

No. 793,267.

PATENTED JUNE 27, 1905.

O. B. BARTH.
SUGAR MACHINE.
APPLICATION FILED JAN. 12, 1905.

FIG. 1.

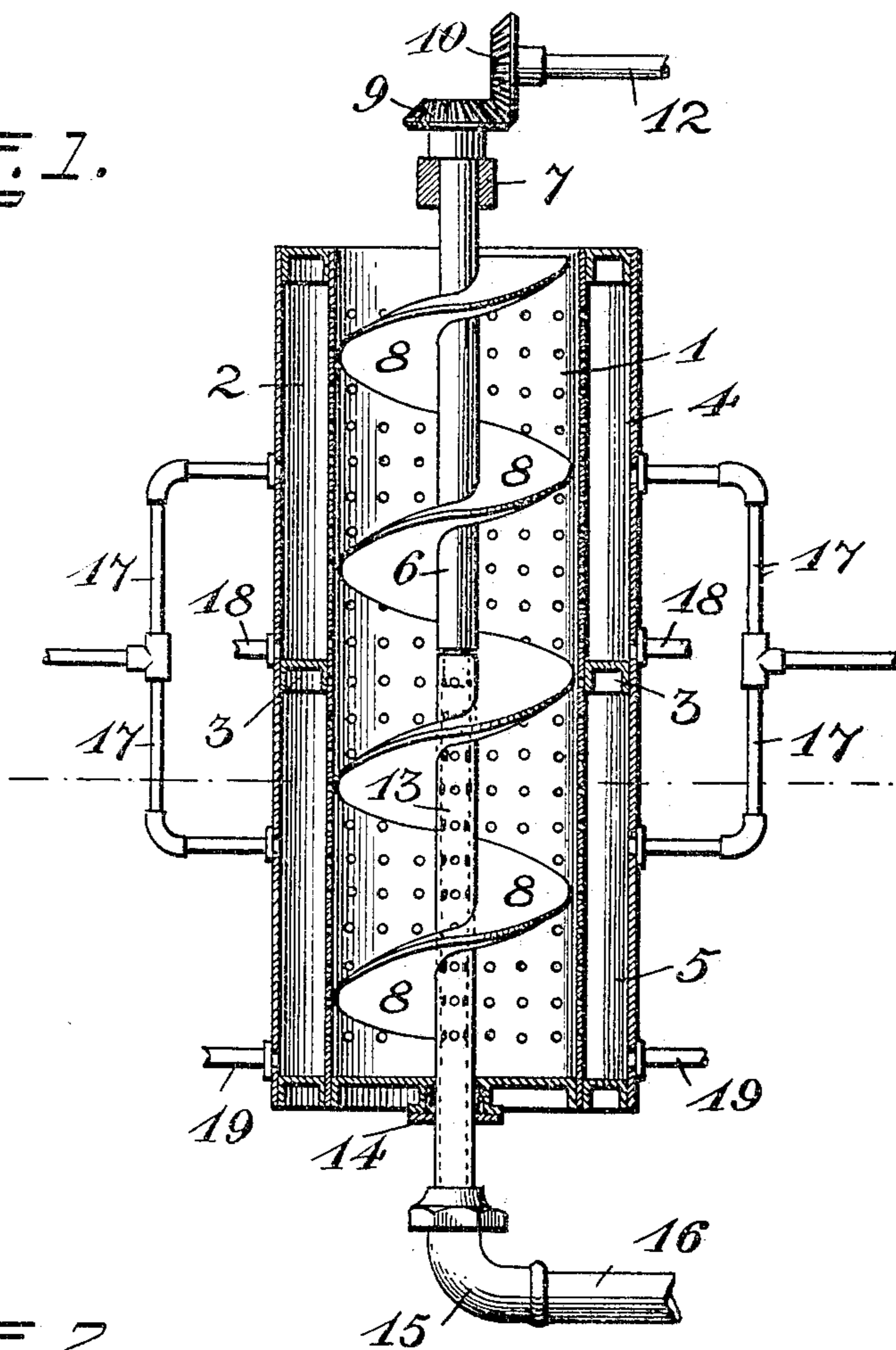
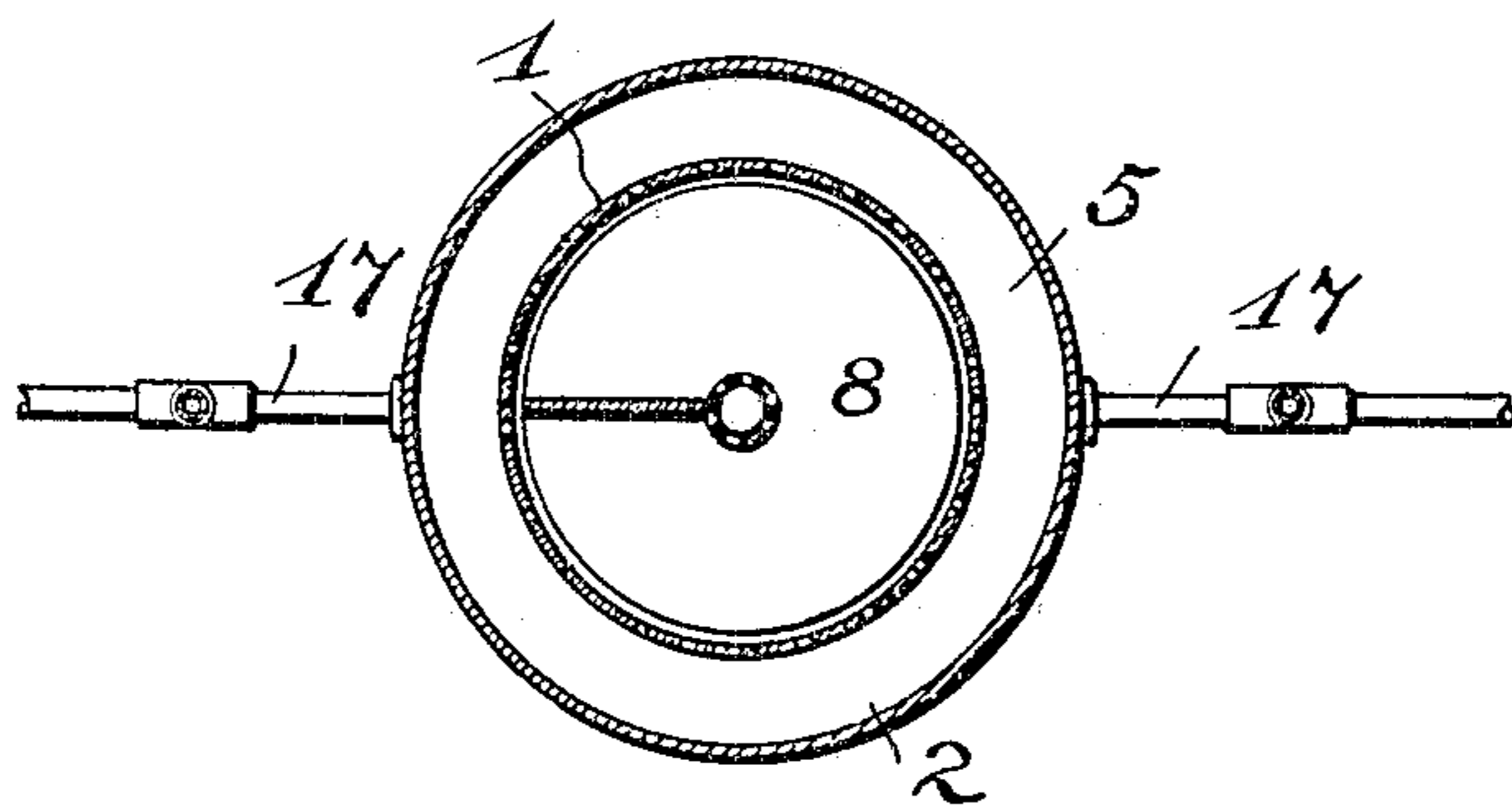


FIG. 2.



Witnesses

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SUGAR-MACHINE.

SPECIFICATION forming part of Letters Patent No. 793,267, dated June 27, 1905.

Application filed January 12, 1905. Serial No. 240,797.

To all whom it may concern:

Be it known that I, OTTO B. BARTH, a citizen of the United States, residing at Loveland, in the county of Larimer and State of Colorado, have invented certain new and useful Improvements in Sugar-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in machines for separating syrup from sugar.

The object of the invention is to provide a machine of this character by which syrup may be extracted or separated from sugar, means being provided whereby the sugar may be afterward washed and the wash water or syrup removed therefrom.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a vertical sectional view through a sugar-machine constructed in accordance with the invention, and Fig. 2 is a horizontal sectional view of the same.

In the embodiment of the invention I provide an inner perforated casing 1, around which and spaced from the same is arranged an imperforate casing 2, said casing being divided by a centrally-disposed partition 3 into an upper compartment 4 and a lower compartment 5. Said compartments surround the upper and lower ends of the inner casing 1.

Within the inner casing 1 is arranged a centrally-disposed vertical shaft 6, which is mounted and supported in a suitable bracket 7. On the shaft 6 is arranged a spiral feed-screw 8, which extends from the upper to the lower end of the inner casing 1. On the upper end of the shaft 6 is mounted a beveled gear-pinion 9, with which meshes a pinion 10 on the end of a drive-shaft 12. The shaft 6 is formed in two sections connected together midway between the ends of the same, the lower section of the shaft being in the form of a perforated pipe 13, which passes through a packed bearing 14, arranged in the lower

closed end of the inner casing. The lower end of the pipe 13 is suitably mounted in an elbow 15 of a water-supply pipe 16, said pipe 16 being connected with a pressure-pump or other suitable forcing devices. (Not shown.)

To the opposite sides of the outer casing 2 and about midway between the ends of each of the compartments 4 and 5 are connected the ends of branched suction-pipes 17, which are connected to a vacuum-pump, (not shown,) whereby the air may be drawn from the compartments 4 and 5, thus forming vacuums in the same, it being understood that the upper and lower ends of the compartments 4 and 5 and the pipe 2 are closed. With the lower ends of the compartment 4 are connected discharge-pipes 18, and with the lower ends of the compartment 5 are connected discharge-pipes 19.

In operation the sugar as it comes from the vacuum-pans in the factory is placed in the inner casing 1 and is fed by the screw 8 to the lower end of the casing, by which process the thick syrup contained in the sugar will be extracted therefrom and will rise in the upper portion of the inner cylinder, where, owing to the vacuum in the compartment 4 around said upper end, this thick syrup will be drawn through the perforations in said casing into the compartment 4. From thence it will be discharged through the discharge-pipes 18, connected therewith. After the syrup has thus been extracted and separated from the sugar the latter is washed with a solution of blue water, which is forced through the pipe 16 into the perforated pipe 13, from whence it is discharged through the apertures in said pipe and through the sugar surrounding the same in the lower end of the inner casing 1. This wash-water will be drawn through the perforations in the end of the casing 1 by means of the vacuum in the compartment 5 in the form of a thin wash-syrup, and from said compartment 5 this syrup is discharged through the discharge-pipe 19. The screw 8 may be reversed to carry the sugar from the bottom of the inner casing to its upper end to discharge the contents. By this process the syrup will be thoroughly separated from the sugar and the latter washed and colored in a thoroughly

efficient and satisfactory manner at a great saving of time, labor, and expense over the present process for performing this operation.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. In a sugar-machine, the combination with an inner perforated casing, of an outer impermeate casing, a feeding mechanism mounted in said inner casing, a partition separating said outer casing into upper and lower compartments, discharge-pipes connected with the same, and means whereby a vacuum is formed in said compartments, substantially as described.

2. In a sugar-machine, the combination with an inner perforated casing, of an outer impermeate casing, a feed-screw revolubly mounted in said inner casing, a partition separating said outer casing into upper and lower compartments, discharge-pipes connected with the same, and a suction-pipe connected with each of said compartments whereby a vacuum may be formed in the same, substantially as described.

3. In a sugar-machine, the combination with an inner perforated casing, of an outer impermeate casing, a feed-screw revolubly mounted in said inner casing, a partition separating said outer casing into upper and lower compartments, discharge-pipes connected with the same, a suction-pipe connected with each of said compartments whereby a vacuum may be formed in the same to draw the syrup from the sugar in the inner perforated casing, and a perforated inner tube or pipe whereby the sugar is washed, substantially as described.

4. In a sugar-machine, the combination with an inner perforated casing, of an outer impermeate casing, a spiral feed-screw revolubly mounted in said inner casing, a partition dividing said outer casing into an upper thick-syrup-receiving compartment and a lower wash-syrup-receiving compartment, a suction-pipe connected with said compartments, whereby a vacuum is formed therein to draw the syrup from the sugar in the inner casing, a perforated water-injecting pipe extending into the lower portion of the inner casing, whereby the sugar contained therein is washed and discharge-pipes connected to the upper and lower compartments of said outer casing, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

OTTO B. BARTH.

Witnesses:

G. M. SMITH,

I. G. McCREERY.