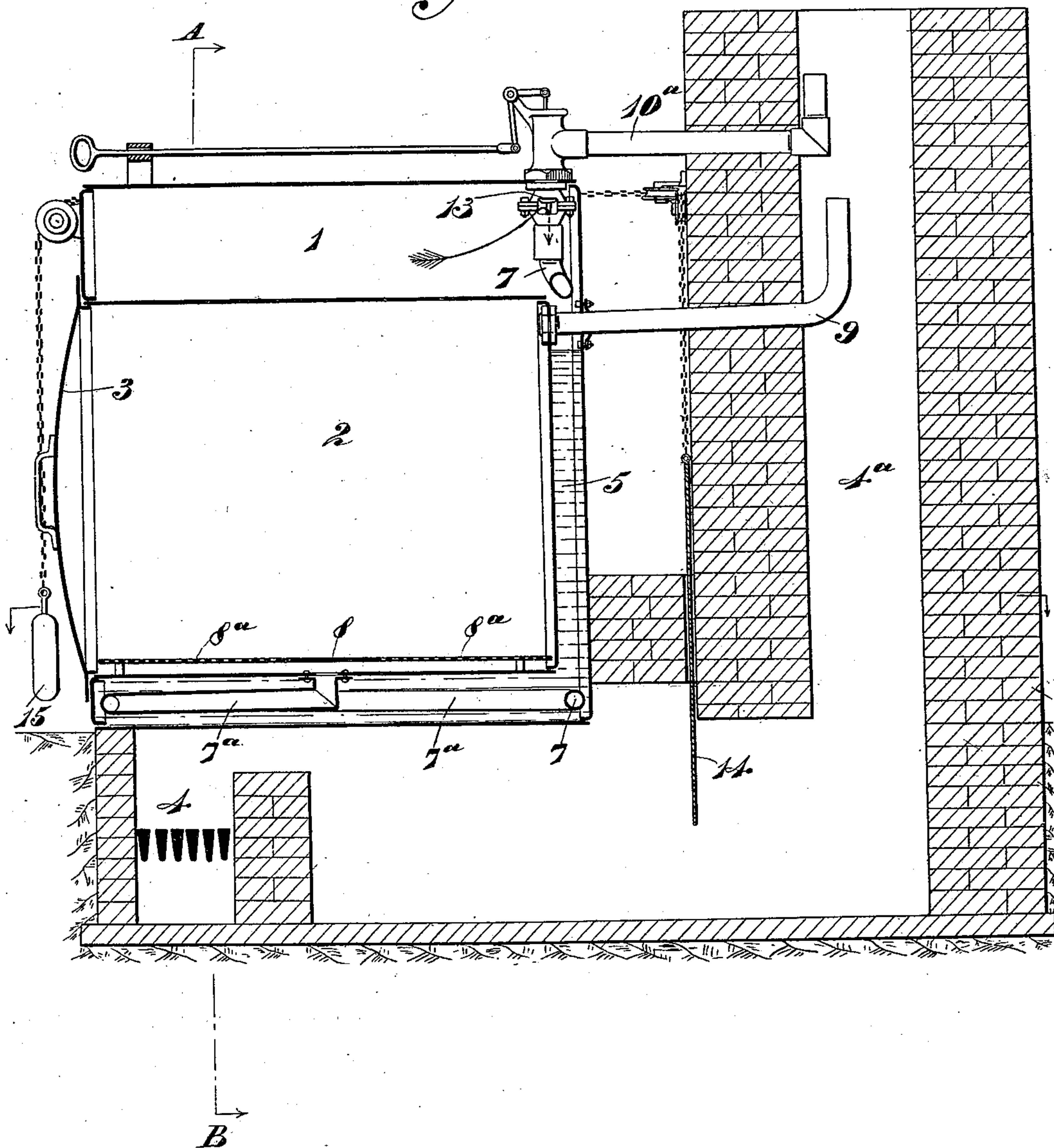


3 Sheets—Sheet 1.

No. 560,951.

Patented May 26, 1896.

Fig. 1.



Witnesses.

Chas. M. Werk

Inventor:

per J. C. Thresh
J. E. Duff
Attorneys

(No Model.)

3 Sheets—Sheet 2.

J. C. THRESH.
DISINFECTING APPARATUS.

No. 560,951.

Patented May 26, 1896.

Fig. 2.

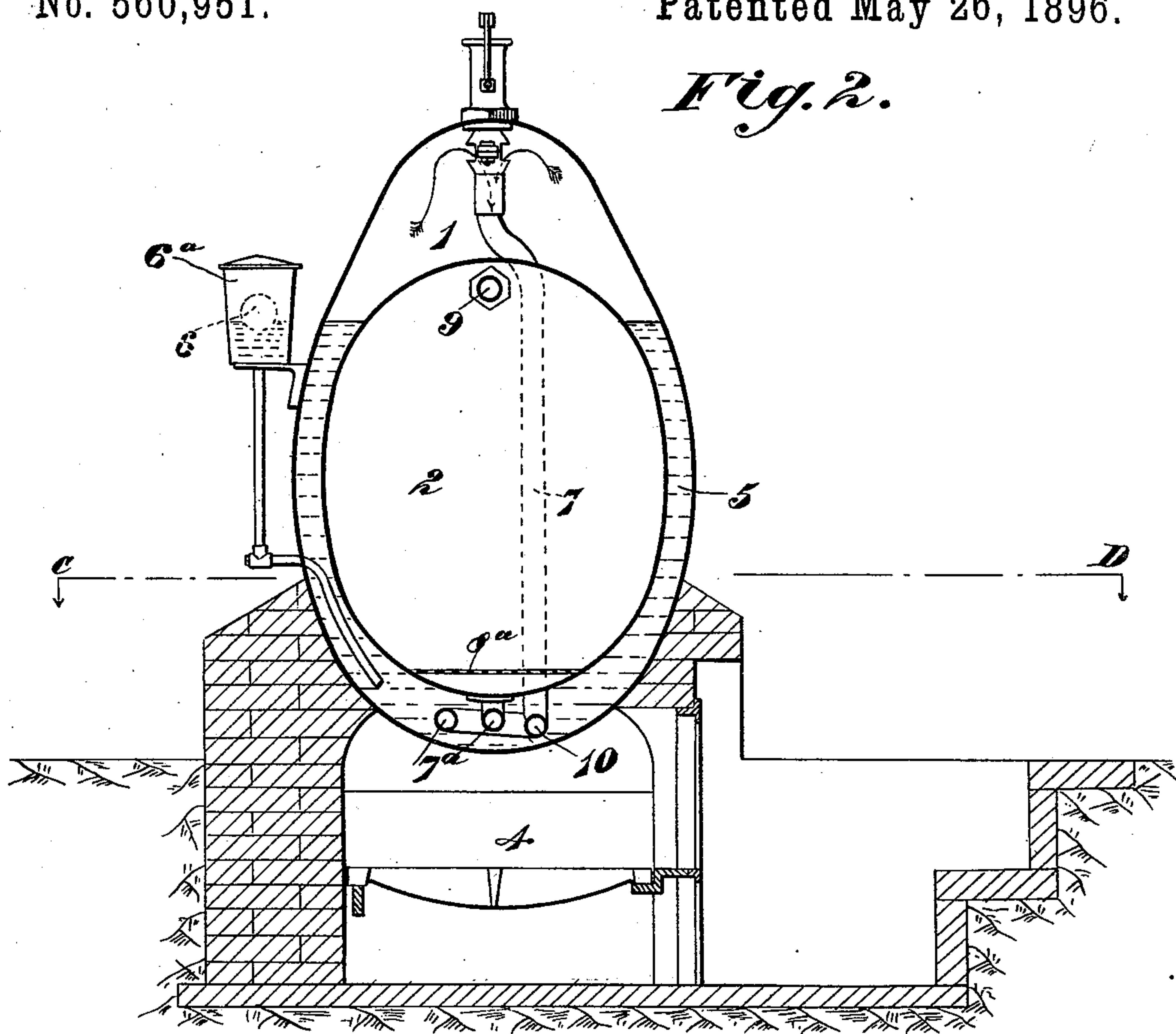


Fig. 4.

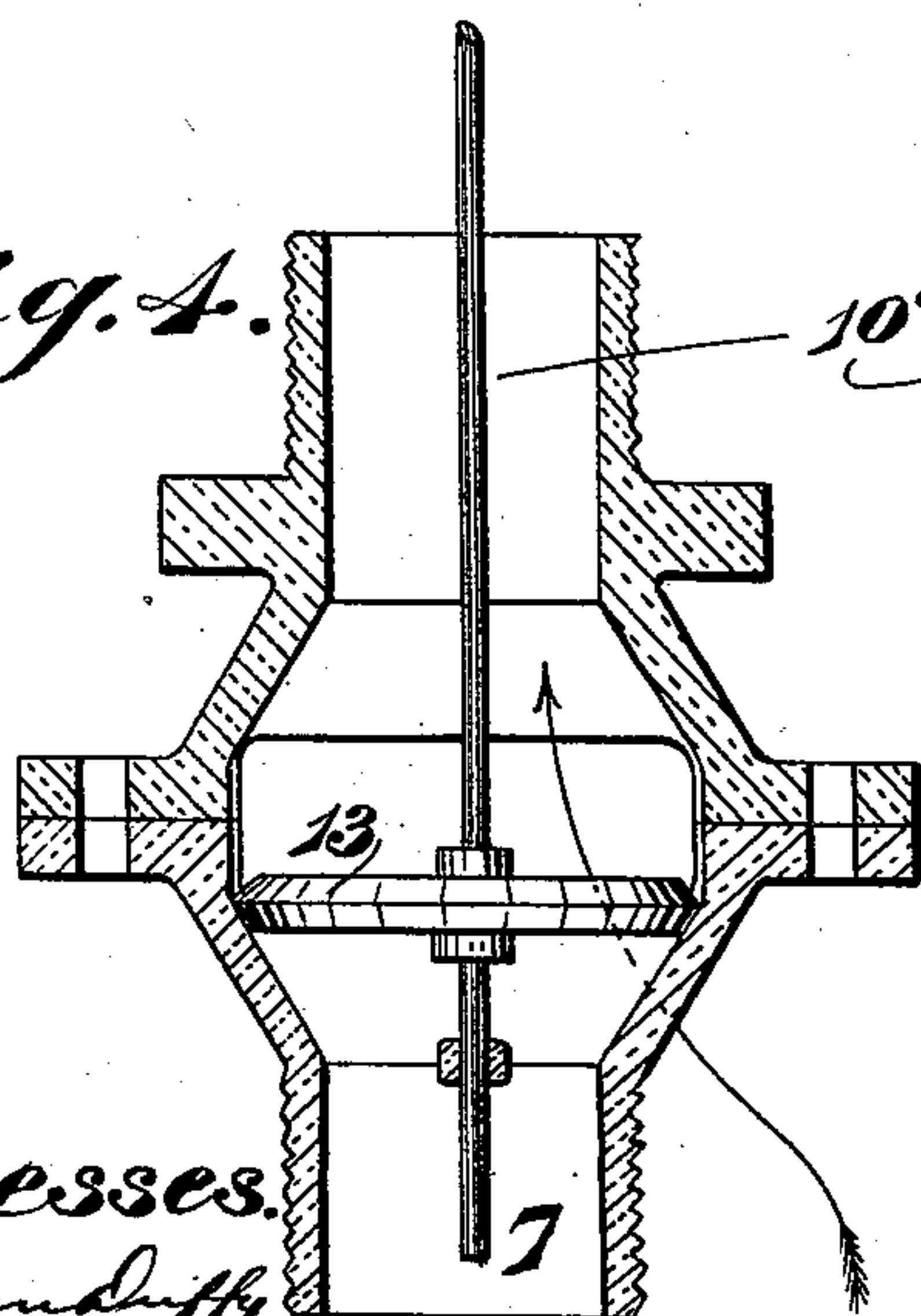
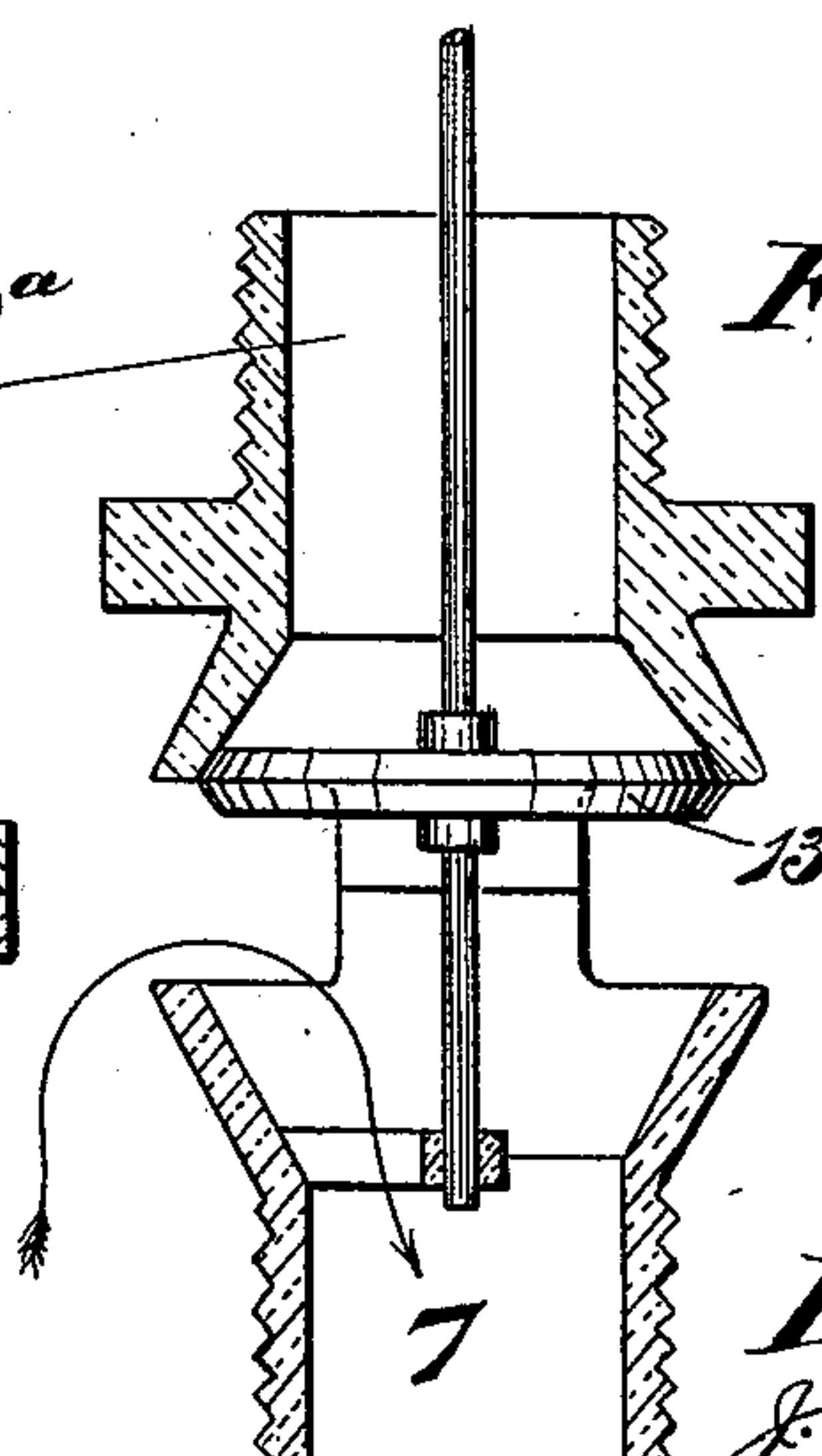


Fig. 5.



Witnesses.

E. Callanduffy

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per *C. E. Duff*
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(No Model.)

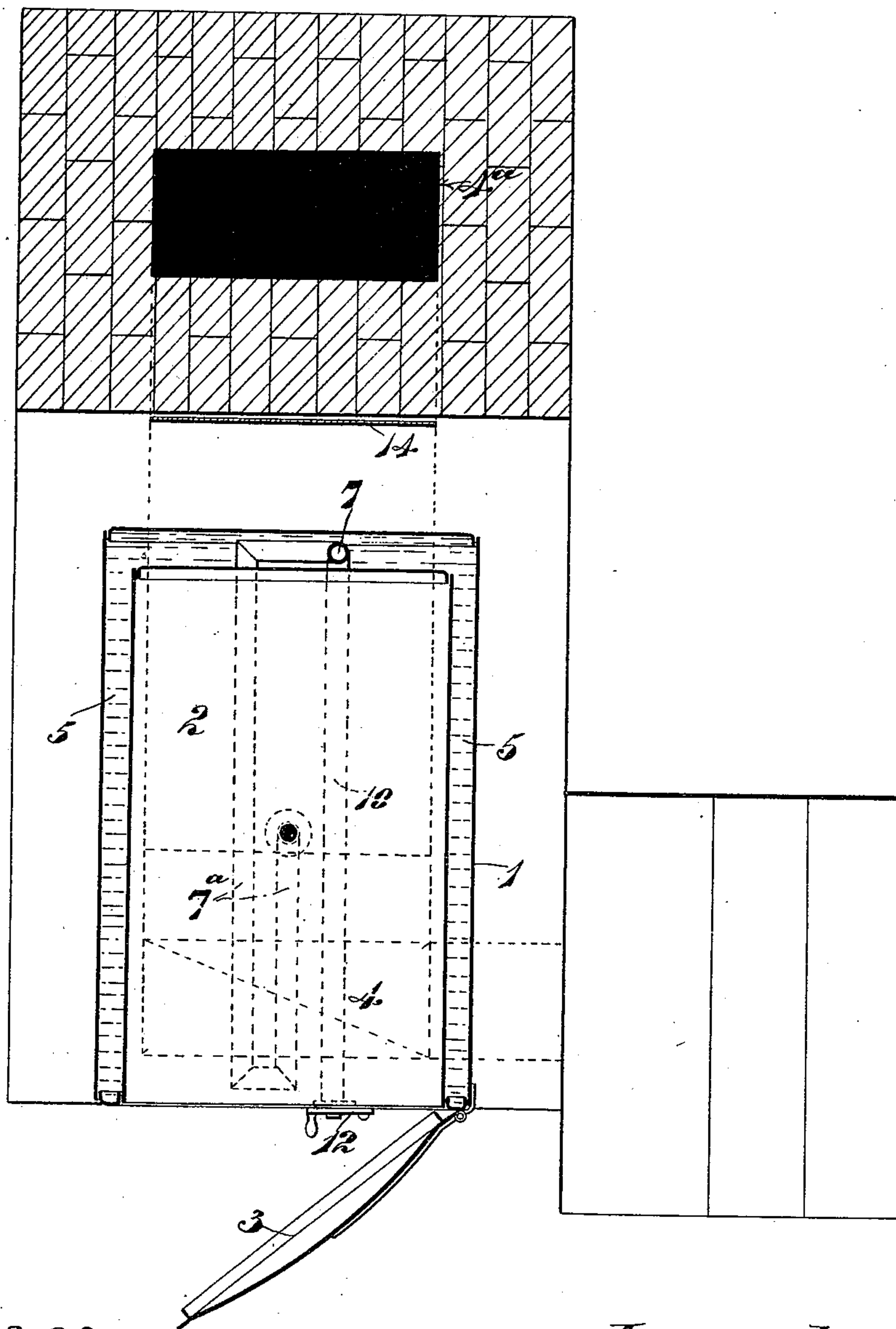
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J. C. THRESH.
DISINFECTING APPARATUS.

No. 560,951.

Patented May 26, 1896.

Fig. 3.



Witnesses.

C. Callanduff

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UNITED STATES PATENT OFFICE.

JOHN CLOUGH THRESH, OF CHELMSFORD, ENGLAND.

DISINFECTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 560,951, dated May 26, 1896.

Application filed June 27, 1895. Serial No. 554,179. (No model.) Patented in England March 8, 1895, No. 4,989; in Germany May 28, 1895, No. 86,202; in Cape Colony October 25, 1895, No. 507; in Belgium November 14, 1895, No. 118,355; in Austria December 14, 1895, No. 45/4,844; in Italy December 31, 1895, LXXVIII, 456, and in Canada February 12, 1896, No. 51,295.

To all whom it may concern:

Be it known that I, JOHN CLOUGH THRESH, a subject of the Queen of Great Britain and Ireland, residing at Chelmsford, in the county of Essex, England, have invented an Improved Disinfector, (for which I have obtained Letters Patent in Great Britain, No. 4,989, dated March 8, 1895; in Germany, No. 86,202, dated May 28, 1895; in Austria, No. 45/4,844, dated December 14, 1895; in Cape Colony, No. 507, dated October 25, 1895; in Italy, No. 456, Vol. LXXVIII, dated December 31, 1895; in Belgium, No. 118,355, dated November 14, 1895, and in Canada, No. 51,295, dated February 12, 1896,) of which the following is a specification.

My invention has for its object to thoroughly disinfect bedding, clothing, or other articles by means of low-pressure steam in an apparatus the disinfecting-chamber of which is open to the atmosphere and receives its steam from a generating-chamber also open to the atmosphere, thus enabling the disinfection to be effectually carried out by means of apparatus which, having no or practically no fluid-pressure to resist, can be made light and cheap, compact, simple in construction, capable of being easily worked by an ordinary laborer, and not liable to derangement.

In the accompanying drawings, Figure 1 is a longitudinal vertical section; Fig. 2, a cross-section on the line A B of Fig. 1; and Fig. 3, a section plan on the line C D of Fig. 2, showing a disinfector constructed according to this invention. Figs. 4 and 5 are central vertical sections taken in planes at right angles to each other, showing, to a larger scale, a valve hereinafter more particularly referred to.

Within a boiler 1, Figs. 1, 2, and 3, open to the atmosphere, is a disinfecting-chamber 2, likewise to the atmosphere and provided with a hinged or removable door 3, (or there may be more than one door,) controlling an opening or openings through which articles to be disinfected can be introduced into the chamber. The boiler, which is heated by a suitable furnace 4, is charged up to a suitable level with a solution 5, having a higher boiling-point than water, such as a solution of

common salt or of chlorid of calcium. The solution and steam in the boiler surround the disinfecting-chamber except at the side or end or sides or ends at which the door 3 or doors is or are located, a practically constant level being maintained by means of an automatic feeding arrangement, such as an ordinary cock with ball-float 6 in tank 6^a, whereby the boiler is in an automatic manner fed with water as and when required to compensate for evaporation. Steam is conducted from the upper part of the boiler, without loss of temperature, by means of a suitable pipe 7, or there may be more than one such pipe, extending through the hot solution 5 to the lower part of the disinfecting-chamber 2, which is or may be provided with a device, such as baffle 8, for deflecting and diffusing the entering steam, and with a perforated or reticulated false bottom 8^a for supporting the article or articles to be disinfected within the chamber. The baffle 8 may conveniently be (as it is shown in the drawings) a non-perforated portion of the false bottom 8^a. A wicker or wire work basket with light iron frame may be used for holding the clothes or other articles to be disinfected, which are put in the basket and the basket slid by suitable means into the disinfecting-chamber. The steam, after acting upon the article or articles to be disinfected, leaves the disinfecting-chamber by a suitable outlet-pipe 9 open to the atmosphere. It may be through the furnace-flue 4^a, as shown.

It is important that the sides of my disinfector be maintained at a temperature slightly above that of steam under normal pressure by the use of a solution 5 having a higher boiling-point than water, as by this means excessive condensation is avoided, and the steam, which in the first instance condenses on and in the article or articles being disinfected, on the basket, door, &c., afterward reëvaporated.

In the arrangement shown by way of example in the accompanying drawings there is provided within the lower part of the boiler 1, located immediately over the furnace 4, a coil 7^a or equivalent arrangement in connection with the pipe 7, and through which the

steam coming from the upper part of the boiler is caused to pass through the hottest portion of the solution 5 immediately before entering the disinfecting-chamber 2.

5 The coil 7^a may be connected to the disinfecting-chamber at any higher point instead of at the bottom of the chamber and the inlet-orifice of outlet-pipe 9 may be in a lower position than shown.

10 In order to admit to the disinfecting-chamber 2 dry warm air to dry the articles after they have been acted upon by the steam, there is provided a branch pipe or passage 10, extending to the exterior of the boiler at or
15 near its lower part, and whose outer end is controlled by a valve 12 of any suitable kind. 10^a is a pipe leading from the upper part of the boiler to the atmosphere. It may be through the furnace-flue 4^a, as shown. The
20 adjacent ends of the pipes 7 and 10^a are controlled by a valve 13. (Shown separately in Figs. 4 and 5.) This valve 13 is so arranged that in one extreme position (shown in Fig. 5) the communication between the upper part
25 of the boiler 1 and the interior of the disinfecting-chamber 2 will be open, so that steam can pass freely from the upper part of the boiler, through the pipes 7 7^a, into the disinfecting-chamber 2, and thence, through the
30 pipe 9, into the atmosphere, (pipe 10^a being then closed,) whereas in the other extreme position of the valve (shown in Fig. 4) the communication between the upper part of the boiler and the disinfecting-chamber will
35 be closed, but the steam-space at the upper part of the boiler will be in free communication with the atmosphere through the branch pipe or passage 10^a. In this position of the valve 13, by opening the valve 12, which may
40 be in the form of a pivoted plate, as shown, or a plug, so as to open to the atmosphere the branch pipe or passage 10, air can be admitted to the disinfecting-chamber 2, this air being heated on its way to the chamber by passing
45 through the pipe 10 and coil 7^a, or coils or equivalent arrangements already referred to.

As will be seen, the pipe 10 inclines forward toward its front end, and the coil 7^a inclines backward toward its connection with
50 the pipe 10, so that any water that may at any time be present in these pipes can be readily drained off by opening the valve 12.

14 is a damper with balance-weight 15 for controlling the communication between the
55 furnace 4 and flue 4^a.

Thus it will be understood that after the apparatus has been used as a disinfector all the steam can be removed from the disinfecting-chamber and the hot air entering through the
60 pipe 10 and coil 7^a will cause the apparatus also to act as a drying-chamber, insuring that after disinfection the clothing, bedding, &c., shall be dry when removed from the apparatus.

65 What I claim is—

1. A disinfector comprising a boiler adapted to contain a solution having a higher boil-

ing-point than water, a disinfecting-chamber arranged within said boiler so as to be
mainly surrounded by said solution, and a 70 steamway connecting the steam-space of said boiler with the interior of said disinfecting-chamber and arranged to pass through said solution whereby steam flowing through said
steamway will acquire heat from said solu- 75 tion in its passage to the said disinfecting-chamber and will be delivered into the disinfecting-chamber uncondensed, substantially as described for the purpose specified.

2. A disinfector comprising a boiler adapted to contain a solution having a higher boiling-point than water, a disinfecting-chamber arranged within said boiler so as to be
mainly surrounded by said solution, and a 85 steamway connecting the steam-space of said boiler with the interior of said disinfecting-chamber and arranged to pass through the liquid-space at the lower part of the boiler located immediately over the boiler-furnace
whereby, steam passing through said steam- 90 way will be maintained at a sufficient temperature to prevent its condensation, substantially as herein described.

3. A disinfector comprising a boiler adapted to contain a solution having a higher boiling-point than water, a disinfecting-chamber arranged within said boiler so as to be
mainly surrounded by said solution, and having an outlet to the external atmosphere, a
steam-pipe connecting the steam-space of 100 said boiler with the interior of said disinfecting-chamber and arranged to pass through said solution, an air-heating pipe also arranged to pass through said solution and connected to said steam-pipe, and valves which
are adapted to control the passage of steam 105 and air through said pipes and whereby steam and hot air can be successively admitted to said chamber substantially as herein described for the purpose specified. 110

4. A disinfector comprising a boiler open to the atmosphere and serving to contain a solution having a higher boiling-point than water, a disinfecting-chamber arranged within
said boiler so as to be mainly surrounded by 115 said solution and at all times open to the external atmosphere, and an air-heating pipe or coil arranged within the liquid-space between the bottoms of the said boiler and chamber and provided with a valve whereby
said disinfecting-chamber can be placed in 120 communication with the external atmosphere and be supplied with heated air, substantially as herein described for the purpose specified.

5. A disinfector comprising a boiler provided with a passage whereby it can be placed
in direct communication with the external 125 atmosphere, a disinfecting-chamber located within said boiler and always in communication with the atmosphere, a pipe forming a passage between the steam-space of the boiler and the interior of said disinfecting-chamber
and arranged to pass through the liquid-space 130 of said boiler, and a single valve adapted to

control said passages, said valve in one position closing the communication between the boiler and the disinfecting-chamber and placing the boiler in direct communication with the atmosphere, and in another position closing the direct communication between the boiler and the atmosphere and opening that between the boiler and the disinfecting-chamber, whereby said boiler is at all times open to the external atmosphere substantially as herein described for the purpose specified.

6. A disinfecter comprising a boiler to contain a solution having a higher boiling-point than water, a disinfecting-chamber located within said boiler so as to be partially immersed in the solution therein and provided with a door or doors, a baffle and perforated false bottom in the lower part of said chamber, an automatic apparatus for supplying water as required to the boiler, a steam-pipe and coil (or coils) connecting the steam-space of said boiler with said chamber and arranged to pass through the solution in the boiler, a second steam-pipe for connecting the boiler with the external atmosphere direct, a valve

adapted to control the adjacent ends of said steam-pipes, and an air-admission pipe with controlling-valve whereby air can be conducted through and heated by the solution on its way to the disinfecting-chamber, as set forth.

7. A disinfecter comprising the boiler 1 with pipe 10^a, the disinfecting-chamber 2 located within said boiler and provided with a pipe 9, the steam-pipe 7 and coil 7^a extending from the steam-space of said boiler through the liquid-space thereof to the disinfecter, a valve 13 arranged to simultaneously control the adjacent ends of said pipes 10^a and 7 and a hot-air-supply pipe 10 provided with a valve and connected with said pipe and coil 7^a, substantially as herein described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN CLOUGH THRESH.

Witnesses:

EDMUND S. SNEWIN,
WM. O. BROWN.