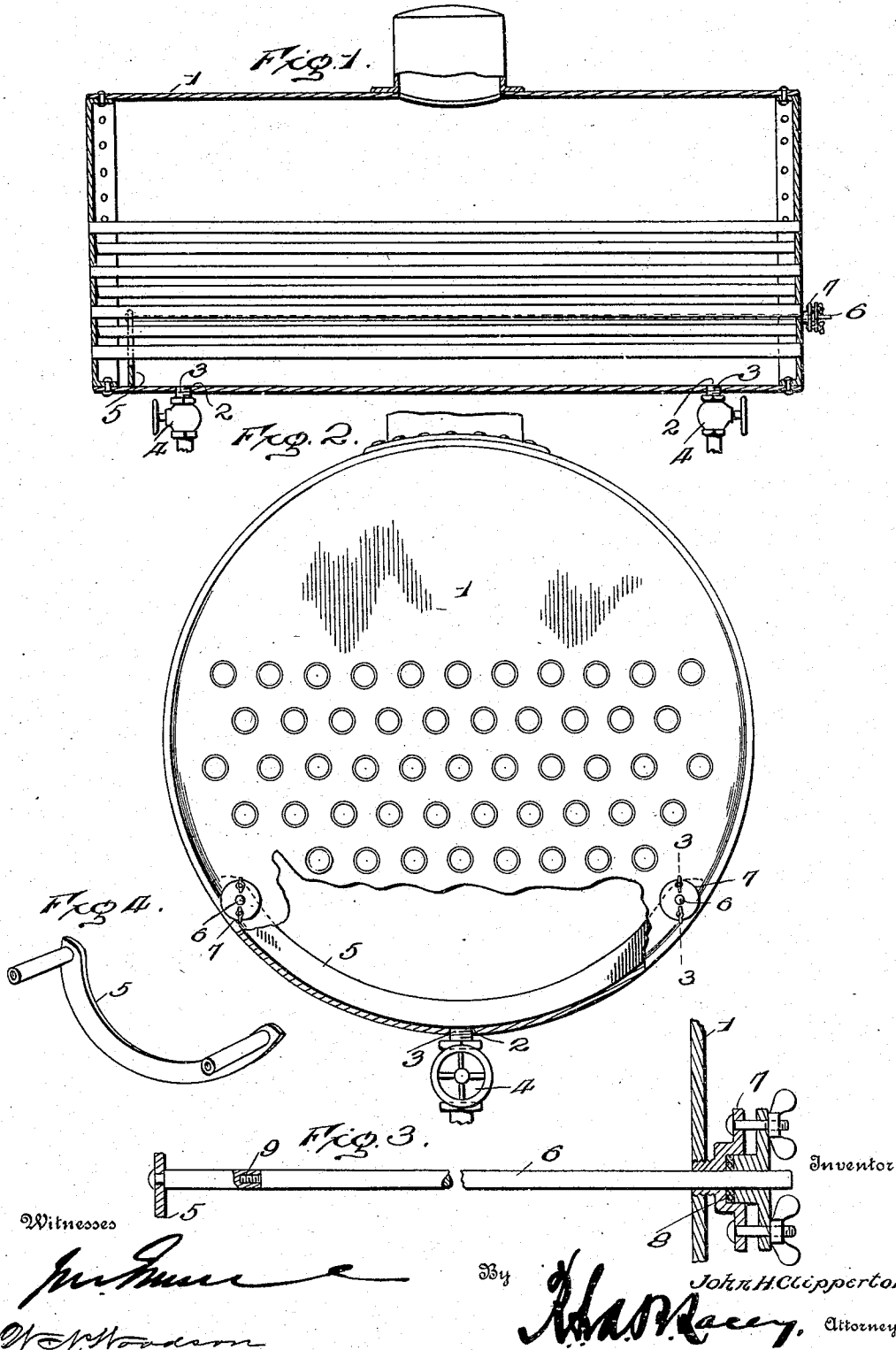


J. H. CLIPPERTON.
BOILER CLEANER.
APPLICATION FILED DEC. 20, 1907.

930,647.

Patented Aug. 10, 1909.



UNITED STATES PATENT OFFICE.

JOHN H. CLIPPERTON, OF SHERBURN, MINNESOTA.

BOILER-CLEANER.

No. 930,647.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed December 20, 1907. Serial No. 407,308.

To all whom it may concern:

Be it known that I, JOHN H. CLIPPERTON, citizen of the United States, residing at Sherburn, in the county of Martin and State of Minnesota, have invented certain new and useful Improvements in Boiler-Cleaners, of which the following is a specification.

The present invention relates to improvements in boiler cleaners and aims to provide a novel device of this character by means of which scales and mud can be withdrawn from the interior of the boiler while the same is under a full head of steam.

While the invention may be applied to any form of boiler it is particularly designed for use in connection with threshing engines, since the threshermen are compelled to employ all kinds of water which necessitates the cleaning of the boiler at least once a week.

The ordinary method of cleaning a boiler by removing the hand-hole plates and washing with cold water requires two men from six to eight hours and necessitates the waste of valuable time.

The object of the present invention has been to overcome this difficulty by means of a simple boiler cleaning device which is permanently mounted within the boiler and enables the scales and mud to be removed from the interior thereof without the necessity of relieving the steam pressure.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a longitudinal sectional view through a boiler having the cleaning device applied thereto. Fig. 2 is an end view of the boiler, portions being broken away. Fig. 3 is an enlarged detail view of the scraping plate and rod for operating the same. Fig. 4 is a perspective view of the scraping plate detached.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The invention is shown as applied to a boiler 1 of the conventional construction, the said boiler being provided at its lower portion and toward opposite ends thereof with outlet openings 2 controlled by blow off valves 4 of any approved type. In the present in-

stance pipes 3 are threaded within the outlet openings so as to project upon the exterior of the boiler and the blow off valves 4 are mounted within the pipes.

The inner walls of the boiler are perfectly smooth at the bottom thereof and slidably mounted upon the said bottom of the boiler is a transversely disposed scraping plate 5. In the present instance this scraping plate has an approximately segmental formation so as to correspond to the shape of the interior of the boiler. For the purpose of reciprocating this scraping plate 5 back and forth across the bottom of the boiler a pair of operating rods 6 are utilized, the said rods passing through openings in one end of the boiler and suitable packing means being provided to prevent leakage around the said rods. A stuffing box 7 is threaded in each of the openings through which the rods extend and the said stuffing boxes project upon the exterior of the boiler and receive the packing glands 8. It will thus be apparent that by suitably manipulating the rods 6 the transverse scraping plate 5 can be reciprocated back and forth across the bottom of the boiler in such a manner as to loosen the scales and mud and cause the same to collect at the ends of the boiler adjacent the outlet openings 2. By opening the blow off valves 4 for a very short period of time the scales and mud thus collected at the ends of the boiler will be blown out by the pressure of the steam. Each of the operating rods 6 is preferably formed in sections having a threaded connection as indicated at 9, the inner section of the rod or that carried by the scraping plate being of such a length as to project slightly beyond the stuffing box 7 when the scraping plate is moved against the end of the boiler. The outer end of the rod 6 is detached when the boiler cleaner is not in use and is simply threaded upon the inner section when it is desired to operate the scraping plate.

It will thus be apparent that with a boiler cleaner constructed in accordance with the present invention the scales and mud can be withdrawn from the interior of the boiler in a comparatively short period of time without the necessity of relieving the steam pressure.

The bottom of the boiler slopes from opposite sides to a central point and the valve-controlled outlets are provided at the lowest

point in the bottom of the boiler to insure the blowing off of all scale or sediment when the valves 4 are opened.

- The scraper 5 is of a length to practically
 5 extend across the bottom from one side of
 the boiler to the other thereby insuring its
 action upon all sediment so as to loosen the
 same and move it toward either one of the
 outlets. By providing two operating rods
 10 6 and having the same connected respec-
 tively to opposite ends of the scraper, the
 latter may be manipulated in a way to in-
 sure removal of any scale or precipitate not
 loosened by ordinary movement of the
 15 scraper over the bottom. Moreover, by
 moving both of the operating rods 6, to-
 gether, the scraper is positively moved there-
 by preventing any torsion and a resultant
 binding of the rods in the stuffing boxes.
 20 Should an end portion of the scraper come
 in contact with scale or other matter difficult
 of removal, this being readily determined
 by unequal strain or resistance upon one of
 the operating rods more than upon the other,
 25 the operating rod having connection with
 the end of the scraper in contact with the
 obstructing matter may be reciprocated, the
 other rod at the same time being held fast.
 The resiliency of the scraper admits of one
 30 or the other of the actuating rods being so

actuated as to impart a vibratory move-
 ment to one end of the scraper, whereas the
 opposite end is held stationary.

Having thus described the invention, what
 is claimed as new is:

In combination a boiler having its bottom
 transversely curved and provided in its low-
 est portion near opposite ends with valve-
 controlled outlets and having transversely
 spaced stuffing boxes fitted to an end there-
 40 of, a scraper located within the boiler and ex-
 tending transversely thereof with its lower
 edge in contact with the bottom, rod sec-
 tions attached to opposite ends of the scraper,
 and main sections detachably connected to
 45 said rod sections and adapted to operate
 through the aforesaid stuffing boxes, the
 parts admitting of the scraper being moved
 and remaining parallel to a given position,
 or admitting of either end of the scraper be-
 50 ing vibrated by one of the operating rods
 while the opposite end of said scraper is
 held stationary by the other operating rod.

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

JOHN H. CLIPPERTON. [L. s.]

Witnesses:

G. W. GRUWELL,
 JOEL DETIENNE.