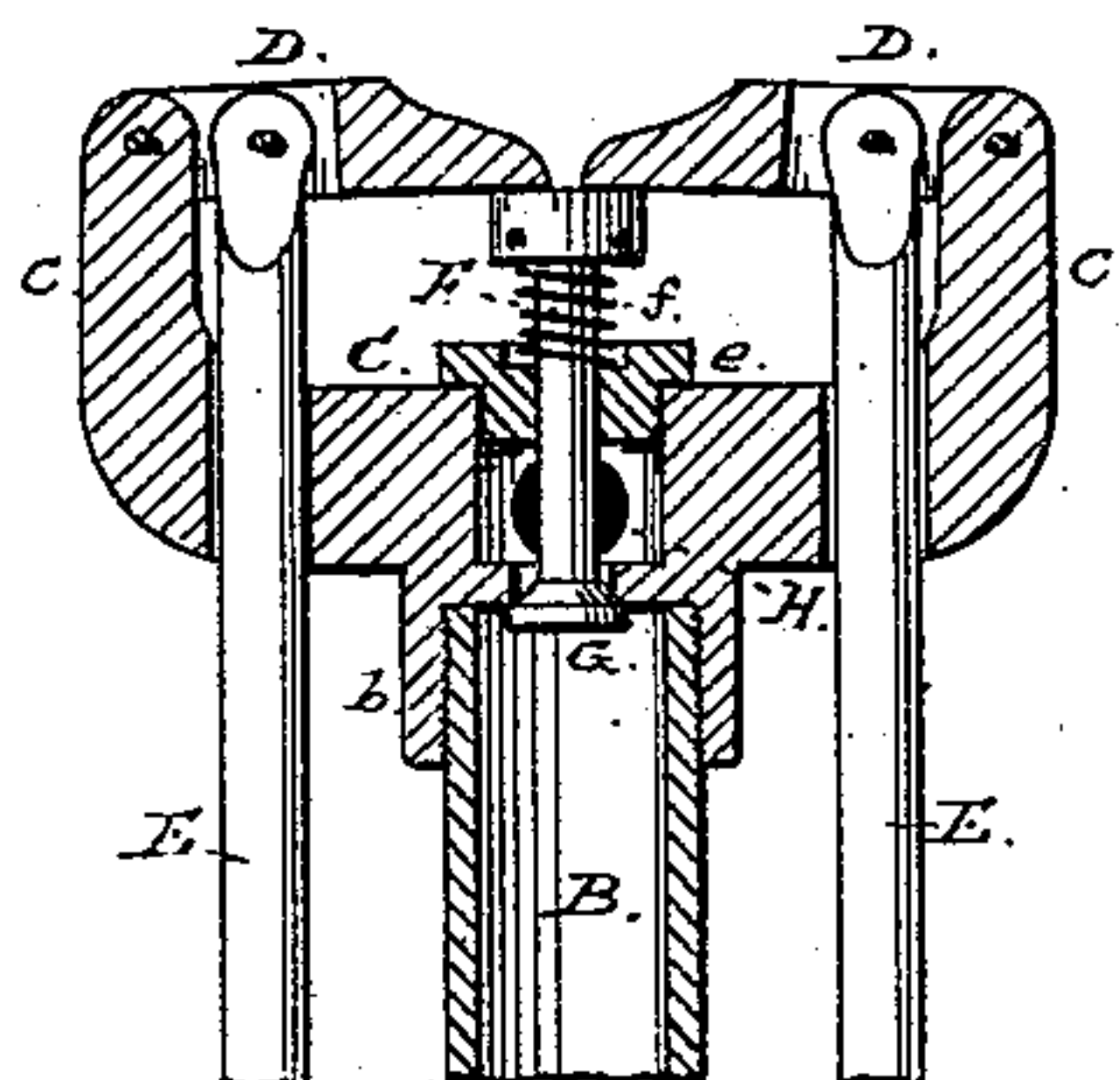


Fig. 2.

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UNITED STATES PATENT OFFICE.

WILLIAM R. JENKINS, JR., OF BELLEFONTE, PENNSYLVANIA.

LOW-WATER ALARM FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 226,754, dated April 20, 1880.

Application filed January 30, 1880.

To all whom it may concern:

Be it known that I, WILLIAM R. JENKINS, Jr., of Bellefonte, in the county of Centre and State of Pennsylvania, have invented a new and useful Improvement in Low-Water Alarms for Steam-Boilers; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object of my invention is the construction of a low-water alarm for steam-boilers in such a way as to make the same more effective and certain in operation, and at the same time simple and durable.

My invention therein consists in the new combination and arrangement of the various operative parts, all as more fully hereinafter explained.

In order that those skilled in the art may know how to construct my low-water alarm, I proceed to describe the same, having reference to the drawings, in which—

Figure 1 is an elevation of my device, and Fig. 2 a central vertical section of the upper part of the same.

Like letters denote similar parts in each figure.

In the drawings, A represents the bottom casting of the alarm, adapted to be connected with the boiler through the lower gage-cock hole. Upon this casting are wings *a a*, through which rods, hereinafter to be described, pass and are secured.

A composition tube, B, extends from the lower casting, A, to and within the yoke C. This yoke is a suitable casting, the lower portion, *b*, of which covers the upper portion of the tube B, and it has on each side of it wings *c c*, extending outwardly and upwardly. To the upper end of these wings *c c* are pivoted levers D, extending inwardly, each an equal distance, to a point almost of contact. These levers are again pivoted to rods E, which pass down through said wings *c c* and down through the wings *a a*, at which point they are secured in an adjustable manner by nuts *d d'*.

A valve-stem, F, passes down through a proper cap and stuffing-box, *e*, and through the center of the yoke C down to a chamber in the bottom of the yoke-casting, where it is connected with a suitable conical valve, G, which fits into proper seats.

The valve-stem before spoken of has proper means of adjustment and spiral spring *f* to hold it up to its work.

A steam-escape pipe, H, tapped into the collar, may have mounted upon it proper steam-whistle I.

If, now, this alarm is connected, as explained, with the boiler, when the water in the same is above the point of connection, the composition tube B is filled with water, which soon falls to a temperature of or a little in excess of the temperature of the surrounding air, and all the parts remain in the position shown in Fig. 2, with the valve G closed; but if water should fall in the boiler below the point of connection, steam rises in the tube B, which, in consequence of the heat imparted to it by the steam, expands, carrying with it the yoke C, and at the same time carries the valve-stem F toward the inner ends of levers D and forces up the short outer ends of the levers, so that their inner ends at the same time approach and press down the valve-stem F. By this movement of the yoke the outer ends of the levers D, being pivoted to the immovable rods E, are raised and the inner ends of said levers depressed quickly, and bearing down upon the valve-stem F depresses that, and with it the valve G. The steam then, escaping around this opened valve F, passes out through the escape-pipe H and into the steam-whistle I, giving the proper alarm.

The advantages of this low-water alarm consist, mainly, in its simplicity, facility of adjustment, and accuracy in operation.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a low-water alarm, the yoke C, constructed as described, and having in its connecting-collar a valve-seat, arranged substantially as and for the purpose set forth.

2. In a low-water alarm, the combination, with the yoke C, of the pipe B, rods E, levers D, valve-stem F, and valve G, when constructed and arranged to operate substantially as described and shown.

This specification signed and witnessed this 28th day of January, 1880.

WILLIAM R. JENKINS, JR.

Witnesses:

J. H. SINGLE,
ROBERT COLE.