

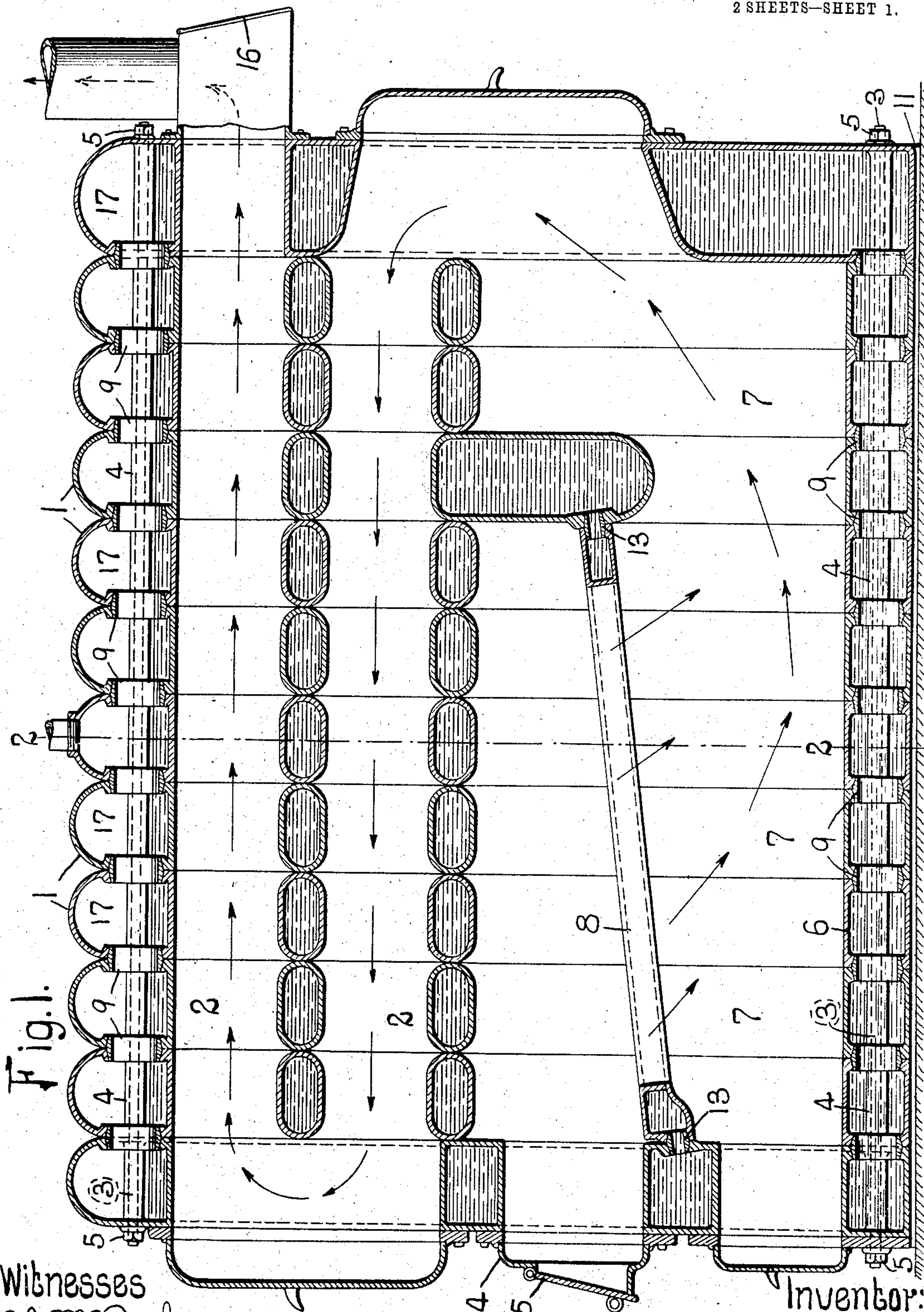
No. 859,593.

PATENTED JULY 9, 1907.

E. M. BOSLEY.
SECTIONAL BOILER.

APPLICATION FILED MAY 5, 1906.

2 SHEETS—SHEET 1.



Witnesses
a. j. McCauley.
Melb L. Church.

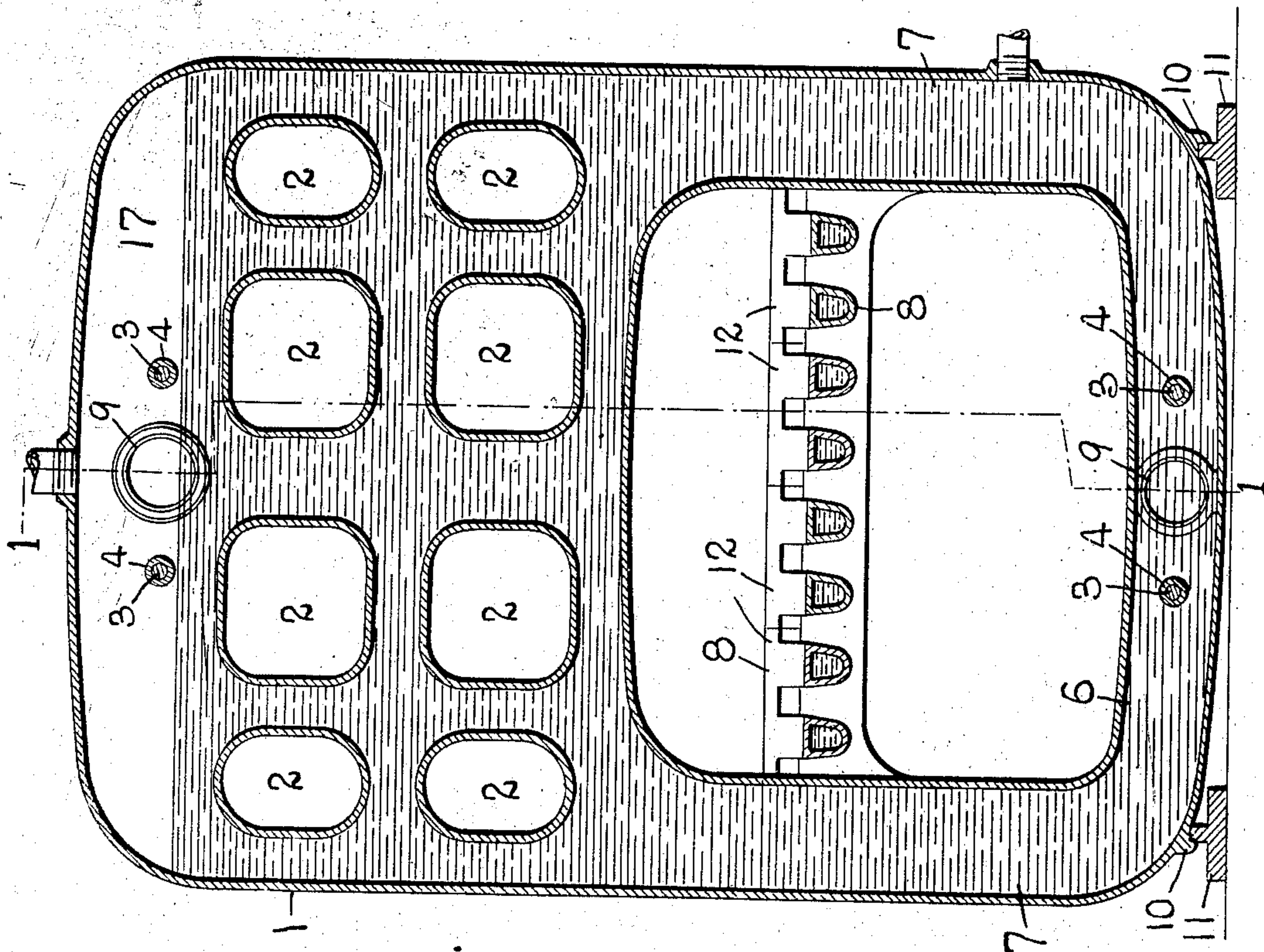
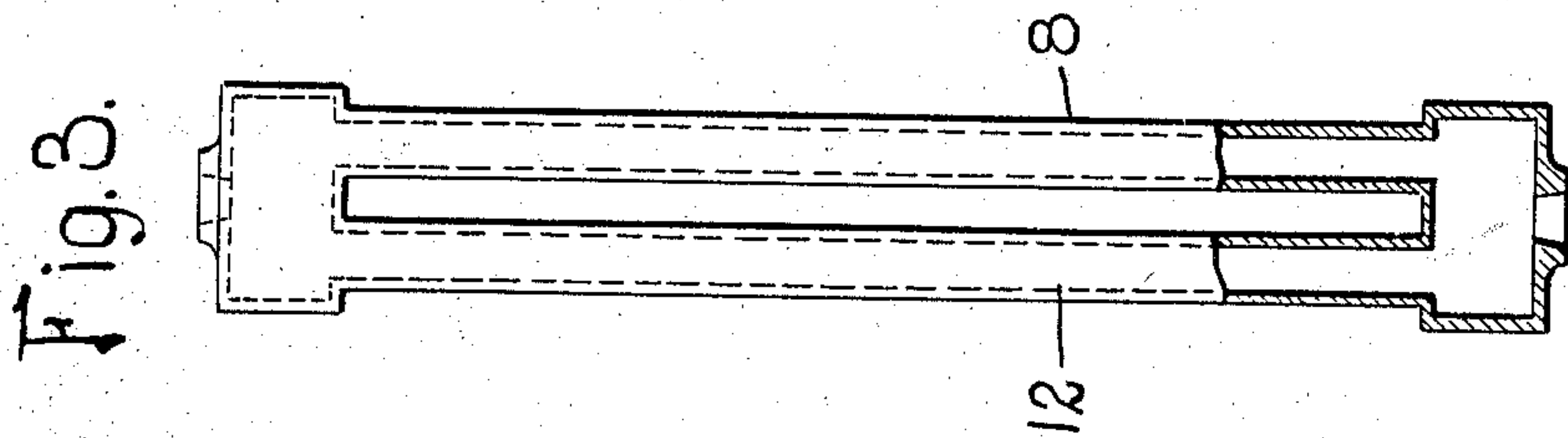
Inventor:
Elijah M. Bosley
by Bakewell Cornwall Atty's.

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2 SHEETS—SHEET 2.



Witnesses
A. J. McCauley.
Wells L. Church.

Fig. 2.

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Elijah M. Bosley
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UNITED STATES PATENT OFFICE.

ELIJAH M. BOSLEY, OF ST. LOUIS, MISSOURI.

SECTIONAL BOILER.

No. 859,593.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed May 5, 1906. Serial No. 315,355.

To all whom it may concern:

Be it known that I, ELIJAH M. BOSLEY, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Sectional Boilers for Heating Systems, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a sectional view through a boiler embodying the features of my invention, this view being taken on approximately the line 1—1 of Fig. 2; Fig. 2 is a cross sectional view taken on the line 2—2 of Fig. 1; and Fig. 3 is a detail view of one of the grate sections.

This invention relates to boilers for heating systems.

One object of my invention is to provide an improved down-draft sectional boiler which can be used for either a steam or a hot water heating system and which is so constructed that a greater heating area is provided than in the boilers heretofore in use.

Another object of my invention is to provide a sectional boiler that can be set up with very little labor and which does not require a separate cast base forming the ash-pit and a brick foundation on which said base is mounted.

Another object of my invention is to provide a boiler having a hollow cast grate forming a part thereof through which the water in the boiler circulates, and still another object of my invention is to provide a heater which is perfectly air-tight so that it can be absolutely controlled by an automatic draft door.

The sectional boilers which have heretofore been in use were set up or erected on a cast base located on top of a brick foundation, each section being provided with legs which rested on the top of the side walls of the cast base. The cost of the brick foundation was considerable and a great deal of labor was required to put the sections of the boiler together because they had to be hoisted up onto the side walls of the cast base, and then blocked up to prevent them from falling until all of the sections were assembled, for if a single section should fall it would knock down a portion of the brick foundation and also the grate which is mounted in the cast base before the sections of the boiler are put together. In down-draft heaters the bottom of the ash-pit burned out quickly, although it was formed of fire brick, on account of the intense heat to which it was subjected, and as the brick foundation would crack after it had been in use for a short while, due to expansion caused by the intense heat, it was impossible to control the heater absolutely by an automatic draft door.

My improved boiler has overcome all of the objectionable features above referred to as each section of the boiler is provided with a hollow water base which is formed integral with the water legs, thereby dispensing with a cast base and brick foundation and enabling the boiler to be set up on tracks placed on the floor of the room in which the boiler is located and insuring a perfectly air-tight heater as well as one which has a greater heating area than those heretofore in use.

Referring to the drawings which represent the preferred form of my invention, 1 designates one of the sections of the boiler which is hollow and is provided with flue openings 2. The boiler may be made up of any desired number of these sections which are held together by bolts or rods 3 extending through sleeves 4 formed integral with each section, the ends of the rods being screw-threaded to receive nuts 5 which clamp the sections of the boiler together. Each section is preferably of the form shown in Fig. 2, and comprises a hollow water base 6 which is formed integral with the hollow water legs 7, this hollow water base being located underneath the grate 8 so that an additional heating area is provided. This hollow water base is subjected to the greatest heat of any portion of the boiler because in a down-draft heater combustion takes place below the grate. Accordingly, the advantage in having a heating surface located at this point can be readily seen.

Communication between each section of the boiler is obtained by means of tapered nipples 9 centrally located at the top and bottom of each section. As the lower nipples are located at the lowest point of the boiler they will receive all of the sediment which collects in the boiler and thus enables the boiler to be cleaned by flushing out these nipples. The water base 6 of each section is preferably provided with lugs 10 which engage tracks 11 placed on the floor of the room in which the boiler is located and in setting up the boiler the first section is placed in alinement with said tracks and then simply moved into an upright position, the other sections being assembled in the same manner and secured together by the bolts 3.

The grate is preferably made up of a plurality of sections 12, one of which is shown in Fig. 3, these sections being hollow castings and forming part of the boiler. Preferably, the sections of the grate are connected to two of the sections of the boiler by means of tapered nipples 13 so that the grate will always be filled with water and thus prevent it from burning out quickly as well as increasing the heater area of the boiler. In case of breakage it is a very easy matter to renew the grate or any section thereof by simply removing the first section of the boiler which permits access to the grate, this being a decided advantage over the constructions

heretofore in use wherein it was necessary to crawl into the ash-pit to get at the grate. The feed door 14 is provided with an automatically operated draft door 15 and as the heater is perfectly air-tight it is possible to absolutely control the same, the smoke bonnet being also provided with a check draft door 16.

Each section of the boiler is provided with a good-sized dome 17 so that the boiler can be used for a steam as well as a hot water heating system, the drawings showing the boiler partially filled with water and used for a steam heating system.

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

1. A down-draft boiler composed of a plurality of sections, each of which has water legs and a hollow water base connecting the lower ends of said legs, a grate extending over the water bases of said section, and nipples

between the water bases of each section to permit the water in the base of one section to pass into the water bases of the adjacent sections; substantially as described. 20

2. A down-draft boiler composed of a plurality of sections, each of which has water legs and a hollow water base connecting the lower ends of said legs, water connections between the water bases of the sections, water connections at the upper ends of said sections, and a hollow cast grate arranged in an inclined plane above the water bases of said sections and forming part of the boiler, thereby causing the water to circulate in the direction in which the flame of the fire travels; substantially as described. 25

In testimony whereof, I hereunto affix my signature, in the presence of two witnesses, this third day of May 1906. 30

ELIJAH M. BOSLEY.

Witnesses:

WELLS L. CHURCH,
GEORGE BAKEWELL.