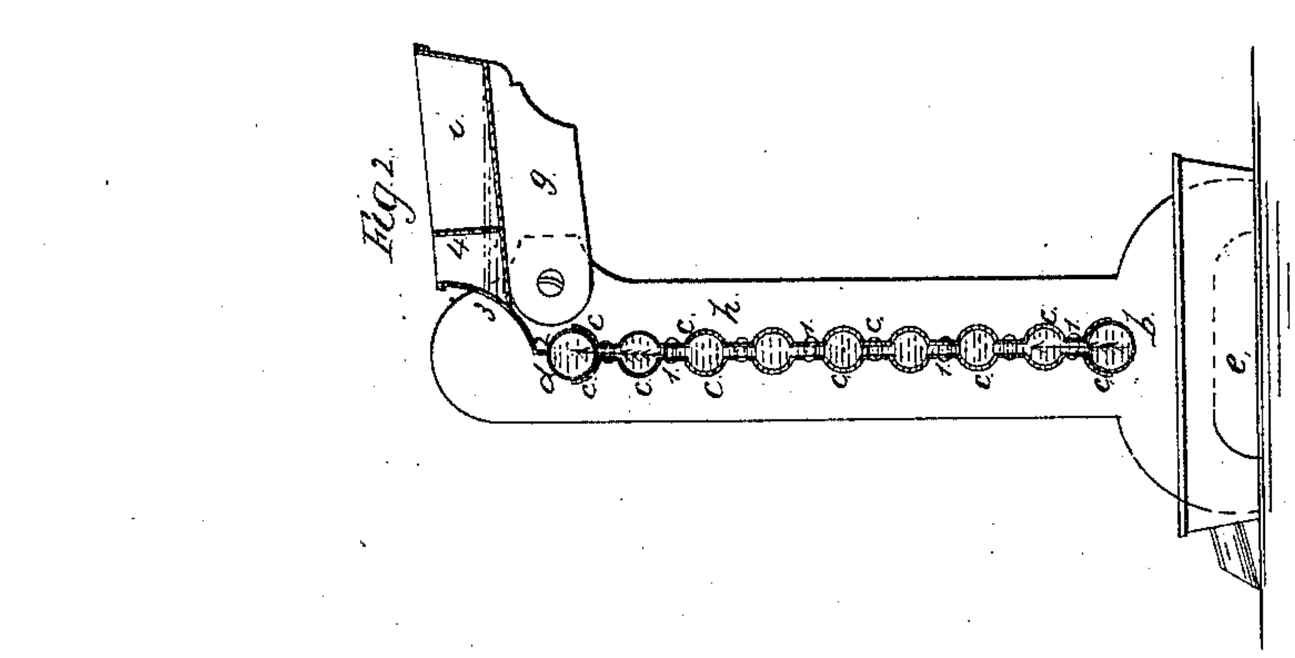
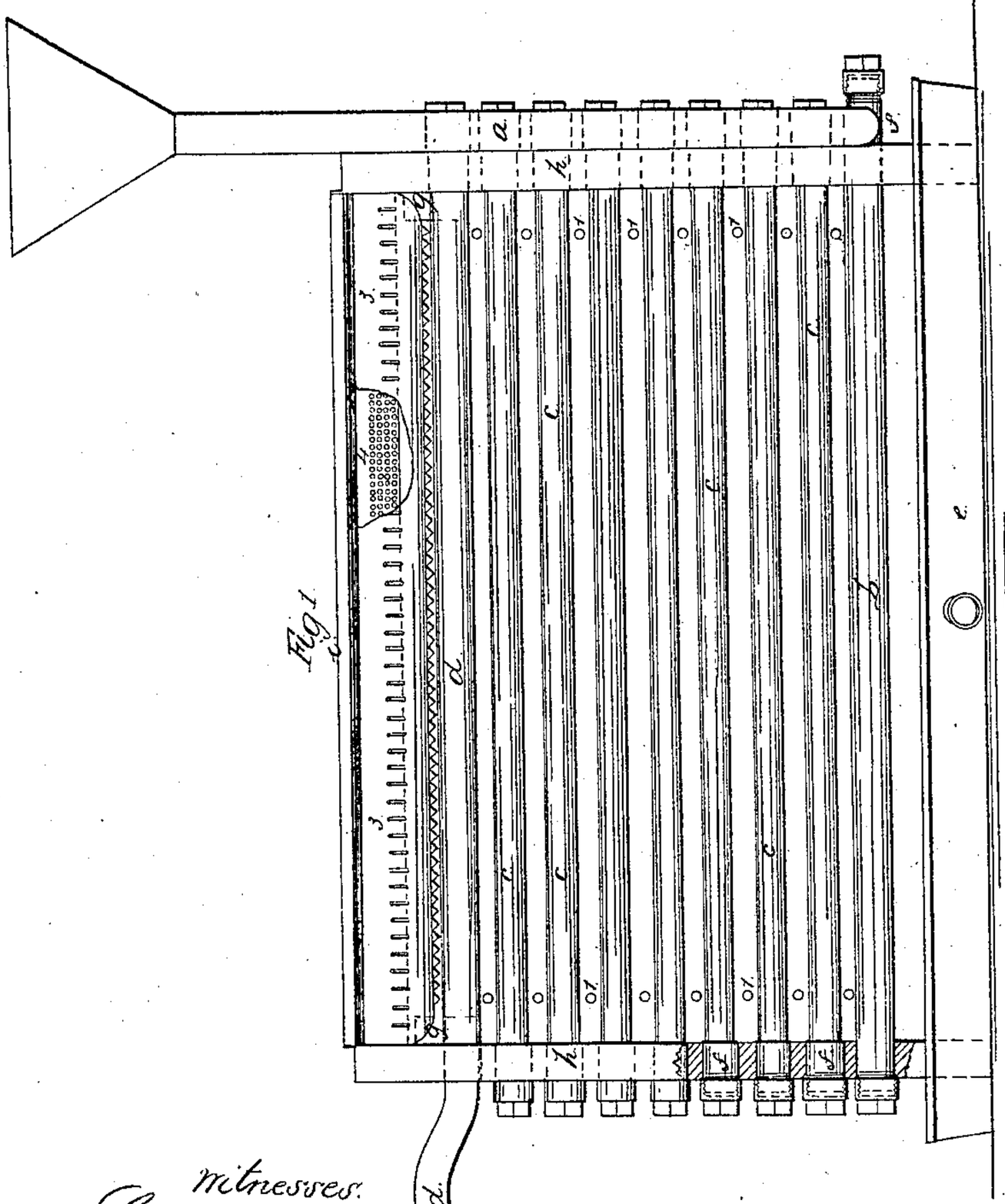
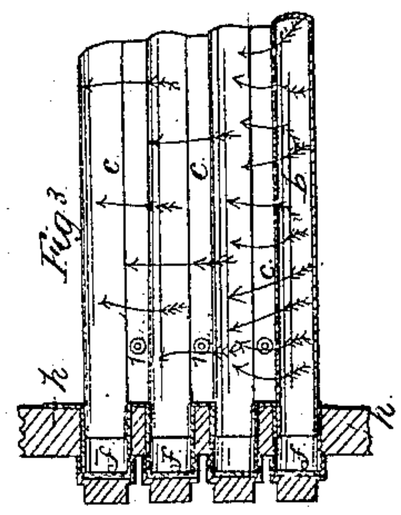
G. B. TURRELL.

COOLER FOR BEER.

No. 32,845. Patented July 16, 1861.







Witnesses.

Samuel N. Sherrell

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UNITED STATES PATENT OFFICE.

GEORGE B. TURRELL, OF NEW YORK, N. Y.

BEER-COOLER.

Specification of Letters Patent No. 32,845, dated July 16, 1861.

To all whom it may concern:

Be it known that I, GEORGE B. TURRELL, of the city and State of New York, have invented, made, and applied to use a certain new and useful Improvement in Coolers for Beer and other Liquids; and I do hereby declare that the following is a full, clear, and exact description of my said invention, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a side elevation of my cooling apparatus, a portion of the same being shown as broken open to represent the interior parts. Fig. 2, is a vertical cross section, and Fig. 3, is a partial longitudinal section.

Similar marks of reference denote the same parts.

My present invention is an improvement upon that set forth in Letters Patent granted November 1st, 1859, to Henry Migeon as assignee of J. L. Baudelot for coolers for beer, &c.

I cause the cooling liquid to travel in the opposite direction to the liquid to be cooled the object being that the hot beer should come in contact with the pipes or surfaces to which the cooling liquid is applied near the place where said liquid passes away and hence is the hottest, and that said liquid to be cooled should leave the apparatus at the point where the cold cooling water is introduced, hence the beer is cooled most perfectly upon leaving the apparatus and that with the expenditure of the smallest possible amount of water; the same as in the aforesaid patent. The means made use of by the said Baudelot were pipes in a vertical range or series.

My invention consists in forming the cooling surface by metallic plates set together in such a manner as to form a space for the cooling water to circulate upward between the plates while the liquid to be cooled trickles over the outside surfaces of said plates, or the liquids may be transposed. I also make use of a peculiar trough to receive the beer and distribute it evenly over the surface of the apparatus.

In the drawing *a*, is the vertical pipe into which the cold water is to be supplied; *b* is a horizontal pipe connecting with *a*. In the upper side of this pipe *b*, are one or more ranges of small holes, the total area being less than the cross sectional area of the pipe *b*, so that the water will rise out of these perforations with uniformity.

c, *c*, are corrugated metallic plates connected at their lower ends to the tube *b*, and at their upper ends to the tube *d*, that is perforated in its lower side corresponding with the perforations in *b*. The ends between these plates are closed as hereafter set forth so that the cooling water circulates upward from the said pipe *b*, between the plates *c*, *c*, and escapes by the pipe *d*, in a heated state while the beer in running down upon the outer sides of these corrugated sheets is cooled, and ready for delivery upon reaching the trough *e*, at the bottom.

By reference to Figs. 2 and 3, it will be seen that by setting the corrugated plates *c*, *c*, together as shown, an opening or space similar to a pipe is formed and to afford room for the water to circulate the metallic sheets are kept apart by washers or strips introduced (at the rivets as at 1, 1.) The circulation however of the water might be maintained by dressing out the corrugations at alternate ends so as to form a circulation from one pipe shape corrugation to the next.

f f are short pipes or nipples introduced between the corrugations at their ends and supplied with screw caps, by the removal of which the interior of the cooler can be freed from sediment either resulting from the water or from the beer when the position of beer and water is transposed. When the corrugated sheets *c*. *c*, are not placed in reverse as shown the corrugations set partially into each other leaving a space of nearly equal width throughout instead of the alternate enlargements and contractions represented.

g. *g*. are brackets upon the frame pieces *h*, which brackets carry the feeding trough *i*, and by being attached with a bolt or screw to each, can be more or less inclined, so as to sustain the trough in a corresponding position and insure the uniform delivery of the beer on each outerside of the corrugated plates, 2. 2 being a series of teeth that by this means are adjusted exactly centrally over the pipe *d*. The side 3 of this trough *i* is provided with vertical slots at short distances apart which cause a uniform delivery of the beer throughout the entire length of trough in consequence of the side

3, damming the beer up in the trough and bringing it to a uniform level; 4, is a screen or sieve of wire or perforated metal to keep back any solid matter or impurities from the beer: This construction of trough is not only easily constructed but is cheap efficient does not become obstructed and can easily be cleaned.

It will be seen that the whole of my apparatus acts as a cooling surface and that a very large area is obtained in a small space: and that plain or more or less corrugated plates *c*. *c*, may be made use of, however the apparatus is more efficacious when the corrugations are deep.

What I claim and desire to secure by Letters Patent is—

1. A cooler for beer or other liquids formed of the vertical plates *c*. *c*, in the manner set forth, and operated as specified.

2. The trough *i* provided with the screen 4, and with the slots in the side 3, as and for the purposes specified.

3. The arrangement of the perforated pipes *b*, and *d*, in the manner specified when combined with the metallic sheets *c*. *c*, as and for the purposes set forth.

4. Introducing the nipples *f*, *f*, at the ends of the plates *c*, *c*, in the manner and for the purposes specified.

In witness whereof I have hereunto set my signature this sixth day of May 1861.

GEO. B. TURRELL.

Witnesses:

LEMUEL W. SERRELL,

THOS. GEO. HAROLD.