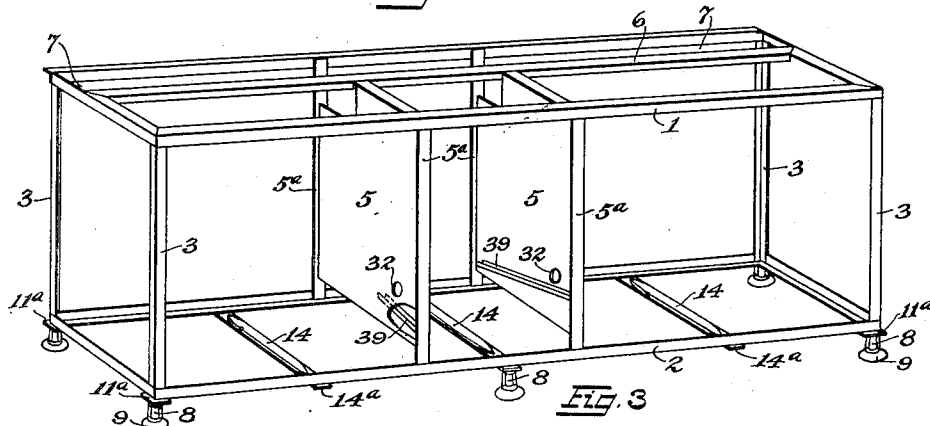
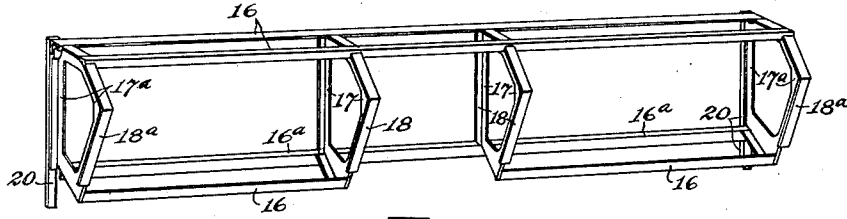
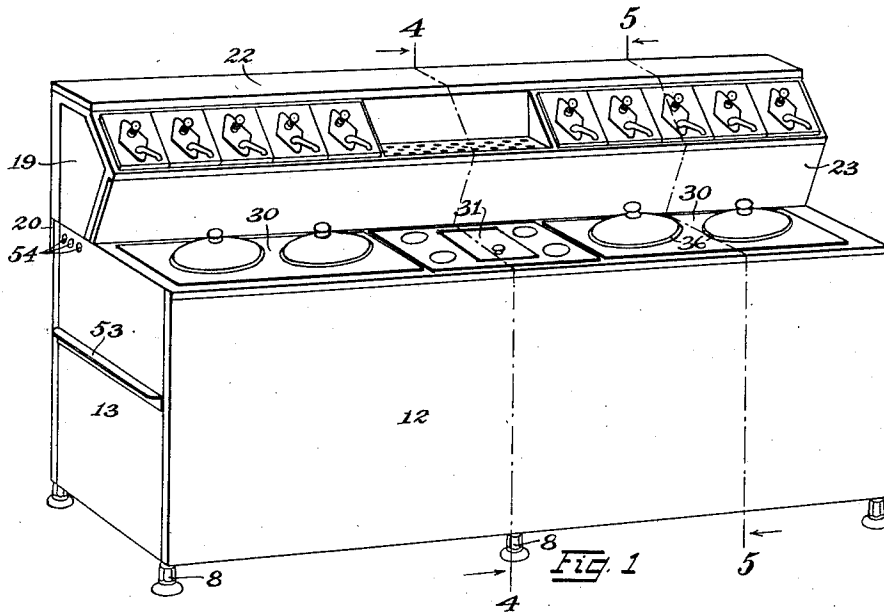


G. W. & H. A. WISE.
COOLER AND SODA FOUNTAIN CONSTRUCTION.
APPLICATION FILED NOV. 29, 1909.

972,137.

Patented Oct. 4, 1910.

3 SHEETS—SHEET 1.

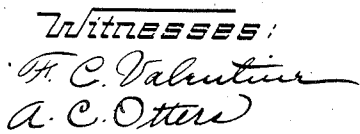


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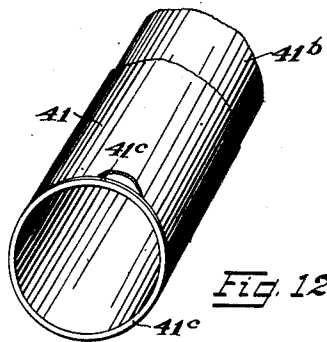
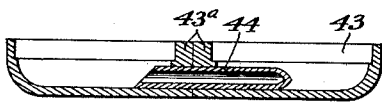
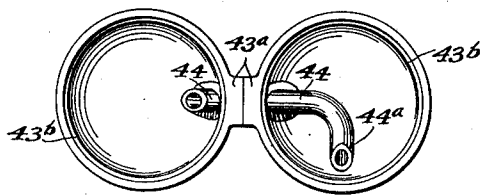
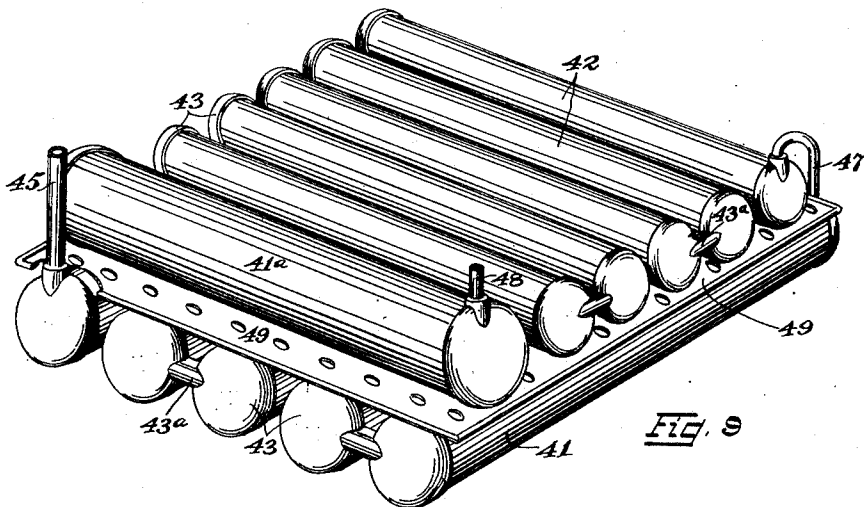
3 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

GEORGE W. WISE AND HENRY A. WISE, OF CLEVELAND, OHIO, ASSIGNORS TO THE WISE SODA APPARATUS COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

COOLER AND SODA-FOUNTAIN CONSTRUCTION.

972,137.

Specification of Letters Patent.

Patented Oct. 4, 1910.

Application filed November 29, 1909. Serial No. 530,523.

To all whom it may concern:

Be it known that we, GEORGE W. WISE and HENRY A. WISE, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Coolers and Soda-Fountain Construction, of which the following is a specification.

Our invention relates to improvements in coolers and soda-fountain construction, the primary object of the invention being to provide a generally improved cooler and soda-fountain of simple, cheap, and efficient construction, much better adapted to its intended purposes than any other invention of the same class with which we are acquainted.

A further object of the invention is to entirely eliminate wood as a material in any part of the structure, and to provide a generally improved metallic frame-work for securing, supporting, and reinforcing the marble walls whereby a generally improved structure of great strength and durability is provided.

A still further object of the invention is to provide a generally improved cooling system adapted to produce and utilize a maximum amount of cold air with a minimum consumption of ice, and with this end in view, we make use of what is known as the "brine or iceless system" of refrigeration whereby the salt-brine from the freezing mixture in the storage cabinets is utilized in cooling the cooling-cylinders in the cooling-chamber. The parts are also specially arranged and combined for this purpose.

The metallic frame herein shown and described but not claimed is made the subject-matter of a divisional application filed April 25, 1910, Serial No. 557,333.

A still further object of the invention is to provide a generally improved cooler and ice-box adapted to cooperate with the storage cabinets and salt-brine to provide a maximum amount of refrigeration with a minimum consumption of ice.

With the above mentioned and other objects in view, the invention consists in the novel construction, arrangement, and combination of parts, hereinafter described, illustrated in one of its embodiments in the accompanying drawings, and particularly pointed out in the appended claims.

Referring to the drawings, forming a part

of this specification, Figure 1, is a perspective view of a cooler and soda-fountain constructed in accordance with this invention. Fig. 2, a perspective view of the container-counter frame portion comprised in the improved supporting and reinforcing metallic frame. Fig. 3, a perspective view of the main body portion of the improved metallic frame. Fig. 4, an enlarged cross-sectional view taken through line 4-4 of Fig. 1. Fig. 5, an enlarged cross-sectional view taken through line 5-5 of Fig. 1. Fig. 6, a perspective view of one of the reinforced corners of the improved metallic frame. Fig. 7, a detail cross-sectional view of one of the adjustable supporting legs. Fig. 8, a detail perspective view of one of the syrup-container racks mounted within the container-counter. Fig. 9, a detail perspective view of the improved cooler contained in the bottom portion of the cooling chamber. Fig. 10, a detail plan view of the inner side of a pair of united metallic heads carrying an improved pipe-conduit for connecting and uniting the cooling cylinders or pipes in pairs. Fig. 11, a longitudinal cross-sectional view of the same. Fig. 12, a detail perspective view of the end portion of one of the improved double walled coolers or cylinders.

Similar numerals of reference designate like parts throughout all the figures of the drawings.

The main body portion of the improved soda-fountain is supported and reinforced by means of a metallic frame (see Fig. 3), comprising upper and lower angle-bar frames 1, and 2, respectively, preferably of rectangular form, and angle-bar corner posts 3, secured and reinforced within the corners of said angle bar frames by means of metallic reinforcing plates or members 4, said plates or members 4, being securely riveted and soldered therein as indicated in Fig. 6, of the drawings.

The angle-bar frames 1, and 2, are provided, intermediate their ends, with metallic cross-partition-plates or heads 5, said partition-plates being preferably of cast brass and provided with integral flange portions 5^a, secured within the inner sides of the angle-bars of the frames 1, and 2. The upper frame 1, is provided near its rear with a second angle-bar strip 6, forming an opening 7, for the reception of a container-

counter frame, hereinafter described, said angle-bar strip 6, resting intermediate its ends upon the flange portions 5^a, formed at the upper portions of the partition-plates 5.

5 The frame of the main body portion of the fountain is adapted to be supported upon adjustable legs, secured to the lower frame 2. The adjustable legs each comprise a base portion 9, carrying a rotary internally
10 threaded standard or sleeve 8, carrying a threaded shank 10, provided with a top or bearing plate 11. The bearing plates 11, of the adjustable legs at the corners of the main frame are provided with outwardly
15 extending flanges or projections 11^a, adapted to engage and support the corners of the marble side and end walls 12, and 13, respectively, when the latter are secured about the sides of the metallic frame. As a further
20 means of supporting said marble side and end walls, the lower frame 2, is provided with channel shaped metallic cross-bars 14, provided with ledges or projections 14^a, extending beyond the front and rear sides of
25 the lower frame and adapted to take under and support the lower marginal edges of the marble side walls 12, when the latter are secured on the front and rear sides of the improved frame. The marble base or
30 bottom wall 15 is adapted to have its marginal edges rest within and to be supported upon the angle-bars comprised in the lower frame 2, its intermediate portions resting upon and supported by the metallic cross-
35 bars 14.

The container-counter frame comprises a plurality of longitudinally extending angle-bars 16, secured to peripherally flanged intermediate and end supporting frames 17,
40 and 17^a, respectively. The peripheral flanges 18, on the intermediate frames 17, extend laterally on either side thereof, and the peripheral flanges 18^a, on the end frames 17^a, extend on the outside only, said peripheral
45 flanges 18^a, corresponding in width to the thickness of the marble end walls 19, of the container-counter, so as to support and extend flush with the marginal edges of the end walls 19, as shown most clearly in Fig. 1, of the drawings. The depending angled
50 portion of the container-counter frame is adapted to rest within the longitudinal opening 7, of the main frame, the lower front angle bar 16^a, resting upon a correspond-
55 ingly shaped angle-bar of the upper frame 1, when the container-counter is mounted as shown most clearly in Figs. 4, and 5, of the drawings. The container-counter frame is
60 provided at its front with vertical bars 20, said vertical bars having their ends extended to rest in front of the marble wall 12, and against the adjacent counter-slab (not shown) so as to provide an intermediate circulating passage or recess 20^a, between the
65 front wall 12, and the counter-slab. The

container-counter frame is provided with strips of heat insulation 21, within its inner top and front portions, and is provided at its top with the usual over-hanging counter-slab 22. The container-counter frame is pro-
70 vided at its rear with an inclined slab 23, said slab 23, being provided on its inner side with syrup-container racks 24, to receive and contain the syrup-containers or jars 25, in an inclined position as shown. The lower
75 peripheral flanges 18^a, of the supporting frames and the flange portions of the lower longitudinally extending angle-bars 16, are adapted to support the marginal edges of an inclined perforated rack 26, having open-
80 ings to receive and support the reduced ends 25^a, of the syrup-containers. It will be observed that the marble end walls 19, are protected from being chipped or otherwise injured by the peripheral flanges 18^a, extend-
85 ing about and protecting the same, as herein described.

The metallic frame of the main body portion of the improved fountain is preferably of rectangular form, and the marble side and end walls 12 and 13, and base or bottom
90 wall 15, are adapted to be secured to the frame by means of screws. Strips of heat insulating paper 27, are interposed between the marble walls and the adjacent frame
95 work to which they are attached for the purpose of preventing dampness getting in between the metallic frame work and the walls, as well as preventing the latter becoming extremely cooled from the inside
100 outwardly, and thus preventing sweating or the precipitation of moisture on the walls. The marble base and side and end walls are lined on their inside with strips of cork insulation 28, said cork insulation being of
105 greater thickness as at 28^a, in front of the storage cabinets, and cut away at the upper portions to provide circulating air passages 29, between the interior of the storage cabinets and the interior of the container-counter
110 so as to provide a circulation of cold air through and about the syrup-containers.

The storage chambers or cabinets 30, are divided from the intermediate cooling-chamber or box 31, by means of the partition-
115 plates or heads 5, said partition plates being non-insulated and provided with brine-inlet openings 32, adapted to carry the salt-water-brine arising from the freezing mixture in the storage cabinets into the bottom
120 portion of the cooling-chamber as herein-after described.

The cork insulation 28, of the storage cabinets and cooling-chamber is lined with a copper lining 33, and the storage chambers
125 or cabinets are provided with a perforated separating cylinder 34, centrally located and supported at its sides by brackets 35, and adapted to receive and contain the usual ice-cream can 36. The brine-inlet openings
130

32, are provided with perforated covers 37, and the salt-water-brine is adapted to pass through the perforated covers, and thence downwardly through housings 38, into inclined troughs 39, carried by the metallic partition-plates 5, on either side of the cooling-chamber. The inclined trough 39, shown in Fig. 4, is adapted to deliver the salt-water-brine at the adjacent rear corner of the colling chamber and the trough 39, at the other side is a short one inclined rearwardly, and is adapted to deliver the salt-brine at the adjacent corner diagonally opposite the rear corner which receives the brine from the first mentioned trough. In this manner the salt-brine is distributed as it accumulates in the bottom of the cooling-chamber and is carried off by a removable waste-pipe 40, having its drain-head 40^a, provided with perforations and adapted to govern the depth of the accumulated salt-brine as hereinafter described.

The improved cooler mounted in the lower portion of the cooling-chamber or box 31, comprises a plurality of cooling-cylinders 41 and cross-cooling pipes 42, provided at their ends with metallic heads 43, preferably formed of block tin, said cooling-cylinders and pipes being alternately connected in pairs at diagonally opposite ends and communicating with each other through pipe-conduits 44, mounted in openings formed in the abutting lug portions 43^a, of the metallic heads. As a means for effectually draining the cooling-cylinders and pipes of their contents, the pipe-conduits 44, have their receiving ends 44^a, depressed and disposed near the bottom portions of said cooling-cylinders and pipes as shown most clearly in Fig. 10, of the drawings. Unless a sufficient amount or thickness of metal is provided at the points mentioned, there is a tendency of the carbonated water to freeze, and hence we provide the thickened lug portions 43^a, and give the same added thickness and reinforce the same by means of the pipe-conduits mounted in the openings of the lug portions, after which mounting the abutting lug portions, together with the pipe-conduit are soldered together.

The carbonated water is adapted to enter the first cooling-cylinder 41, through an inlet pipe 45, entering, in the present instance, through a suitable opening in one of the end walls of the cabinet and passing along one of the inclined drip-troughs 46, beneath the container-counter to the cooling-chamber, said pipe at this point passing downwardly and connected to the lug portion 43^a, of the metallic head of the first cooling-cylinder. The carbonated water after being thoroughly agitated and commingled by traversing the cooling-cylinders passes out of the end of the last cooling-cylinder through an upwardly extending pipe 47, said pipe being

connected to the lug portion 43^a, of the metallic head of the first adjacent cross cooling-pipe. The carbonated water thence traverses the respective cross cooling-pipes and passes into a cooling-cylinder 41^a, from whence it is passed upwardly through a draft-pipe 48, leading to the draft-stand on the counter-slab 22.

The cooling-cylinders and pipes are made up of inner and outer tubes as shown in Fig. 12, the outer tube being formed of copper, and the inner tube 41^b, preferably of block tin, said inner tube being provided at its ends with a peripheral flange 41^c, adapted to abut against the adjacent ends of the outer tube to fit within the annular recess 43^b of the metallic head where the parts are thoroughly soldered together.

A perforated drip-plate 49, is interposed between the cooling-cylinders and cross cooling-plates, said drip-plate being adapted to prevent any melting ice which may be stored in the cooling-chamber above the coolers, from falling through between the cross cooling-pipes into the salt-water-brine between the cooling-cylinders. If the particles of melting ice were permitted to fall into the salt-water-brine between the cooling cylinders, the brine and ice would have a tendency to freeze up between the cooling cylinders, hence the provision of this perforated drip-plate. The removable waste-pipe has its drain-head just above the plane of the cooling-cylinders and on a plane with said drip-plate so as to keep said cooling-cylinders submerged in the salt-water-brine.

As a means for diluting or tempering the accumulated salt-water-brine, non-carbonated or natural water is adapted to be introduced into the salt-water-brine by means of inclined pipes 50, (see Fig. 4) arranged on either side of the cooling-chamber, intersecting a longitudinally extending inlet pipe 51, extending along the drip-trough 46, and out through an opening 52, in one of the end walls of the cabinet. The inlet pipe 51, preferably extends beneath and in front of the work-board (not shown) where it is provided with a suitable valve. When it is desired to provide a new supply of salt-water-brine or cleanse the bottom of the cooling-chamber and coolers, the waste-pipe 40, may be withdrawn whereby salt-water-brine may be effectually drained, after which natural water may be introduced through the inclined pipes 50, to thoroughly flush and cleanse the parts.

In order that the angle-bars comprised in the improved frame may present a perfectly smooth and true surface for the attachment of the marble walls thereto, said angle-bars are preferably formed of cold drawn brass. The bracket 53 shown in Fig. 1, is adapted for the support and attachment of a work-board, and the openings 54, formed in the

end wall just beneath the container-counter are designed for the passage of suitable pipes, said pipes being adapted to extend beneath and to the front edge of the work-board where they are provided with suitable valves.

From the foregoing description, taken in connection with the accompanying drawings, the operation and advantages of our invention will be readily understood.

Having thus described an embodiment of our invention, what we claim and desire to secure by Letters Patent is,—

1. A cooler for soda-fountains, comprising a plurality of cooling-cylinders and pipes alternately connected in pairs at diagonally opposite ends by metallic heads provided with pipe conduits, and a drip-plate interposed between said cooling-cylinders and pipes.

2. A cooler for soda-fountains, comprising a plurality of cooling-cylinders and cross-pipes, each made up of inner and outer metallic tubes and alternately connected in pairs by metallic conduit heads soldered to the ends of said tubes.

3. In a cooler for soda-fountains, a plurality of cooling-cylinders and pipes each made up of inner and outer metallic tubes, said inner tubes being provided at their ends with peripheral flanges abutting against the adjacent ends of said outer tubes, and metallic conduit heads soldered to and covering the abutting portions of said tubes.

4. A cooler for soda-fountains, comprising a plurality of cooling cylinders and cross pipes alternately connected in pairs at diagonally opposite ends by metallic heads having abutting lugs provided with openings, pipe-conduits mounted in said openings, and a perforated drip-plate interposed between said cooling cylinders and cross pipes.

5. A cooler for soda-fountains, comprising a plurality of cooling-cylinders and cross-cooling pipes provided at their ends with metallic heads and communicating with each other by means of alternately arranged pipe-conduits disposed within and connecting said metallic heads in pairs, said pipe conduits having their receiving ends depressed and disposed near the bottom portions of said cooling-cylinders and pipes.

6. A cooler and soda-fountain, comprising insulated storage-cabinets and an intermediate cooling-chamber separated therefrom by non-insulated partitions, means for conducting salt-water brine from said storage-cabinets and distributing the same in said cooling-chamber, a plurality of cooling cylinders and pipes, and means for accumulating salt-water brine over said cooling cylinders.

7. A cooler and soda-fountain, comprising storage-cabinets having insulated side and

end walls, an intermediate cooling-chamber having metallic partition-plates provided with brine-inlet openings leading to said storage-cabinets, a plurality of cooling-cylinders and cross-cooling pipes below said brine-inlet openings, a waste-pipe having its drain-head above the plane of said cooling-cylinders, and a container-counter in open communication with said storage-cabinets and cooling-chamber.

8. A cooler and soda-fountain, comprising storage-cabinets having their side and end walls insulated, an intermediate cooling-chamber having its front and rear walls insulated and provided at its sides with non-insulated partitions having brine-inlet openings, a plurality of cooling-cylinders and cross-cooling pipes below said brine-inlet openings, a drain-pipe having its head above said cooling-cylinders, and a container-counter in communication with the upper rear portions of said cooling-chamber and storage-cabinets.

9. A cooler and soda-fountain, comprising storage-cabinets, an intermediate cooling-chamber, metallic partition-plates on either side of said cooling-chamber and provided with brine-inlet openings, a plurality of cooling-cylinders and cross cooling-pipes in said cooling-chamber below said brine-inlet openings, a perforated drip-plate interposed between said cooling-cylinders and cross cooling-pipes, and a waste-pipe provided with drain openings on a plane with said drip-plate.

10. A cooler and soda-fountain, comprising insulated side and end walls, and non-insulated partitions forming storage-cabinets and an intermediate cooling-chamber communicating with said storage-cabinets through brine-inlet openings in said partitions, a plurality of cooling cylinders and pipes in said cooling-chamber, means for carrying salt-water brine from said brine-inlet openings and distributing the same in said cooling-chamber, and means for accumulating said salt-water brine over said cooling-cylinders.

11. A cooler and soda-fountain, comprising insulated side and end walls, non-insulated metallic partition-plates disposed between said insulated side walls and provided with brine-inlet openings, said walls and partition-plates forming storage-chambers and an intermediate cooling-chamber, a plurality of cooling-cylinders and cross-cooling pipes below said brine-inlet openings, means for carrying salt-water brine from said brine-inlet openings and accumulating and distributing the same over and about said cooling-cylinders, a perforated drip-plate interposed between said cooling cylinders and pipes, and a container-counter communicating with the upper rear portions of said cooling and storage chambers.

12. In a cooler and soda-fountain, a cooling chamber provided with side walls having brine inlet openings, a plurality of cooling-cylinders and cross cooling pipes in said
5 cooling chamber below said brine-inlet openings, a removable waste-pipe provided with a drain-head above the plane of said cooling-cylinders, and means for diluting the accumulated salt-water brine about said cooling
10 cylinders and for washing and cleansing said

cylinders and pipes when said waste-pipe is removed.

In testimony whereof we have affixed our signatures, in presence of two witnesses.

GEORGE W. WISE.
HENRY A. WISE.

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