

K. T. SCHÜTZINGER.
BEER COOLER.
APPLICATION FILED JUNE 5, 1908.

931,891.

Patented Aug. 24, 1909.
4 SHEETS—SHEET 1.

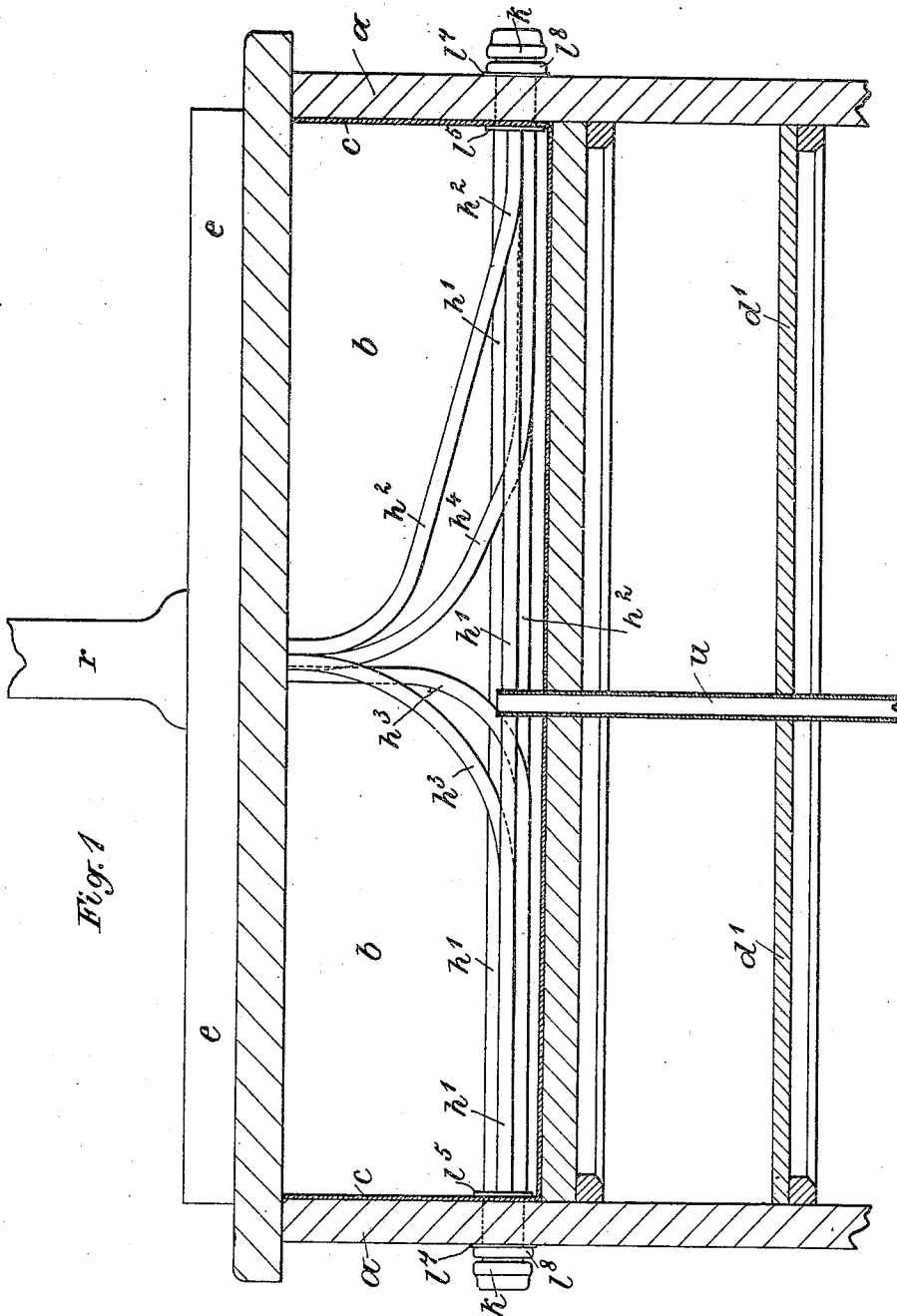


Fig. 1

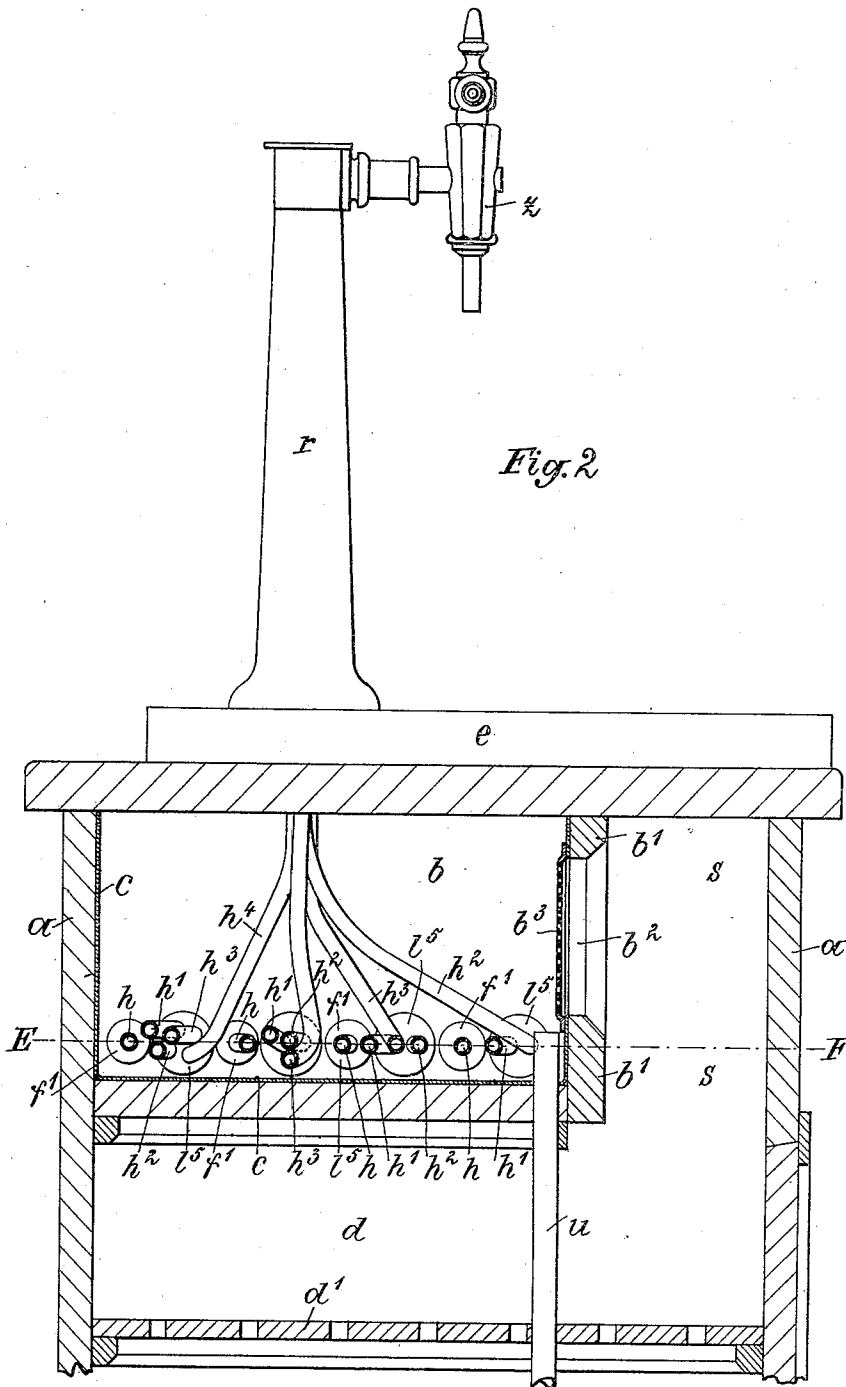
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Frank W. Briesen

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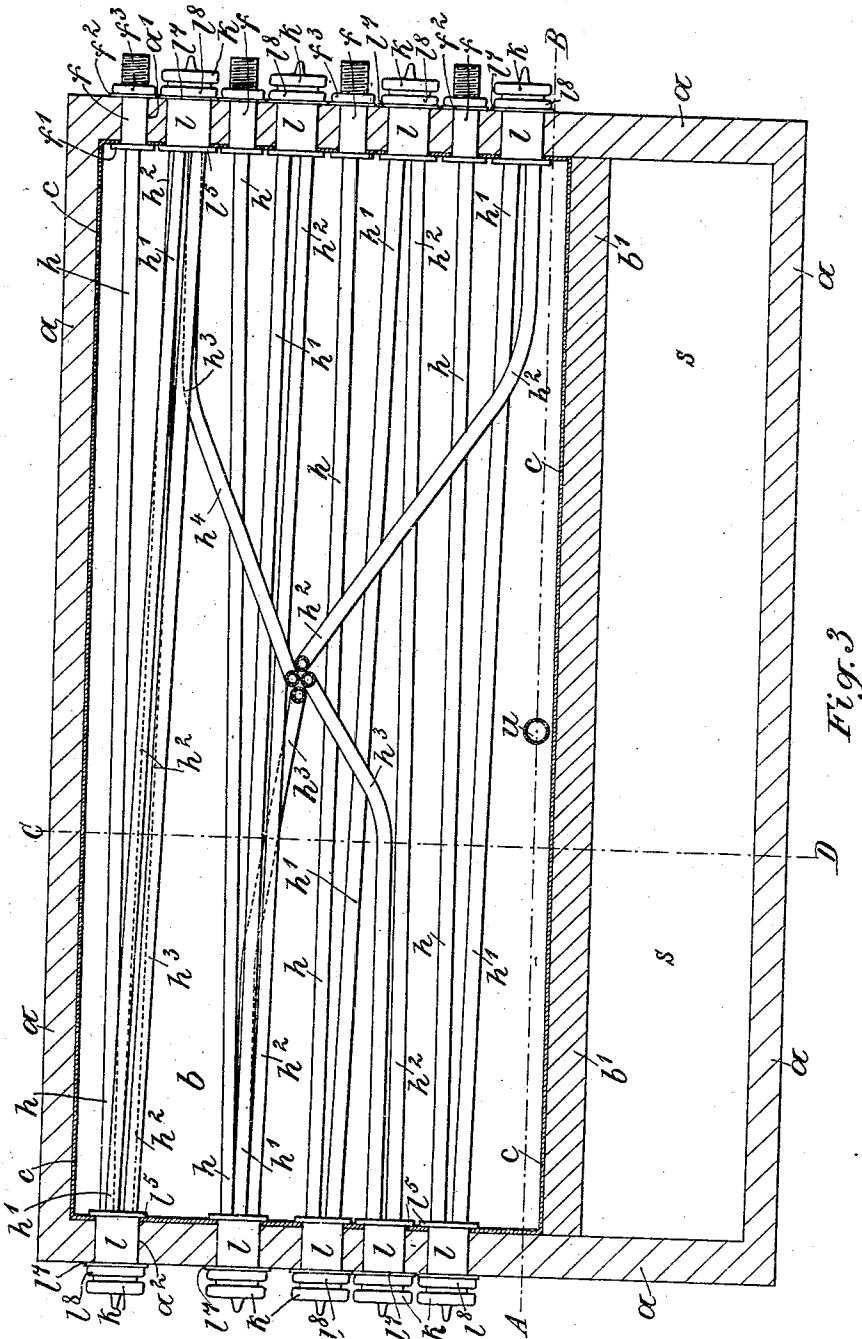


Fig. 3

Witnesses
August Wauer.
H. R. Schuch.

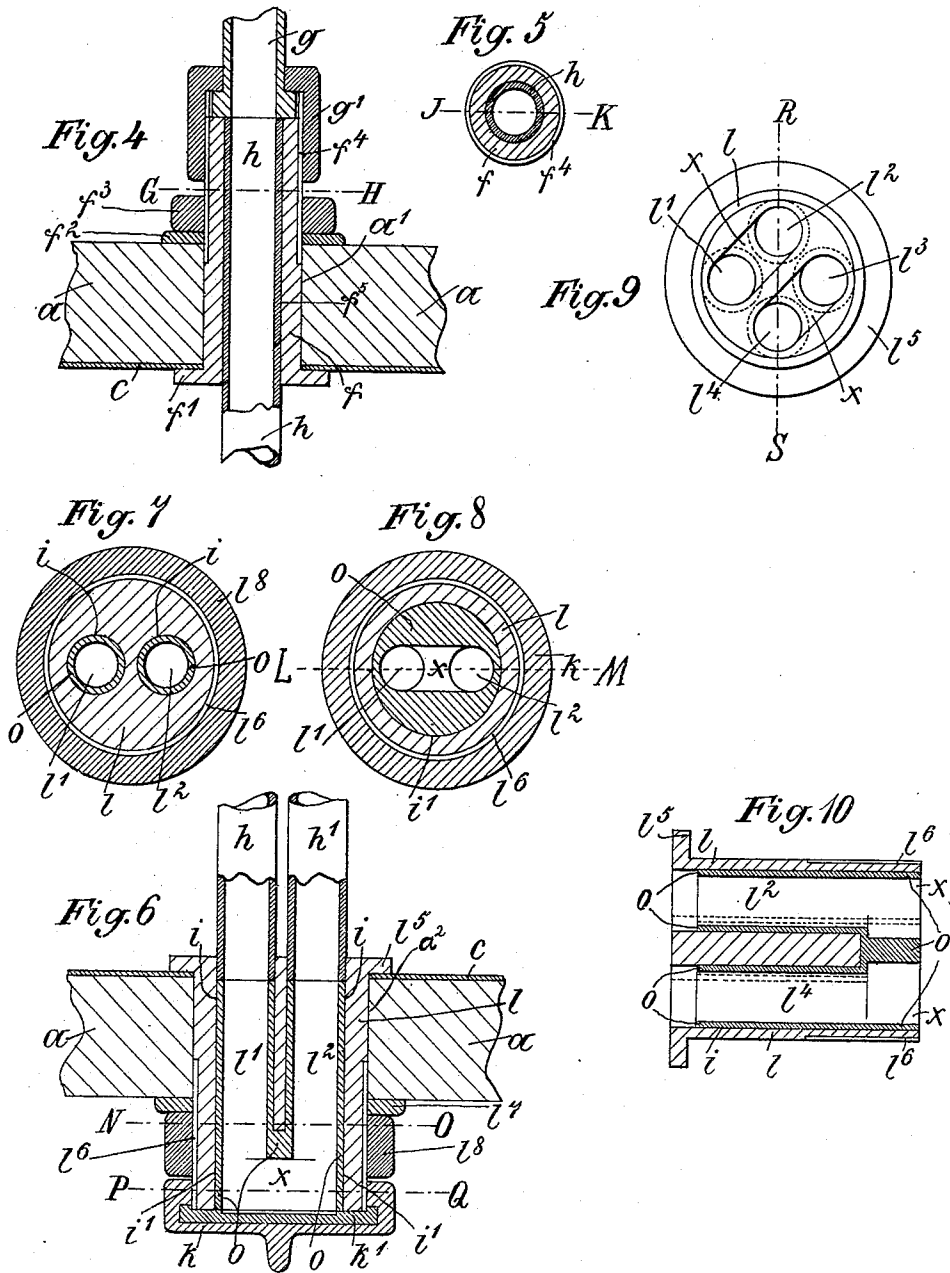
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4 SHEETS—SHEET 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

KARL THEODOR SCHÜTZINGER, OF HAMBURG, GERMANY.

BEER-COOLER.

931,891.

Specification of Letters Patent.

Patented Aug. 24, 1909.

Application filed June 5, 1908. Serial No. 436,791.

To all whom it may concern:

Be it known that I, KARL THEODOR SCHÜTZINGER, a subject of the German Emperor, and resident of Hamburg, Germany, have invented new and useful Improvements in Beer-Coolers, of which the following is a specification.

The beer cooler which forms the subject of this invention consists of straight tubes with connecting headers which latter receive the ends of said tubes and are for this purpose made with two or more parallel passages combined in pairs. The headers are mounted in the opposite walls of a box or casing and have caps for access from the exterior when it is desired to clean the tubes by the use of a brush.

The improved cooler can be used as a refrigerating or a heating device, although it is chiefly arranged for the supply of beer in drinking bars, one of which is shown in the drawing.

Figure 1 is a longitudinal section according to A—B of Fig. 3. Fig. 2 is a cross section taken on line C—D of Fig. 3; and Fig. 3 is a horizontal section on E—F of Fig. 2. Fig. 4 is a longitudinal section on J—K of Fig. 5 through the header mounted in an ice box and to which is connected at the exterior a pipe coming from the barrel, while internally it carries the first straight tube of a refrigerating coil. Fig. 5 is a cross section on G—H of Fig. 4. Fig. 6 shows a header mounted in the ice box connected with two pipes in longitudinal section on line L—M of Fig. 8. Fig. 7 is a cross section on N—O and Fig. 8 a cross section on P—Q of Fig. 6. Fig. 9 is an end view of a header for four pipe-connections, and Fig. 10 is a longitudinal section on R—S of Fig. 9.

In the bar *a* is fixed the ice box *b* lined with zinc *c* and having in its rear wall *b*¹ an opening *b*² covered with a perforated plate *b*³. This arrangement enables the cold air to pass from the box *b* through the passage *s* into the lower chamber *d* fitted with shelves *d*¹ on which food and drinks can be placed.

The header *f* is formed with a collar *f*¹ and passes through a hole *a*¹ in the box *a* to which it is secured by means of a washer *f*² and a nut *f*³. A tin pipe *g* coming from a distant barrel is connected to the inlet header *f* by a union-nut *g*¹ for which purpose the projecting end of the header is screw-threaded externally at *f*⁴.

The header has an internal bore *f*⁵ to fit

the refrigerating pipe *h* which is made of tin like the supply *g*, the pipe *h* extending through the bore *f*⁵ to the exterior of the header.

In the opposite wall to the inlet header *f* in the box *a* there is a connecting or return header *l* having four communicating passages *l*¹, *l*², *l*³, *l*⁴ see Figs. 9 and 10. The header *l* is formed at its inner end with a collar *l*⁵ and has screw-threads *l*⁶ at the other end. It is seated in a hole *a*² of the wall of the box and then firmly secured by a washer *l*⁷ and screw-nut *l*⁸.

The tube *h* is fixed in the bore *l*¹ of the header *l* and is thus in communication with the bore *l*² of the latter and with the tube *h*¹. The latter leads to the passage *l*¹ of another similar connecting header *l* secured close to and in the same wall as the inlet header *f*. The second passage *l*² of the right hand connecting header *l* is in communication with the third passage *l*³ of the left hand connecting header *l* through a tube *h*². The passage *l*³ of the left hand connecting header *l* carries in its bore *l*⁴ a tube *h*³ which leads to the passage *l*³ of the right hand connecting header *l*. The passage *l*³ of the latter is in open communication with the passage *l*⁴ in the same header and to the latter is secured the tube *h*⁴ which leads through the stand *r* to a delivery tap *z*. The conduit may be extended by the adoption of one or several more connecting headers *l*, or it may be shortened by using a twin-passage header at the right side instead of the aforesaid quadruple passage header as those shown in Figs. 6 to 8.

A beer conduit in which a quadruple and a twin-passage header are used together is arranged side by side with the former having two quadruple-passage headers.

The inlet header *f* connects the pipe *h* with the passage *l*¹ of the left hand connecting header *l*. The passage *l*² of the latter is fitted with a pipe *h*¹ leading to the passage *l*¹ of the right hand header *l*. From the passage *l*² of the latter a tube *h*² leads to the passage *l*³ of the left hand header *l* in the passage of which the tube *h*³ is secured which latter leads through the stand *r* to the delivery tap *z*.

Very long beer conduits can also be established with the use of only twin-passage headers *l* as is shown in the Figs. 1, 2 and 3 of the drawing.

In the third beer conduit there are one inlet header *f* and three connecting headers *l*. From the inlet header *f* a tube *h* extends

to the passage l^1 of the left hand header l . The passage l^2 of the latter communicates through the tube h^1 with the passage l^1 of the right hand header l whose passage l^2 and tube h^2 communicates with the passage l^1 of a further left hand header l . In the passage l^2 of the latter is secured the tube h^3 which extends through the stand r to a delivery tap.

10 In the fourth and last beer conduit there are two connecting twin passage headers l and one inlet header f . The pipe h connects the inlet header f with the passage l^1 of the left hand connecting header l whose second
15 passage l^2 communicates with the passage l^1 of the right hand header l through the tube h^1 . In the passage l^2 of the last named header is secured a tube h^2 which extends through the stand r to the delivery tap z
20 thereof.

The twin-passage connecting header l has like the quadruple passage header a a flange l^5 at its inner end as well as screw-threads l^6 at its outer end for the reception of a nut l^8 at
25 which with a washer l^7 insures a firm hold for same on the wall of the box a .

The headers l are externally closed by caps k which are tinned in the interior.

u is an overflow pipe for the efflux of the
30 ice water and e is a drain-board.

The tubes h are all tin which can be easily bent and have the ends introduced in the passages of the headers f and l and then soldered.

35 Each header consists of a metal block l having two or more parallel bores i corresponding to the external diameter of the tubes h . The front part of the block l has a cylindrical bore i^1 of a depth equal to the
40 internal diameter of the tube h and forming the communication between the two passages. The diameter of each passage l^1, l^2, l^3, l^4 is equal the diameter of the tubes h .

45 The longitudinal passages l^1, l^2 , and the passages l^3, l^4 , are drilled into the solid metal block l , and are connected in pairs by transverse passages x . The latter are also drilled into the block l , and are of a diameter substantially equal to that of pipes l^1 , etc., so

that no objectionable traps or pockets are 50 formed between the longitudinal passages.

The external run of the header l after having manufactured the same in the manner previously stated is smoothly finished, as is also the interior of the cap so that the two 55 parts make an air-tight connection. Packing material such as rubber, asbestos, fiber etc. is therefore avoided and the beer is only in contact with tin throughout its entire course toward the tap, which is a great con- 60 sideratum from a hygienic point.

By removing all the caps of a beer-conduit, or of all the beer-conduits, the tubes h which run straight between the headers allow of ready inspection to ascertain whether 65 every portion thereof has been thoroughly cleaned by the brush.

The arrangement of these headers l enables the space required for a refrigerating box to be reduced to the smallest possible 70 limits so that a comparatively small ice-box can be used for a number of more or less lengthy beer-conduits. These may, if desired, be disposed one above the other in the ice-box, although for practical purposes it 75 will be preferable to place the same side by side close to the bottom of the box as is shown in the drawings.

What I claim is:

1. In a beer cooler, a head comprising a 80 metal block, having a pair of longitudinal passages and a connecting transverse passage of substantially equal diameters formed therein, and a cap for closing said passages.

2. In a beer cooler, a cooling chamber, 85 combined with a series of heads fitted therein comprising each a metal block having a pair of longitudinal passages and a connecting transverse passage of substantially equal diameters, and with pipes traversing the 90 cooling chamber and engaging successive heads.

Signed by me at Hamburg, Germany, this 22nd day of May 1908.

KARL THEODOR SCHÜTZINGER.

Witnesses:

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