(No Model.)

J. BAUSCHKE.

BOILER CLEANER.

No. 395,649. Patented Jan. 1, 1889.

Fig. 1.

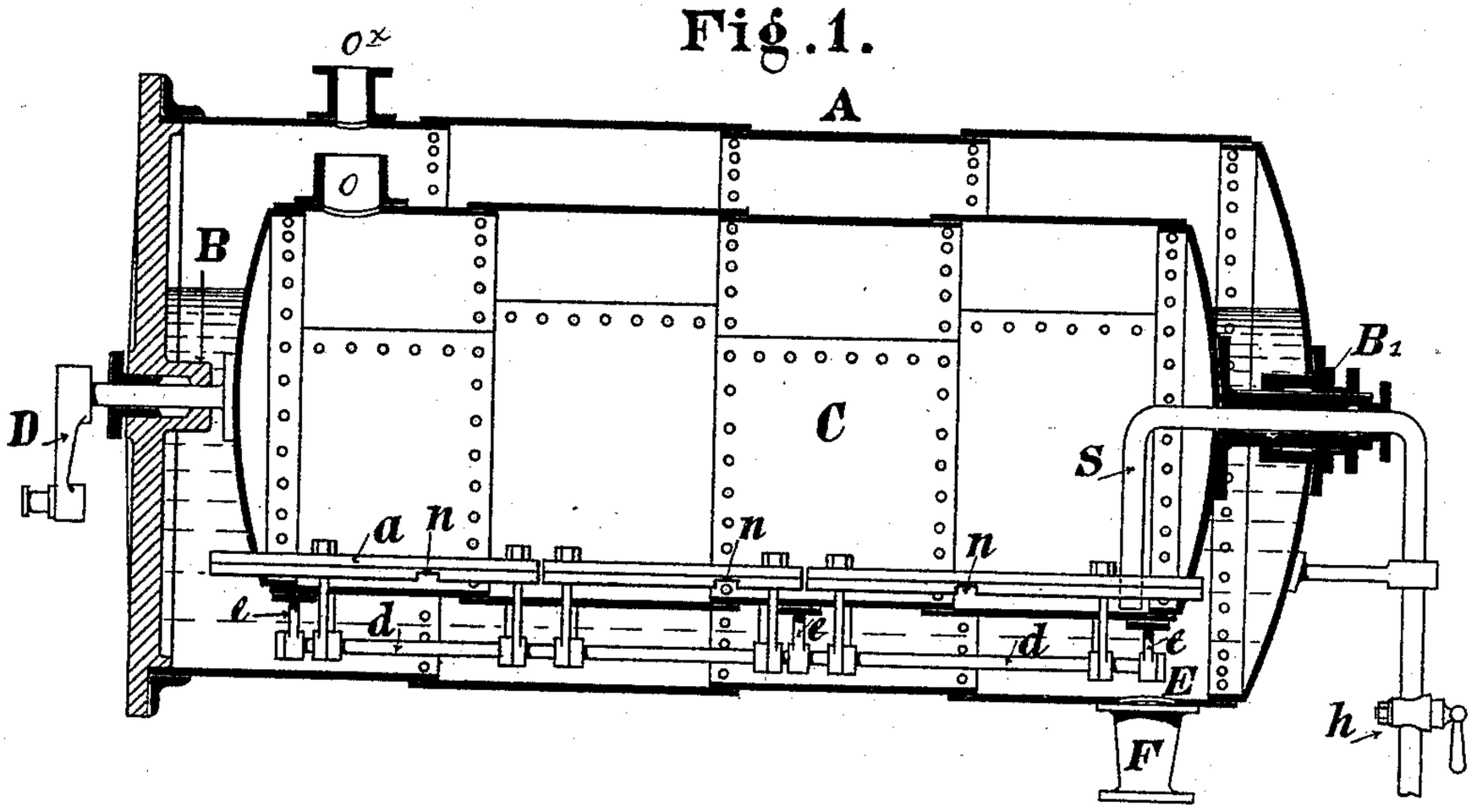


Fig. 2.

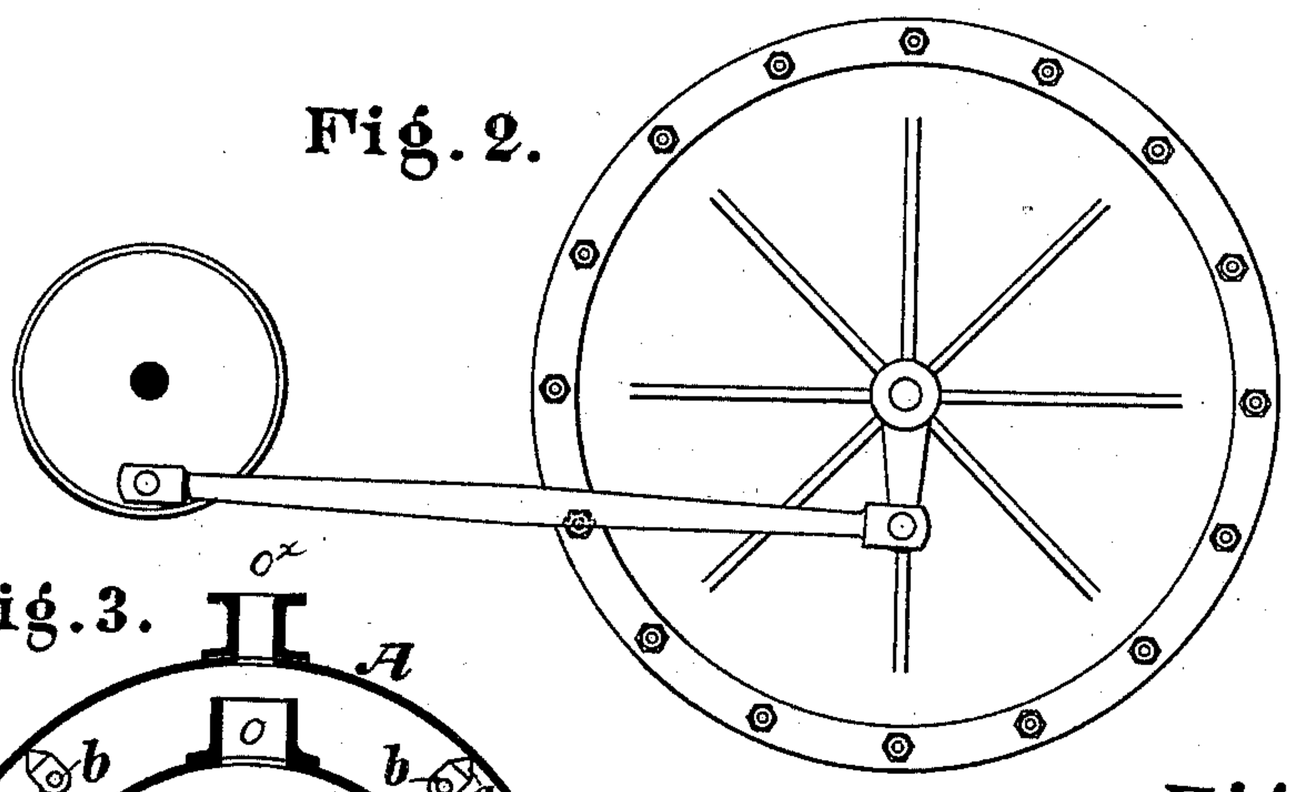


Fig. 3.

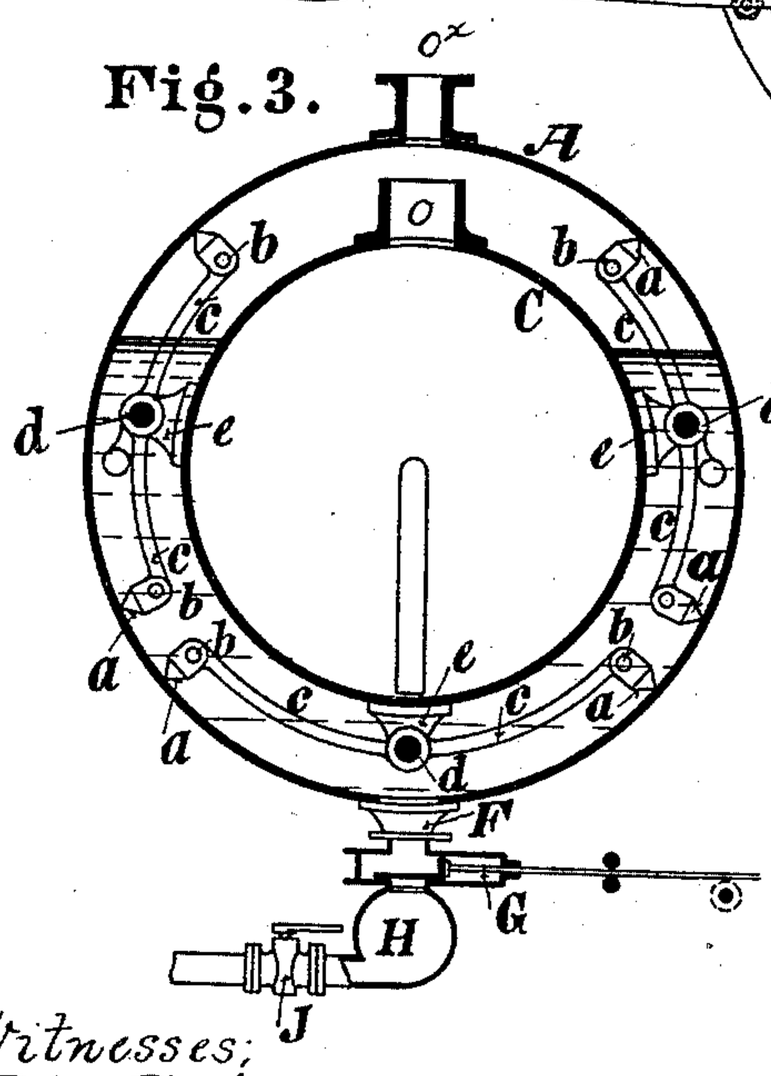


Fig. 4.

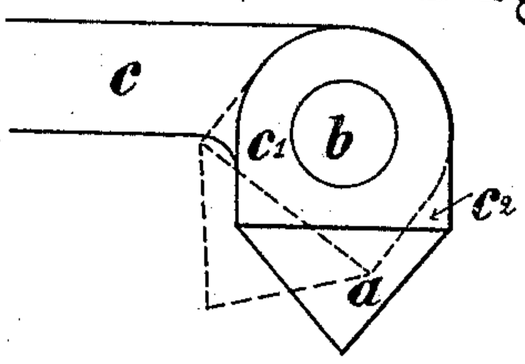
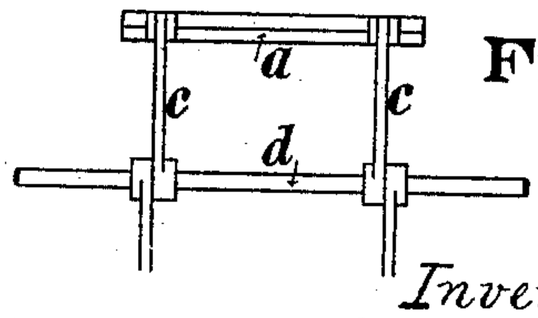


Fig. 5.



Witnesses;
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C. C. McDonald

Inventor,
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UNITED STATES PATENT OFFICE.

JOSEPH BAUSCHKE, OF BRESLAU, PRUSSIA, GERMANY, ASSIGNOR TO EMILE MAURICE HEIBER, OF SAME PLACE.

BOILER-CLEANER.

SPECIFICATION forming part of Letters Patent No. 395,649, dated January 1, 1889.

Application filed December 27, 1887. Serial No. 259,165. (No model.) Patented in England August 18, 1887, No. 11,310; in Belgium August 18, 1887, No. 78,611; in France August 18, 1887, No. 185,389; in Germany August 18, 1887, No. 42,693, and in Austria-Hungary January 8, 1888, No. 32,842 and No. 63,396.

To all whom it may concern:

Be it known that I, JOSEPH BAUSCHKE, a subject of the King of Prussia, residing at Breslau, in the Province of Silesia, in the Kingdom of Prussia and Empire of Germany, have invented a new and useful Improvement in Boiler-Cleaners, (for which the following patents have been granted to me and to my assignee, E. M. HEIBER, to wit: of Belgium, No. 78,611, dated August 18, 1887; of France, No. 185,389, dated August 18, 1887; of Germany, No. 42,693, dated August 18, 1887; of England, No. 11,310, August 18, 1887; of Austria-Hungary, Nos. 32,842 and 63,396, January 8, 1888,) of which the following is a specification.

The nature of the invention consists in the combination, with an exterior cylindrical boiler supported above a furnace with its axis in nearly a horizontal position and having in either end bearings, more fully hereinafter described, of an interior cylindrical boiler within the said exterior boiler and of such size as to allow for water and steam space between the interior of the exterior boiler and the exterior of the interior boiler, said interior boiler containing no water, but being adapted for the admission of steam, and being mounted upon journals running in the bearings aforesaid in the ends of said exterior boiler, one of the journals of the said interior boiler being provided with a crank, by means of which the said interior boiler may be oscillated around its axis upon its said journals, having a series of scrapers attached to the exterior of said inner boiler within said outer boiler, so that when the said inner boiler is oscillated the scrapers, moving therewith, operate upon the inner surface of the bottom part of said exterior boiler to remove the sediment, scales, and depositions of feed-water.

The nature of the invention also consists in the details of construction and combination, substantially as illustrated in the drawings, hereinafter described, and subsequently pointed out in the claims.

Figure 1 is a vertical axial section of a boiler constructed according to my invention. Fig. 2 is a transverse section of the same. Figs. 3 and 4 are detail views of parts of the scraper, more fully hereinafter described. Fig. 5 is a diagrammatic view showing how the device may be constructed to connect with a driving-power.

A designates the exterior boiler, which is to be placed upon its furnace with one end a little lower than the other. At either end are journal-bearings B B′, which may be made steam-tight with a convenient stuffing-box in any common and well-known way. This exterior boiler has a steam-outlet at its top, (designated by O×,) which may be of any common and well-known form. Within this exterior boiler, A, is an interior boiler, C, having its axis coincident with the axis of the boiler A and mounted upon journals which work in the bearings B B′. The journal which works in the bearing B may be provided with a lever or a winch, as D, by means of which the boiler C may be oscillated around its axis, as illustrated in Fig. 5, either by being attached to a driving-power or in any other convenient way. Between these two boilers there is a space sufficient for the reception of water and the generation of steam.

The boiler C is not to contain water, but is perforated on its upper side at O, through which the steam is free to pass in and out. In order to draw off any water that may arise from the condensation of steam in said boiler C, the siphon-tube S, passing through the bearing at B′, has been provided. This tube has a stop-cock, to close its end, at *h*.

To either end of the interior boiler is attached a bearing at *e*, in which the rod *d* is set parallel to the axis of the boilers. Upon this is mounted by its middle the lever *c*, upon either end of which is mounted a triangular bar, *a*, parallel to the rod *d*, and with its edge resting on the inside of the boiler A. This rod *a* is held in place by the bearings *b*, and is notched at *n*, so that it will not catch on the rivets on the inside of the boiler A. At the lower part of the boiler is an outlet-pipe, F, connecting by means of the slide-valve G with the bulb H. This bulb H connects with a waste-pipe which is opened and closed by turning the valve J, the whole device to b as illustrated in the drawings.

It is a well-known fact that water used to

feed a steam-boiler deposits lime and other earthy and mineral substances in the boiler in the generation of steam, and that these deposits adhering to the interior surface of the boiler give great trouble and annoyance to the operator. I obviate this as follows: When the boiler is in use, the oscillation of the interior boiler carries with it the scrapers *a* and their accompanying mechanism. The sharp edge *a*, scraping on the inside of the boiler A, keeps the sediment in the inside of the boiler A constantly stirred up, and that sediment making its way downward gradually accumulates over the outlet-tube F. If the slide-valve G is opened and the valve J closed, it gradually falls into the bulb H. When this bulb is full, the valve G may be closed and J opened. Then the sediment running out of the bulb H escapes through the waste-pipe, and thus I clean the sediment and scales out of a boiler without withdrawing the fire or decreasing the head of steam.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with an exterior cylindrical boiler supported above a furnace with its axis in nearly a horizontal position, and having in either end bearings, substantially as specified, of an interior cylindrical boiler within said exterior cylindrical boiler and of such size as to allow for water and steam space between the interior of the exterior boiler and the exterior of the interior boiler, said interior boiler to contain no water, but being adapted for the admission of steam, and being mounted upon journals moving in the bearings aforesaid in the ends of said exterior boiler, one of the journals of said interior boiler being provided with a crank, by means of which the said boiler may be oscillated around its axis upon its said journals, having a series of scrapers attached to the exterior of said inner boiler within said outer boiler, so that when the said inner boiler is oscillated the scrapers moving therewith operate upon the inner surface of the bottom part of the said exterior boiler to remove the sediment, scales, and depositions of feed-water therefrom, substantially as and for the purpose set forth.

2. In a steam-generator, the combination, with the exterior boiler, A, having bearings B B′, outlet-pipe F, valve G, and bulb H, having a waste-pipe closed with a valve, J, of the inner boiler, C, journaled in said boiler A at B and B′, having the winch D attached to one of its journals, and the siphon-pipe S, passing from within through one of its journals and closed without by the cock *h*, the bearings *e*, attached to said inner boiler, the rod *d* in said bearings, the arms *c*, mounted on said bar *d*, and the scrapers *a*, mounted upon said arms *c*, to operate upon the interior of the said exterior boiler, A, substantially as and for the purpose set forth.

In testimony whereof I hereunto sign my name, in the presence of two subscribing witnesses, this 1st day of December, 1887.

JOSEPH BAUSCHKE.

Witnesses:

THEODOR PROKOWSKI,

FERDINAND FEEMANN.