

(No Model.)

2 Sheets—Sheet 1.

D. WAIGHT.
BOILER CLEANING DEVICE.

No. 544,144.

Patented Aug. 6, 1895.

Fig. 1

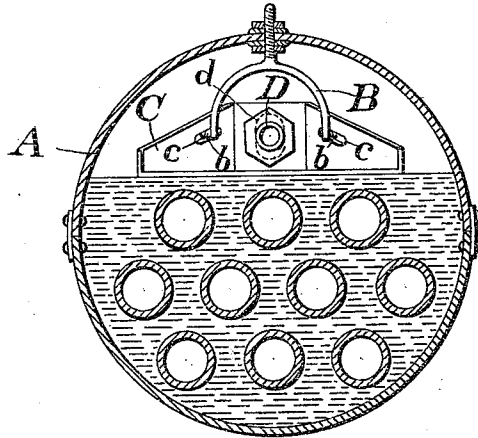


Fig. 2.

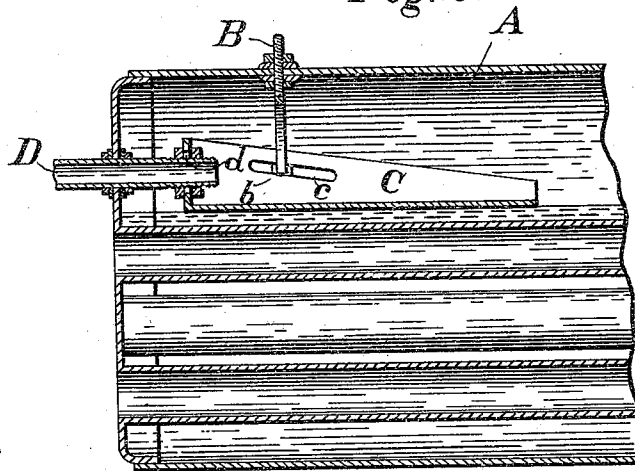
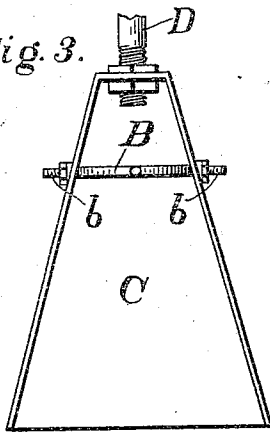


Fig. 3.



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2 Sheets—Sheet 2.

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Fig. 4.

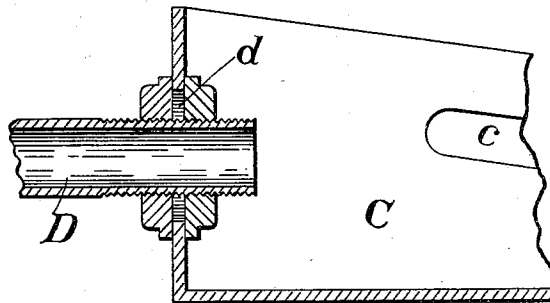
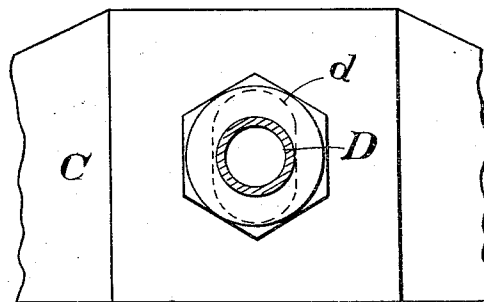


Fig. 5.



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UNITED STATES PATENT OFFICE.

DAVID WRIGHT, OF BEAVER FALLS, PENNSYLVANIA.

BOILER-CLEANING DEVICE.

SPECIFICATION forming part of Letters Patent No. 544,144, dated August 6, 1895.

Application filed October 23, 1894. Serial No. 526,743. (No model.)

To all whom it may concern:

Be it known that I, DAVID WRIGHT, a citizen of the United States, residing at Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Boiler-Cleaning Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others 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.

This invention relates to that class of boiler-cleaners in which a skimming-pan is placed within the boiler, just below the water-level, to catch the solid matter held in suspension or solution and conduct it to a settling-chamber; and the improvement consists in a particular manner of attaching or holding the said skimmer in place, so that its height within the boiler may be conveniently adjusted to the normal water-level, and also that it may not be injuriously shaken about or broken from its fastenings by agitation due to the foaming of the boiler.

In the accompanying drawings, wherein like letters represent like parts, Figure 1 is a front interior elevation of the boiler with the skimmer in place; Fig. 2, an interior section view, and Fig. 3 a detached top plan of the skimmer, the better to show its outline form. Fig. 4 is a vertical longitudinal section showing the vertical and the horizontal adjustability of the connection between the skimmer and the pipe to conduct turbid water out of the boiler; and Fig. 5, an elevation of the same with the pipe in section, showing particularly the vertical adjustability of the said connection.

A is the boiler; B, a yoke depending perpendicularly within the same from the shell of the boiler; C, the skimmer, and D the pipe in communication with the skimmer to conduct the turbid water out through the back wall of the boiler to the settling-chamber. The yoke is rigidly suspended from the shell of the boiler in any suitable manner that will permit said yoke to be raised or lowered within the boiler for purposes of adjustment—as, for instance, by screw-stem and nut outside the

shell, with washers or packing to keep the perforation through the boiler-shell steam-tight, as shown in the drawings. At the bottom it is bent outwardly into feet *b*, which engage and pass through the long inclined slots *c*, formed in the side walls of the skimmer. The extremities of these feet are screw-threaded, and when, by moving the skimmer to or fro upon the feet of the yoke the skimmer is properly adjusted to the water-level, ordinary nuts are screwed up tight upon the feet extremities, causing the wall to bear against the yoke, and the skimmer is thus fastened in place.

It will be seen from Fig. 1 that if the floor of the skimmer should be out of level the defect might be remedied by giving the yoke B a partial turn in its socket after loosening its feet from their screw-nuts, thus raising one side of the skimmer and depressing the other within the limits of the inclined slots in the skimmer sides till a level floor should be gained.

To permit of the adjustment just described the side walls of the skimmer form a regular incline from front to rear of the skimmer, so that they are higher at the rear than at the front. The plane of the skimmer is triangular, as customary with cleaners of this class. An orifice *d*, in the back wall of the skimmer, receives the mouth of the conduit-pipe which is to remove the impurities from the boiler. This connection between skimmer and conduit-pipe through said orifice is to be carried out in any suitable and familiar manner that will permit the skimmer to be moved forward or backward or raised or lowered in its adjustment to the water-level. As already indicated, this adjustment is mainly effected through moving the skimmer by means of its pair of long sloping slots upon the feet of the yoke, for, as will be seen from the drawings, the farther the skimmer is moved forward the lower it will descend to reach the water-level.

By referring to Fig. 2 it will readily be seen how the delivery-pipe may be fitted to the horizontal and vertical adjustments of the skimmer. In its passage through the boiler-shell and through the back wall of the skimmer the pipe is in each case held by a pair of oppositely-placed collar-nuts, arranged to bear toward each other from and against

the opposite surfaces of boiler-shell and skimmer-wall, and as these two pairs of collars are movable along the surface of the pipe it is evident that the pipe can advance or recede within the boiler or the skimmer, or both, and so be accommodated to the horizontal adjustment of the skimmer. As to its vertical adjustment to adapt it to a high or low water level in the boiler, the orifice in the back of the skimmer being vertically elongated to the comparatively slight extent needed to meet the habitually small difference between water-levels in the boiler, it follows that the delivery-pipe may be set nearer the top or the bottom of the orifice, as occasion may require, and all that part of the orifice not filled by the pipe will be closed by the clamping of the collar-nuts. The delivery-pipe and its connections with boiler or skimmer are no part of the invention. The adjustments of the skimmer are manual, not automatic, and are made within narrow space-limits, and the connecting of the delivery-pipe to the skimmer, so as not to interfere with the adjustability of the skimmer within its necessary limits, is a mere piece of ordinary work for a steam or

boiler fitter or a machinist. For these reasons it is not deemed necessary to more particularly describe or illustrate the delivery-pipe connections.

The operation of a boiler-skimmer of this kind is so well known to steam-engineers, firemen, and fitters that it need not be described.

I claim—

The combination of the yoke rigidly supported within and by a steam boiler, and having the pair of outwardly turned feet, with the triangular based skimmer having the inclined side walls and, in those walls, the inclined slots adapted to engage the feet of the yoke aforesaid; the said skimmer having also the orifice in its back wall in communication with the ordinary outlet pipe of such a cleaner, and the whole constructed and arranged as and for the purposes hereinbefore described.

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

DAVID WAIGHT.

Witnesses:

STEPHEN MINOR,
G. L. EBERHART.