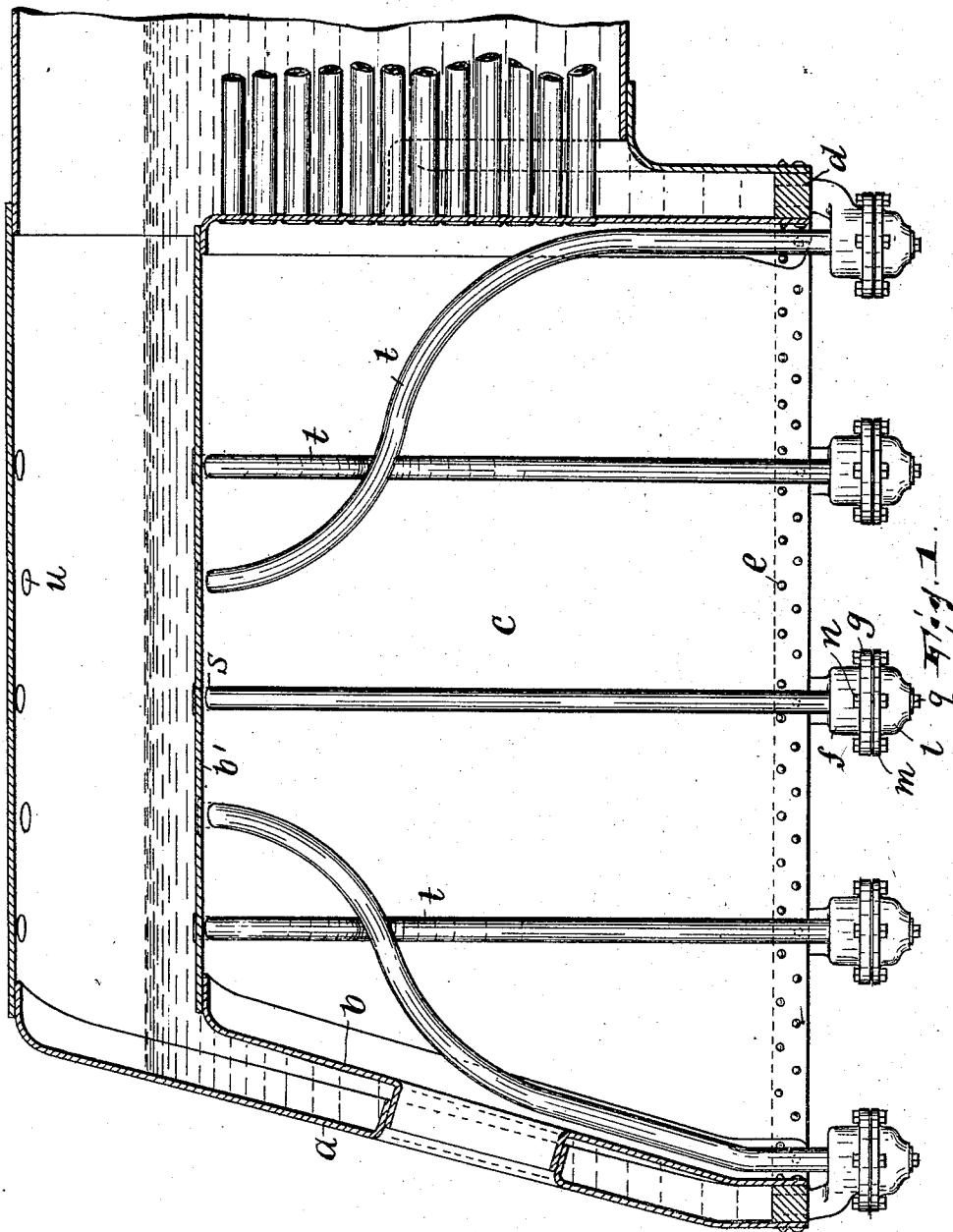


J. PELLINGTON.
LOCOMOTIVE BOILER.
APPLICATION FILED NOV. 18, 1912.

1,057,666.

Patented Apr. 1, 1913.

2 SHEETS—SHEET 1.



WITNESSES

Wm. D. Bell.
Eric Kaufmann.

INVENTOR,

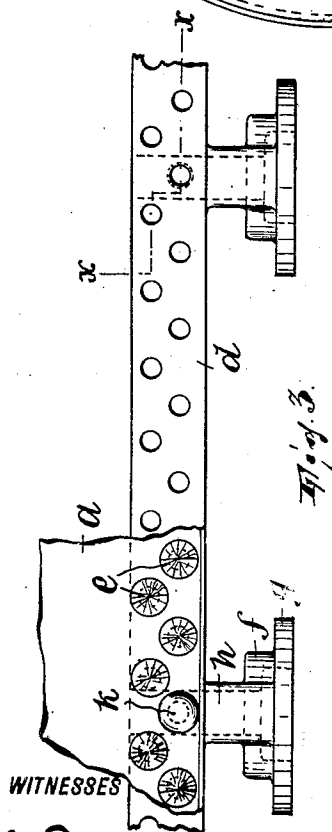
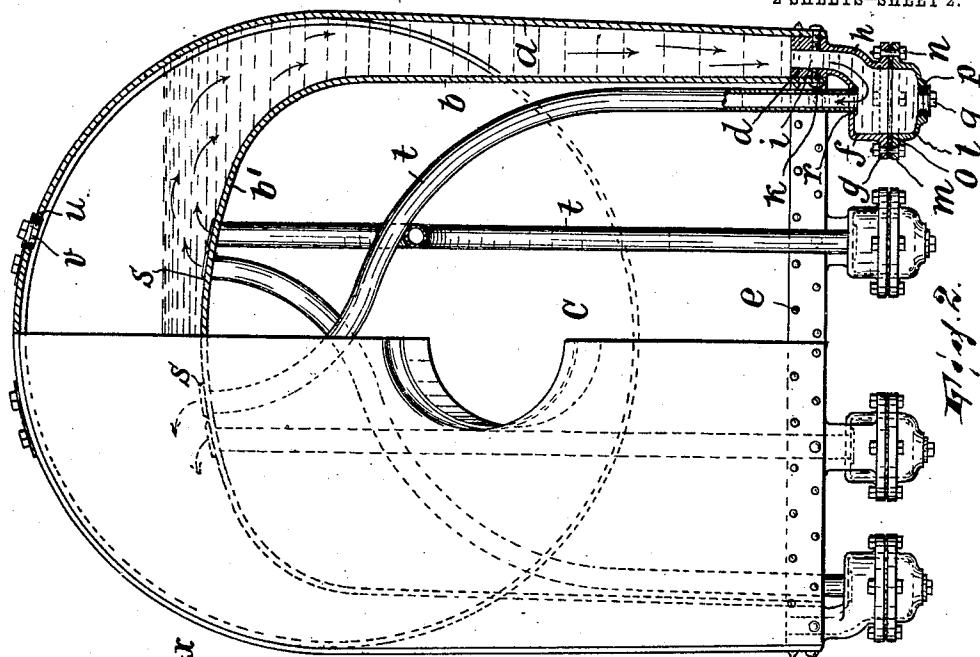
James Pellington,

BY *J. H. Howard.*
ATTORNEY.

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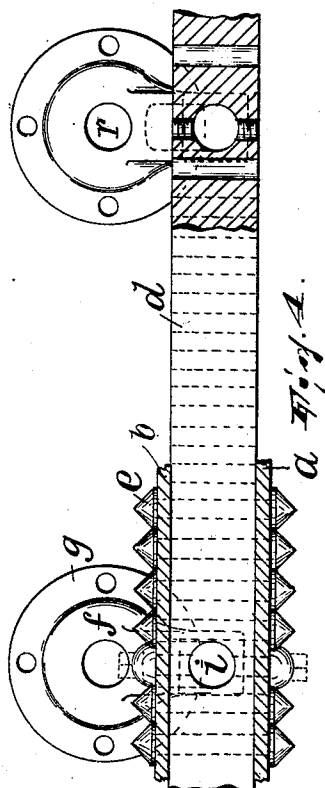
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2 SHEETS—SHEET 2.



WITNESSES

Wm. D. Bell
Chair Kaufmann.



INVENTOR,
James Pellington,

BY  ATTORNEY.

UNITED STATES PATENT OFFICE.

JAMES PELLINGTON, OF PATERSON, NEW JERSEY.

LOCOMOTIVE-BOILER.

1,057,666.

Specification of Letters Patent.

Patented Apr. 1, 1913.

Application filed November 18, 1912. Serial No. 731,976.

To all whom it may concern:

Be it known that I, JAMES PELLINGTON, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Locomotive-Boilers, of which the following is a specification.

This invention relates to the construction of locomotive boilers and particularly to the construction of the fire-box end thereof.

As at present constructed, the part of the boiler which embraces the fire-box accumulates sediment on its bottom wall or "mud-ring," as a result of which the mud-ring-including portion of the boiler becomes in time burned out, as it would not be if occupied by water.

The object of this invention is so to construct the afore-mentioned part of a boiler of the locomotive type that it may be kept clear of sediment and the durability of the boiler thus increased.

The invention consists, first, in a novel arrangement of sediment receptacles with relation to the mud-ring of a boiler whereby the collection of the sediment in said receptacles shall take place in a way calculated to avoid overheating and consequent burning out of the sediment-containing part of the structure; second, in the construction of the lower portion of the water-jacket-forming part of a boiler, and particularly the mud-ring and sediment-receptacle-forming portion thereof; and, third, in a novel means whereby a circulation of the water through the receptacle or receptacles is established for the purpose of retarding as far as possible, if not preventing, the accumulation of sediment therein while the boiler is in use.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of the fire-box-including portion of a boiler constructed in accordance with this invention; Fig. 2 shows partly in rear elevation and partly in transverse section the improved boiler; Fig. 3 is a side elevation on a larger scale of a fragment of the mud-ring; Fig. 4 is a plan view of the mud-ring, showing it partly in section on the line *a-a* in Fig. 3.

a is the outer wall and *b* the inner wall of the boiler, the latter forming the fire-box space *c*.

d is the continuous frame or mud-ring which closes the bottom of the space around the fire-box extending between the walls *a*

and *b* and forms therewith the water jacket. This frame, in accordance with the present invention, is preferably constructed thus: It is preferably a solid endless casting bored for the reception of the rivets *e* whereby the outer and inner walls of the boiler are secured thereto. Integral with this casting and depending downwardly therefrom at suitable intervals are the upper sections *f* of the sediment receptacles or mud pots each of which sections is open downwardly and has an exterior flange *g* and a reduced neck or neck portion *h* forming a continuation of a passage *i* which extends vertically through the mud-ring. In the preferred construction the neck portion *h* for each section *f* is at the outer side thereof, so that the section is substantially wholly under the boiler. Where the securing points for the walls *a* *b* coincide with the passages, instead of using rivets which would obstruct the passages, I use "patch-bolts" *k* as shown in Fig. 2 and on a larger scale in Figs. 3 and 4.

Each mud-pot or sediment receptacle includes a lower section or cap *l*, preferably hollow and open at the top. It has an exterior flange *m* around its upper edge or mouth, whereby, by the use of bolts *n* or the like, it may be secured to the upper section *f* to form the mud-pots, suitable packing *o* being interposed between the sections. Each lower section *l* has in the bottom thereof a discharge opening *p* which is internally threaded to receive a removable plug *q*.

It will be understood that the tops of the grate bars (not shown) are about coincident with the top of the mud-ring, as in the usual construction. Any accumulation of sediment takes place in the improved boiler not upon the mud-ring where it will give rise to the burning out of the mud-pot-including portion of the boiler, but in the mud-pots where it is well below the level where the heat of the fire is effective to accomplish the burning out. The sediment collecting in the mud-pots may be withdrawn from time to time by removing the plugs *q*.

I prefer to provide the boiler also with means for retarding, if not preventing, the accumulation of sediment thus: The top of the section *f* of each mud-pot is provided with a circular opening *r* and a corresponding opening *s* is formed in the arch *b'* of the wall *b*, and into these openings are fitted the ends of a pipe *t*, there being as many of

such pipes as there are mud-pots. The ends of these pipes are expanded so as to make a tight joint at the openings *r* and *s* by suitable tools entered at the bottom of each section *f* (the complementary section *l* being removed) and through openings *u* in the arch of the wall *a*, said openings *u* having the removable plugs *v*. The pipes *t* are preferably bent so as to allow them to expand and contract to avoid starting the joints at *r* and *s*. This construction permits a circulation of the water in the boiler to take place substantially as indicated by the arrows in Fig. 1, so that the tendency for sediment to collect is reduced.

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

1. In combination, with a boiler having a fire-box space, a water-jacket flanking said space and a mud-ring forming the bottom of the water-jacket and arranged substantially coincident with the fire-level in said space, a sediment receptacle arranged below the mud-ring and having its interior communicating upwardly through the mud-ring with the interior of the water-jacket, said receptacle having means to withdraw therefrom the sediment collecting therein.

2. In combination, with a boiler having a fire-box space, a water-jacket flanking said space and a mud-ring forming the bottom of the water-jacket and arranged substantially coincident with the fire-level in said space, water-conducting means connecting the

water-jacket with a relatively higher part of the boiler and including a sediment receptacle disposed below the mud-ring and communicating upwardly through the mud-ring with the interior of the water-jacket.

3. In combination, with a boiler having a fire-box space, a water-jacket flanking said space and a mud-ring forming the bottom of the water-jacket and arranged substantially coincident with the fire-level in said space, water-conducting means connecting the water-jacket with a relatively higher part of the boiler, extending through the fire-box space and communicating with the interior of the water-jacket upwardly through the mud-ring.

4. In combination, with a boiler, having a fire-box space, a water-jacket flanking said space and a mud-ring forming the bottom of the water-jacket and arranged substantially coincident with the fire-level in said space, said mud-ring having a downward and downwardly open hollow projection, and a cap removably secured on the open side of said projection and forming therewith a sediment receptacle and said receptacle communicating upwardly through the mud-ring with the interior of the water-jacket.

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

JAMES PELLINGTON.

Witnesses:

JOHN W. STEWARD,
WM. D. BELL.