A. FAULHABER.

Beer-Cooling Apparatus.

No. 203,718. Patented May 14, 1878.

FIG. 1.

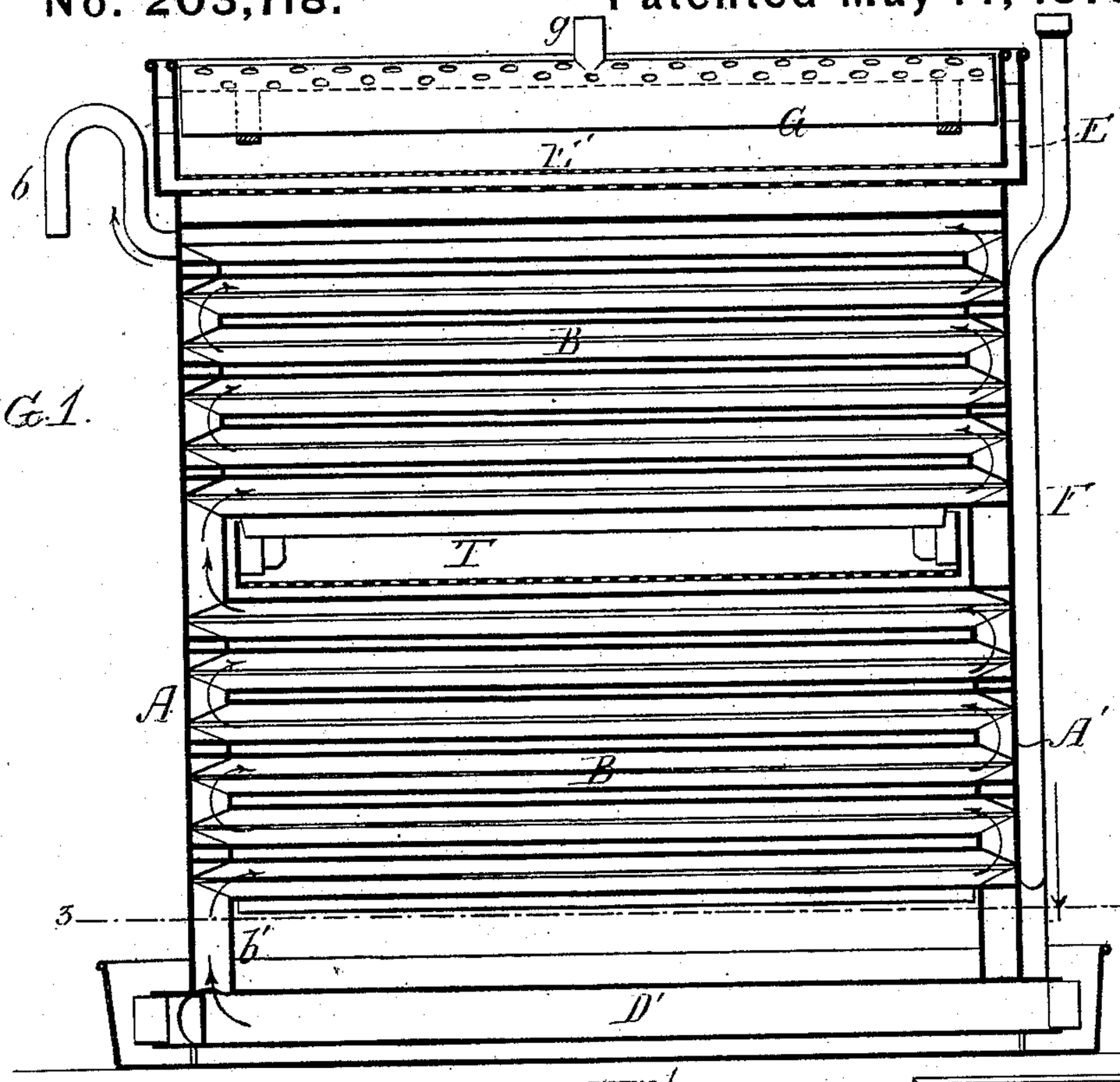


FIG. 2.

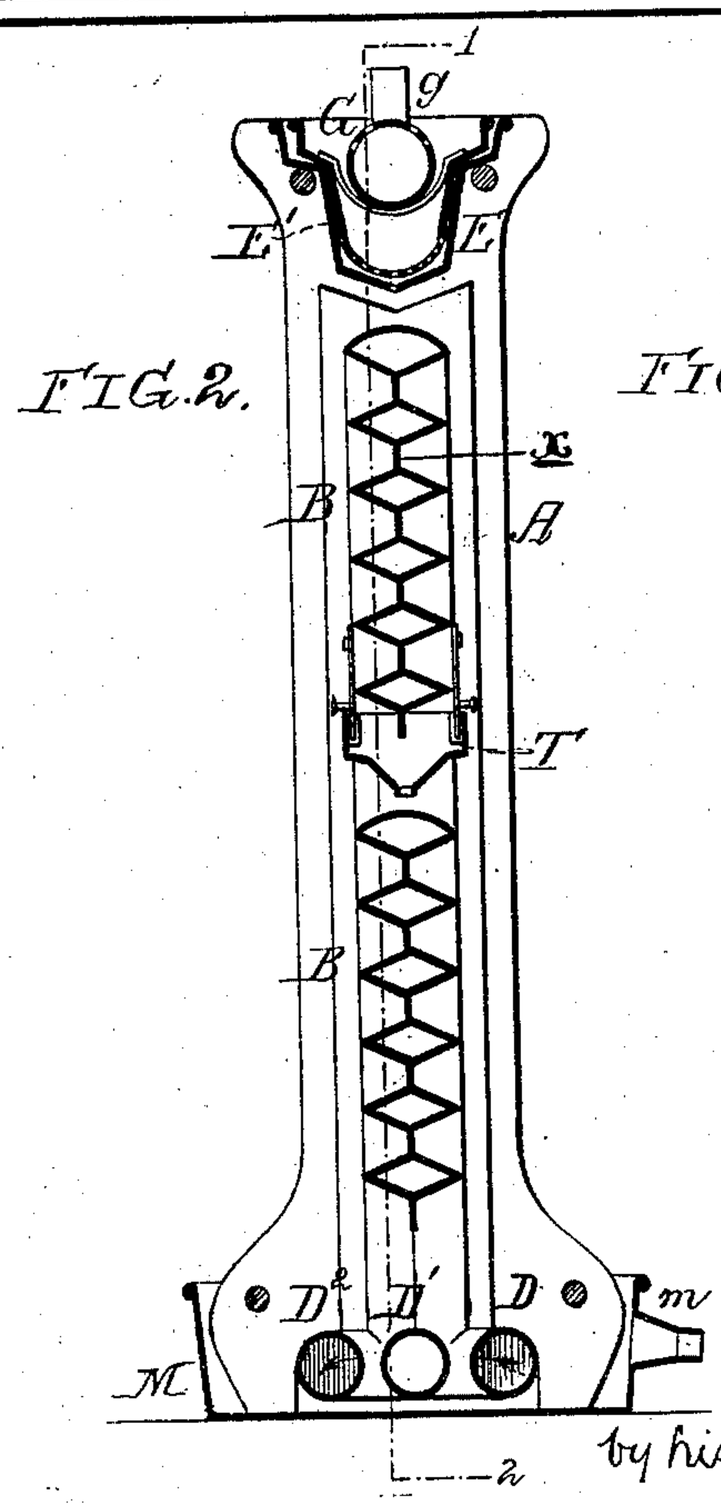
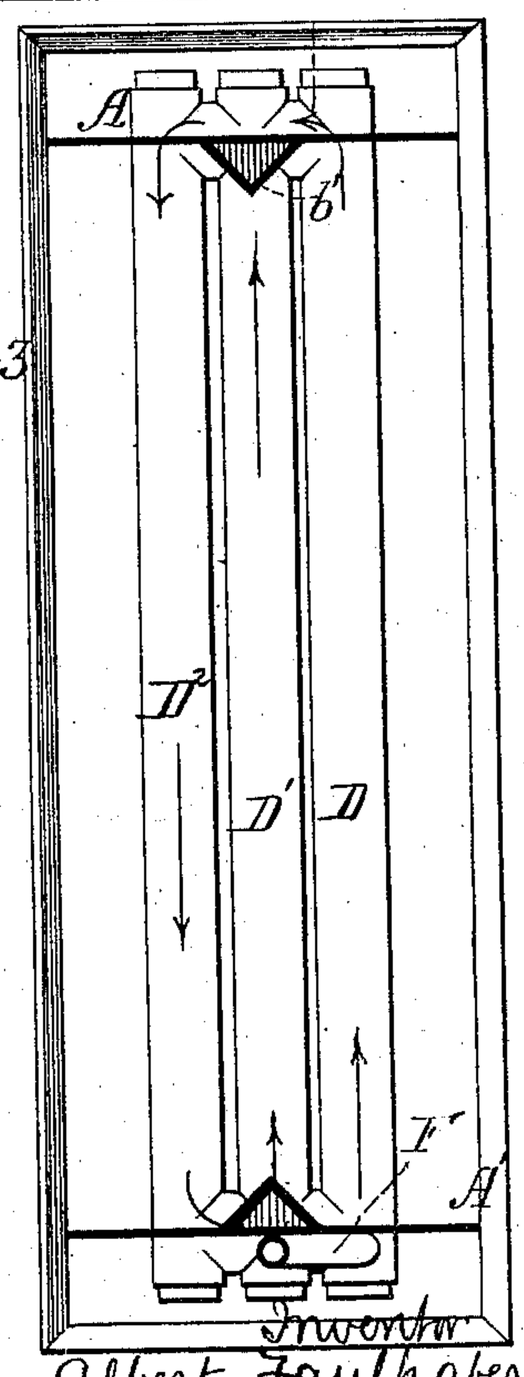


FIG. 3.



Witnesses,

Thomas McIlvaine
Harry Smith

Inventor
Albert Faulhaber
by his Atty's Howson and Sons

UNITED STATES PATENT OFFICE.

ALBERT FAULHABER, OF HEIDELBERG, GERMANY.

IMPROVEMENT IN BEER-COOLING APPARATUS.

Specification forming part of Letters Patent No. **203,718**, dated May 14, 1878; application filed March 20, 1878.

To all whom it may concern:

Be it known that I, ALBERT FAULHABER, of Heidelberg, Germany, have invented certain Improvements in Cooling Apparatus, of which the following is a specification:

My invention relates to that class of apparatus for cooling beer in which the liquid to be cooled passes through a series of pipes, over which cold water is permitted to flow; and the object of my invention is to so construct the apparatus that the cold water will flow evenly over the pipes or tubes, and that the beer or other liquid will be thoroughly cooled. This object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a longitudinal section of the cooling apparatus on the line 1 2, Fig. 2; Fig. 2, a transverse section; and Fig. 3, a sectional plan on the line 3 4, Fig. 1.

In the drawing, A A are the vertical end plates of the frame, which support the horizontal flat tubes B B, the pipes D D^1 D^2 at the bottom, and the perforated water-trough E at the top. These horizontal tubes B B communicate with each other at opposite ends alternately, so that the liquor, in passing through them, will be compelled to take the circuitous course pointed out by the arrows in Fig. 1, the top tube communicating with an outlet-tube, *b*, while the lowest of the horizontal flat tubes B communicates, through the pipe *b'*, with the central pipe D^1 of the coil of pipes at the bottom of the frame. The opposite end of this pipe D^1 is in communication, through the pipes D^2 and D, with the supply-pipe F.

On the upper part of the frame, immediately over the flat tubes B, is arranged the usual trough E, with its central row of perforations; and in this trough rests a sieve, E', to prevent the passage of solid matters, and which is provided with suitable supports for the distributing-vessel G, which communicates, through a nozzle, *g*, with the water-supply, and has a series of perforations throughout its length, these perforations being arranged on the upper side of the vessel, in order that the liquid, in flowing out, may be evenly distributed throughout the length of the trough.

Between each of the flat tubes is a connecting-plate, *x*, for the purpose of facilitating the flow of water over the said tubes; but two of these tubes, near the center of the series, are arranged at some little distance from each other, in order to permit a perforated trough, T, to be suspended over the lower series of tubes, as shown in Fig. 2, the object of this arrangement being to equalize the flow of water over the lower tubes.

The frame, with its pipes and tubes, is placed in a pan or receptacle, M, provided with an overflow-pipe, *m*, Fig. 2, so arranged that the coil of pipes D, D^1, and D^2, into which the liquor first flows from the supply-pipe F, will be more or less immersed in the cool water which flows down into the receptacle from over the tubes B.

When in operation, the cold water, after leaving the distributing-vessel G and passing through the trough E, flows over the series of tubes B and through the trough T, and collects in the pan M, while the liquor entering through the pipe F circulates through the coil D D^2 D^1, and thence passes up through the tubes B and out at *b;* or, if found more convenient, the cooling-water may be caused to pass through the coil of pipes in the pan and upward through the tubes, while the beer is allowed to flow from the trough E over the surface of the said pipes and into the pan M.

I claim as my invention—

The combination of the series of horizontal tubes B with a perforated trough, T, arranged about midway between the top and bottom, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 29th day of January, 1878.

ALBERT FAULHABER.

Witnesses:

FRANZ WIRTH,

FRANZ HASSLACHER.