

W. H. PAGE.
Sectional Steam-Boilers.

No. 207,771.

Patented Sept. 3, 1878.

FIG 1

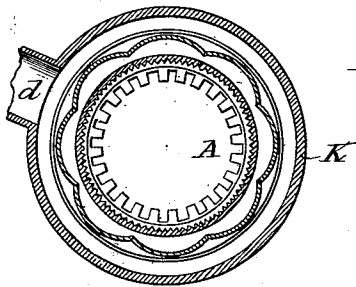
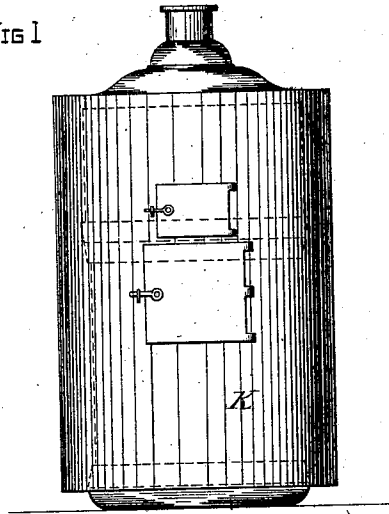


FIG 3

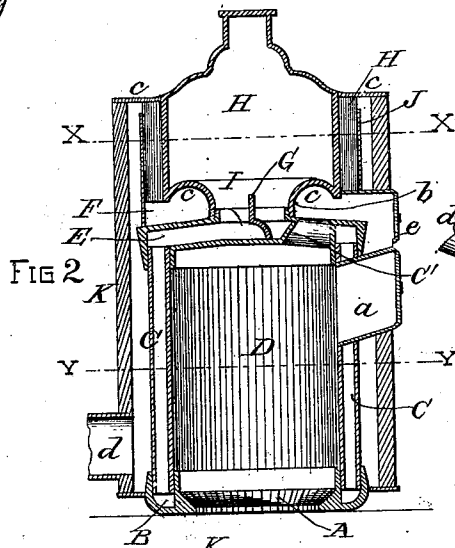


FIG 2

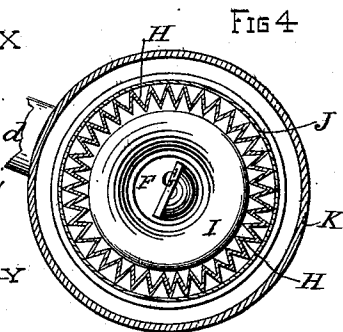
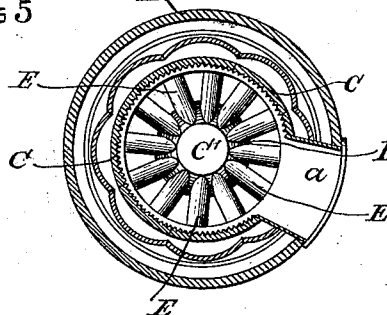


FIG 4

FIG 5



WITNESSES
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UNITED STATES PATENT OFFICE.

WILLIAM H. PAGE, OF NORWICH, CONNECTICUT.

IMPROVEMENT IN SECTIONAL STEAM-BOILERS.

Specification forming part of Letters Patent No. **207,771**, dated September 3, 1878; application filed May 8, 1878.

To all whom it may concern:

Be it known that I, WILLIAM H. PAGE, of Norwich, in the county of New London and State of Connecticut, have made certain Improvements in Sectional Steam-Boilers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which forms a part of this specification, and in which—

Figure 1 is a front elevation of my improved sectional steam-boiler. Fig. 2 is a vertical section thereof. Fig. 3 is a section on line *y y* of Fig. 2, looking downwardly. Fig. 4 is a section on line *x x* of Fig. 2; and Fig. 5 is a section on line *y y* of Fig. 2, looking upwardly.

Corresponding parts in the several figures are denoted by similar letters of reference.

This invention relates to certain improvements in steam-boilers of that class which, as a trade distinction, may be termed "sectional boilers"—one formed of two or more sections, to permit of the ready separation or portability of the parts—the object of which is to provide for the thorough distribution or dissemination of the heat, to obtain the greatest possible amount of heating-surface, to conduct the heat to and around the uppermost part of the boiler, and to produce a circulation of the water from the rear toward the front of the boiler.

The nature of this invention consists, first, in the constructing of the boiler with deeply scalloped or V-shaped walls or sides; secondly, in arranging around the fire-grate a water-chamber, with which connects a series of segmental chambers, communicating with each other, extending up around the fire-box, and communicating with a tubular crown-sheet, to which is screwed or otherwise detachably connected an open arched bottomed boiler; thirdly, in the arrangement in the crown-sheet of a partition or plate, extending up into the open bottom of the boiler; and, fourthly, in the employment, in connection with the scalloped or V-shaped walls or sides of the boiler, of a surrounding casing-cylinder, substantially as hereinafter more particularly set forth.

In the annexed drawing, A marks the fire

grate or basket, constructed with and external to which is a water-chamber, B. C C are a series of segmental chambers, communicating with each other, arranged in the form of an upright cylinder or receptacle, and cast or otherwise united together, and thus forming the fire-box or furnace D, to which is supplied a chute and a door for the introduction of fuel. The internal circumference of the fire-box or furnace D is provided with a serrated or ribbed surface, to provide passages between it and the fuel to promote the upward passage of the heat, and thus expedite the heating of the walls of the furnace or segmental chambers and increase their heating effect. Upon these segmental chambers C C is a crown-sheet, C', composed of a series of radial pipes, E E, and a central annular chamber, F, with which the said pipes connect the segmental chambers C C.

G is a semicircular dome-shaped diaphragm, fastened at its lower end in the bottom of the chamber F, and arranged so as to divide the orifice of the said chamber about centrally, as seen in Figs. 2 and 4, the object of which is to produce a circulation of the water in ebullition from the rear toward and down the front of the boiler. H is the boiler, formed with an open bottom, I, and provided with a downwardly-projecting screw-threaded neck, *b*, for its attachment to a similar threaded neck on the dome C'. The bottom of the boiler is curved upwardly, as at *c c*, to receive and confine, in a measure, the heat passing out from the furnace between the radial water-pipes E E, and to provide, also, a greater amount of heating-surface to the water in the boiler.

The boiler H is constructed with V-shaped or scalloped sides, as clearly shown in Fig. 4, to present the greatest possible amount of heating-surface to the water therein, and to provide passages between the same and a surrounding shell or case, J, resting upon the tubes or pipes E E, with its upper end arranged a short distance below the top flange, *c*, of the boiler, to form a means of egress for the heat from said passages down between the external surrounding case K and the boiler-case J and the furnace, after which it passes off with the unconsumed particles of combustion out through the pipe *d*. A door, *e*, is pro-

vided in the casing J about in a line with the top of the crown-sheet, for the removal of sediment, &c.

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

1. In a steam-boiler, the furnace D, consisting of a series of segmental chambers, C C, communicating with each other, with a serrated inner ribbed surface, substantially as and for the purpose set forth.

2. In a steam-boiler, the crown-sheet C', having its chamber F provided with a division-plate or diaphragm, G, substantially as and for the purpose set forth.

3. The furnace consisting of the series of cylindrically, compactly arranged tubes or

segmental chambers C C, in combination with the crown-sheet, having the radial pipes or tubes E E, and provided with the partition or diaphragm G and boiler H, substantially as and for the purpose set forth.

4. The combination, with the boiler H, having V-shaped scalloped sides, of the sliding case or shell J, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I hereunto affix my signature in the presence of the two witnesses.

WILLIAM HAMILTON PAGE.

Witnesses:

GEO. C. SETCHELL,
CHAS. H. POTTER.