(No Model.)

E. H. ASHCROFT.

ELECTRICAL ALARM FOR STEAM BOILER CLEANERS.

No. 265,365. Patented Oct. 3, 1882.

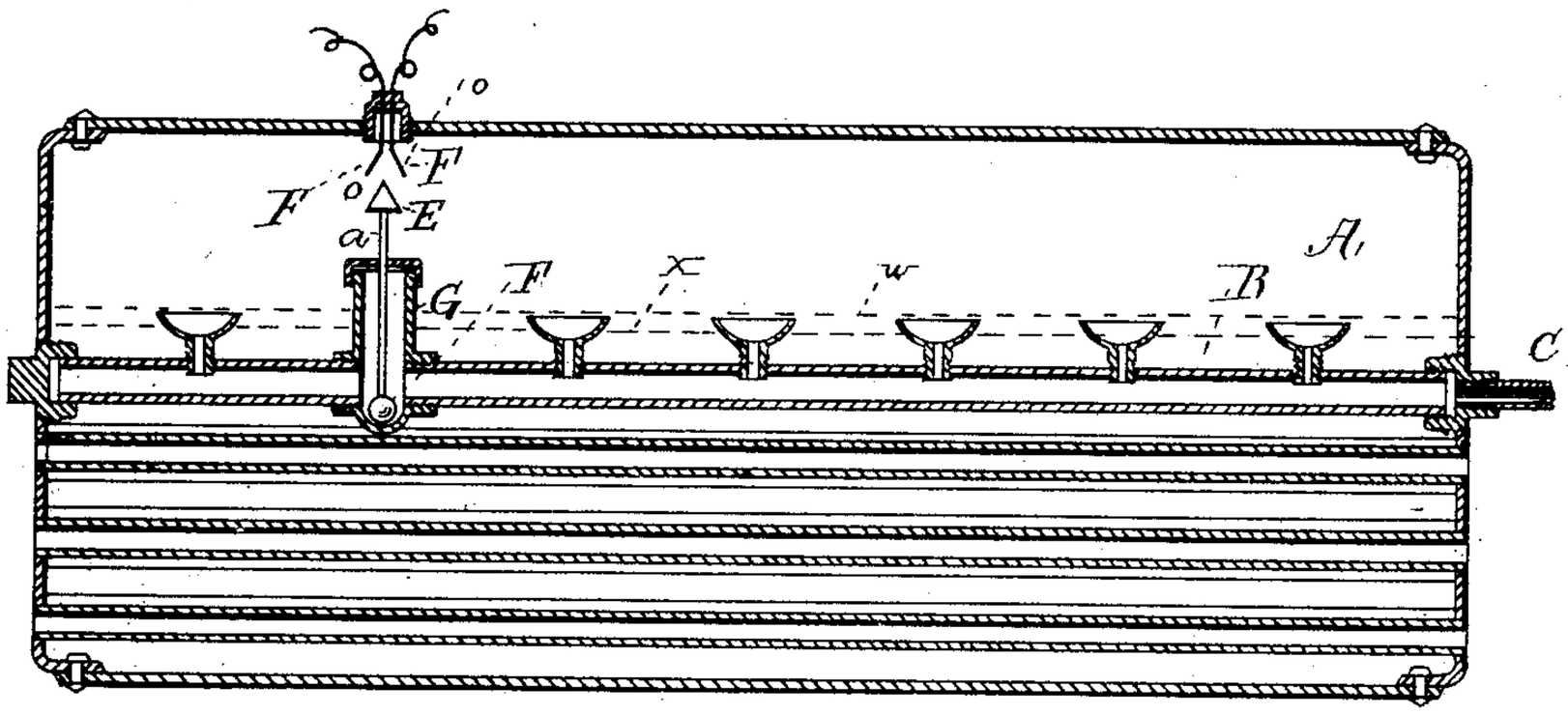

Fig. 1.

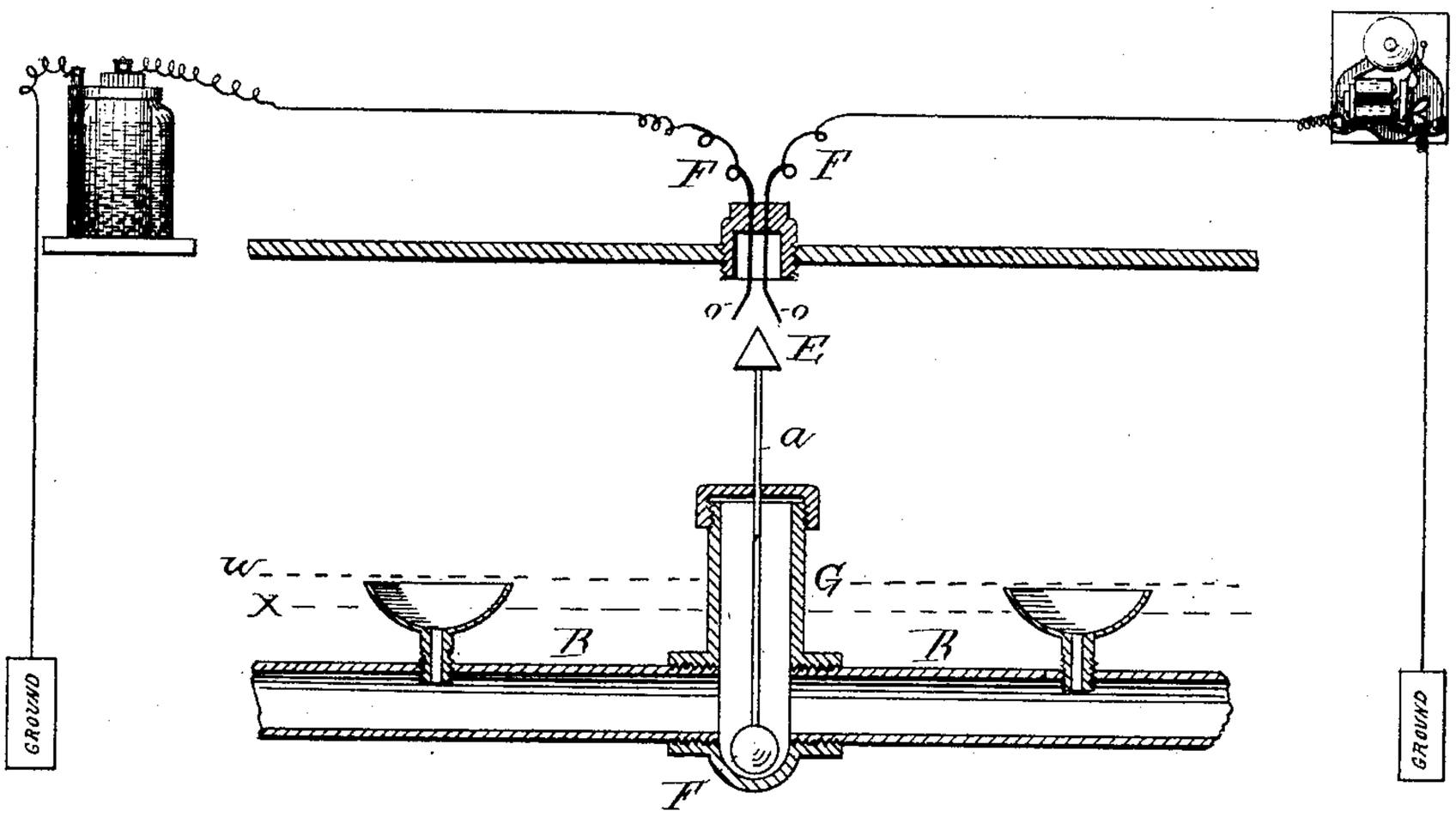

Fig. 2.

WITNESSES

Frank G. Parker.

Chas. Spaulding.

INVENTOR

Edward H. Ashcroft

UNITED STATES PATENT OFFICE.

EDWARD H. ASHCROFT, OF LYNN, MASSACHUSETTS.

ELECTRICAL ALARM FOR STEAM-BOILER CLEANERS.

SPECIFICATION forming part of Letters Patent No. 265,365, dated October 3, 1882.

Application filed June 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDWARD H. ASHCROFT, of Lynn, in the county of Essex, in the State of Massachusetts, a citizen of the United States, have invented a certain new and useful Improvement in Electric Alarms for Steam-Boiler Cleaners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature and operation.

This invention relates to that class of apparatus known as "steam-boiler cleaners," the object being to remove scum and earthy matter floating on the surface of the water in the boiler, and to prevent the formation of scale and incrustation on the boiler-plates and tubes of the boiler. It relates, also, to means whereby the owner of the boiler, or his manager, may have notice when the cleaner is in operation.

To this end my invention consists in locating in a boiler a series of receiving-cups, or a trough mounted upon a pipe preferably suspended horizontally lengthwise the boiler its entire length, said pipe being provided with a chamber of any approved shape or size and a float within said chamber, the float having a stem provided with a metallic point of good conductivity, this float, with its pointed stem or rod, being so arranged that when the water in the boiler rises to a certain level the metal point is brought into contact with electric conductors, whereby an electric circuit is completed and the alarm is sounded at any place desired.

The chief features of this device consist, in the first place, in the removing of the gross earthy matter or scum contained in or settling in the water, which, when used in boilers for making steam, becomes incrusted on the inside of them, thereby deteriorating the boiler-plates and rendering them ultimately dangerous for use.

It consists, secondly, in devices for automatically announcing or reporting the active operation of the device by causing the alarm to be sounded while the water in the boiler is at or above a certain height, at which the impurities or scum therein are being ejected therefrom through the cleaning or blow-off pipe or device.

To insure frequent and regular operation in blowing off the scum and to detect the non-use of the cleaner is the principal object of my invention.

The accompanying drawings show a longitudinal section of a boiler with my invention attached.

In Figure 1, A represents the boiler; B, the blow-off pipe, made in two sections, one end of each section entering the boiler-head, as shown in a former patent granted to me, No. 254,446, March 7, 1882, and the other end of each section entering a chamber, G, somewhat the contour of the body of a globe-valve. The chamber G extends above the water-line of the boiler and below the bottom of the pipe B. In chamber G, I place a float, F, to which are attached a stem, *a*, and point E. The top wall of the chamber is provided with an aperture, through which stem *a* projects, the stem being made to fit easily said aperture, which also serves as a guide to said stem. Through the shell of the boiler I make an opening in a line over the float-chamber, into which is secured steam-tight a hollow plug or cap provided with electric springs, insulated, which connect with electrical wires, also insulated. The wires of course connect with an electric battery. The electrical springs extend from the cap down into the boiler a sufficient length to allow the metal point to come in contact with them when the float rises, and thus an electrical circuit is formed which by certain means sounds an alarm, giving notice that the blow-off should be put in operation. Fig. 2 shows an enlarged detail of the apparatus.

Operation: The working water-level of the boiler is indicated in dotted lines *x* in the drawings, and the line of water-level *w*, at which the scum, &c., should be discharged through the cleaning apparatus, is also shown in the drawings by dotted lines. At certain hours of the day—say at 10 o'clock a. m.—the engineer is directed to use the blow-off valve connected with the apparatus, and previous to the time named, at which time the cleaner is to be operated daily, the line of water-level in the boiler is to be raised in the usual way from the working-level to the line of blow-off. When the water is raised to the line of blow-off above the cleaning-cups the float-chamber fills and the float rises, bringing the metal point in contact with the electrical

springs, through which the electric current is formed with the battery and the alarm is sounded. The blow-off should then commence and continue until the line of water in the boiler is reduced below the cups, when the float will fall to its seat in the chamber and the electric current will be broken, causing the alarm to cease sounding. Thus, if the alarm is not operated, either through neglect of the engineer or through the derangement of the apparatus in some of its parts, notice of non-operation will be made known where the alarm is located.

Having described my invention, I claim—

The combination of the blow-off device with an electro-magnetic bell or alarm apparatus, the pipe B, the chamber G, and the float with its pointed stem, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 27th day of May, 1882.

EDWARD H. ASHCROFT.

Witnesses:
GEORGE J. CARR,
WILLIAM F. NOONAN.