

F. V. BAUDELLOT.  
COOLERS FOR BEER, ALE, &c.

No. 189,331.

Patented April 10, 1877.

Fig. 1.

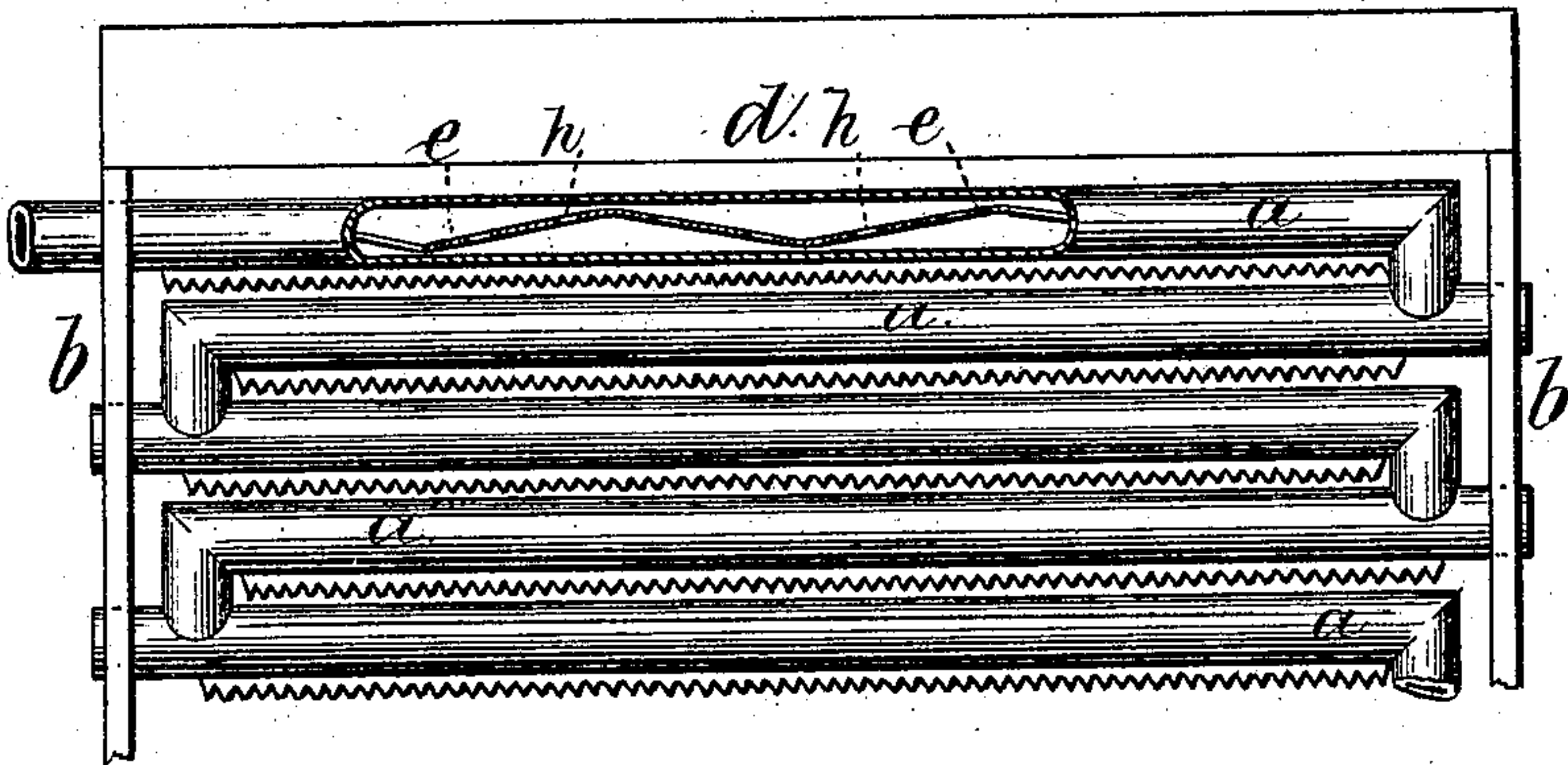


Fig. 2.

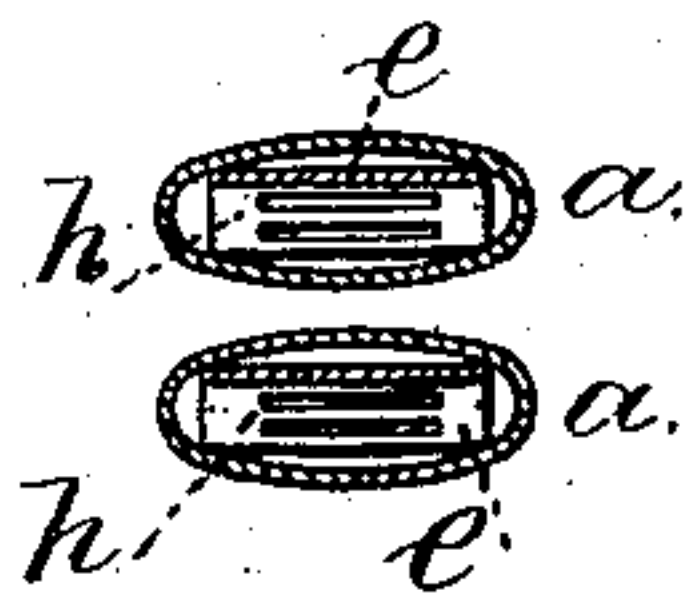
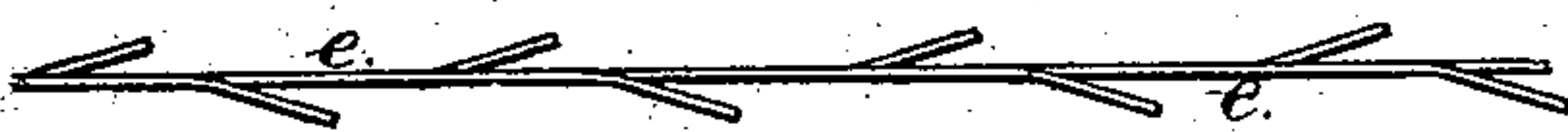


Fig. 3.



Fig. 4.



Inventor.

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Witnesses,

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# UNITED STATES PATENT OFFICE.

FRANÇOIS VICTOR BAUDELLOT, OF HARANCOURT, NEAR SEDAN, FRANCE.

## IMPROVEMENT IN COOLERS FOR BEER, ALE, &c.

Specification forming part of Letters Patent No. 189,331, dated April 10, 1877; application filed March 12, 1877.

*To all whom it may concern:*

Be it known that I, FRANÇOIS VICTOR BAUDELLOT, of Harancourt, near Sedan, France, have invented an Improvement in Coolers for Beer, Ale, and other liquids, of which the following is a specification:

In an application for Letters Patent allowed to me January 13, 1877, a cooler for beer, &c., is described, in which metal plates of spiral form are introduced within the tubes through which the water passes, for the purpose of agitating the water and directing all the particles or molecules forcibly against the inner surfaces of the tubes, thereby cooling more efficiently the beer or other liquid which trickles down upon the outside of the tubes.

My present invention has the same object in view as that set forth in the aforesaid application, and the same consists in metal plates of zigzag or undulating form, placed within the tubes of the beer-cooler, to deflect the water and prevent it moving in a direct current through the tubes, and also cause the particles to change position and be directed against the interior of the tubes.

In the drawing, Figure 1 is an elevation and partial section of the upper part of a cooler for beer or similar liquids. Fig. 2 is a cross-section of two of the tubes, and Fig. 3 an elevation of the detaining-strip. Fig. 4 is a modification of the detaining-strip.

The cooler is composed of any desired number of horizontal tubes, *a*, connected at alternate opposite ends, and supported in any suitable frame, *b*.

The refrigerating-water passes in at the lowest tube, rises through the various tubes, and escapes by the upper tube *a*, and the beer or other liquid to be cooled passes from a trough, *d*, immediately over the upper tube, and falls upon said tube in a thin sheet, and

then trickles to the tube next below, and so on to the last tube, from which it passes to a trough, all substantially as set forth in Letters Patent No. 25,992.

Within each tube *a* there is a detaining and deflecting plate, *e*, of sheet metal, bent into a zigzag or undulating form, as shown in Fig. 1, and these deflecting-plates cause the particles or molecules of water to change position and prevent the water being of different temperatures at the same part of the tube; they also interrupt the rectilinear movement of the water through the tubes, and direct the particles of water against the inner surface of the tubes, to cool the beer or other liquid, and at the same time reduce the quantity of water required for the cooling operation.

The strip *e* may have holes in the same, as at *h*, to aid in the agitation of the water, and in some cases a strip of wire-cloth, bent in the zigzag form aforesaid, may take the place of the sheet-metal plate.

The deflecting-strip *e* may be made of a flat metal plate with tongues cut in the same, and bent up at an inclination, as illustrated in Fig. 4.

I claim as my invention—

In a beer-cooling apparatus consisting of a vertical range of horizontal tubes, *a*, connected at alternate opposite ends, and over which the beer or other liquid trickles, the zigzag detaining and agitating strips *e* within the tubes *a*, for the purposes and substantially as specified.

Signed by me this 10th day of February, A. D. 1877.

F. V. BAUDELLOT.

Witnesses:

ALBERT ANTHONIAS,  
RAULIN GILMER.