

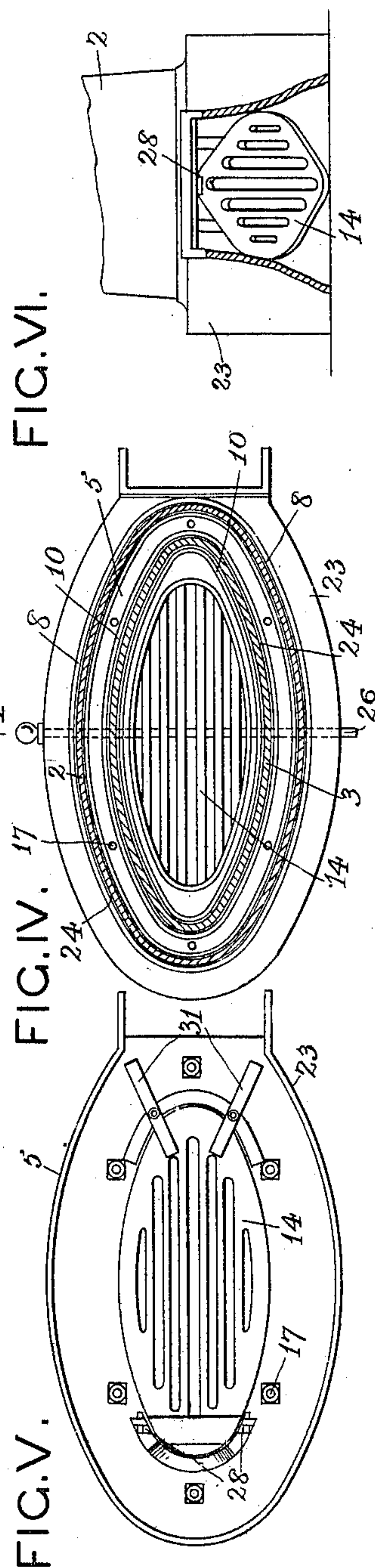
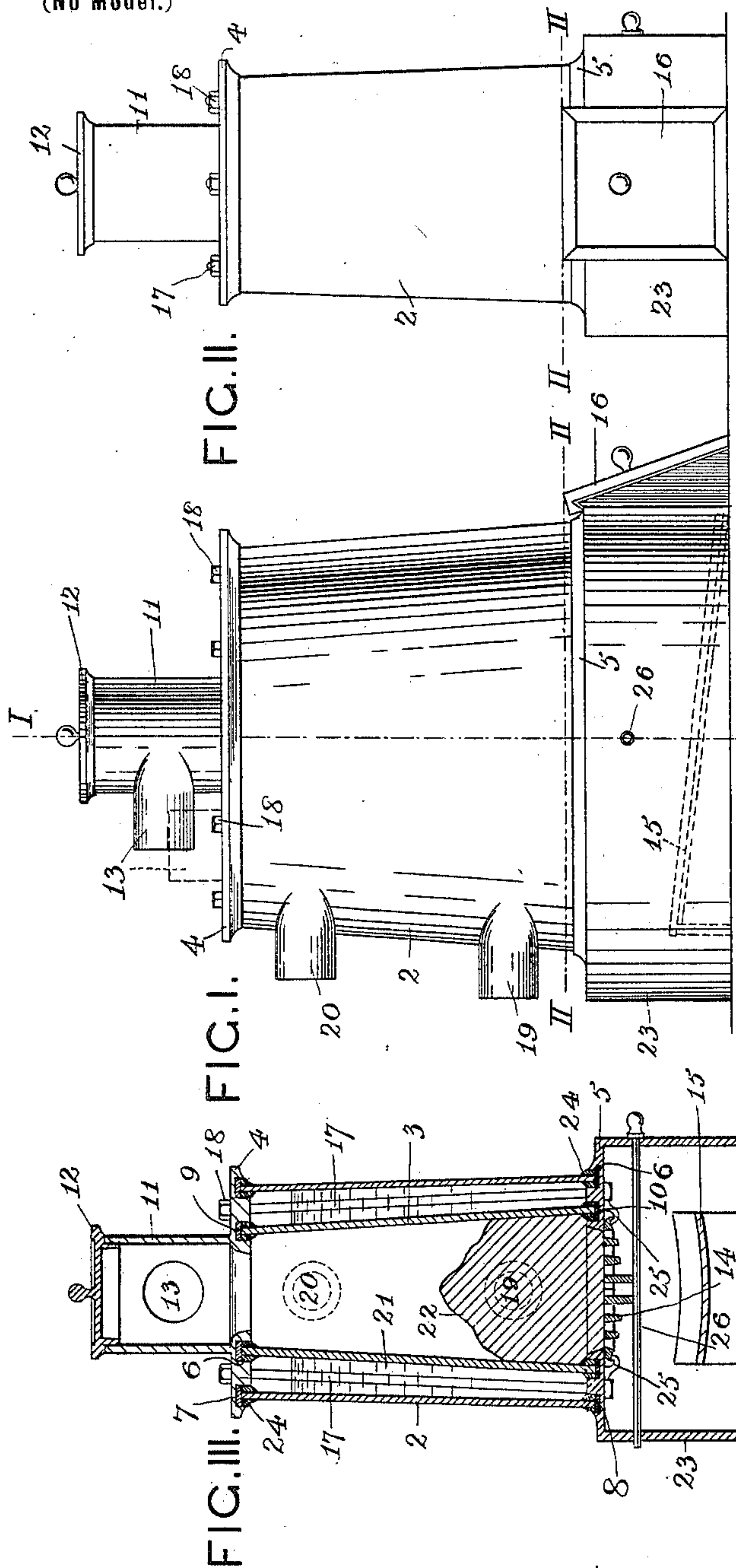
No. 673,961.

Patented May 14, 1901.

J. T. MAZEY.
WATER HEATING APPARATUS.

(Application filed Mar. 31, 1900.)

(No Model.)



Witnesses,
Thos. Wilson.
John T. Farakowley.

Inventor,
John Thomas Mazey.
per
Douglas Leechman.
attorney.

UNITED STATES PATENT OFFICE.

JOHN THOMAS MAZEY, OF COVENTRY, ENGLAND.

WATER-HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 673,961, dated May 14, 1901.

Application filed March 31, 1900. Serial No. 11,013. (No model.)

To all whom it may concern:

Be it known that I, JOHN THOMAS MAZEY, a subject of the Queen of Great Britain, residing at Coventry, county of Warwick, England, have invented certain new and useful Improvements in Water-Heating Apparatus, of which the following is a specification.

My invention relates to water-heating apparatus, and has for its object to provide an improved slow-combustion boiler.

In the accompanying drawings, Figures I and II are side and front elevations, respectively, of a boiler constructed according to my invention. Fig. III is a vertical transverse section of the same on the line I I in Fig. I. Fig. IV is a plan on the line II II in Figs. I and II. Figs. V and VI are an inverted plan and front elevation, respectively, showing a modified arrangement of fire-bars.

The same numerals refer to like parts throughout the drawings.

In constructing a boiler according to my invention I take two cast-iron oval taper shells 2 3 of equal length, but unequal diameters. The smaller shell 3 is arranged within the larger 2, and the two are held in position by top and bottom plates 4 5, the whole being held together by longitudinal bolts. It is convenient to make the two shells of such relative dimensions that the large end of the inner shell may be passed through the small end of the outer shell in fitting up the boiler. The upper plate 4 is formed with two oval grooves 7 9 on its under side, the larger groove 7 being adapted to receive the top of the larger shell 2 and the smaller groove 9 being adapted to receive the top of the smaller shell 3. The center of the plate 4 is carried upward in the shape of a hollow cylinder to form a hopper 11, which is covered by a removable lid 12. The smoke-pipe 13 preferably leads out from the hopper 11, but may project directly from the top plate, as shown in dotted lines in Fig. I. The base or lower plate 5 has two oval grooves 8 10 on its upper surface corresponding to those on the lower surface of the upper plate 4, and the lower edges of the shells 2 3 are adapted to enter the said grooves 8 10, respectively, as shown. Washers 6, of asbestos or other suitable packing material, are preferably laid in

the beds of all the grooves. The center portion of the base is fitted with fire-bars 14, preferably at a short distance above the ground. An ash-tray 15 may be fitted under the fire-bars. A sliding door 16 may be fitted on the lower part of the outer shell 2 or, preferably, on the skirting 23 of the bottom plate 5, as shown, or other suitable means may be provided for giving access to the fire-bars and ash-tray, if any. A suitable number of tie-bolts 17—say six—connect the top plate 4 with the base 5, passing through the space between the shells, and are tightened by nuts 18 at one or both ends thereof. Tightening the nuts secures the shells 2 3 firmly within the grooves 7 8 9 10 and grips the said shells, top plate 4, and base 5 together. Red lead or the like 24 is employed in addition to the above-mentioned packing, or other suitable means may be adopted to secure watertight joints between the plates and shells and bolts. Water 21 is admitted to the annular space between the shells through an orifice 19 in the outer shell at or near the bottom thereof. The water is heated by the combustion of coke or other suitable material or materials 22 within the inner shell, and the water when heated issues from the annular space through an orifice 20 at or near the top of the outer shell below the smoke-pipe.

I sometimes divide the fire-bars 14 along the major axis and adapt the outer edges thereof to hook (25) onto the bottom plate 5. The fire-bars are normally supported on a rod 26, passing across the base under the said fire-bars, so that by withdrawing the rod the halves of the fire-bars are able to turn downward and release any clinker or the like which may have accumulated in the bottom of the stove, or, as shown in Figs. V and VI, the said fire-bars may remain in one piece, hinged (28) by their rear end to the bottom plate and normally held up by bar-buttons 31. When the outer ends of the buttons are drawn together, the front end of the fire-bars falls, Fig. VI, and allows of the ready removal of the clinker, as before. In either case the fire-bars are set at a suitable height to allow of their falling, and the boiler proper is preferably raised by the skirting 23 or otherwise for this purpose.

The above-mentioned boilers are specially suitable for heating greenhouses and for similar purposes.

What I desire to secure by Letters Patent
5 is—

1. In water-heating apparatus the combination of, an oval taper outer shell, an oval taper inner shell, a top plate, a bottom plate,
10 tie-bolts passing from the top plate to the bottom plate between the inner and outer shells, and a hopper formed with the top plate, substantially as set forth.

2. In water-heating apparatus, the combination of, an oval taper outer shell, an oval taper inner shell, a top plate, a bottom plate, 15 tie-bolts passing from the top plate to the bottom plate between the inner and outer shells, and a hopper and a smoke-pipe formed with the top plate, substantially as set forth.

JOHN THOMAS MAZEY.

Witnesses:

JOHN THOMAS FAZAKARLEY,
THOS. F. WILSON.