(No Model.)

T. J. McKEONE.

RANGE BOILER.

No. 590,584. Patented Sept. 28, 1897.

FIG. 1

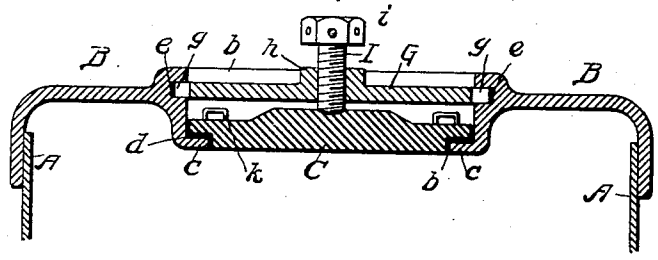


FIG. 2

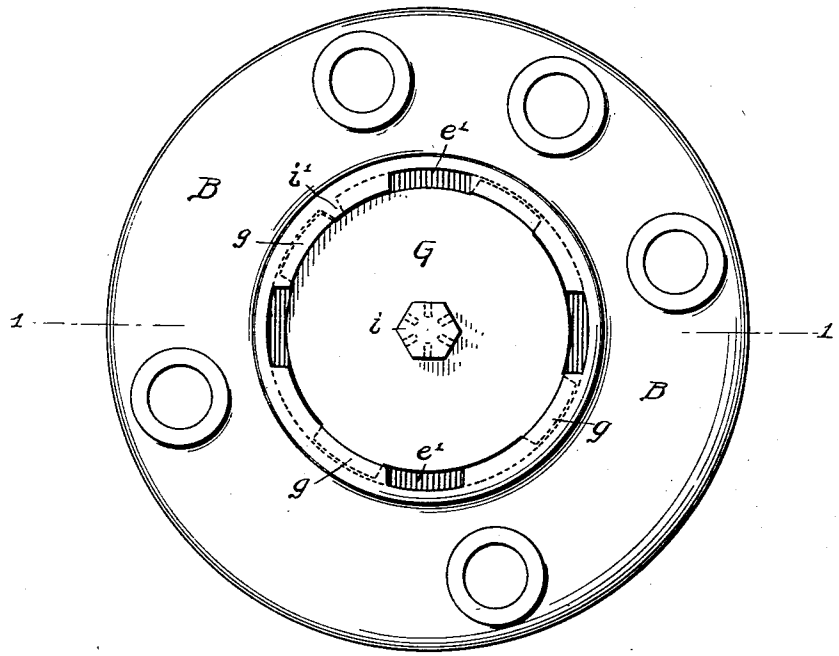
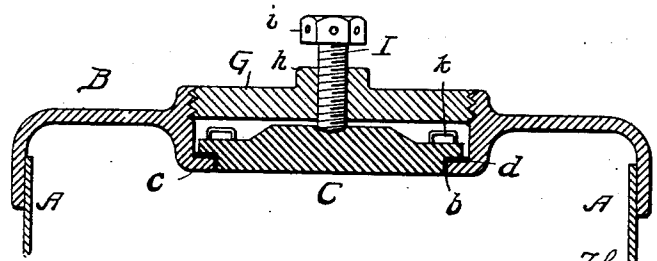


FIG. 3



Witnesses:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS J. McKEONE, OF PHILADELPHIA, PENNSYLVANIA.

RANGE-BOILER.

SPECIFICATION forming part of Letters Patent No. 590,584, dated September 28, 1897.

Application filed January 11, 1897. Serial No. 618,695. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. McKEONE, a citizen of the United States, and a resident of the city of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Range-Boilers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to certain improvements in range-boilers, and has for its object to so construct the boiler that it may be readily opened from time to time and the scale and deposit be removed.

In range-boilers as now constructed, especially those of the log-boiler type, no provision is made for the removal of the scale and dirt from the interior of the boiler, and in course of time the bottom of the boiler becomes thickly coated with scale and dirt, which under the action of the fire is baked and hardened and often forms a crust of several inches in thickness, preventing the direct action of the heat upon the water and also lessening the capacity of the boiler.

In carrying out my invention I provide at the end of the boiler a suitable opening closed by a cover or cap, which may be readily removed when it becomes necessary to examine the boiler and remove the dirt therefrom, the opening being made sufficiently large to permit the passage of the hand and enable the use of a scraping-bar.

In the accompanying drawings, Figure 1 is a sectional elevation on the line 1 1, Fig. 2, of sufficient of a range-boiler to illustrate my invention. Fig. 2 is a plan view of the same; and Fig. 3 is a similar view to Fig. 1, illustrating a slightly-modified construction.

Referring to the drawings, A represents one end of the shell of an ordinary cylindrical range-boiler; B, a head formed, preferably, of cast metal and provided with a central flanged opening *b*. The wall of this opening is provided with a flange *c*, forming a seat for the reception of a cap or cover C, which fits snugly upon the seat, a ring *d*, of india-rubber or other suitable material, being placed between the seat and the cover to insure a tight fit and prevent danger of leakage.

The wall of the opening is provided with an annular groove *e*, and the outer wall of the groove is cut away to form a series of lateral openings *e'*, as shown more clearly in Fig. 2, a series of elongated spaced lugs being thus provided for the reception of a disk or plate G, having radially-projecting lugs *d*, adapted to enter the openings or passages *e'* and, when the plate is turned, to enter and be confined in the groove *e*.

In the center of the plate G is a boss *h*, the sides of which are square or hexagonal, so that a wrench may be applied when it is desired to turn the plate to effect the engagement of the lugs *g* in the groove *e*, and, if desired, a suitable stop *i'* may be formed in such groove to limit the turning of the plate and hold it in any position desired.

The center of the boss *h* is tapped for the passage of a bolt or screw I, the end of which impinges upon the center of the cover C and holds the latter tightly in position. The end *i* of the bolt I is square or hexagonal in form for the application of a wrench, and is also provided with a series of transverse openings *i'* for the passage of a pin, by which the turning of the bolt may be effected in case the head of the latter cannot be held tightly by the jaws of the wrench.

In closing the opening the cover C, with its packing-ring *d*, is first fitted to the flange *c*, and the plate G is then inserted and turned until its lugs *g* enter the groove *e*, when the locking-bolt I may be turned and the cover forced tightly to its seat. In removing the cover it is sometimes found that the packing *d*, under the action of the hot water, has become tightly fixed to its seat, and to provide for the removal of the same I place upon the rear of the cover two small loops *k*, in which suitable tools may be inserted for the forcible removal of the cover.

It is not necessary that the plate G should fit tightly in its groove, as this plate merely forms a fulcrum for the action of the screw I, and in some cases I may thread the periphery of the plate G and form similar threads for its reception upon the inner wall of the opening, as shown, for instance, in Fig. 3.

With a device of this character the boiler may be readily cleansed and the accumulation of deposits be prevented. In some cases where the range is not in use, as during the

summer season, the cover may be altogether removed and the boiler opened for the entrance of air during the whole time the boiler is not in use, preventing the accumulation of stagnant water and the formation of scale and rust.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination in a boiler having an enlarged mouth or opening at one end, of a holding-plate, G, having radially-projecting lugs, *g*, adapted to openings, *e'*, in the edges of the enlarged mouth for adjusting and locking the holding-plate in position, a cover, C, adapted to be seated on an inner flange, *c*, and locking-screw, I passing through said holding-plate and impinging upon the cover, substantially as described.

2. The combination in a boiler, of the shell, A, the head, B, having opening, *b*, therein, a flange, *c*, a groove, *e*, having lateral openings, *e'*, a cover, C, adapted to be seated on the flange, *c*, a holding-plate, G, having radially-projecting lugs, *g*, adapted to the openings, *e'*, in the groove, *e*, and a locking-screw, I passing through said holding-plate adapted to impinge upon the cover, substantially as described.

3. The combination of the shell, A, the head, B, having opening, *b*, therein, a flange, *c*, a groove, *e*, formed in the wall of said opening, a cover, C, seated on the flange, *c*, a holding-plate, G, having lugs, *g*, adapted to the groove, *e*, a locking-screw, I, passing through said holding-plate and impinging upon the rear wall of the cover, and loops, *k*, also formed on the rear face of said cover, substantially as specified.

In witness whereof I have hereunto set my hand this 9th day of January, A. D. 1897.

THOMAS J. McKEONE.

Witnesses:
W. S. FURST,
HORACE PETTIT.