

(No Model.)

C. D. TISDALE.

ELECTRICAL LOW WATER INDICATOR FOR BOILERS.

No. 539,559.

Patented May 21, 1895.

Fig. 1.

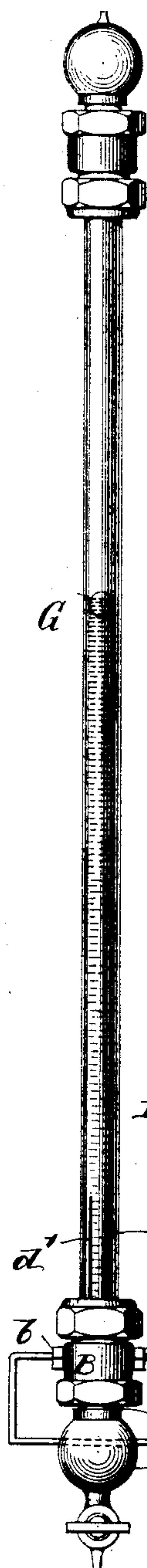
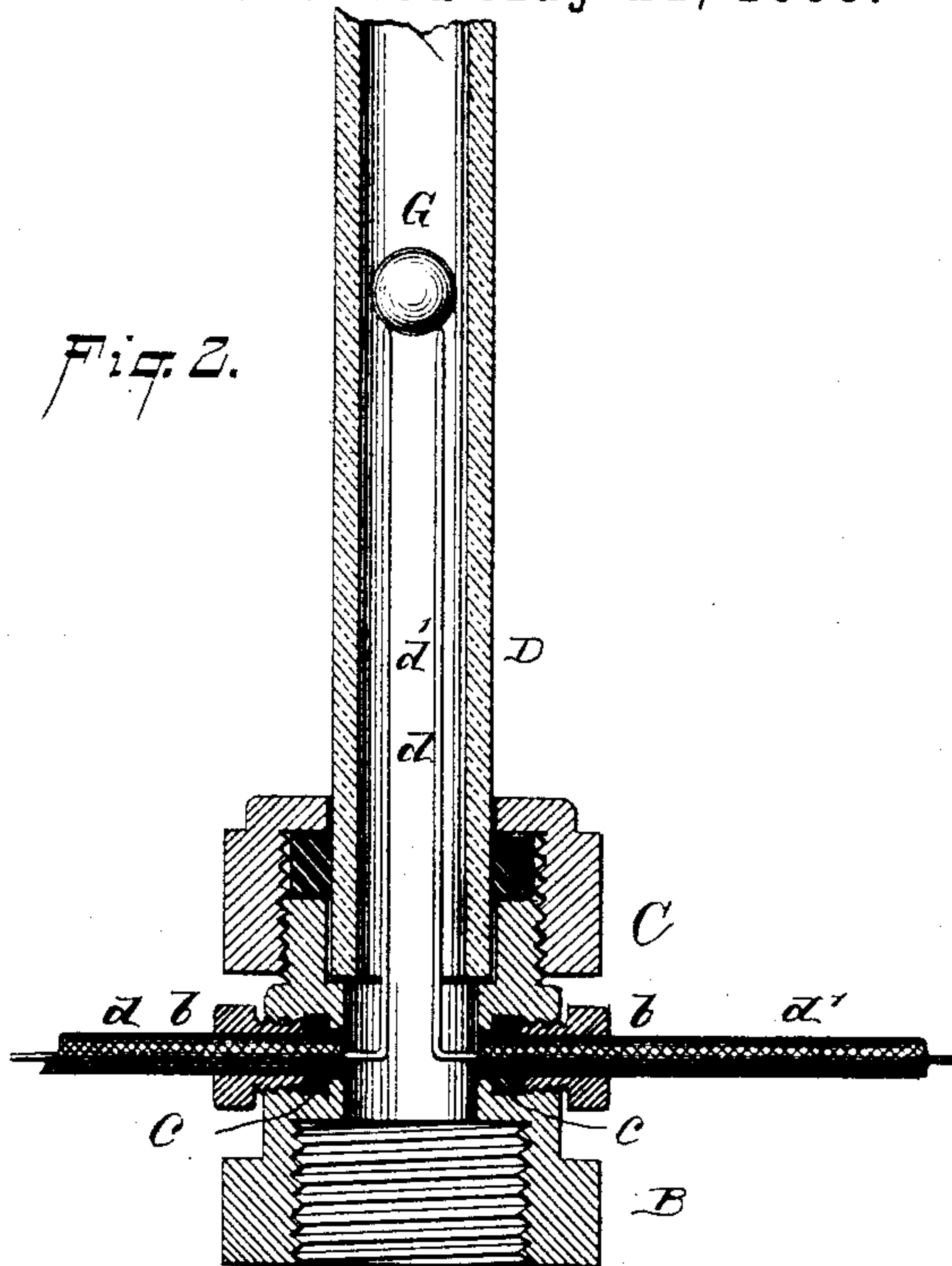


Fig. 2.



WITNESSES:

William Goebel.  
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INVENTOR

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# UNITED STATES PATENT OFFICE.

CHARLES D. TISDALE, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF THREE-FOURTHS TO JOHN D. GOULD, OF BROOKLYN, NEW YORK, AND CHARLES A. HANSON, OF ORANGE, NEW JERSEY.

## ELECTRICAL LOW-WATER INDICATOR FOR BOILERS.

SPECIFICATION forming part of Letters Patent No. 539,559, dated May 21, 1895.

Application filed April 19, 1894. Serial No. 508,142. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES D. TISDALE, of East Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Electrical Low-Water Indicator for Boilers, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a side elevation of my improved electrical low-water indicator for boilers, and Fig. 2 is an enlarged vertical transverse section.

Similar letters of reference indicate corresponding parts in both views.

The object of my invention is to provide a simple and effective low water indicator, which will give an alarm either in the boiler room or at any required distance from the boiler room, as for example, in a distant office.

My invention consists in the combination with a glass water gage, of an auxiliary connecting piece inserted between the lower end of the water gage and the water gage cock, the said intermediate piece being provided with contact wires extending up into the tube, and a float placed within the water gage tube, and capable of forming an electrical connection between the contact wires extending up into the tube, all as will be hereinafter more fully described.

The water-gage cock A, which is connected with the boiler, is furnished with the usual nipple *a*. On this nipple is screwed the intermediate connecting piece B, having a threaded upper end to which is fitted the centrally apertured screw cap C, the bore of which is adapted to receive the glass water gage tube D. In the sides of the intermediate piece B are formed glands *b*, which are provided with insulating bushings *c*, through which extend electric wires *d d'*, the inner

ends of which extend upwardly into the glass tube D, while the outer ends of the said wires are connected with the battery E and distant electric bell F. In the glass tube D is placed a hollow metallic float G, which is supported by the column of water in the tube when the water in the boiler is at its normal height. When the level of the water in the boiler falls below or approaches the limit of safety the float G descends, forming an electrical contact between the ends of the wires *d d'* within the glass tube, thus completing the electric circuit and causing the bell to ring, thus showing that the water is low in the boiler.

It will be observed that my improved low water indicator can be applied to a boiler by removing the glass water gage tube, and replacing it with a tube having the auxiliary connecting piece B, the tube with the attachments being constructed to replace the ordinary water gage tube.

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

In an electrical low water indicator for steam boilers, the combination of a glass tube connected with the boiler above and below the normal water level of the boiler, an auxiliary connector inserted between the lower boiler connection and the lower end of the glass tube, electrical conductors extending through the sides of the auxiliary connector, thence upwardly in the glass gage tube, a metal float having a convex surface and adapted to form an electrical connection between the electrical conductors, and an electrical generator and alarm device, substantially as specified.

CHARLES D. TISDALE.

Witnesses:

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