

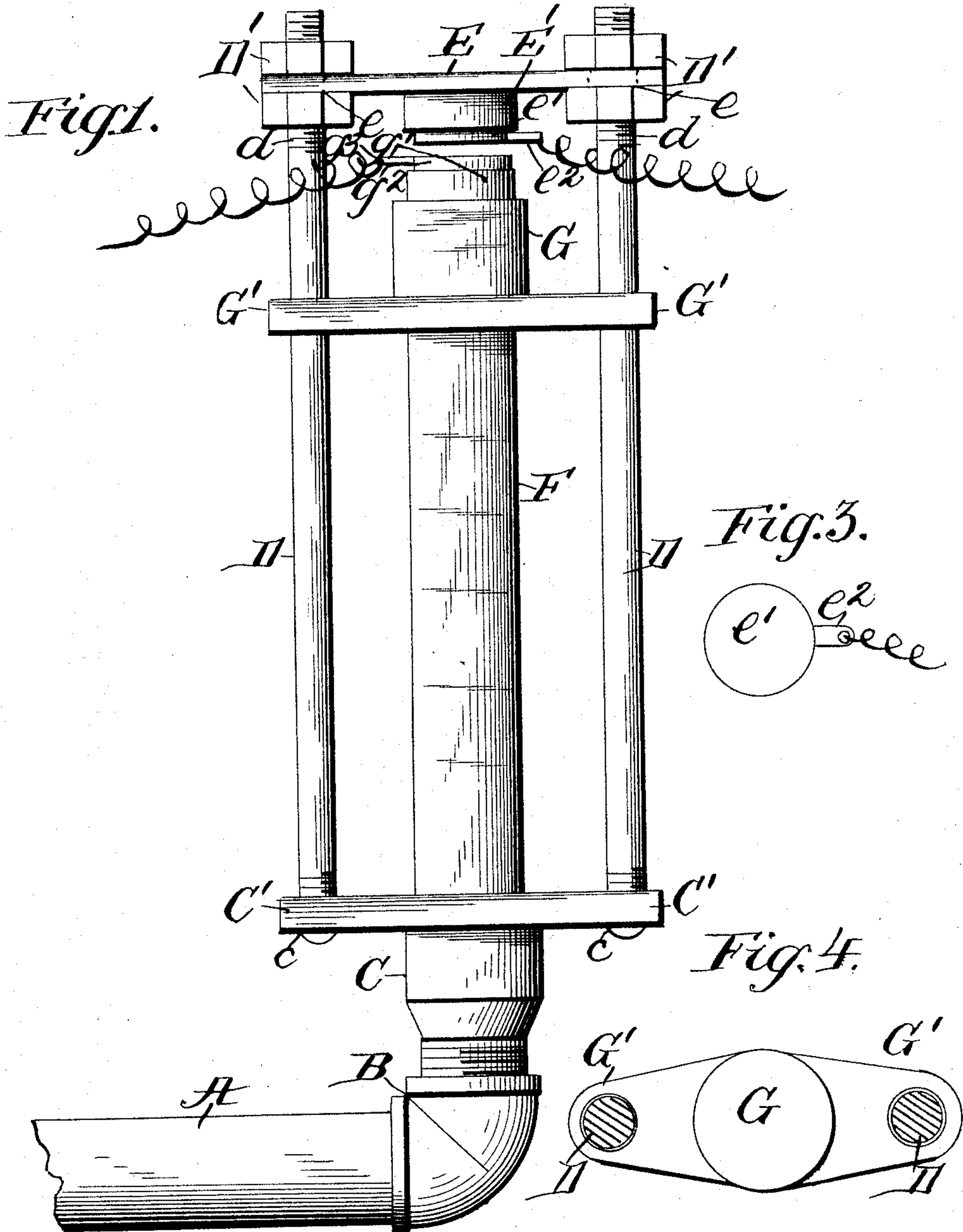
(No Model.)

2 Sheets—Sheet 1.

O. G. GUSS.
LOW WATER BOILER ALARM.

No. 428,482.

Patented May 20, 1890.



Witnesses

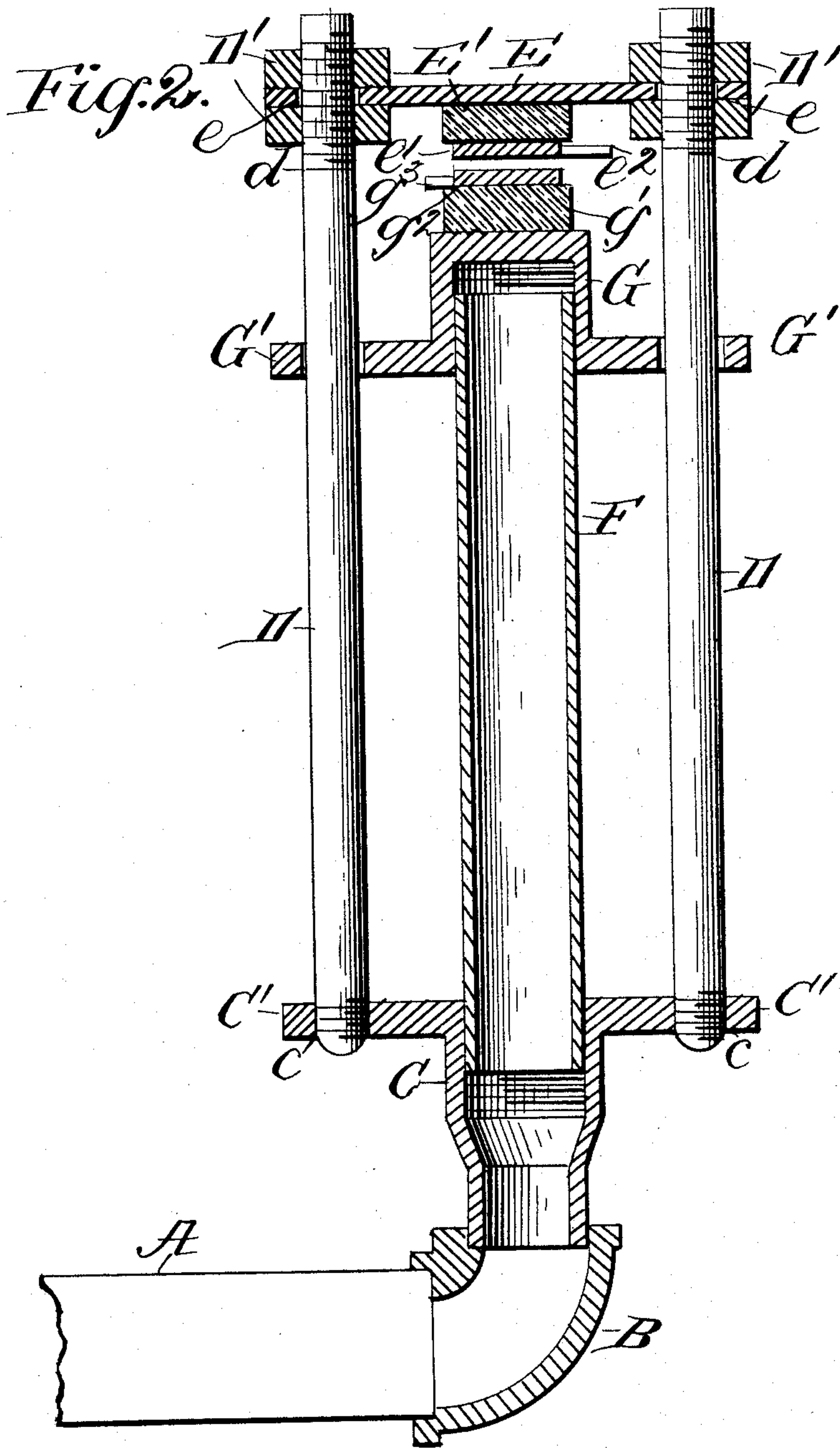
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LOW WATER BOILER ALARM.

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UNITED STATES PATENT OFFICE.

ORRANGE G. GUSS, OF LIMA, OHIO.

LOW-WATER BOILER ALARM.

SPECIFICATION forming part of Letters Patent No. 428,482, dated May 20, 1890.

Application filed September 9, 1889. Serial No. 323,358. (No model.)

To all whom it may concern:

Be it known that I, ORRANGE G. GUSS, a citizen of the United States, residing at Lima, in the county of Allen and State of Ohio, have
5 invented certain new and useful Improvements in Electric Low-Water Alarms for Steam-Boilers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others
10 skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

15 My invention has for its object to provide a novel construction in electric low-water alarms for steam-boilers; and the nature thereof consists in a metallic tube of an expansive nature, securely supported from the
20 pipe-connections of the boiler, whereby when the tube expands or becomes lengthened by means of steam issuing therein causes an electric circuit to be completed by means of two metallic plates which are connected to
25 the two wires respectively leading from an electric alarm, and other details in the construction, as will be hereinafter more fully described.

30 In the accompanying drawings, in which corresponding parts are designated by similar letters, Figure 1 is a front elevation of my invention. Fig. 2 is a sectional view thereof, and Figs. 3 and 4 details thereof.

35 In the drawings, A represents the usual pipe-connections from the boiler, having an elbow B, which receives the screw-threaded piece C, having wings C'. These wings C' are provided with two holes *c*, which receive the supporting-rods D at their lower ends.

40 Upon the upper ends of the rods D are formed screw-threads *d* for receiving two nuts D' each, between which are securely held and made adjustable a spring-plate E, having holes *e* encircling the rods D.

45 To the under side of the plate E is secured a circular piece of insulating or non-conducting material E', and to this is fastened a copper plate *e'*, having a lip or lug *e*² for connecting one of the wires of an electric
50 alarm.

Supported between the two rods D and in connection with the steam-exhaust of the boiler is a metal tube F, the lower end of which is screwed in the part C. The upper
55 end of the tube F is provided with screw-

threads, which receive a screw-cap G, having wings G', and holes in their outer ends, which also receive the rods D, and which slide or move therefrom.

To the upper end or top of the cap G is also
60 secured a piece of insulating or non-conducting material *g'*, and to this is secured a copper plate *g*², having a lug or lip *g*³, to which is secured or fastened the other wire of the electric alarm circuit.

65 In the operation of my invention a common battery is used connected to the usual electric bell or alarm, the wires of which are connected, respectively, to the two copper plates.

70 In carrying out my invention it will be observed that it is intended thereby to ascertain when a fresh supply of water is necessary in the boiler, which can be known at any distance from the boiler. When the
75 boiler is full of water, it fills in the tube F to the cap G, and will be held in that position until the water is consumed or becomes low in the boiler, when the water runs out of the tube and steam takes its place, which causes
80 the metal tube to expand in length, causing the two plates *e'* and *g*² to come in contact, closing the circuit of electricity and introducing a current through an electric bell placed in any part of the building.

85 Having described the nature of my invention, what I claim, and desire to secure by Letters Patent, is—

In an electric low-water alarm for steam-boilers, the combination of the tube F, of
90 expansive metal, leading from the boiler, the cap G, screwed to the upper end of the said tube and provided with wings G', said wings having holes encircling the guide-rods D, the said cap G carrying the insulating material
95 *g'*, and copper plate *g*², having a lip *g*³, the spring-plate E, having holes *e* and carrying insulating material E', and copper plate *e'*, said plate provided with a lip *e*², the plate E being made adjustable by means of the nuts
100 D' working upon screw-threads *d* upon the upper ends of the rods D, substantially as herein described.

In testimony whereof I affix my signature in presence of two witnesses.

ORRANGE G. GUSS.

Witnesses:

C. VAN T. SMITH,
MARTIN L. BECKER.