

970,289.

O. E. ALLEN.  
STEAM COOKER.  
APPLICATION FILED MAR. 3, 1910.

Patented Sept. 13, 1910.  
2 SHEETS—SHEET 1.

Fig. 1.

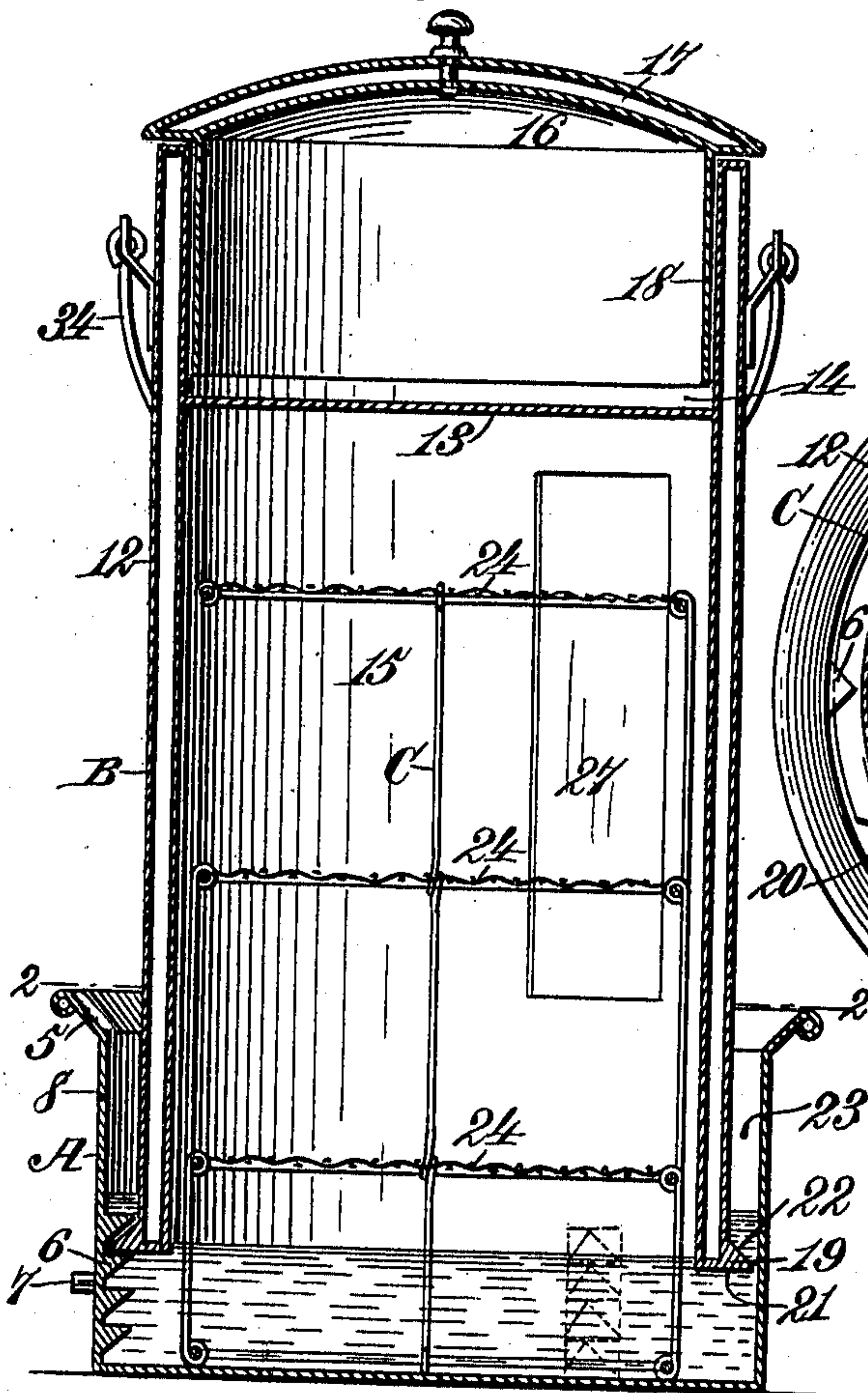


Fig. 2.

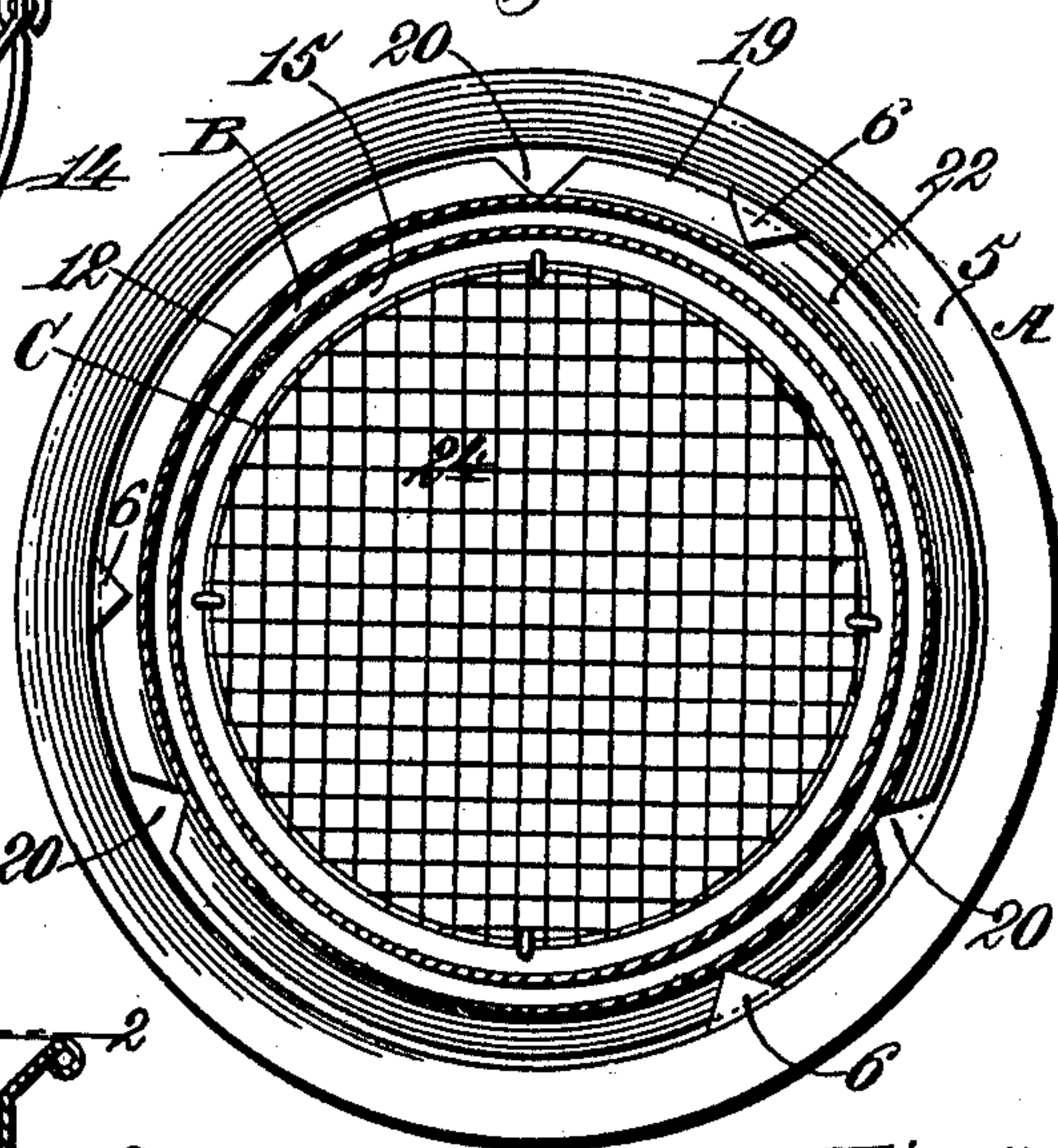


Fig. 3.

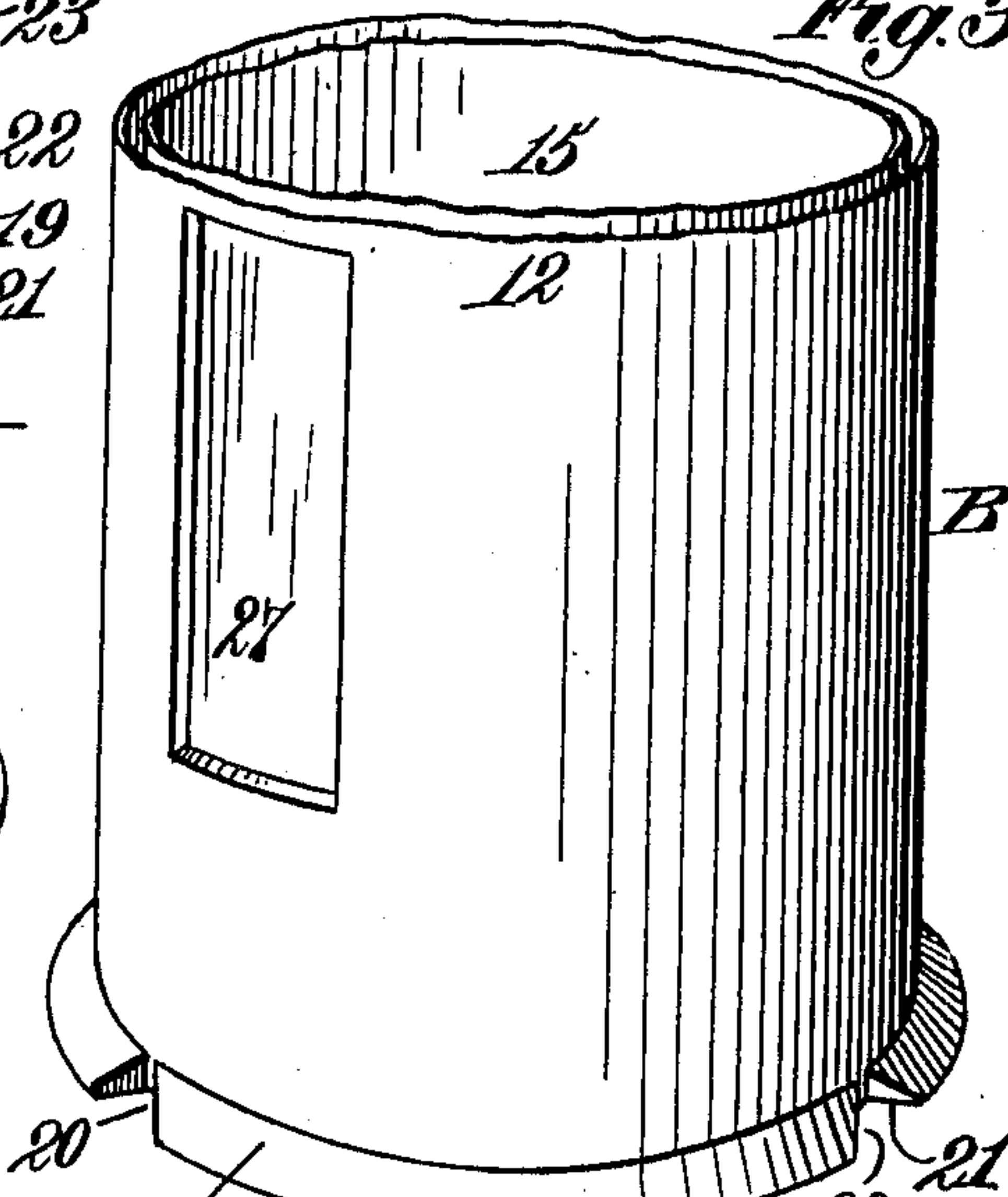
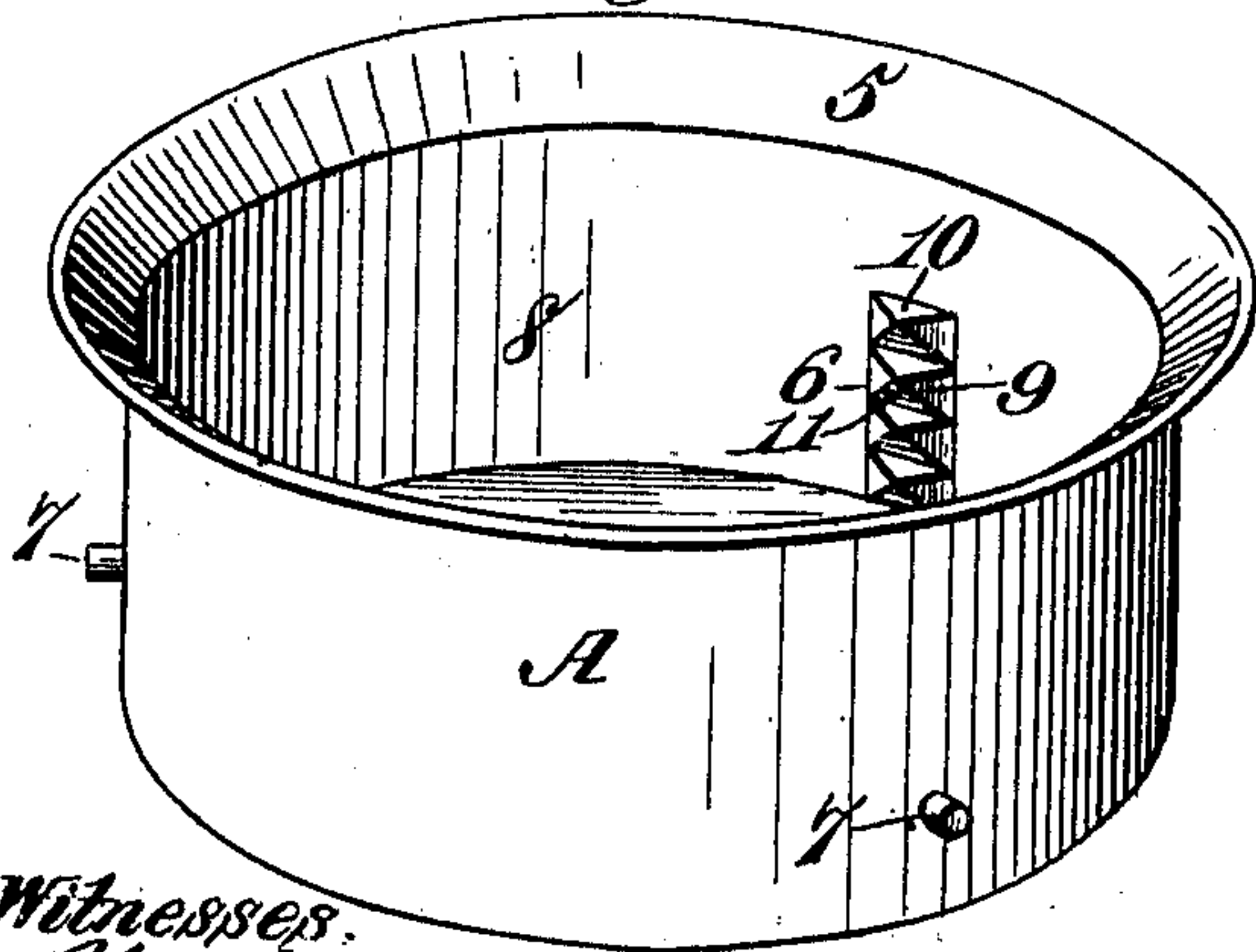


Fig. 4.



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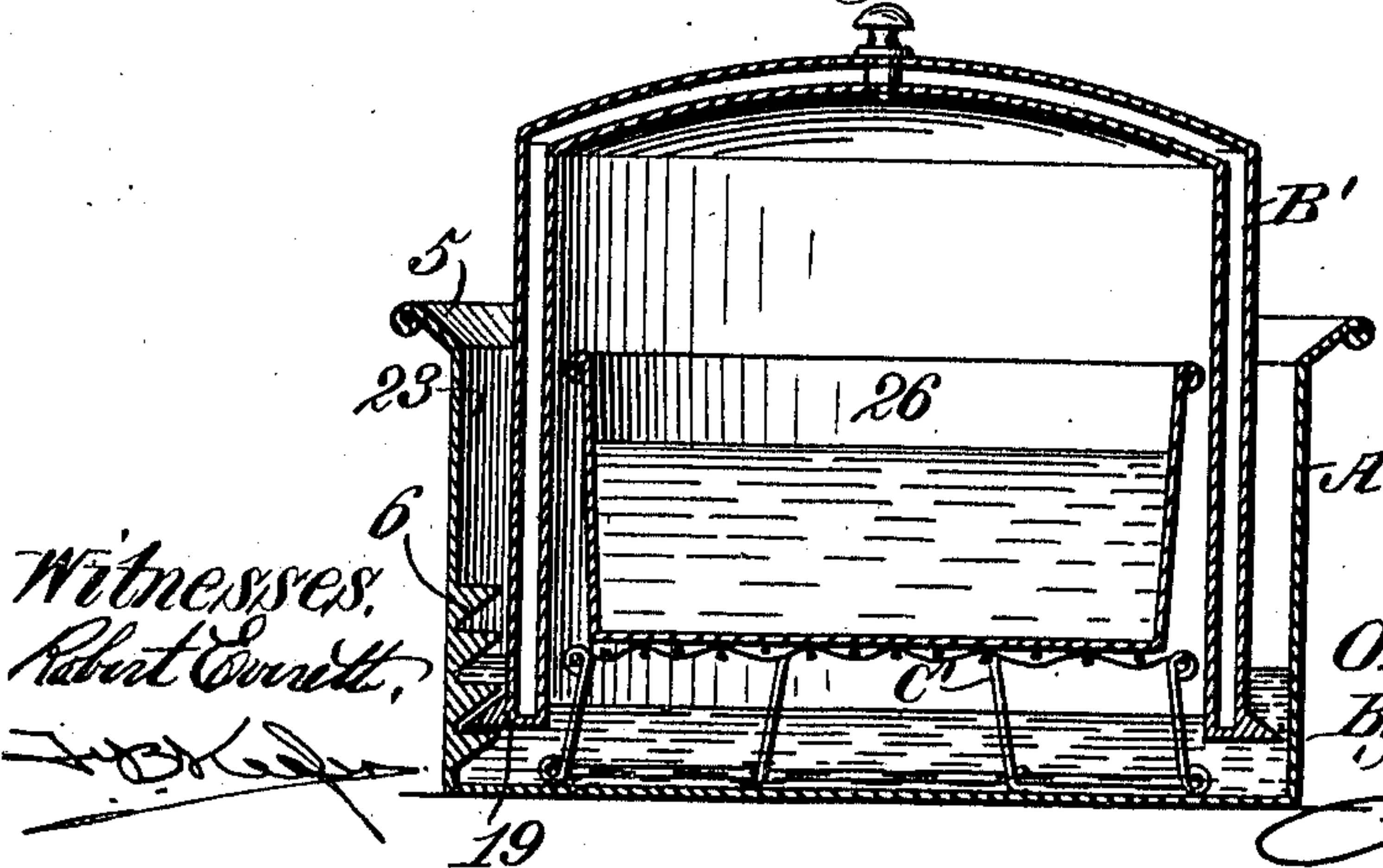
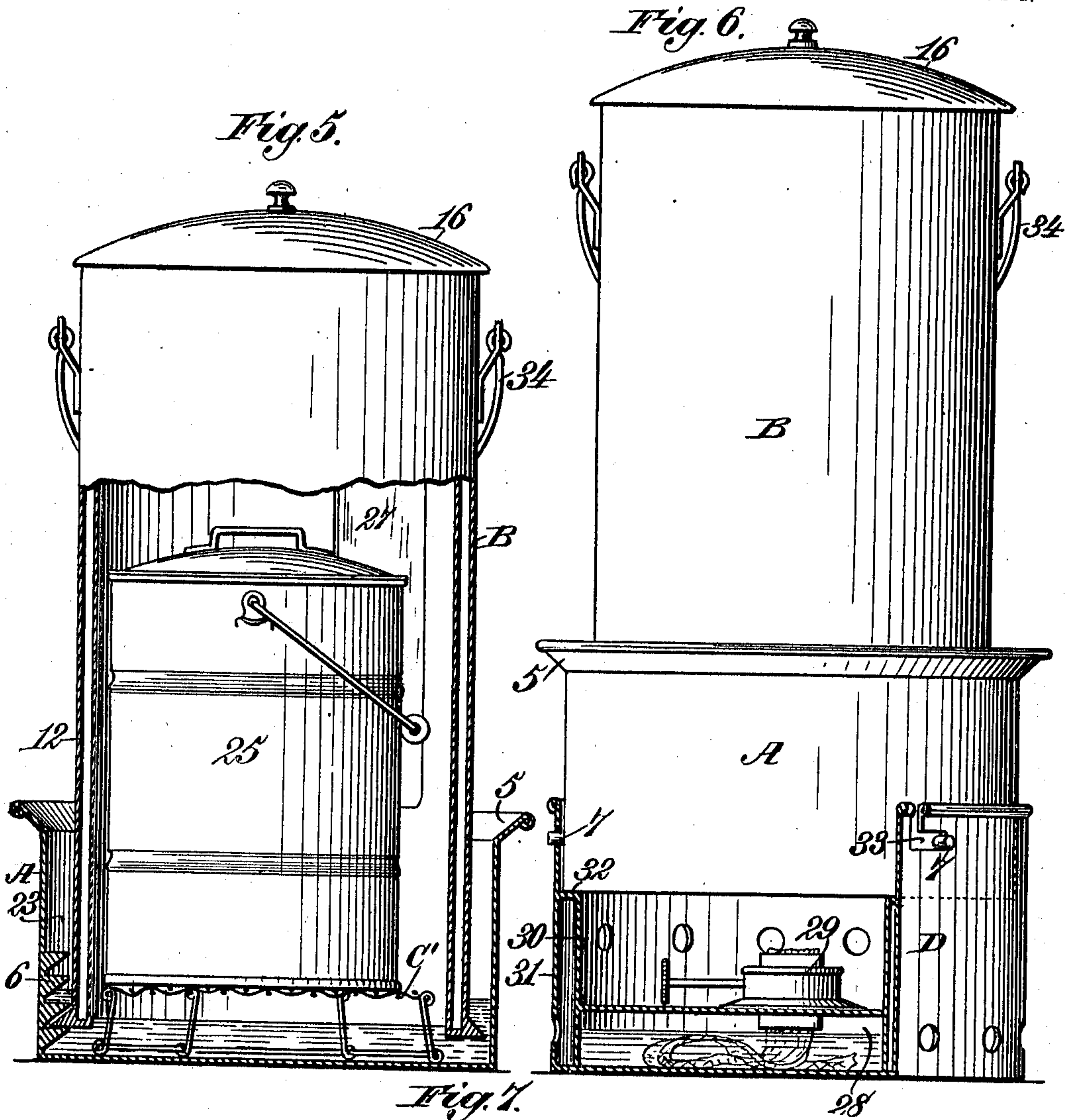
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

ORVILLE E. ALLEN, OF HORNELL, NEW YORK.

STEAM-COOKER.

970,289.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed March 3, 1910. Serial No. 547,046.

*To all whom it may concern:*

Be it known that I, ORVILLE E. ALLEN, a citizen of the United States, residing at Hornell, in the county of Steuben and State of New York, have invented new and useful Improvements in Steam-Cookers, of which the following is a specification.

The present invention is an improvement in steam cookers, and it proposes a structure wherein the pressure of the live steam, which is utilized as the cooking and heating agent, may be regulated at will within certain predetermined limits by the adjustment of one of the two main elements of the cooker relative to the other element.

It further comprehends the production of a cooker wherein the construction and arrangement of the two afore-mentioned main elements is such as to effect the formation of an expansion chamber between said elements designed to receive a water seal which not only prevents the entrance of dust or dirt into the cooker, but permits the loss of water occasioned by evaporation to be compensated by fresh supplies of water without interrupting the cooking operation, and also permits only the surplus steam to escape.

Finally, it contemplates a cooker which may be readily carried from place to place and which will operate with equal readiness upon a range and a liquid fuel heater of any conventional type.

A structural embodiment of the invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a vertical sectional view of the improved cooker. Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1. Fig. 3 is a fragmental perspective view of one of the two main elements of the cooker. Fig. 4 is a perspective view of the other main element. Fig. 5 is a vertical sectional view, partly in elevation, of the cooker utilized in connection with a different type of food receptacle from that shown in Fig. 1. Fig. 6 is an elevational view of the cooker attached to a liquid fuel heater, the latter being shown partly in section. Fig. 7 is a vertical sectional view showing a further modification of the invention.

From an inspection of the drawings, it will be seen that the cooker consists, as originally stated, of but two essential elements,

namely, a vessel or base, generally designated by the letter A, and a bell-like member B arranged therein. With these two elements there is associated a support C which may either itself receive the food to be cooked or may constitute a stand or mount whereon the food receptacle rests.

The vessel or base A, which is common to all forms of the invention, acts as a water receptacle or reservoir, and is shown as of substantially cylindrical shape. It is provided with an out-turned continuous flange at its upper edge, and with inner and outer supports 6 and 7 located, respectively, upon the corresponding faces of its side wall 8. In the present construction, the inner supports are constituted by vertically arranged series of lugs or teeth 9 which project laterally from the above-mentioned wall, their upper faces 10 being flat and their lower faces 11 inclined. The outer supports 7 are in the nature of lateral pins.

The bell B, shown in Figs. 1, 3 and 5, is preferably constructed with a double side wall 12. Adjacent the upper end of this member there is provided a horizontal partition 13 which divides the interior thereof into two chambers 14 and 15 of unequal depths, the upper or shallow chamber being employed for "dry warming" purposes. The chamber last referred to is closed by a cover 16 comprising a double top wall and a depending side wall 18, the latter wall preferably fitting within said chamber. At its lower edge the bell is formed with a continuous out-turned flange 19 having a series of notches 20 corresponding in number to the number of series of lugs or teeth 9, with which the base or vessel A is provided, and in shape to that of said lugs or teeth. The lower face 21 of this flange is flat, and its upper face 22 inclined, the arrangement being such that when the flange is in cooperative engagement with said supports, its lower face will rest upon the upper faces of one set of lugs or teeth, while its upper face will fit against the inclined lower faces of the next higher set, as shown in Figs. 1, 5 and 7, the bell being supported in this manner in adjusted position with relation to the base or vessel A.

The outer diameter of the bell is somewhat less than that of the base or vessel, and, con-



sequently, when the former is arranged within the latter, an intermediate annular chamber 23 will be produced which communicates with the space or chamber below the flange 19 by way of the notches 20 and also by way of the space between the flange edge and the side wall 8 of the base or vessel.

The food to be cooked by the live steam generated from the water in the vessel A is arranged within the bell, as will be understood. Where it is desired to utilize the heating action of the steam directly, the support C shown in Fig. 1 may be employed, said support being in the form of a wire rack upon the horizontal members 24 of which the food or the dishes containing the same are placed. On the other hand, where the food has already been cooked, and is merely to be kept in a heated condition, it may be placed in an ordinary dinner pail 25, or the like, (see Fig. 5), which is supported upon the low rack or stand C'. The last-mentioned stand may also be employed for supporting a pan or kettle 26, as shown in Fig. 7; in this instance, however, a shallow bell B' is preferably made use of. In order to enable the progress of the cooking to be watched, a suitable window 27 is provided in the full-sized bell, and, in fact, in the shallow bell B' as well, illustration thereof in the latter construction being omitted.

In the operation of the apparatus, water is poured into the vessel A, after which the food to be heated or cooked is placed either in the compartments of the rack C, or in the proper receptacle, when the stand C' is to be employed. The bell is then placed over the receptacle or rack in the manner shown, and its flange 19 engaged with the proper set of lugs or teeth 9, whereby it is held at the proper distance from the bottom of the vessel. During the operation of adjusting the bell, its flange is submerged in the water, the water above said flange constituting a seal, as will be apparent, which prevents escape of steam except by way thereof, and further prevents entry of dust or dirt into the interior of the bell. The depth of this seal is varied by the adjustment of the bell within the vessel A, and consequently such adjustment will in turn regulate the pressure within said bell, since the steam can escape through the seal much more readily when the latter is shallow than when it is deep. In other words, when the bell is lowered to its utmost extent, the steam pressure, and, therefore, the heat within the bell is greatest, and will decrease as the bell is raised. The surplus steam escaping through the water seal passes into the annular chamber 23 where it is free to expand, the production of this chamber enabling water to be poured into the vessel from time to time

to compensate for the loss by evaporation. No interruption of the cooking operation is necessary, however, during such periodic re-filling.

The heating of the water for the purpose of steam generation may be accomplished by placing the apparatus upon a cook stove or range of ordinary construction, or upon a lamp or the like.

In Fig. 6, there is shown a liquid fuel heater to which the apparatus is particularly well adapted for attachment. This heater, which is indicated generally by the letter D, has its fuel receptacle 28 and burner 29 inclosed within the inner of two concentric chambers separated by an annular wall 30, the upper edge of which is turned outwardly and joined to the outer wall proper 31 of the heater, this out-turned portion constituting a support 32 upon which the cooker is adapted to rest. The attachment of the cooker to the heater is effected by means of the reception of the pins 7 in a series of bayonet slots 33 formed in the upper portion of the heater wall 31.

When the connection of the bell with the vessel A is effected by the inter-engagement of the flange 19 with the inner series of supports 6 as above described, the cooker may be readily carried from place to place by means of the handles 34 with which said bell is provided. The heater D may likewise be connected to the cooker and carried about with the latter. Where the small-sized bell B' is employed, provision of the handles is not essential, since the flange 5 on the vessel A will serve the same purpose. The bell may be readily removed from the base or vessel for cleaning or other purposes, by merely disconnecting its flange from the supports 6.

I claim as my invention:

1. A steam cooker comprising an open-topped water receptacle, a hollow element adjustable vertically therein for containing the steam generated from the water, said element having its lower end submerged in the water to produce a seal and having its side wall spaced from that of said receptacle to produce an interposed annular chamber wherein the seal lies, and cooperating means arranged within said chamber for supporting said element at different heights to vary the depth of said seal.

2. A steam cooker comprising a water receptacle provided with a plurality of vertical series of supports, and a hollow element adapted to contain the steam generated from the water adjustable in said receptacle and provided with a single out-turned flange arranged for interchangeable engagement with said series of supports, to maintain said element in adjusted position.

3. A steam cooker comprising a water receptacle provided with a plurality of ver-



tical series of supports, and a hollow element adapted to contain the steam generated from the water adjustable in said receptacle and having its lower end submerged in the  
5 water therein to produce a water seal, said end being provided with an out-turned flange arranged for engagement with said series of supports and formed with notches adapted for registration with the same, to

permit said element to be vertically adjusted 10 and maintained in adjusted position.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ORVILLE E. ALLEN.

Witnesses:

J. C. MOORE,  
GARD W. FORD.