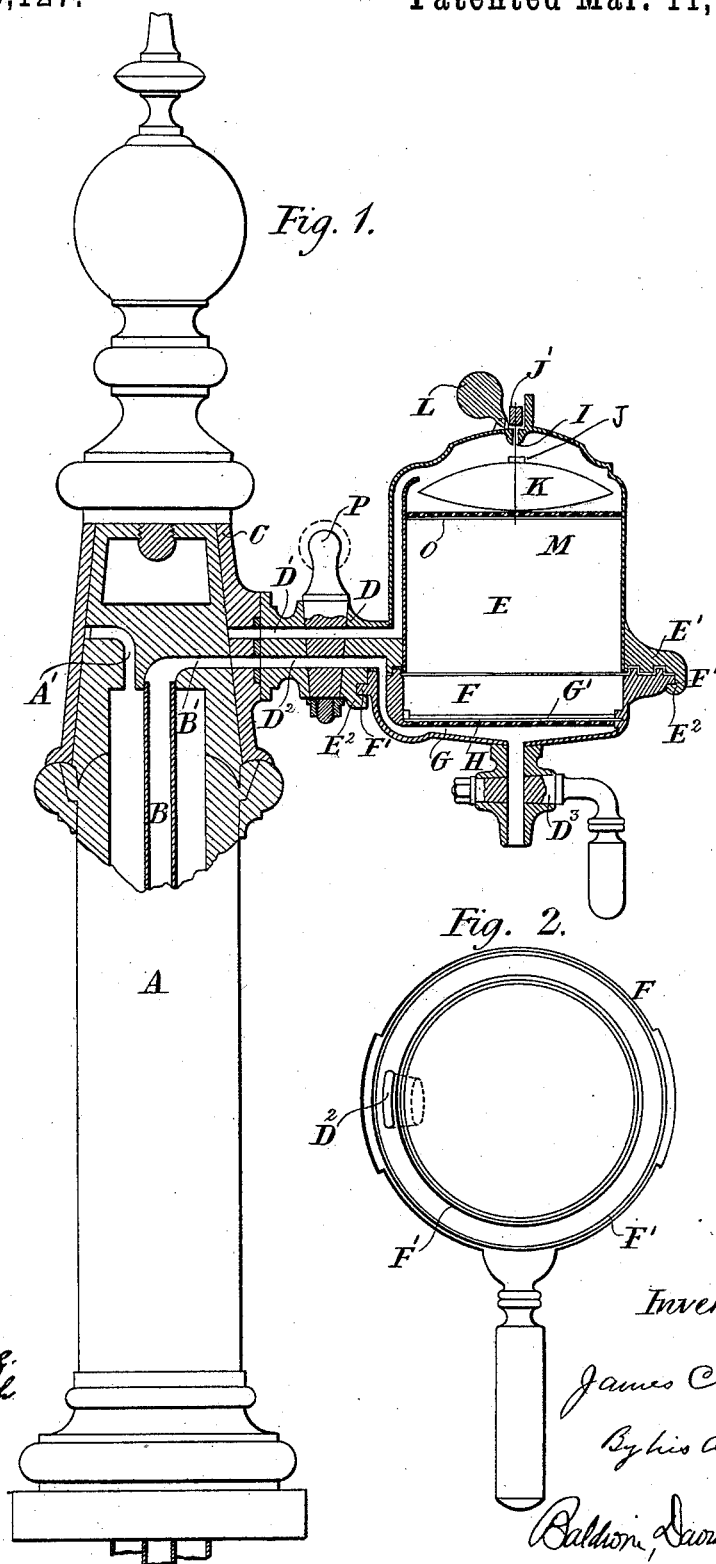


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APPARATUS FOR MAKING INFUSIONS.

No. 423,127.

Patented Mar. 11, 1890.



Witnesses:
Sattis De Long,
N. H. Smith

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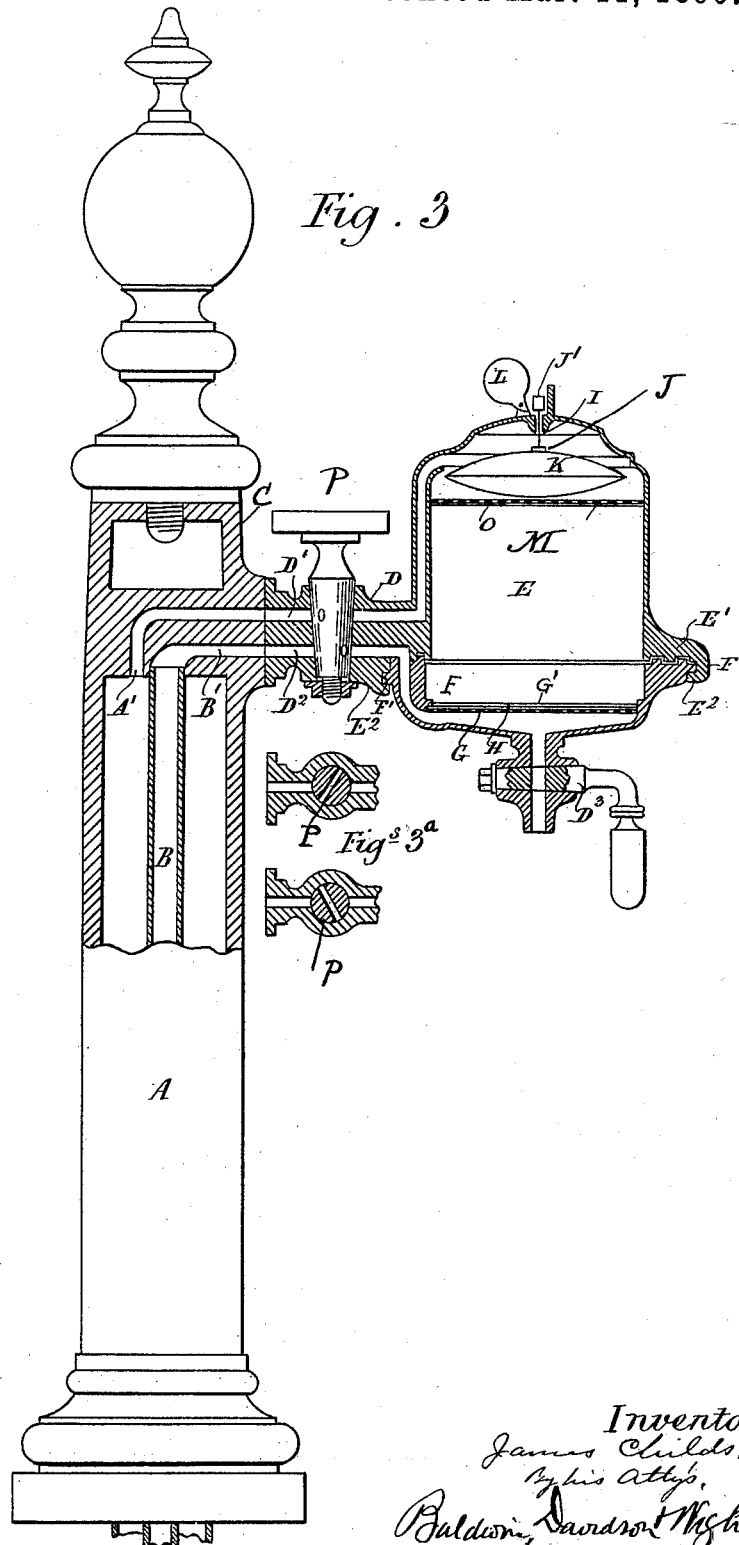
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Fig. 3



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(No Model.)

4 Sheets—Sheet 3.

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Fig. 5.

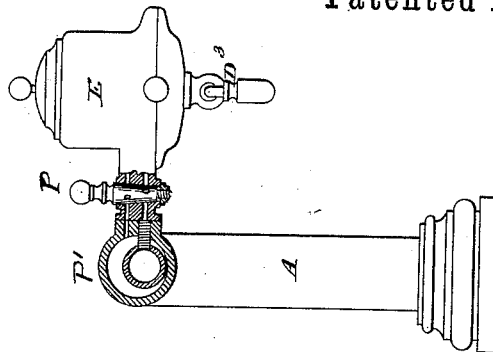
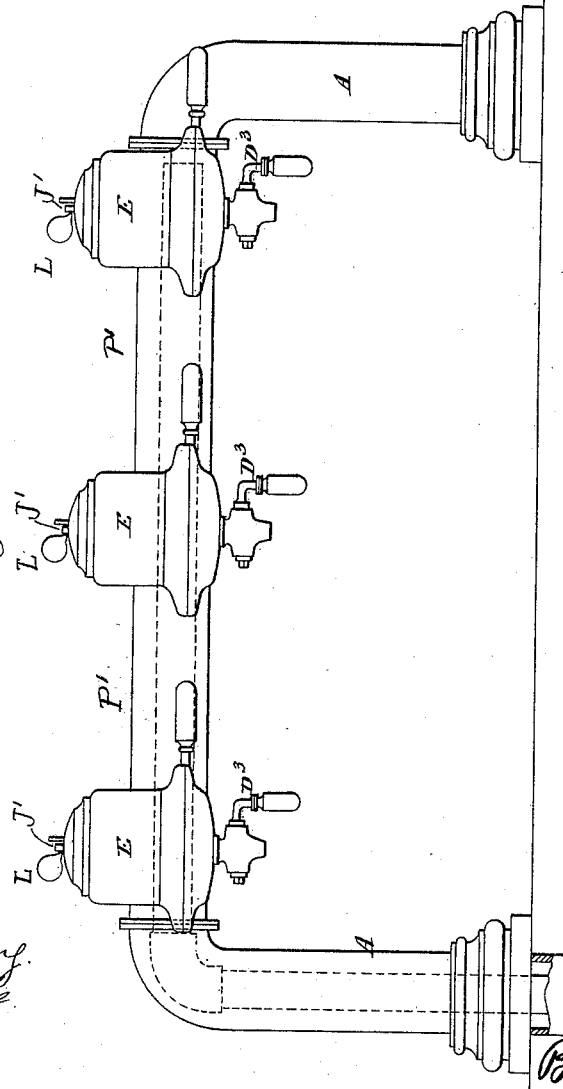


Fig. 4.



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Baldwin & Davis & Night.

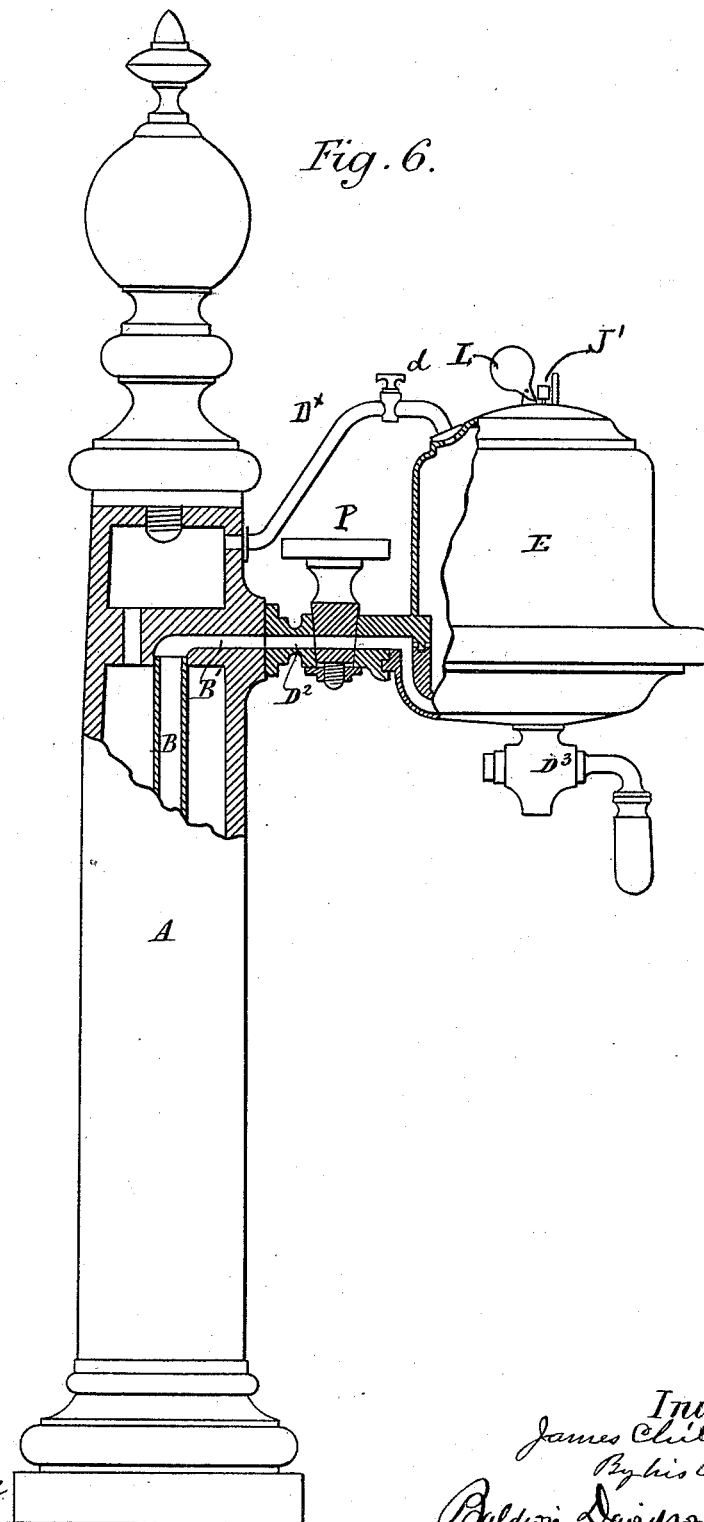
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APPARATUS FOR MAKING INFUSIONS.

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Fig. 6.



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UNITED STATES PATENT OFFICE.

JAMES CHILDS, OF CEDAR LEA, CLAPHAM COMMON, COUNTY OF SURREY,
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APPARATUS FOR MAKING INFUSIONS.

SPECIFICATION forming part of Letters Patent No. 423,127, dated March 11, 1890.

Application filed September 9, 1889. Serial No. 323,385. (No model.)

To all whom it may concern:

Be it known that I, JAMES CHILDS, gentleman, a subject of the Queen of Great Britain, residing at Cedar Lea, Clapham Common, in the county of Surrey, England, have invented certain new and useful Improvements in Apparatus for Making Infusions, of which the following is a specification.

In United States Letters Patent No. 411,037, granted to me as the assignee of Charles Jones, September 17, 1889, is described an apparatus for making infusions. In this apparatus the material to be infused was placed into a holder which was above the top of a receiver in which the infusion was collected. The bottom of the holder was perforated and had a disk of felt or fleecy fabric placed over it for the material to be infused to rest on. The holder was carried by its cover, which was fixed at the end of a hollow arm through which boiling water from a boiler maintained under light pressure could be introduced and caused to pass downward through the material into the receiver, an air-valve being provided to allow air to escape from the receiver. This valve was closed by a float when the receiver filled. The apparatus was also so constructed that the hollow arm extended radially from the plug of a tap carried at the top of a standard which formed the water-supply pipe, and the tap was so formed that when the hollow arm was turned around the standard into one position boiling water passed to the receiver, and when turned into another position the passage of boiling water to it was shut off. With this apparatus the infusion was made as the liquid passed through the holder to the receiver.

The object of my invention is to construct apparatus of this kind in such manner that the material to be infused may be placed at the lower part of the receiver and the receiver be filled with boiling water and the material allowed to remain immersed in the water for any desired length of time, and in such manner that when the tap at the bottom of the receiver is opened to draw off the infusion the infusion is driven through the filter-surface on which the material rests by the pressure of steam from the boiler, or it might be by air under pressure.

The drawings hereunto annexed show apparatus constructed according to my invention.

Figure 1 is a view of the apparatus partly in vertical section; Fig. 2, a plan view of the removable bottom of the receiver. Fig. 3 is a side elevation, mainly in section, of a modification in which the arm is fixed to the standard and cannot be turned around it. Figs. 3^a are sections through the two passages in the plug of the cock. Fig. 4 is a front elevation, and Fig. 5 a cross-section, of a similar modification, in which a number of vessels are carried by a horizontal bar instead of each by a separate standard. Fig. 6 is a side elevation, mainly in section, of a modification in which the pipe for supplying steam to the top of the receiver is separate from the arm by which the receiver is carried.

A is a hollow standard kept filled with steam from a steam-boiler under light pressure.

B is a pipe led up through the standard from below the water-level in the steam-boiler.

A' is a passage leading from the interior of the standard to one side of it, and B' is a passage similarly leading from the top of the pipe B to the opposite side of the standard.

C is a conical ring embracing the standard where these passages pass to its sides.

D is an arm extending from the ring and carrying at its end the receiver E.

F is a removable bottom to the receiver. It is made to fit fluid-tight against the under side of a flange E', which surrounds the lower part of the receiver, and is held up to it by projections F', which extend from it, engaging with lugs E², which project downward from the flange E'. The under surfaces of the projections F' and the part of the lugs which these surfaces bear against are made inclined, so that by giving a partial turn to the movable bottom this bottom may be drawn tightly against the under side of the flange and a tight joint made between them.

D' D² are two passages formed through the arm D. The end of one them D' can, by turning the ring C around the standard A, be brought opposite to the end of the steam-passage A'. The other passage D² can similarly

be brought opposite the passage B'. The passage D' is carried up to the upper part of the receiver, and the passage D² to the lower part of the removable bottom. Within the removable bottom is a perforated false bottom G, above which may be placed a disk of felt or fleecy fabric H, which may be held in place by a perforated grating G' placed above it. Above this there is sufficient space to contain the quantity of material used each time that an infusion is made.

D³ is a draw-off tap on the under side of the removable bottom.

I is a small outlet for air at the top of the receiver. J is a valve by which this outlet can be closed when the float is raised.

K is a float for lifting the valve to its seat.

L is a weighted catch, which comes below a projection or block J' on the stem of the valve outside the top of the receiver whenever the valve is raised, and then completes the lifting of the valve and holds it up to its seat, the weight being sufficiently heavy to overcome the weight of the float.

M is a perforated plate passing across the upper part of the receiver just below the float.

O is a cloth held against the under side of this perforated grating to prevent any of the material or grounds being carried up to the float or valve.

P is a tap in the arm D by which the passages in the arm D can be opened or closed at pleasure.

The apparatus is used in the following manner: When the requisite quantity of material from which an infusion is to be made has been placed onto the perforated false bottom carried by the removable bottom F, this removable bottom is placed against the lower part of the receiver, and a partial turn is then given to it to cause the projections F' to engage with the lugs E². The radial arm D is then turned into the position shown at Fig. 1 and boiling water passes into the receiver. When the receiver is nearly full, the float raises the valve J and closes the air-outlet and the valve is held in its closed position by the weighted catch above mentioned. When the boiling water has remained for a sufficient length of time on the material, the arm D can be turned into position for the passage D' to be brought opposite to the steam-passage A'. Then when the draw-off tap D³ is opened the pressure of steam, acting on the top of the fluid in the receiver, presses it down through the filter-surface carried by the perforated false bottom of the receiver.

In place of the arm D being made capable of swiveling around a standard, as shown in the drawings, it might be fixed to it, and the steam-passages A'D' and the water-passages B' be permanently opposite one another, as shown at Fig. 3. In this case the tap P might be so formed that when in the position shown in the drawings both the steam and water passages are closed, and when turned

a quarter-turn in one direction the water-passage is opened, and a quarter-turn in the opposite direction the water-passage is closed and the steam-passage opened; or in cases where a number of vessels for making infusions are required in place of each vessel being carried by a separate standard, any desired number of vessels might be carried each by a separate arm extending from a hollow horizontal bar P', as shown in Figs. 4 and 5. In place, also, of the steam-passage to the upper part of the receiver being carried through the arm by which the receiver is carried, it might, but not so advantageously, be a separate pipe D^x, led to the upper part of the receiver from the steam-space of the steam-boiler and fitted with a tap d, by which the passage of steam through it may be controlled, as shown in Fig. 6; or, as before stated, air under pressure might be used in place of steam for forcing the infusion through the filter-surface when the draw-off cock is opened. I would also state that in place of employing a float to lift and close the air-valve J previous to steam or air under pressure being admitted to the upper part of the receiver other means might be adopted for opening and closing the valve and for indicating when sufficient water had entered the receiver.

What I claim is—

1. The combination, substantially as hereinbefore set forth, of the receiver, a passage for admitting steam thereto, a passage for admitting boiling water to the receiver, a removable bottom, a draw-off cock, and a perforated false bottom within the removable bottom of the receiver above the cock.

2. The combination, substantially as hereinbefore set forth, of the receiver, its removable bottom, the perforated false bottom within the removable bottom of the receiver, a passage for admitting boiling water below the false bottom, a second passage for admitting steam to the upper part of the receiver, and a valve to allow the escape of air when the receiver is being filled with water and to be closed when steam or air under pressure is admitted.

3. The combination, substantially as hereinbefore set forth, of the receiver, a passage for admitting boiling water, a passage for admitting steam, an outlet-valve for allowing air to escape from the receiver as it is being filled with boiling water, and a float and weighted catch for closing and keeping closed the valve when the receiver has been filled.

4. The combination, substantially as hereinbefore set forth, of the receiver, an arm by which it is carried having two passages through it, one for admitting boiling water to the receiver, the other for admitting steam to the top of the receiver, a perforated false bottom above the opening for admitting boiling water to the receiver, and valve apparatus for opening and closing these passages, and a draw-off cock.

5. The combination, substantially as here-
inbefore set forth, of the receiver, an arm by
which it is carried having two passages
through it, one for steam and one for water,
5 the removable bottom of the receiver, a per-
forated false bottom secured to the receiver,
and a draw-off cock below the false bottom.

6. The combination, substantially as here-
inbefore set forth, of the receiver, the arm by
10 which it is carried having two passages
through it, one for steam and one for water,
the flanged removable bottom of the receiver,

the perforated false bottom therein below the
upper edge of the flange, whereby a space is
formed above the perforated false bottom to 15
hold the quantity of material required to be
used for making one infusion, and a draw-off
cock below the false bottom of the receiver.

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