

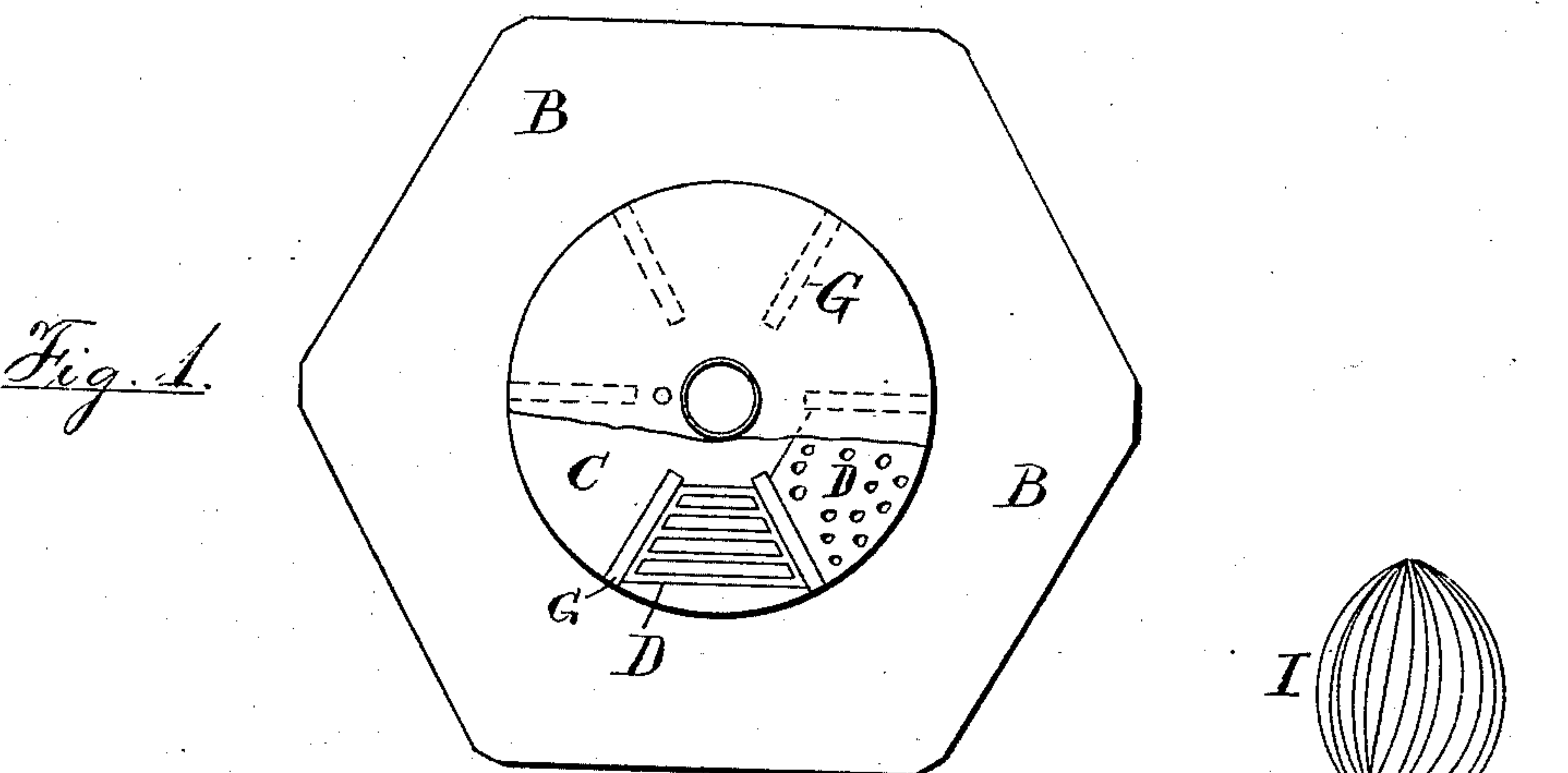
(No Model.)

R. DRAKE.  
HATTER'S TANK.

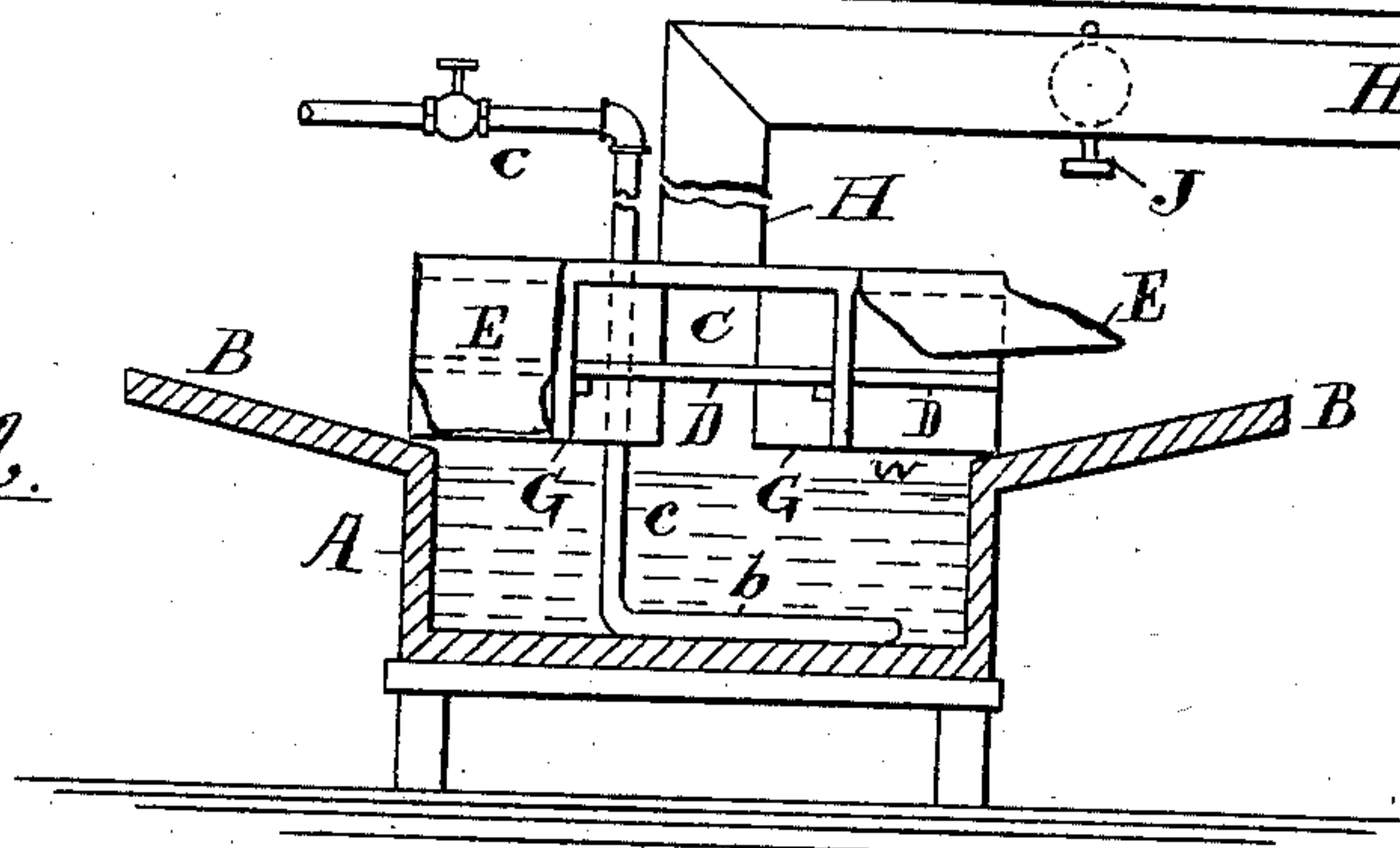
No. 279,547.

Patented June 19, 1883.

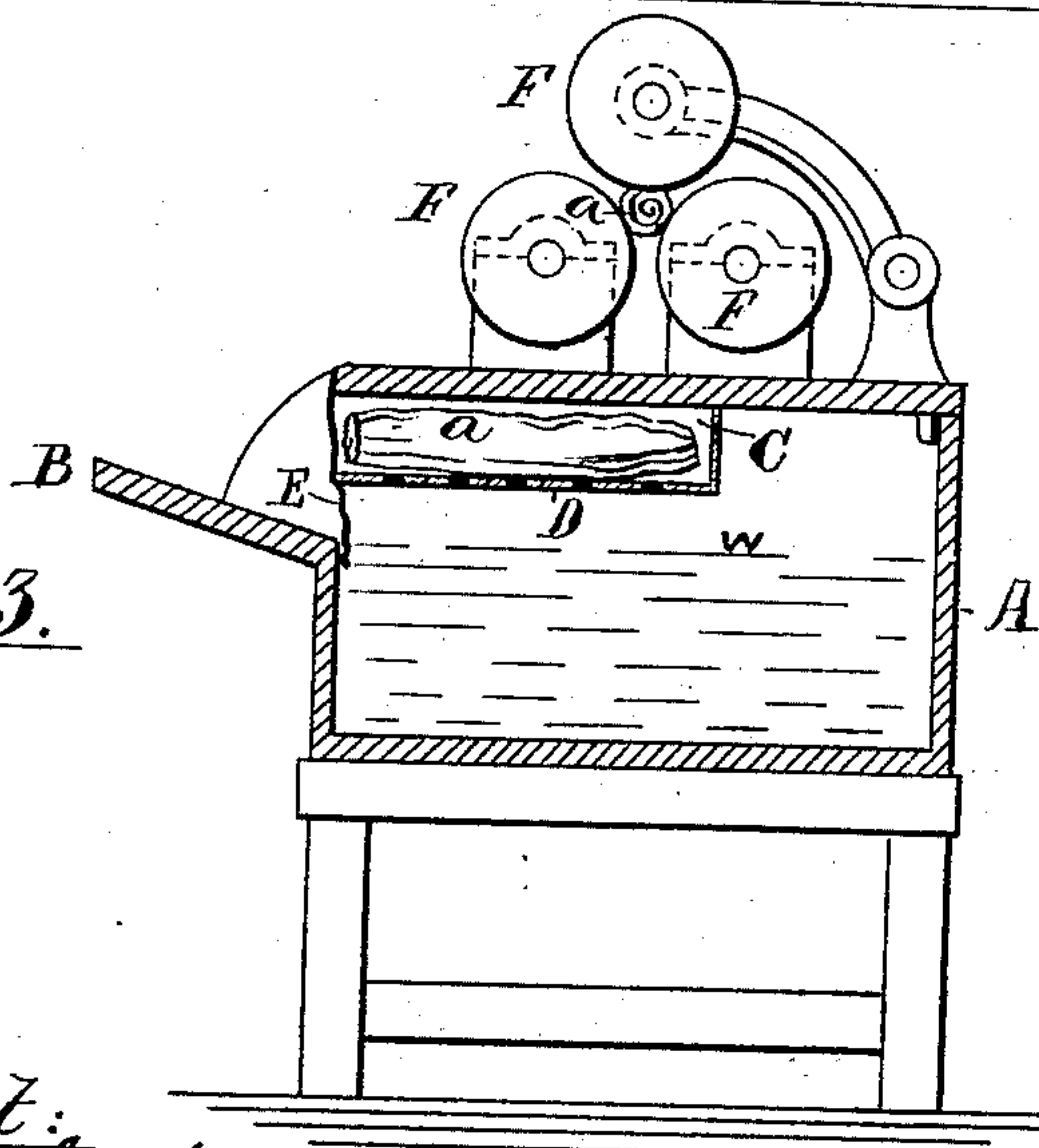
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Attest:*  
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# UNITED STATES PATENT OFFICE.

ROBERT DRAKE, OF NEWARK, NEW JERSEY.

## HATTER'S TANK.

SPECIFICATION forming part of Letters Patent No. 279,547, dated June 19, 1883.

Application filed January 24, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT DRAKE, a citizen of the United States, residing in the city of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Hatters' Tanks, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

10 This invention relates to such tanks of hot water as are used in hat manufacture for dipping or soaking the hat-bodies at intervals during the sizing, scalding, shrinking, and analogous operations, and may be applied to  
15 the same when combined with rolling and pressing devices, as in many felting-machines, or when used apart from such mechanism in operating upon the bodies by hand-labor. In the  
20 latter case the tank is often called a "kettle," and when designed for a number of operators is provided with a shelf or a plank around its edges, and is termed a "battery." The steam rising from such tanks, whether combined with mechanism for felting or not is a great  
25 annoyance to the workmen, and has been removed with partial success heretofore by hoods of different kinds resembling funnels inverted over the tanks.

30 To afford access to the water in the tank, a considerable space has heretofore been left between the upper edge of the kettle and the cone or funnel placed over it, and more or less of the vapor has thus made its escape from the surface of the hot water.

35 My invention enables me to utilize the hot vapor rising from the water in a sizing-tank in a new and advantageous manner; and it consists, first, in forming a steam-chamber over the hot water; secondly, in inclosing the  
40 side or sides, where access is required, by a cloth or equivalent covering; thirdly, in providing a shelf inside the chamber in the vapor of the steam; and, fourthly, in exposing the hat-bodies to the vapor in such steam-chamber  
45 before or during the manipulations of the workman.

50 The nature of the invention will be understood from the annexed drawings, in which Figure 1 is a plan of a battery provided with my inclosed steam-chamber, a part of its covering being broken away to show the shelves

inside. Fig. 2 is a side elevation of the same with the tank and its side planks in section, and Fig. 3 is a transverse section of a tank having felting-rollers mounted thereon. Such  
55 felting-rollers are in practice connected with gearing and are operated by treadle and various other attachments; but nothing besides the rollers and their supports is shown herein, as such features are greatly modified in different  
60 machines, and form no part of this invention.

In all the figures, A is the tank, filled to a certain level with water, as to line *w*, and B is the plank on which the operator rolls and folds  
65 the hats in operating upon them. C is the steam-chamber, in which the hat-bodies may, if desired, be steamed before or during the other operations of the workman. D is a shelf supported inside the chamber, adjacent to the  
70 cloth or curtain E, by which access is gained to the interior of the chamber.

In Fig. 3 the cloth is shown hung over an opening at the front end of the chamber, where the operator stands in front of the felting-rollers  
75 F F; but in Figs. 1 and 2 the plank is shown formed on six sides of the tank, and as the battery is thus fitted for six workmen the chamber C is provided with the openings and  
80 curtains E upon six of its sides, and is shown provided with six radial partitions, G, to support as many shelves D. These shelves may  
85 be formed as a grating or with perforations at different points, to permit the steam to permeate the felts laid thereon and to allow the water therein to return freely to the tank.

In Fig. 2 the central curtain is entirely removed to show the location of the shelf and the converging partitions G, while the curtain  
90 at the left side is partially pushed in, as when the operator inserts a hat-body in the water in the tank.

In Fig. 3 a roll of hat-felts is shown at *a* upon the shelf D, and the operator would require to lift up the pendent curtain E to remove it  
95 when wanted.

In Fig. 2 the usual steam-coil, *b*, and feed-pipe and cock *c* are shown, and the same device is employed in heating the water in the tank  
100 in Fig. 3, by which means the water is kept at a boiling-temperature when required.

By the application of my inclosed chamber to the tank the vapor is confined and retains



a higher temperature than when allowed to escape freely; but some outlet is needed for the surplus, and is shown at H in the three figures, Fig. 2 showing the pipe connected with  
5 a self-turning ventilating-wheel, I, by which an upward current is maintained. In the same figure a damper, J, is shown inserted in the pipe, by which the vapors can be retained at pleasure and a higher temperature sustained  
10 by accumulating a slight pressure.

The operation of my device is as follows: When using the shelf D for steaming the hat-bodies the workman places a suitable number of the bodies upon the shelf and lowers the curtain to confine the hot vapor in contact with the  
15 bodies until they are rendered warm and mellow. He then takes a part of such bodies and folds or rolls them up, and subjects them to the operations necessary to scald, shrink, or  
20 size them, as the case may be. When ready to be crozed or changed he places them again on the shelf, and lets them warm again while performing the same operation upon another batch already steamed. He then returns the  
25 latter lot to the steam-chamber, while he proceeds farther with the first lot, and thus alternates the steaming and the other required operations until the desired result is secured. The advantages of such steaming before and  
30 during most of operations of hat manufacture are already well known, but have heretofore been secured, chiefly, by steam-boxes and casings apart from the water-tanks used as described herein. My invention therefore consists partly in applying the cover to the tank  
35 to prevent the offensive escape of vapor, and partly in utilizing such vapor to steam the bodies while using the tank for the other purposes heretofore known and practiced. When  
40 applying the cover to the tank independent of the shelves D the curtains E serve to afford access merely to the water in the tank for dipping the bodies therein; but when the shelves are combined with the chamber C the curtain

serves a double function, and affords access 45 both to the water in the tank and the shelf in the chamber. The water also serves a double function not heretofore secured, and which obviates waste of heat and greatly facilitates the performance of the operator's work, when 50 it serves to wet the felts, when required, and also to furnish steam for the hot chamber above it.

Having thus described my invention, I claim the same as follows, reserving any novel sub- 55 ject-matter not claimed herein to be claimed in other patent applications:

1. The combination, with a battery-tank and its surrounding plank B, of a cover or steam-chamber C, provided with openings closed by 60 curtains E or their equivalent, and having an outlet-pipe, H, arranged and operated to carry off the vapor, substantially as shown and described.

2. The combination, with a tank used for 65 dipping hat-bodies, of a steam-chamber provided with supports for hat-bodies, and receiving hot vapor from the water in the tank, and an opening closed by a curtain, E, or its equivalent, substantially as shown and described. 70

3. The combination, with the steam-chamber receiving its hot vapor from a tank used for dipping hat-bodies, of an outlet-pipe, H, provided with a damper, J, substantially as 75 and for the purpose set forth.

4. The combination, with the tank for dipping hat-bodies, of the steam-chamber C, arranged and operated as described, the outlet-pipe H, and the self-turning ventilator I, operated substantially as herein set forth. 80

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

ROBT. DRAKE.

Witnesses:

THOS. S. CRANE,  
W. T. D. CRANE.