

P. C. ELSEY.
WATER HEATER.
APPLICATION FILED NOV. 8, 1910.

995,063.

Patented June 13, 1911.

2 SHEETS—SHEET 1.

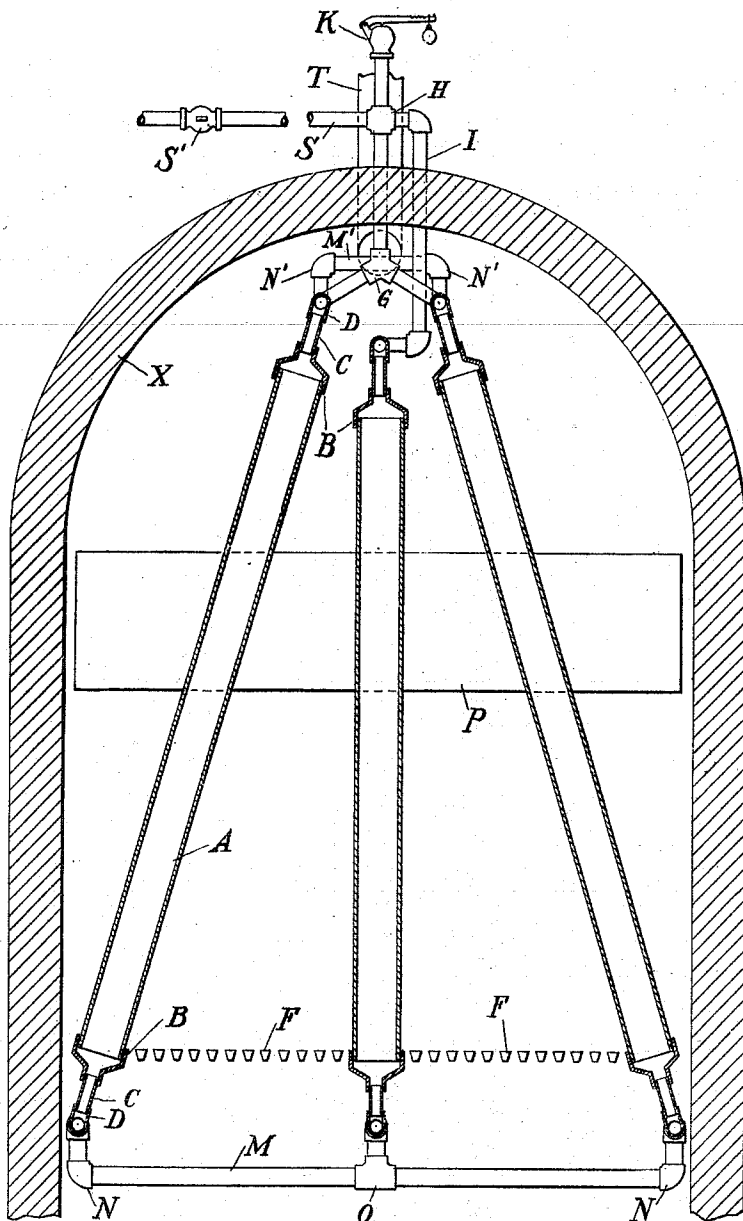


FIG. 1.

Prestley C. Elsey.
Inventor

Witnesses

Wm. E. Seaver.
Edwin H. Smith

by Geo. E. Tew
Attorney

P. C. ELSEY.
WATER HEATER.

APPLICATION FILED NOV. 8, 1910.

995,063.

Patented June 13, 1911.

2 SHEETS—SHEET 2.

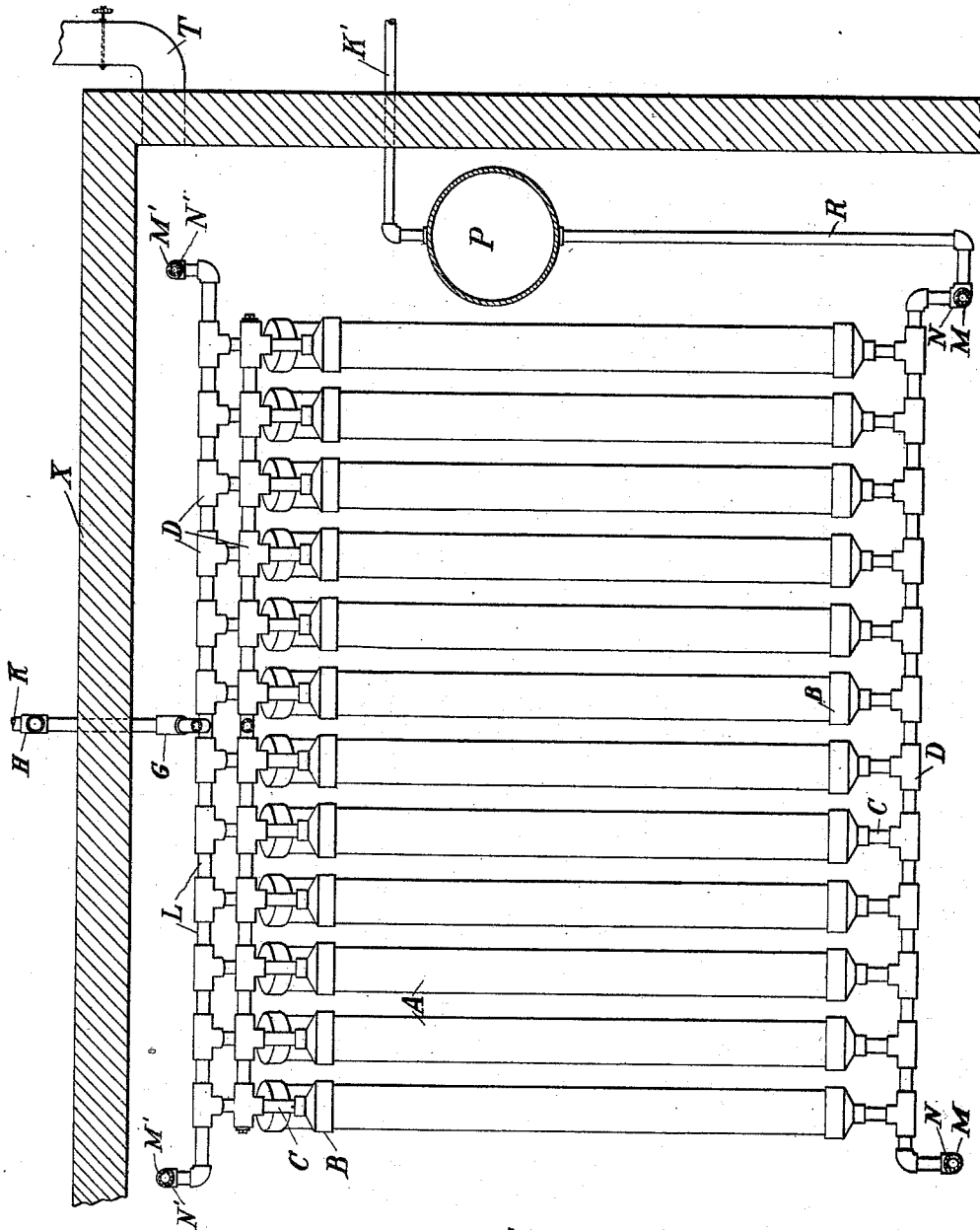


FIG. 2.

Witnesses

Wm. E. Seaver
Edith L. Smith

Prestley C. Elsey.
Inventor

by Geo. C. Tew
Attorney

UNITED STATES PATENT OFFICE.

PRESTLEY C. ELSEY, OF QUINCY, ILLINOIS.

WATER-HEATER.

995,063.

Specification of Letters Patent. Patented June 13, 1911.

Application filed November 8, 1910. Serial No. 591,361.

To all whom it may concern:

Be it known that I, PRESTLEY C. ELSEY, a citizen of the United States, residing at Quincy, in the county of Adams and State of Illinois, have invented certain new and useful Improvements in Water-Heaters, of which the following is a specification.

This invention relates to water heaters or boilers particularly adapted for hot water or steam heating, in which low pressure is employed, the device being especially useful in connection with house heating, in which a slow fire and little pressure is used.

An object of the invention is to produce a heater or boiler composed of a series of sections which can be built up to any size desired, each section consisting of a set of tubes, capable of being easily connected or disconnected. This feature is decidedly advantageous in house work, because the sections can be carried separately through any doorway or stairway without inconvenience, and the heater set up in the place where it is to stand by connecting the desired number of sections.

A further advantage is that no special parts are required, but the heater may be built of stock pipes, connections and fittings, which is an important advantage with respect to cost and also with respect to repairs, and modifications in the size of the boiler.

The construction and advantages of the invention will be more fully evident from the following description and the accompanying drawings in which—

Figure 1 is a vertical cross section of the heater. Fig. 2 is a longitudinal section.

As shown, the boiler or heater is provided with three banks or sets of tubes. The two outside banks incline inwardly toward each other at the top, in inverted V-shape. The middle bank stands vertically, midway between the two outside banks. The construction of each section of each bank is substantially identical, comprising a tube A, preferably about four inches in diameter, with a reducing coupling B screwed onto each end, and a nipple C screwed into each reducer, and a T D screwed onto the outer end of each nipple. Each tube A, with its connections at the ends as described, forms a section, and in setting up the banks a series of sections are joined together by means of nipples L which are screwed into the T's D at the top and bottom of the banks, the nipples

L being right and left threaded at opposite ends, and the T's being threaded to match. It will be seen that the nipples L and the T's form, in effect, continuous pipes at the top and bottom of each bank, extending from the front to the rear of the structure, and the upright tubes A, when the sections are set up, are spaced apart, say about two inches, so that the fire may pass around or between the tubes. The tubes of the side and central banks may correspond substantially in number and position with each other, the tubes of the central bank being somewhat shorter.

It is obvious that by means of the construction described a heater of any desired size may be made by adding sections as necessary, and the parts of each section may be kept in stock or readily obtained from standard stuff, and the various sections set up in the basement or other place where the heater is to be located.

To provide for circulation the banks are connected at their front and rear ends by cross pipes M, at the bottom, these cross pipes being joined to the T's D by suitable elbows N and T's O; and at the top the banks are connected at front and rear ends by cross pipes M' and elbows N'.

For service, a Y G is connected to the two side banks at the top, preferably at about the middle of the boiler, and the stem of this Y extends through the casing X of the heater, and joins a four way connection or X H located outside of the casing. The connection from the middle bank consists of a pipe I which extends from the top of said middle bank to the fitting H. The upper branch of this fitting may be provided with a safety valve K, and another arm with the service pipe S having a valve S', said service pipe leading to the radiator or heating system. The return pipe K' leads to a drum P located within the casing and extending across between the side walls thereof, behind the banks of tubes, and this drum is connected by a pipe R to the cross pipe M at the rear, whereby the returning water is supplied to the lowest part of the boiler and is heated in the drum P before it enters the tubes.

Inasmuch as the tubes A are comparatively large the flow of water therethrough is slow and hence the water may be heated to a high temperature.

The arrangement of the banks of tubes A

permits the grate F to be set in between the lower ends thereof, as shown in Fig. 1, and the number of grate bars may be varied according to the size of the heater. The products of combustion flow around between the upright tubes of the various banks, and thence out through the stack connection T at the back of the casing. The casing may be built of brick or any material suitable for the purpose.

To take out or replace any section it is simply necessary to unscrew the nipples L at the top and bottom, and the desired section can then be lifted out and another put in place and the nipples screwed in again. This enables repairs to be very quickly made, the sections being in that respect independent of each other, and capable of being taken out or put in at will. The whole central bank may be removed or omitted by disconnecting and plugging off the pipe I, and the T's O, without interfering with the two side banks; and, accordingly, a middle bank may be added when desired, to a heater having the two side banks. Any section of any bank may be removed and the connection plugged up without affecting the communication of the other sections.

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

1. A water heater comprising in combination side and middle banks of tubular sections, the middle bank being vertical and the side banks being inclined toward each other at the top, the banks being connected to each other at top and bottom, and each section comprising a tube and a T connected to each end thereof, the T's of the respective sections being connected together by removable nipples, whereby any section of any bank may be individually removed, the T's and nipples forming tubular connections between the sections of each bank, at the top and bottom thereof.

2. A bank for a water heater, comprising a set of tubes A spaced apart, reducers B at opposite ends of said tubes, nipples C screwed into said reducers, T's D screwed to the nipples, and nipples L connecting the T's, forming a sectional bank any tube A of which may be removed by unscrewing the nipples C, without disconnecting the remaining sections.

3. A water heater comprising in combination a casing, middle and side banks of tubes within said casing and spaced from the walls thereof, cross connecting pipes between said banks at the top and bottom thereof, a water drum extending across within the casing at the upper part of the back thereof, a return connection to said drum, a pipe from said drum to the lower cross connecting pipe, and a service pipe connected to the top of the banks.

4. A water heater comprising in combination a casing, middle and side banks of upright tubes within said casing, the banks being connected at top and bottom within the casing, a pipe connected to the top of the two side banks and extending through the top of the casing, and a pipe connected to the top of the middle bank and extending through the top of the casing and connected to said bank outside the casing.

5. A water heater comprising upright middle and side banks of tubes, and service and return pipes to which said banks are connected, the connections of the middle bank to the said pipes being separate from those of the side banks, whereby the middle bank is independently removable and replaceable, without disturbing the connections of the side banks with said pipes.

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

PRESTLEY C. ELSEY.

Witnesses:

Mrs. F. F. NIEHAUS,
STELLA A. SMITH.