

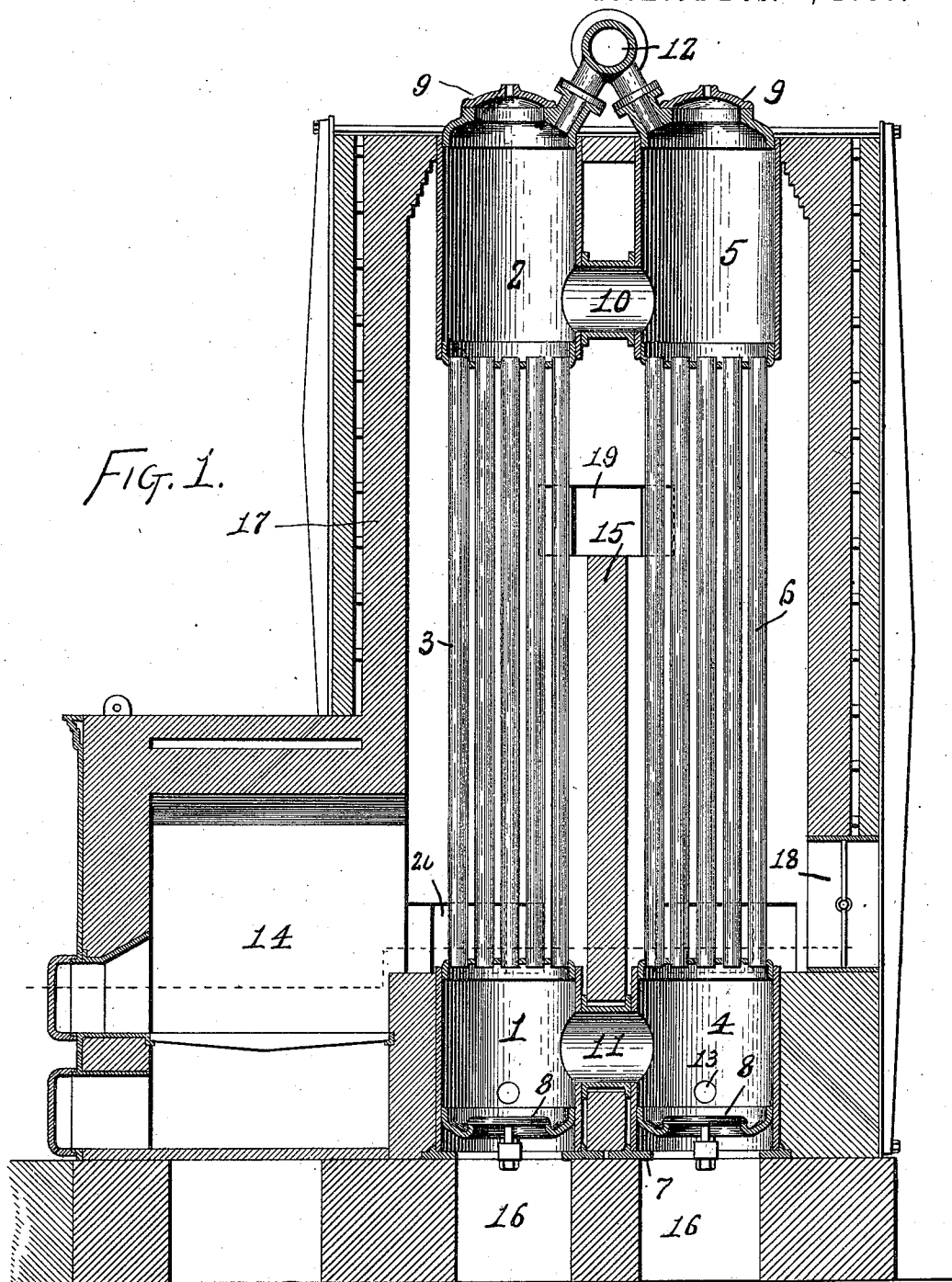
(No Model.)

2 Sheets—Sheet 1.

V. O. STROBEL,
STEAM BOILER.

No. 576,828.

Patented Feb. 9, 1897.



Witnesses:
E. R. Shipley.
M. S. Belden.

Victor O. Strubel Inventor
by James W. See
Attorney

(No Model.)

2 Sheets—Sheet 2.

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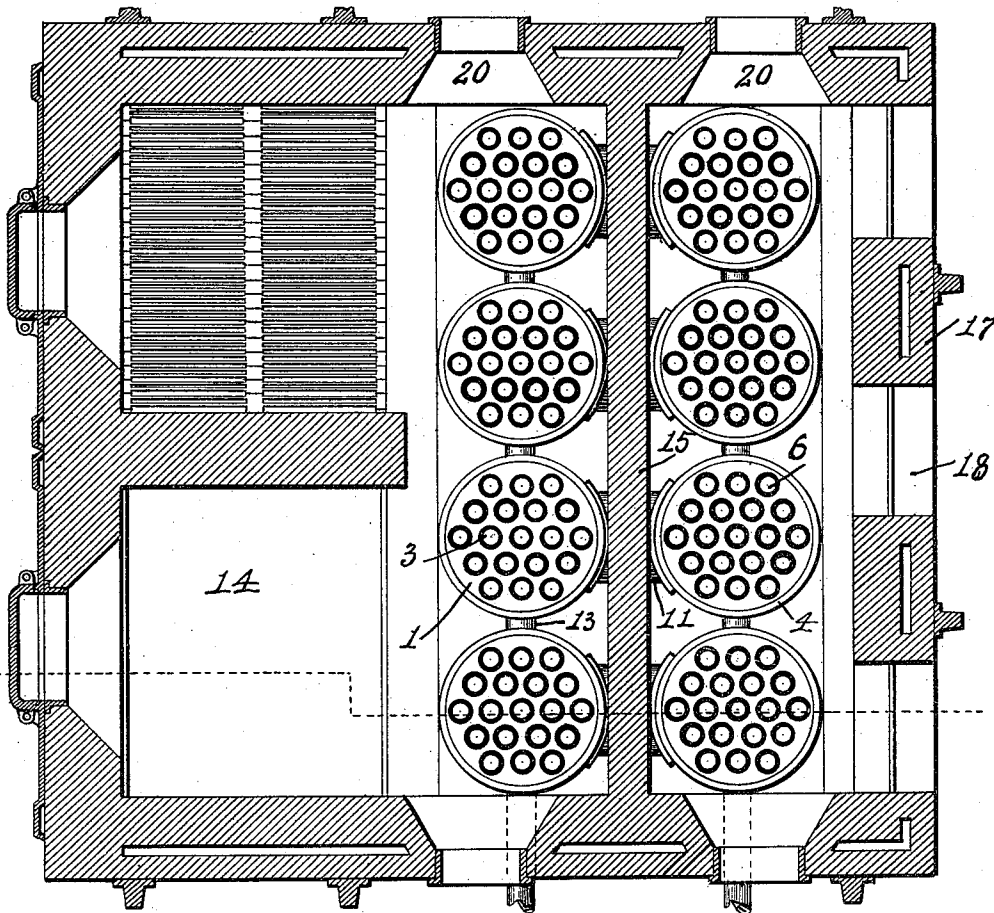


Fig. 2.

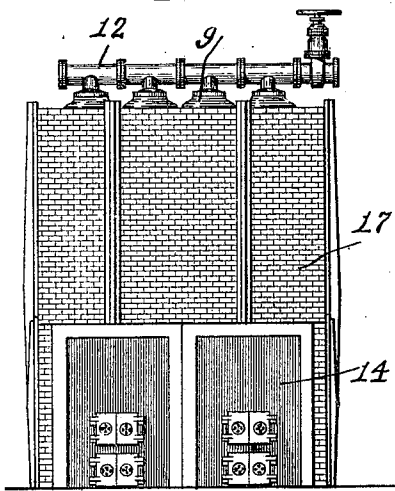


Fig. 3.

Witnesses:
E. R. Shipley,
M. S. Bilden.

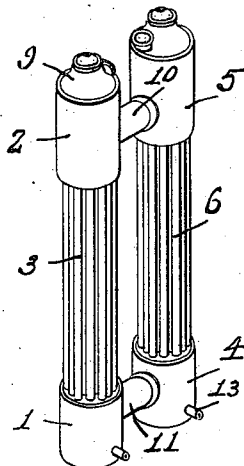


Fig. 4.

Victor O. Strobel

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UNITED STATES PATENT OFFICE.

VICTOR O. STROBEL, OF PHILADELPHIA, PENNSYLVANIA.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 576,828, dated February 9, 1897.

Application filed June 3, 1896. Serial No. 594,074. (No model.)

To all whom it may concern:

Be it known that I, VICTOR O. STROBEL, of Philadelphia, Philadelphia county, Pennsylvania, have invented certain new and useful Improvements in Steam-Boilers, of which the following is a specification.

This invention relates to water-tube steam-boilers and will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a vertical section of a steam-boiler embodying my invention; Fig. 2, a horizontal section of the same; Fig. 3, a front view of the same, and Fig. 4 a perspective view of one of the elements or units of the boiler detached from its setting.

My invention contemplates a unit constituting, say, a fifty-horse-power boiler, which unit lends itself to use in multiple, a series of the units being set side by side in a single setting.

In the drawings I illustrate four of the units associated, and the description hereinafter given as to one unit may apply alike to any of them.

In the drawings, 1 indicates a base-shell having, preferably, the form of a vertical cylinder; 2, a vertical cylinder disposed over and some distance above the base-shell; 3, tubes connecting the base-shell 1 and the vertical cylinder 2, being properly expanded into suitable tube-plates in those two structures; 4, a second base-shell disposed to the rear of the first one; 5, a second top cylinder disposed at the rear of the first one; 6, tubes connecting the rear base-shell and top cylinder; 7, a sole-plate on which the base-shells rest and which is in turn supported on a suitable foundation; 8, manheads in the lower wall of the base-shells; 9, manheads in the roofs of the top cylinders; 10, a large neck connecting the front and rear top cylinders near their faces; 11, large necks connecting the front and rear base-shells; 12, steam-pipe having connection with the upper portion of the front and rear top cylinders; 13, blow-off connections from the base-shells; 14, the furnace, disposed in front of the boiler structure which has been described, the furnace having any suitable form of grate disposed at a level somewhat below the top of the base-shells, an ordinary bridge-wall intervening

between the rear of the grate and the front base-shell; 15, a wall extending from the foundation upwardly between the front and rear base-shells and their tubes and separating the main portion of the space occupied by the twin boiler structure into two chambers, the top of this dividing-wall 15 being located well up toward the top cylinders; 16, passages in the foundation below the base-shells to give access to the manheads 8; 17, the walls of the boiler-setting, completely inclosing the boiler structure, but leaving room for gases at its front and rear and sides, the furnace 14 being formed at the base of the front wall and discharging its hot products into the chamber formed within the walls of the setting; 18, outlet to chimney, disposed in the rear wall of the setting and at a point well down toward the rear base-shell, connection to be made from this outlet to the chimney in any suitable manner; 19, doorway in the side wall of the setting above the top of wall 15 to give access to the upper central portion of the chamber occupied by the boiler; and 20, similar doors in the side walls of the setting to give access to the lower portion of the chamber occupied by the tubes.

Giving attention to Fig. 1, and considering the boiler as a single unit with its two base-shells and two top cylinders and their connecting tubes, it would be observed that the furnace-gases first pass up among the front tubes, then turn over the dividing-wall 15, and then pass down among the rear tubes and out to the chimney. The boiler structure is at entire liberty to expand and contract vertically, independent of the walls of the setting. The manheads in the base-shells and top cylinder permit of ready removal and insertion of tubes. The doors in the side wall give access for cleaning the exterior of the tubes. The conditions for circulation are of the most favorable character.

The structure appearing in Fig. 1 may be assumed as constituting a boiler-unit of, say, fifty-horse power. Such units may be arranged in connected series, side by side, as will be obvious from Figs. 2 and 3, the base-shells being connected up by the blow-off pipe, and the top cylinders being connected up by the common steam-pipe, the dividing-wall 15 serving for all of the units, and the

furnace having a corresponding appropriate width.

I claim as my invention—

1. In a steam-boiler, the combination, substantially as set forth, of front and rear base-shells connected by a neck, front and rear top cylinders connected by a neck and by a steam-pipe, tubes connecting the shells and cylinders, an inclosing chamber for the boiler structure thus formed, a furnace arranged to discharge its products into the front of the base of said chamber, a chimney connection at the rear of the base of said chamber, and a wall transversely dividing said chamber into a front and rear chamber, each containing one of said sets of tubes, base-shells and cylinders, and having an opening placing said front and rear chambers in communication with each other at their tops.

2. In a steam-boiler, the combination, substantially as set forth, of front and rear base-shells connected by a neck, manheads in the floor thereof, top cylinders over said base-

shells, tubes connecting the base-shells with the top cylinders, manheads in the roofs of the top cylinders, an inclosing chamber connected with a furnace and chimney, a supporting-foundation, and chambers in said foundation below said base-shells.

3. In a steam-boiler, the combination, substantially as set forth, of a pair of front and rear base-shells and top cylinders connected by vertical tubes, the entire structure thus formed standing vertically on a foundation, a similar structure standing beside the first one and having steam connection therewith, walls forming a chamber inclosing said structures in common, a furnace connected with the base of said inclosing chamber, and a chimney connection from the base of said chamber opposite said furnace connection.

VICTOR O. STROBEL.

Witnesses:

JAMES W. SEE,

SAM D. FITTON, Jr.