C. E. PRICE.

CANDY CRYSTALLIZER.

APPLICATION FILED APR. 22, 1911.

1,012,011.

Patented Dec. 19, 1911.

3 SHEETS—SHEET 1.

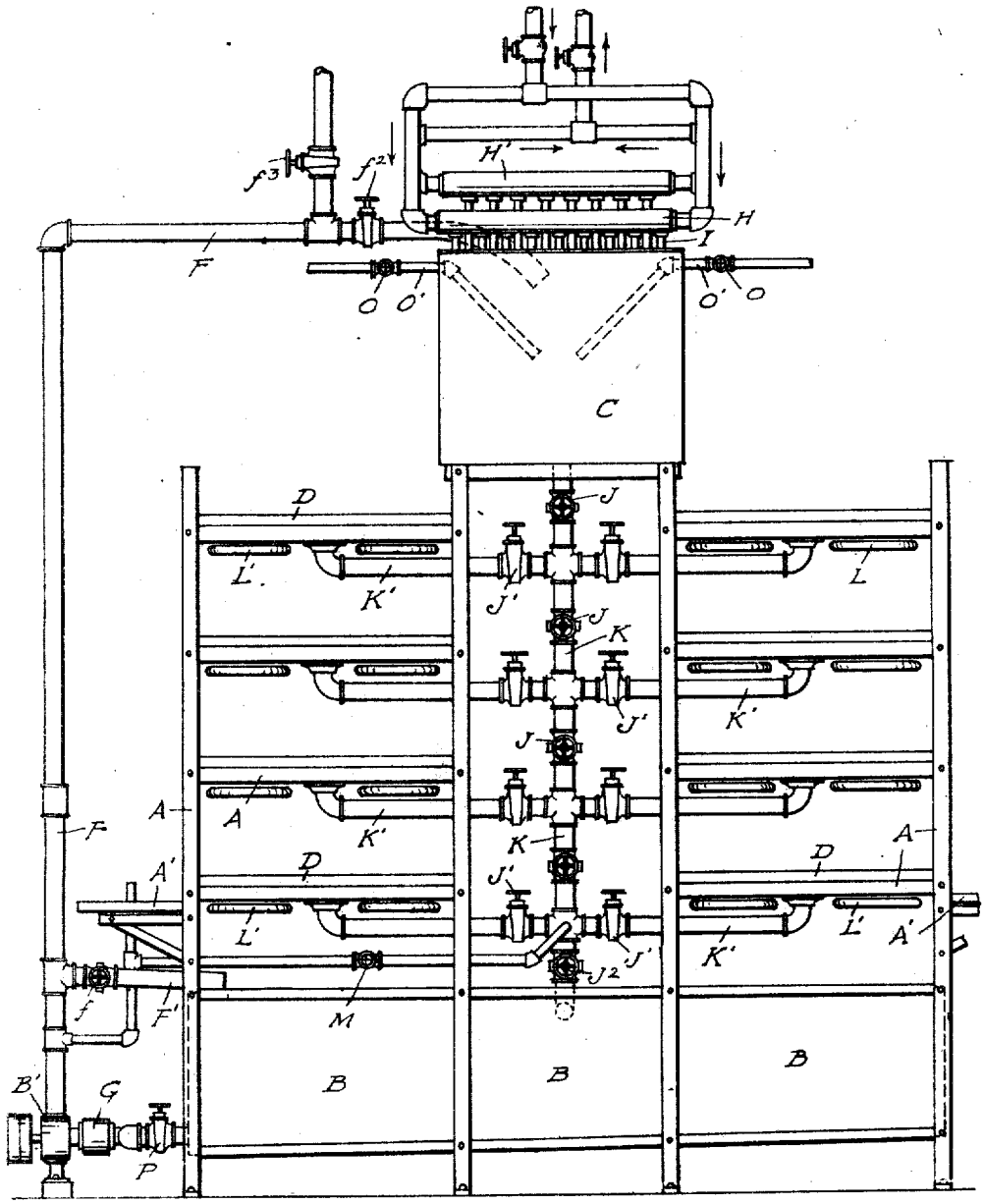

FIG. 1.

WITNESSES:

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Marie Mitchell

INVENTOR:

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3 SHEETS—SHEET 2

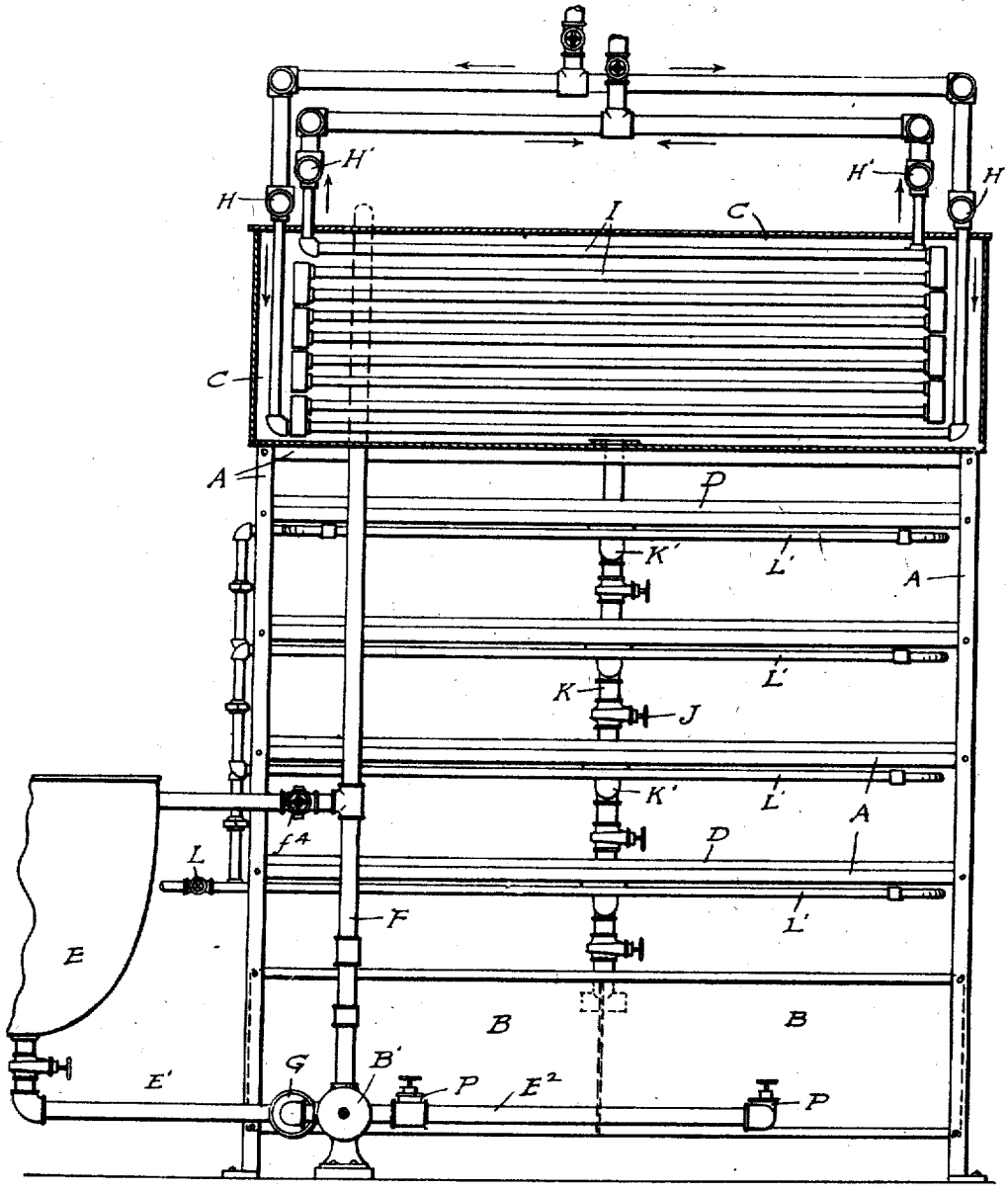

FIG. 2.

WITNESSES:

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3 SHEETS—SHEET 3.

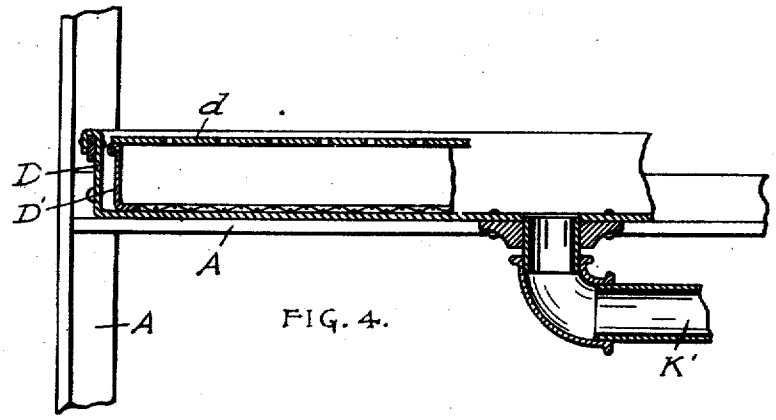

FIG. 4.

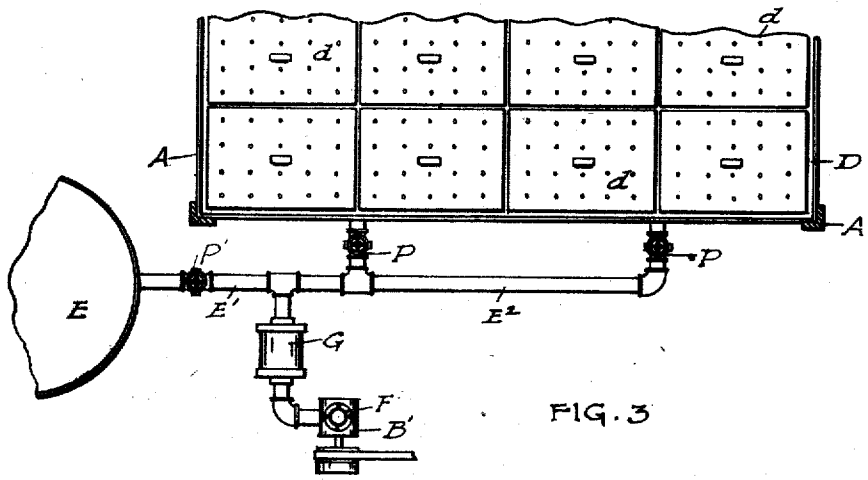

FIG. 3

WITNESSES:

A. B. Cornelius

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UNITED STATES PATENT OFFICE.

CLAUDE ELMER PRICE, OF ST. JOSEPH, MISSOURI, ASSIGNOR OF ONE-HALF TO RALPH W. DOUGLAS, OF ST. JOSEPH, MISSOURI.

CANDY-CRYSTALLIZER.

1,012,011. Specification of Letters Patent. Patented Dec. 19, 1911.

Application filed April 22, 1911. Serial No. 622,783.

To all whom it may concern:

Be it known that I, CLAUDE ELMER PRICE, a citizen of the United States of America, residing at St. Joseph, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in Candy-Crystallizers, of which the following is a specification.

The object sought in this invention is to provide a mechanism and systemmatic arrangement of parts through which large quantities of candy may be crystallized at a minimum of labor and time and by which all waste of sugar is obviated.

I accomplish my object by the construction shown in the accompanying drawings, in which—

Figure 1 is an end elevation of the entire device; Fig. 2 is a side elevation of the same; Fig. 3 is a top view of a group of baskets, including a plan of pipe connections with drain tanks; and Fig. 4 is a detail cross sectional view of a pan and basket, and a pipe connection, the parts broken away, showing uncrystallized candy in the basket.

Similar letters refer to similar parts in the several views.

A A— represent the several parts of the frame of the device and A′ is a platform. Said platform is for the use of an operator to enable him to reach the upper pans and baskets of the crystallizer.

B B— are drain tanks having inclined bottoms as indicated in Fig. 1, and C is a syrup cooler tank.

D D— are shallow metal pans, and D′ D′— are metal baskets each provided with a removable cover *d*. The purpose of making the pans shallow is to obviate the heavy crystallization of syrup which occurs in deep pans. Preferably I construct my device with a plurality of pans spaced one above another and with a plurality of wire bottom baskets in each pan, thereby saving floor space.

B′ is a pump to draw syrup from kettle E, (shown broken away,) through pipe E′ and also to pump syrup from drain tanks B B— through pipe E^2.

P′ is a valve on pipe E′ and P P are valves on pipe E^2. Said valves are respectively used in the above described operation of drawing syrup through said pipes E′ and E^2.

F is a pump line pipe to carry the syrup from pump B′ into the syrup cooler C.

F′ is a pipe controlled by valve *f* to drain from pipe F.

I provide a valve f^2 on line pipe F, as shown in Fig. 1, which when closed forces syrup through valve or valves f^3 which must be opened for the operation, for the purpose of pumping syrup to other places, and I also provide an opening and valve f^4 on said line pipe to permit syrup to be pumped back into the top of kettle E for the purpose of circulating the syrup and thoroughly dissolving the sugar.

G is a pocket to catch any nails that may have been in the sugar.

The syrup having been pumped into said syrup cooler tank, water is simultaneously turned into opposite ends of feed headers H H. I I— are coils so arranged that alternate coils are fed from opposite ends of the tank by feed headers H H and they also overflow in a corresponding manner through overflow headers H′ H′. The syrup having been cooled by means of the above described process to the desired temperature and the candy to be crystallized placed in baskets D′ D′—, the desired valve or valves J on trunk line K are opened to permit the syrup to pass through said valves J. The desired valve or valves J′ on branch pipe or pipes K′ is now opened allowing the syrup to pass through said valve and branch pipe K′ into one or more of said shallow pans D, the pan or pans having previously been filled with baskets D′ D′— containing candy before it is crystallized, as shown in Fig. 4. As the pans D are filled with syrup valves J′ J′ are closed. Valve L, as shown in Fig. 2, is now opened allowing steam to pass through heating coils L′ L′— to keep the syrup in pans D D— at the desired temperature until the process of crystallization is completed. Valves J′ are again opened, and valve J^2 is likewise opened to allow surplus syrup to drain into the drain tank. Valve I is closed at the same time that valve J′ is again opened and lids *d d*— are removed to allow the crystallized goods in said baskets to cool. The baskets containing the crystallized candy are now removed from pans D D— and the candy is ready to be packed. The baskets having been emptied are again placed in the pans, covers *d d*— are placed

thereon and steam is turned into trunk line K through valve M; one or more valves J′ are next opened and also one or more valves J, except the top one, valve J^2 now being closed. The steam is then forced through branch pipe or pipes K′ into pan or pans D dissolving all sugar that has crystallized in pans D and on baskets D′ and covers J. Valve J^2 is then opened to allow the syrup formed by this operation to drain into drain tank B. Steam is now turned through valves O O, shown in Fig. 1, and through pipes O′ O′, into syrup cooler tank C. All valves on the trunk line are now opened allowing syrup formed by this operation to pass into drain tanks B. The syrup that has drained into tank B may now be removed by opening valves P P allowing said syrup to flow into pump B′ by which it may be pumped through pump line F to the desired location.

What I claim and desire to secure by Letters Patent, is:

1. In a candy crystallizer the combination with a supporting frame, a syrup supply pump at the base of the frame, a syrup cooler at the top of the frame, cold water supply pipes connected therewith, and drain tanks at the base of the frame, of a line pipe and valves therefor forming connection between said pump and said cooler tank, a trunk line central in said candy crystallizer and a plurality of branch pipes therefrom spaced apart, a valve to allow syrup to enter said trunk line, a plurality of valves to allow syrup to pass into said branch pipes, as desired, a valve at the base of said trunk line to allow surplus syrup to drain into the drain pipe to be repumped into the syrup cooler.

2. The combination in a candy crystallizer having a supporting frame, of a shallow pan and a removable wire bottom basket therein supported horizontally thereby to receive syrup and reduce to the minimum the settling of sugar therein and a branch pipe, provided with a valve, having connection with said pan through which by the force of gravity said pan and basket are filled and drained and by which they are steamed out.

3. A candy crystallizer comprising a supporting frame, a syrup cooling tank thereon, coils therein, feed headers and overflow headers for effecting an even temperature of the syrup, drainage tanks at the base of said frame, a plurality of shallow pans supported in said frame spaced vertically apart, a plurality of removable wire bottom shallow baskets carried in said pans and the necessary connected supply piping and operating mechanism.

4. In a candy crystallizer the combination of a frame, a central trunk line to receive, distribute and discharge syrup, the valves thereon to regulate such receipt, distribution and discharge, a plurality of shallow pans, the bottom of each engaging with the outer end of one of said branch pipes, shallow detached baskets carried in each of said pans and a plurality of heating coils underneath the pans to regulate the temperature of the syrup as the process of crystallization proceeds.

5. In a candy crystallizer pipes regulated by valves comprising a line through which heated syrup may be pumped from a kettle into a syrup cooling tank supported at an elevation, cold water feed headers and overflow water headers and coils so arranged as to connect at opposite ends with said feed and overflow headers to obtain an evenly reduced temperature of syrup in said tank, a trunk line pipe at the bottom of said cooler tank and seated in a drain tank, a plurality of corresponding branch pipes each entering a shallow pan and a plurality of coils beneath said pans having steam heat pipe connection for regulating the temperature of the syrup in said pans.

6. In a candy crystallizer the combination with a suitable kettle, pump and syrup cooler tank and drain tanks, and feed and overflow headers for and coils within said cooler tanks, of a trunk line forming vertical connection between said tanks, a pump line pipe to pump syrup into said cooler, a pipe to drain syrup from said line pipe, a plurality of horizontal branch pipes extending from said trunk line, a plurality of shallow metal pans to receive syrup through the bottoms thereof from said branch pipes and a plurality of shallow wire bottom baskets carried in said shallow metal pans, heating coils underneath said pans and a plurality of valves in said pipes by which to regulate the flow of syrup.

7. A candy crystallizer provided with a suitable kettle and pump, comprising a frame and elevated platform, a syrup cooler tank provided with feed and overflow headers and with alternate coils therein fed simultaneously from opposite ends thereof, a drainage tank having an inclined bottom slightly elevated within said frame, a trunk line connecting said cooler and drainage tanks, a pump line pipe to carry syrup to the cooler tank, a pipe to drain from said line pipe and a controlling valve therefor, valves on said line pipe to allow syrup to be pumped to any desired locations, a valve on said line pipe to permit syrup to be pumped back into said kettle for the purpose of circulating the syrup and dissolving the sugar, a plurality of shallow metal pans carried by said frame, removable wire bottom baskets in said pans and covers therefor, branch pipes from said trunk line, valves on said trunk and branch lines permitting syrup to flow out of said cooler tank, down said trunk line and through one or more of

said branch lines upon candy in said baskets, heating coils underneath said pans, a valve at the base of said trunk line to allow surplus syrup to drain into said drainage tank, a valve to permit steam to be turned into said trunk line to pass through said branch pipes into said pans to dissolve sugar that may crystallize fast to said pans, baskets, covers, pipes and valves and valves to permit syrup to flow into the pump to be repumped up through said pump line and a pocket contiguous to the pump to catch nails that may have been in the sugar.

In testimony whereof I affix my signature in presence of two witnesses.

CLAUDE ELMER PRICE.

Witnesses:
L. C. BAUMAN,
E. F. HARTZELL.