

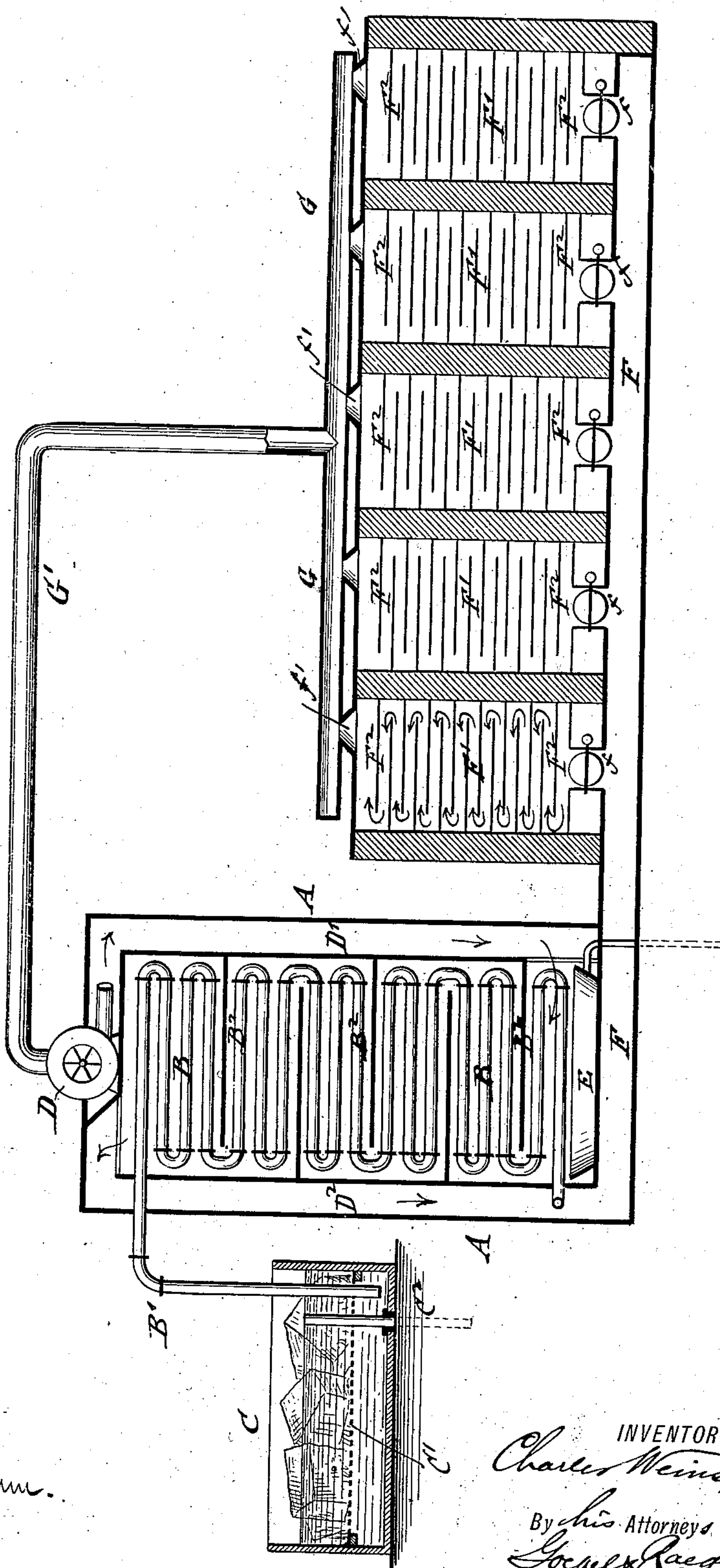
(No Model.)

C. WEINSPACH.

APPARATUS FOR COOLING AIR FOR CONFECTIONERS' USE.

No. 331,928.

Patented Dec. 8, 1885.



**WITNESSES**

for H. Rosenbaum.  
Martin Petay.

INVENTOR

INVENTOR  
Charles Weinsbach  
By his Attorneys,  
Goebel & Raegeners



# UNITED STATES PATENT OFFICE.

CHARLES WEINSPACH, OF JERSEY CITY, NEW JERSEY.

## APPARATUS FOR COOLING AIR FOR CONFECTIONERS' USE.

SPECIFICATION forming part of Letters Patent No. 331,928, dated December 8, 1885.

Application filed July 25, 1885. Serial No. 172,597. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES WEINSPACH, of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Apparatus for Cooling Air for Confectioners' Use, of which the following is a specification.

This invention relates to an improved apparatus for cooling air for confectioners' use in drying chocolate and other articles of confectionery in the summer months; and the invention consists of a closed cooling-box, within which a system of pipes is arranged, through which cold water supplied from an ice-water tank is passed. The air is forced in a counter-current over the cooling-pipes and conducted from the cooling-box by a distributing-channel to the different cooling chambers or cabinets, which are provided with perforated shelves for supporting the trays for chocolate or other confectionery. An air-forcing apparatus draws the air in a zigzag course around the shelves, and returns the same through a suction-chamber and suction-pipe to the cooling-box.

The accompanying drawing represents a vertical longitudinal section of my improved apparatus for cooling air for confectioners' and other purposes.

In the drawing, A represents a closed and jacketed air-cooling box, which is preferably made of sheet metal and of a size corresponding to the size of the spaces to be cooled.

In the box A is arranged a cooling-coil or system of cooling-pipes, B, which is connected at the upper end by a pipe, B', with an ice-water tank, C. The tank C is provided with a grating or shelf, C', for supporting the blocks of ice, and with an adjustable overflow-pipe, C'', by which the height of water in the tank C can be regulated and the ice be immersed more or less, whereby the temperature of the water used for cooling the air is regulated according to the temperature of the atmosphere, it being made colder on hot days and less cold on cooler days, whereby an average temperature of the air of about 60° Fahrenheit can be regularly obtained. The water passes from the ice-water tank C to the upper part of the coil B, then through the different sections of the same, and is then conducted off. The air is forced by an air suction and forcing appa-

ratus, D, into the cooling-box A, and passes first downward in a side channel, D', to the lower part of the cooling-box A, and then in upward direction through the box, it being compelled to pass in a zigzag course over the cooling-pipes B by the action of a number of horizontal diaphragms, B'', that are alternately attached to the opposite walls of the cooling-box. As the air passes in a counter-current to that of the water through the cooling-box A, it is gradually brought in contact with colder pipe-sections until it reaches, finally, the coldest pipe-sections at the upper part of the box A. From the upper part of the cooling-box the air is passed through a channel, D'', at the opposite side of the same, to a receiving-chamber, F. A drip-pan, E, is arranged at the bottom of the cooling-box A, for collecting the water of condensation that is deposited by the air on the surface of the cooling-pipes. The receiving-chamber F extends from the lower part of the air-cooling box A to the bottom of refrigerating chambers or cabinets F', and communicates therewith by means of valved openings *ff*. The articles to be dried are placed on trays, which are supported on shelves F'', that are alternately attached to opposite side walls of the cabinets F. The shelves F'' are perforated or made of wire, to admit the direct passage of the air through the shelves when the trays are removed, while when the trays are in position the air is forced in a zigzag course around the shelves and trays, as shown by arrows in the drawing. The upper part of the cabinets F' communicate by short pipes *f'* with a suction-chamber, G, that extends over the top of the cabinets, and that is connected by a suction-pipe, G', to the fan or other air-forcing apparatus D, which is preferably supported at the top part of the air-cooling box A. By the air-forcing apparatus the air is passed in a continuous circuit from the cooling-box to the cabinets, and from the cabinets back to the cooling-box. The moisture that is evaporated by the confectionery is carried along by the air, condensed on the surface of the cooling-pipes, and collected by the drip-pan, whence it is conducted off. A continuous supply of cold dry air of uniform temperature is thus supplied to the refrigerating-cabinets, so as to effectively cool chocolate or other confection-



ery placed therein without discoloring the same or forming a film on the surface of the same. The chocolate or other confectionery retains thereby its natural color and assumes  
 5 a permanent solid state. The temperature of the cooling-water is regulated according to the temperature of the atmosphere, ice-water being used in hot weather, while in cooler weather well-water of ordinary temperature  
 10 may be used for cooling purposes.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a closed air-cooling box, a coil or system of cooling-pipes located  
 15 in the same, a cold-water tank connected to the cooling-coil, a number of refrigerating chambers or cabinets, an air-forcing apparatus, a distributing-chamber connecting the cooling-box with the cabinets, and channels for con-  
 20 necting the air-forcing apparatus with the cooling-box and the drying-chambers, substantially as set forth.

2. The combination of a closed air-cooling box having interior diaphragms extending al-  
 25 ternately from opposite walls, a coil or system of pipes located in said box between said diaphragms, a cold-water tank connected with said system of pipes, an air-forcing apparatus,

a channel for connecting the air-forcing appa-  
 ratus with the cooling-box, a distributing-chan- 30  
 nel, a series of refrigerating chambers or cab-  
 inets having alternating shelves, a suction-  
 chamber communicating with the top of the  
 cabinets, and a suction-pipe leading to the air-  
 forcing apparatus, substantially as set forth. 35

3. An apparatus for cooling air, a closed  
 air-cooling box having an interior coil or sys-  
 tem of pipes, a drip-pan at the bottom of the  
 same, and alternately-arranged diaphragms  
 for conducting the air in a circuitous course 40  
 over the pipes, substantially as set forth.

4. In an apparatus for cooling air, a cold-  
 water tank having a grating or shelf for the  
 ice and an adjustable overflow-pipe. substan-  
 tially as set forth.

5. In an apparatus for cooling air, a refriger- 45  
 ating chamber or cabinet having perforated  
 or wire shelves attached alternately to the op-  
 posite side walls, substantially as set forth.

In testimony that I claim the foregoing as my 50  
 invention I have signed my name in presence  
 of two subscribing witnesses.

CHARLES WEINSPACH.

Witnesses:

PAUL GOEPEL,  
 MARTIN PETRY.