F. V. BAUDELOT.

BEER-COOLER.

No. 189,332. Patented April 10, 1877.

Fig. 1.

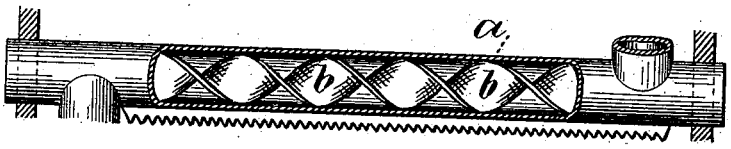

Fig. 2.

Witnesses
Chas. H. Smith
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UNITED STATES PATENT OFFICE.

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

IMPROVEMENT IN BEER-COOLERS.

Specification forming part of Letters Patent No. **189,332**, dated April 10, 1877; application filed August 21, 1876.

To all whom it may concern:

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

Coolers for liquids have heretofore been constructed in which a vertical range of horizontal pipes is made use of, with a trough above the range of pipes that supplies said liquid, and it trickles in a thin film over the outsides of the pipes, and there is a supply of water passing into the lower pipes of the range, and escaping from the upper pipe of the range. Coolers of this general character may be seen in Letters Patent numbered 25,992, 85,190, &c.

My improvement is made for rendering the cooling-water more efficient in cooling the pipes and the liquid to be cooled that flows over such pipes.

In coolers of the character before named the cooling-liquid, in passing through the pipes, is not agitated and forcibly directed against the interior surfaces of the tubes; hence it passes through without absorbing from the tubes as much caloric as it might, and the liquid in contact with the tubes remains of a higher temperature than the other portions of the liquid.

The object of the present invention is to agitate the liquid passing through the cooler, and direct all its particles or molecules forcibly against the interior surfaces of the tubes, thereby rendering the water or cooling-liquid more efficient in cooling the tubes than heretofore, and at the same time either effecting a saving in the amount of water required or increasing the capacity of the cooling apparatus.

In the drawing, Figure 1 is a partial section and elevation of one of the tubes made use of in said cooling apparatus, and Fig. 2 is a cross-section.

The vertical range of horizontal tubes is composed of any desired number of tubes, *a*, connected at alternate opposite ends, and provided with a supply-trough for the beer, and with inlet-pipe for the cold water at the bottom, and outlet delivery-pipe for the heated water at the top, the same as in the aforesaid Letters Patent.

Within each of the horizontal tubes *a* there is a strip of sheet metal at *b*, that is so constructed that it detains the water running through the pipe or tube, and agitates the same sufficiently to prevent the water being of different temperatures at the same part of the pipe.

To effect this operation the strip of metal *b* is twisted into a spiral form, and the action of the inclined surfaces of the metal strip is to deflect the water flowing through the pipe, and cause it to impinge against the inner surface of the pipe, and to agitate the liquid sufficiently to render it all of a nearly-uniform temperature, instead of the said liquid that is actually in contact with the interior of the pipe being of a higher temperature than the water more or less remote; hence, less cooling-water is required than heretofore, or the cooling apparatus is increased in capacity.

I claim as my invention—

In a beer-cooling apparatus, consisting of a vertical range of horizontal tubes connected at alternate ends, and over which the beer trickles, the twisted detaining and deflecting strip *b* within the tubes, for the purposes and substantially as set forth.

Signed by me this 15th day of August, A. D. 1876.

F. V. BAUDELOT.

Witnesses:
A. F. MIGEON,
JOHN W. BROOKS.