(No Model.)

C. H. MANNING.

DEVICE FOR CLEANING WATER LEGS OF BOILERS.

No. 332,266. Patented Dec. 15, 1885.

Fig. 1,

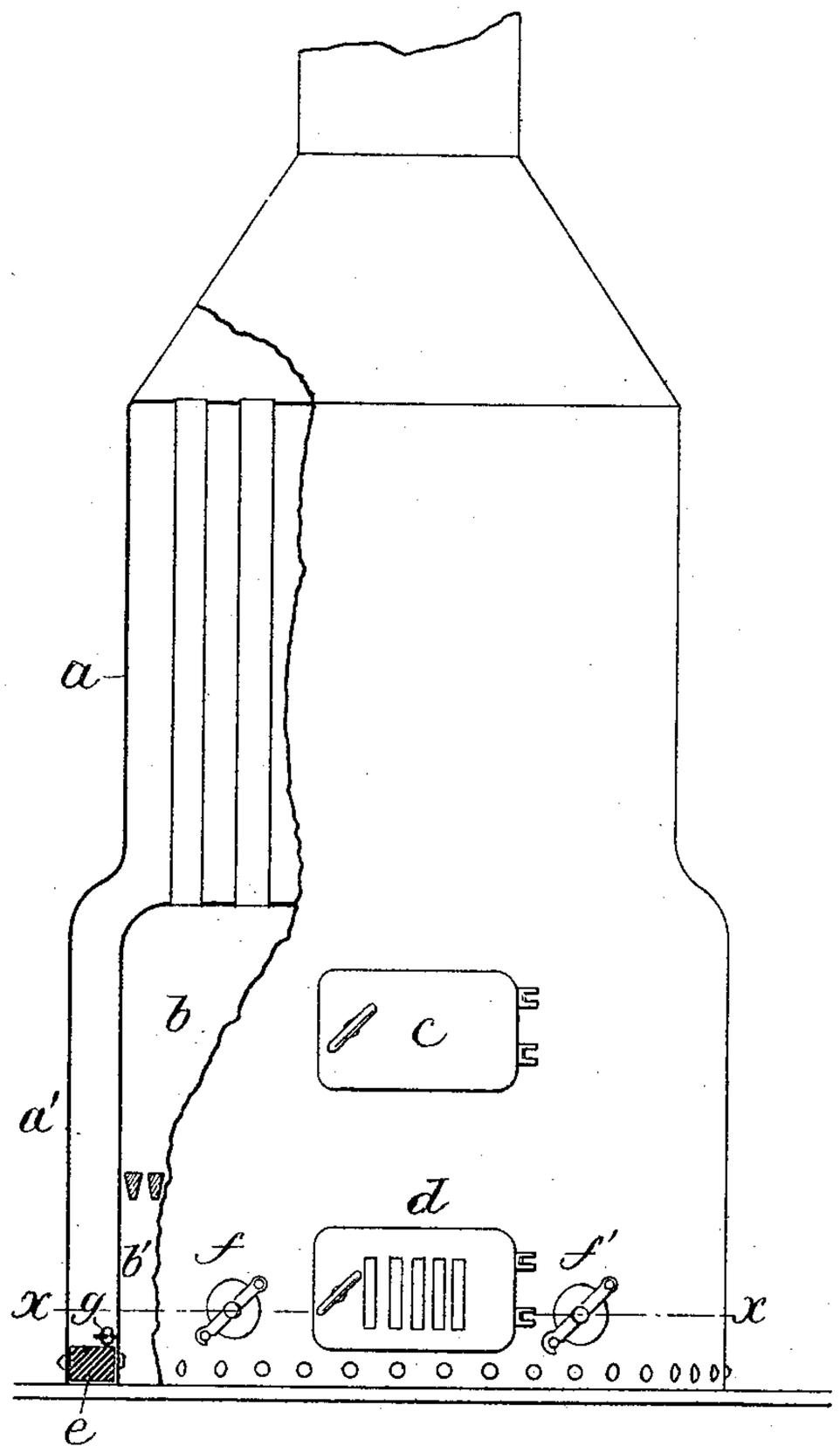
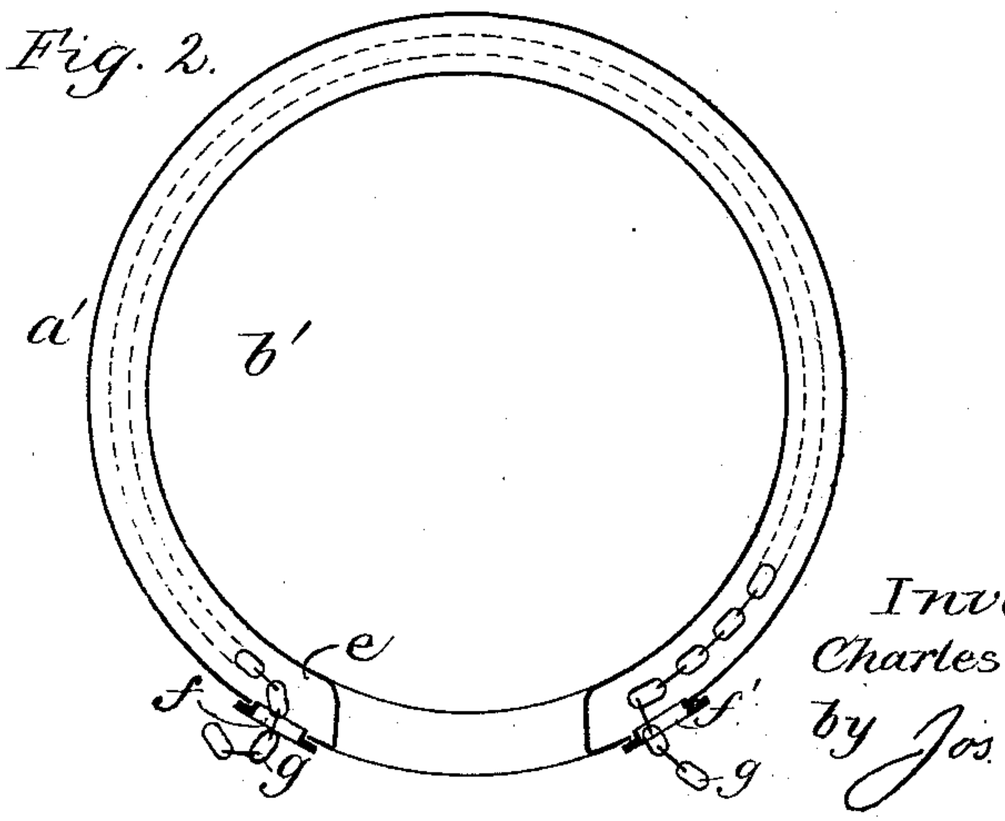


Fig. 2.



Witnesses,
J. J. Mahoney.
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Att'y

UNITED STATES PATENT OFFICE.

CHARLES HENRY MANNING, OF MANCHESTER, NEW HAMPSHIRE.

DEVICE FOR CLEANING WATER-LEGS OF BOILERS.

SPECIFICATION forming part of Letters Patent No. 332,266, dated December 15, 1885.

Application filed November 9, 1885. Serial No. 182,308. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. MANNING, of Manchester, county of Hillsborough, State of New Hampshire, have invented an Improvement in Devices for Cleaning Water Legs of Boilers, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention relates to a device for cleaning boilers, and is especially applicable to upright cylindrical boilers in which the fire-chamber is inclosed in an annular water-leg in which the water has but little circulation, and the sediment which consequently collects is very difficult to dislodge.

The invention is shown as applied to an upright cylindrical boiler, the lower portion of which forms a water-leg surrounding a fire-chamber and ash-pit being provided with doors entering the fire-chamber and ash-pit.

The invention consists in providing the boiler with a flexible cleaning device, which may be a piece of common chain or rope or chain provided with scrapers at intervals along its length, the said chain lying in the annular space at the bottom of the boiler, where the sediment collects, with its ends adjacent to hand-holes in the boiler, so that by removing the hand-plates the ends of the flexible cleaner may be drawn outside of the boiler. The said cleaning device exceeds in length by two or three feet the distance around the boiler between the hand-holes, so that a foot or more will project out through the hand-holes, and the operator may draw the cleaning device back and forth through the annular space, so that it will dislodge and stir up the sediment, which may then be readily washed out. When the boiler has been properly cleaned, the ends of the cleaning device are put back inside the boiler and the hand-plates fastened in place, the cleaning device always remaining in the boiler.

Figure 1 is a front elevation, partly in section, of a boiler provided with a cleaning device in accordance with this invention; Fig. 2, a horizontal section thereof on line *x x*.

The invention is shown as applied to an upright cylindrical boiler, *a*, the lower portion of which forms a water-leg, *a'*, surrounding the fire-chamber *b* and ash-pit *b'*, the said water-leg *a'* having openings for the usual doors, *c d*, entering the fire-chamber and ash-pit. The external and internal sheets of the lower part, *a'*, of the boiler are connected with an annular base-plate, *e*, forming the bottom of the boiler, and, as shown, in this instance the door *d* is down nearly to the level of the said base-plate *e*, and thus breaks the continuity of the annular water-space just above the said base-plate. The boiler is provided with hand-holes *f f'* at either side of the door *d* and just above the base-plate *e*, the said hand-holes being closed by the usual hand-plates; and the boiler contains a flexible cleaning device, *g*, extending wholly around the boiler from one hand-hole to the other, and being longer than the distance around the boiler between the hand-holes, so that when the latter are opened the ends of the cleaning device may be drawn some distance outside the boiler, as shown in Fig. 2. This cleaning device may consist of a piece of ordinary chain, or of chain provided with scrapers or buckets, such as used in chain-pumps of well-known construction, or any other strong flexible material, which, when moved back and forth with an endwise movement through the annular space, will dislodge and stir up the sediment so that it can be readily washed out by water flowing through the boiler. When the boiler is to be cleaned, the hand-plates are removed and the ends of the cleaning device drawn out through them, as shown in Fig. 2, and the operator then pulls first on one and then on the other end of the cleaning device, moving it lengthwise back and forth along the top of the base-plate *e*. If the door *d* were a sufficient distance above the base-plate to form a complete annulus of the water-space below, a single hand-hole would be sufficient, as both ends of the cleaning device might be drawn out through such hand-hole.

If the cleaning device has not been placed in the boiler in the process of construction, it may be subsequently inserted by threading a stout wire in at one hand-hole when it will be guided around by the outer sheet of the boiler so that its end may be reached at the other hand-hole and the chain or cleaning device

drawn by it into the boiler, where it will subsequently remain.

I claim—

A boiler provided with an opening and removable cover or plate therefor, and a flexible cleaning device contained within the boiler having its ends accessible through the said opening when the cover is removed, and of sufficient length to extend at both ends some distance outside the boiler, whereby it may be moved to and fro along the bottom of the boiler, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES HENRY MANNING.

Witnesses:
F. P. SHELDON,
GEO. F. HIGGINS.