

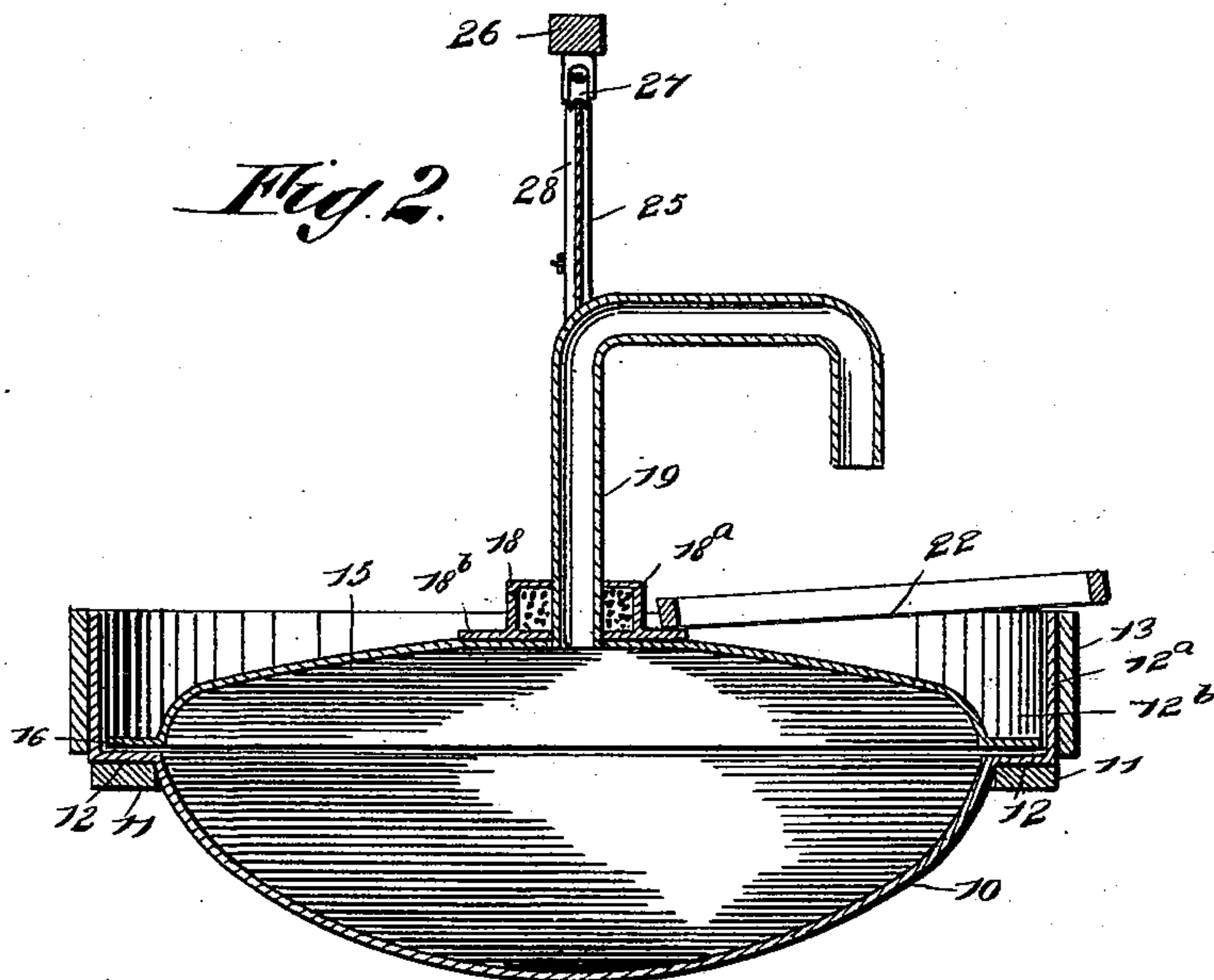
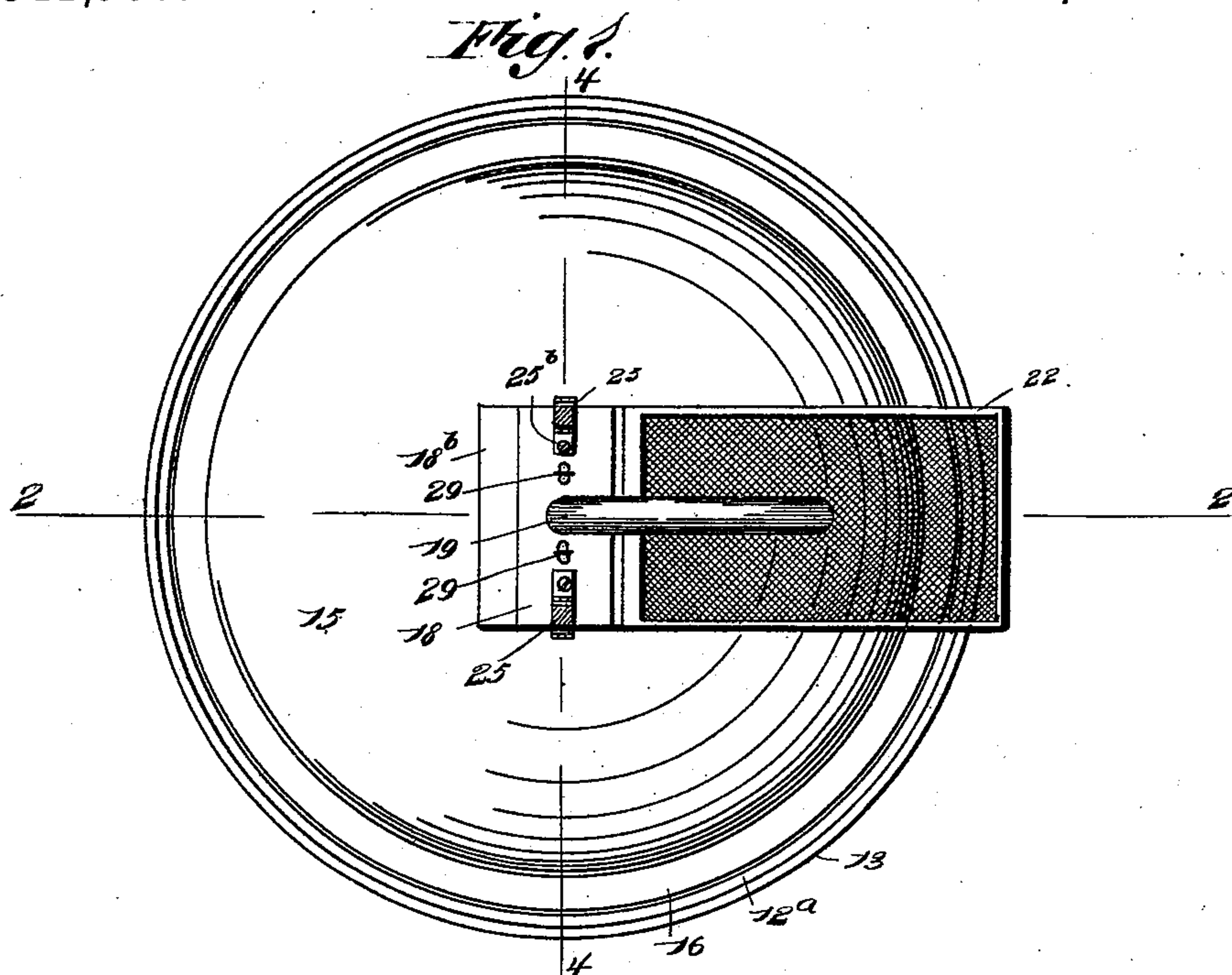
(No Model.)

2 Sheets—Sheet 1.

W. S. BALLOU.  
EVAPORATING PAN.

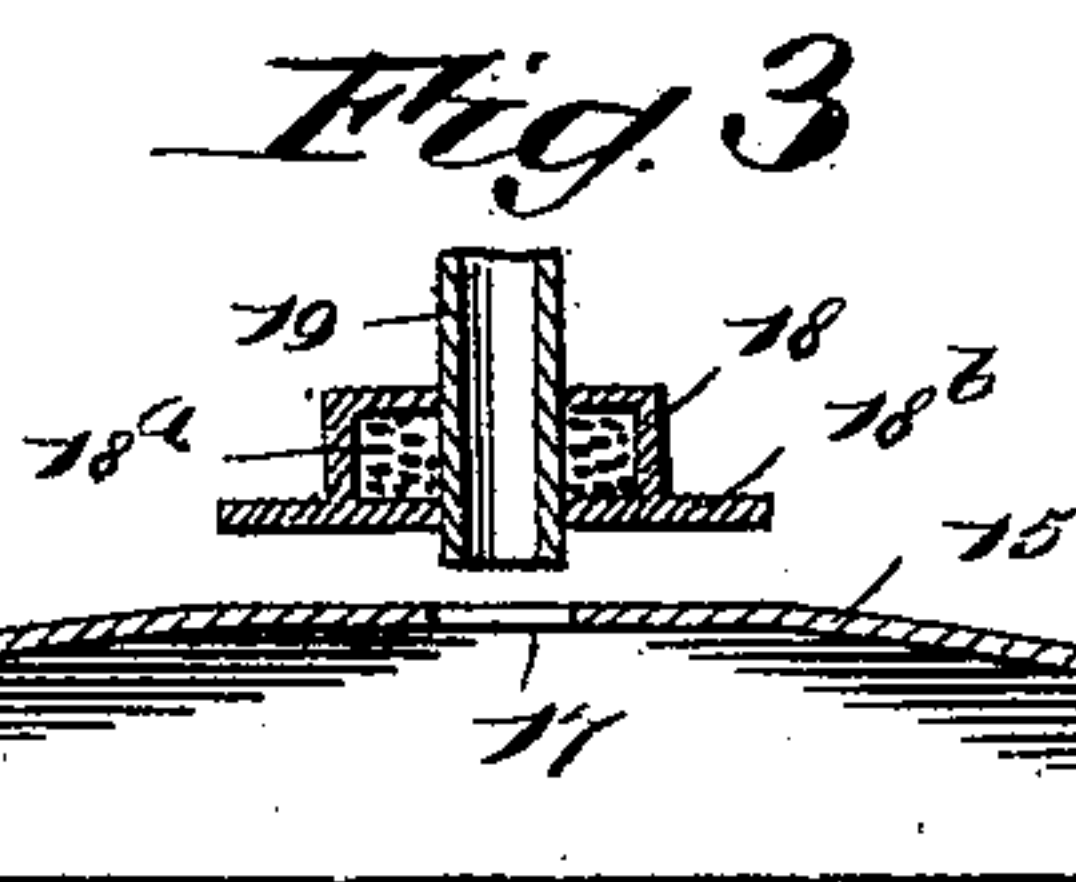
No. 541,707.

Patented June 25, 1895.



WITNESSES:

*F. McArdle*  
*J. R. McAuliffe*



INVENTOR

*W. S. Ballou*  
BY *Munn & Co*  
ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

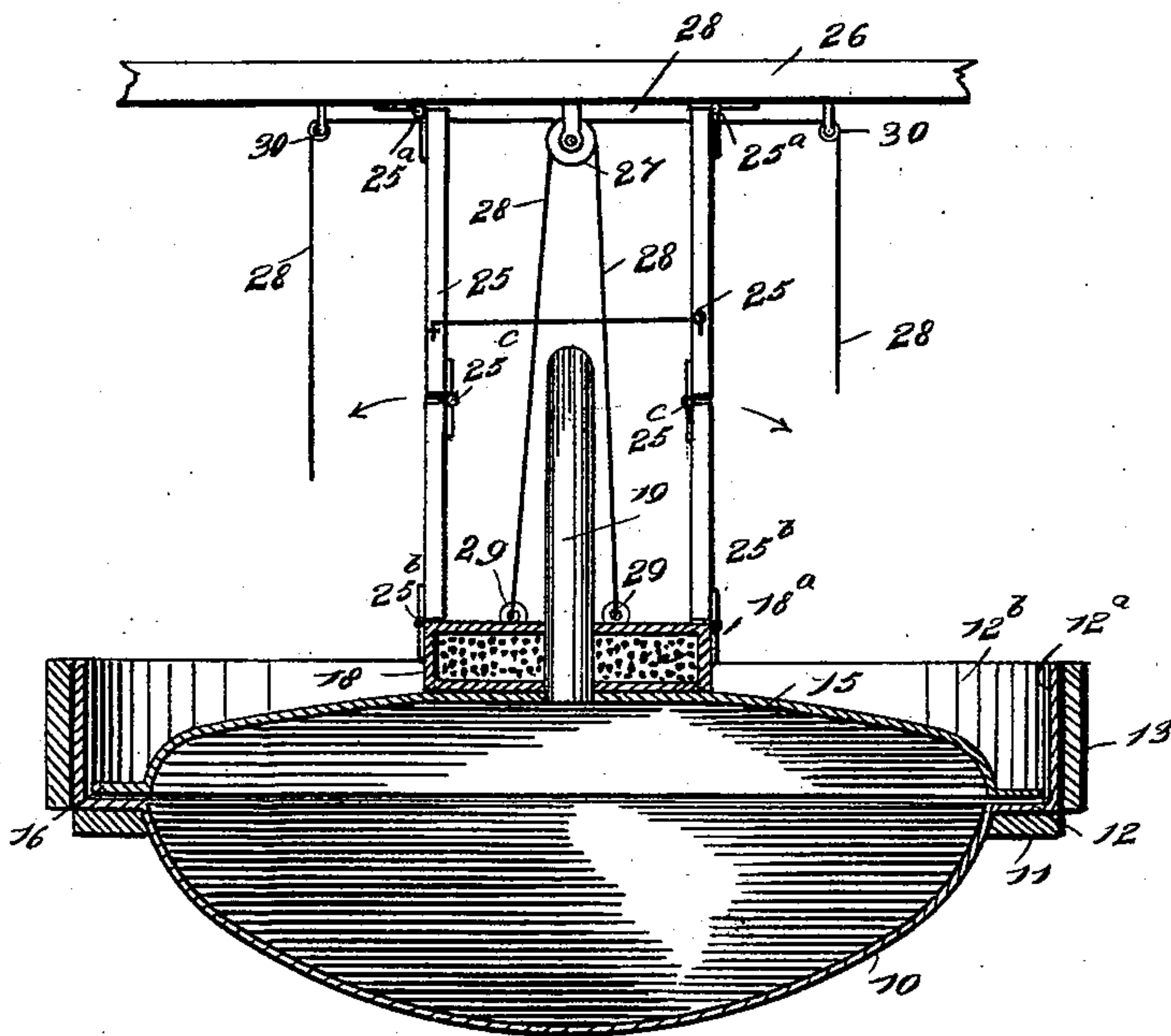
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*Fig. 4*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM S. BALLOU, OF BAINBRIDGE, GEORGIA.

## EVAPORATING-PAN.

SPECIFICATION forming part of Letters Patent No. 541,707, dated June 25, 1895.

Application filed September 10, 1894. Serial No. 522,630. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM S. BALLOU, of Bainbridge, in the county of Decatur and State of Georgia, have invented a new and Improved Cooler and Skimmer, of which the following is a full, clear, and exact description.

My invention relates to improvements in cooler and skimmer attachments for ordinary sirup boiling kettles or pans.

The object of my invention is to produce an apparatus which may be applied to an ordinary kettle and which will enable the sirup therein to be rapidly boiled without the least attention, and which is constructed in such a way that the sirup is moved over and over to and from the kettle, passing meanwhile through a strainer and skimmer, so that it is effectually cleaned and only pure sirup left in the kettle.

My improved apparatus is so constructed and arranged that the juice may be thoroughly cooked and boiled over a comparatively hot fire, thus rendering the process of reduction speedy and cheap.

To these ends my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of a kettle provided with my improved cooler and skimmer, parts being in section. Fig. 2 is a vertical section of the same on the line 2 2 of Fig. 1. Fig. 3 is a broken detail section of the cooler and its appurtenances; and Fig. 4 is an elevation with parts in section, the view being taken at right angles to Fig. 2, and on the line 4 4 in Fig. 1.

The kettle 10 is of the usual kind, and has the customary horizontal flange 12 adapted to rest on the support 11, and a vertical flange 12<sup>a</sup>, such flanges in connection with the cooler presently referred to forming a collecting chamber 12<sup>b</sup>, the flange 12<sup>a</sup> being also encircled by the usual hoop or band 13.

15 indicates the cooler which is in the nature of an inverted dished cover, and is provided with a flange 16 fitted over the flange 12

of the kettle, and held thereon in such a way as to permit the entry of the juice between the flanges for a purpose presently described, said space in the drawings being exaggerated in the interest of clearness.

Centrally, the cooler 15, which serves as a cover for the kettle 16, has an aperture 17, over which fits a detachable cap 18 through which leads a vent spout 19, which extends upward and is bent twice at about a right angle so as to deliver upon the top of the cooler and into the collecting chamber 12<sup>b</sup>. The cap 18 is hollow and filled with a metallic or other packing 18<sup>a</sup>, and at two sides of the cap flanges 18<sup>b</sup> extend.

22 indicates the skimmer which comprises a suitable frame and a screen held therein, and such skimmer is long enough to extend from the flange 18<sup>b</sup> of cap 18, to the kettle rim, it being disposed under the discharge of the spout, as clearly shown.

From the foregoing description in connection with the drawings it will be readily seen that the sirup may be boiled over a hot fire, and will need no attention until reduced to the proper consistency, as a constant circulation is maintained through the spout and the strainer, as the hot juice which is forced up from the boiler through the spout 19, settles on the strainer, where it is skimmed, partially cooled, and passes therethrough onto the top of the cooler, and cools on the latter, or in other words, cools in the open air, temporarily collects in chamber 12<sup>b</sup> and passes back into the kettle through the space between the flanges 12 and 16, which space is only sufficiently large to allow cooled juice to pass through but not large enough for the hot juice to escape, except at the highest pressure when the cover being formed of elastic or yielding metal and being held down at its center, the margins are forced, by the internal pressure, away from the flange 12 so as to open a passage at which the vapors may escape.

Before placing my improved skimmer and cooling devices on the kettle, the juice to be made into sugar is slowly brought to a boil and the heavier skimmings removed by hand, after which the cooler and skimmer are applied and the kettle takes care of itself.

Preferably the cooler 15 has sufficient engagement with the spout 19 to enable both to



be lifted together, and provision for lifting the same is made by the devices shown which consist of cords or wires 28. I also employ braces 25, having a hinged connection as at 5 25<sup>a</sup> with a suitable overhead support 26, and a hinged connection with the cap 18, as at 25<sup>b</sup>, and the supports further have a hinge joint in the center, as at 25<sup>c</sup>, the braces serving to force and maintain the cooler in place.

10 On the overhead support a pulley 27 is secured over which the cords 28 pass, one end of each cord passing downward to eyes 29 or equivalent devices on the cap 18, and the other ends passing through suitable guides 15 30 and thence downward within reach of the attendant.

In practice a pull on the cords 28 will raise the cooler to the desired height to give access to the kettle, the braces 25 flexing at the center as will readily be understood. The braces 20 normally are prevented from flexing by the use of a hooked rod 40, which connects the braces 25 near their hinge joint 25<sup>c</sup>.

Having thus described my invention, I 25 claim as new and desire to secure by Letters Patent—

1. The combination of a kettle and a collecting chamber, a cooler or cover member held on the kettle with its edges spaced 30 slightly apart therefrom whereby an inlet is formed, said cooler having a vent spout and a skimmer arranged to receive the juice from the vent spout and discharge it onto the cooler, substantially as set forth.

2. The combination with the kettle having 35 an annular flange and a vertical rim, a cooler or cover member having an annular flange fitted on the flange of the kettle but held slightly spaced apart therefrom, a discharge 40 spout projected up from the cooler and held to discharge over the top of the same, and a straining device held between such spout and the top of the cooler, all arranged substantially as shown and described.

3. The combination of a kettle having a 45 flat flange around its edge, said flange being upturned at its edges, and perforated cover provided with a vent spout and having a flattened flange around its edge, the flange on said cover being of less diameter than the flat 50 flange on the kettle, and being spaced apart slightly therefrom, whereby an inlet is formed, substantially as set forth.

4. The combination of a kettle, a cover therefor, a support arranged above the cover, 55 flexible connections between said support and the cover, whereby the latter may be elevated, and braces each consisting of rods hinged together at adjacent ends, each of said braces being hinged at one end to the 60 support and at the other end to the cover, whereby the latter is guided in its vertical movements, substantially as set forth.

WILLIAM S. BALLOU.

Witnesses:

W. G. D. TONGE,

W. C. MOORE.