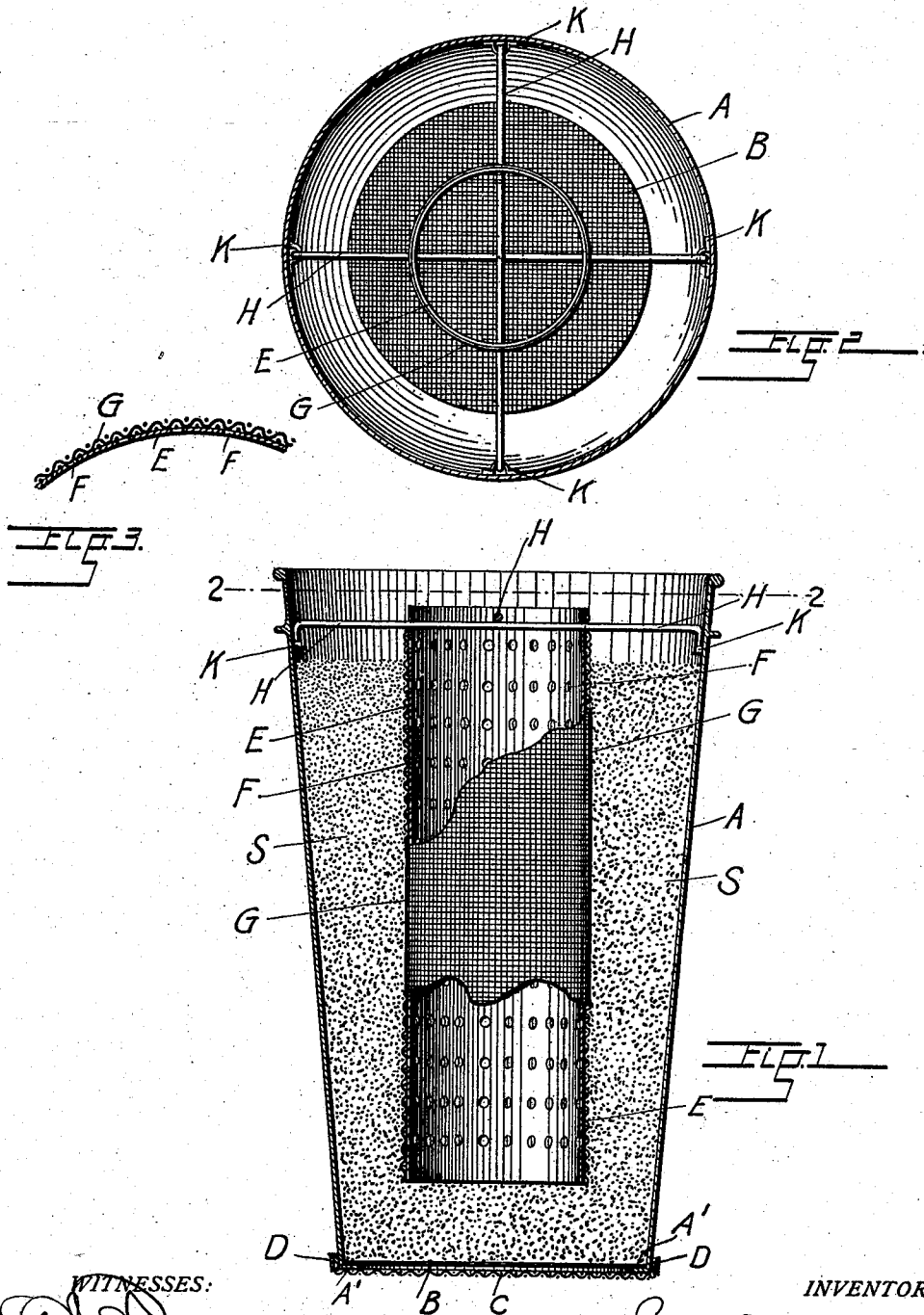


No. 884,921.

PATENTED APR. 14, 1908.

J. C. HARDESTY,
SIMPLE SYRUP PERCOLATOR.
APPLICATION FILED JUNE 20, 1904.



WITNESSES:
[Signature]
[Signature]

INVENTOR.
James Craig Hardesty.

UNITED STATES PATENT OFFICE.

JAMES CRAIG HARDESTY, OF DENVER, COLORADO.

SIMPLE-SYRUP PERCOLATOR.

No. 884,921.

Specification of Letters Patent.

Patented April 14, 1908.

Application filed June 20, 1904. Serial No. 213,430.

To all whom it may concern:

Be it known that I, JAMES CRAIG HARDESTY, a citizen of the United States, residing at Denver, in the county of Denver, State of Colorado, have invented a new and useful Simple-Syrup Percolator, of which the following is a specification.

The invention relates essentially to syrup percolators and has for its object to provide a simple and efficient apparatus by means of which a mixture or syrup water and sugar or the like, of maximum strength, may be obtained in a minimum time.

To this end, the invention comprises an outer containing vessel having imperforate side walls and provided with a pervious bottom, and a receptacle, preferably provided with open ends and having perforated sides, which may be conveniently covered with a textile material, said receptacle being centrally suspended in the containing vessel at a distance from the bottom thereof so as to provide a space between the side walls of the vessel and the receptacle and also between the bottom of the vessel and the receptacle to contain the sugar or other material and maintain a constant body of sugar or the like between the receptacle and the bottom of the vessel through which the menstruum is caused to pass and thereby to take up sugar or the like in sufficient quantities to form a saturated solution.

In the accompanying drawings, Figure 1 is a vertical section through an apparatus involving the invention, the inner receptacle being shown partly in elevation. Fig. 2 is a horizontal section through the apparatus. Fig. 3 is a fragmentary sectional detail of the inner receptacle.

Continuous syrup percolators, as heretofore constructed, have usually consisted of a simple bucket-like vessel having a perforated bottom, into which the sugar and water have been supplied in suitable quantities, with the object of having the water pass through the entire body of sugar and take up sufficient quantity of the latter to form a syrup. It has been found that percolators of this character are exceedingly slow in operation for the reason that the water or other menstruum has to pass through the entire body of sugar. For example, in the percolators of the old type referred to, of 100 lbs. capacity, it has been found that four hours are required from the time the sugar and water are placed therein before any syrup is de-

livered from the apparatus and furthermore, the capacity of such a percolator is limited, one of the size mentioned, producing only about six gallons of syrup of maximum density in twenty-four hours. The present invention contemplates the provision of a percolator that will begin the production of a syrup of maximum weight or density in substantially fifteen minutes and will moreover produce or deliver about ten gallons of syrup of maximum density in twenty-four hours, from a percolator of 100 lbs. capacity. These results are attained by providing an apparatus of the general character illustrated in the drawings, in which, A indicates an outer or retaining vessel, open at the top and provided with imperforate side walls. The bottom of the vessel A is provided with a flange A' which is adapted to receive and support a screen B of gauze or perforated metal, over the outside of which is stretched a thickness of textile material, preferably heavy cotton flannel cloth which is secured in position by an exterior clamping ring D. A piece of thin muslin or other suitable textile material cut to the proper shape and size may also be placed on the top of the screen B, so as to completely cover the same and prevent the escape of the solid material contained in the vessel.

Suspended centrally within the vessel A is a receptacle E which is conveniently formed of an open-ended metal cylinder having perforated or foraminous sides, the foramina being indicated by perforations F in the drawings. The outside of the cylindrical receptacle F is conveniently covered with a layer of textile material G, preferably muslin or the like, drawn tightly around the cylinder and having its ends sewed together in order to hold it securely in place.

In order to support the inner receptacle E within the vessel A, in proper relation to effect a normal percolation, viz., to produce a syrup of maximum density, in a minimum time, the said receptacle is suspended centrally within the vessel A and at a distance from the bottom of the latter sufficient to maintain a uniform depth of sugar or the like between the lower end of the receptacle E and the bottom of the vessel A. A convenient means for accurately suspending the receptacle in position is illustrated in the drawings and consists of two crossed rods H passed laterally through the upper edge of the receptacle and provided at their ends

with hooked portions which engage brackets or lugs K mounted on the inside of the vessel A. It will be noted that this arrangement provides a relatively large annular space between the walls of the vessel A and the interior receptacle and also provides a considerable space between the lower end of the inner receptacle and the bottom of the vessel, and into this continuous space surrounding the receptacle the sugar or other material to form the syrup is filled.

The operation of the apparatus, hereinbefore described, is substantially as follows. The space between the receptacle E and the walls of the vessel A is filled with sugar or the like up to the desired height. Water in appropriate quantities is poured on top of the sugar between the inner cylindrical receptacle E and the walls of the vessel A. The water passes through the sugar or other material, the textile material surrounding the outside of the receptacle E and the perforations in the walls of said receptacle into the interior of the latter, and fills or partially fills said inner receptacle. The water or other menstruum then passes from the interior of the receptacle E through the relatively thick layer of sugar between the lower end of said receptacle and the bottom of the vessel, thereby taking up and dissolving sufficient quantity of the sugar to form a syrup of maximum density, after which the syrup passes through the perforated or pervious bottom of the receptacle and is collected in any suitable apparatus. As the sugar below the open end of the receptacle E is dissolved to form the syrup, it is immediately replaced by other portions of the sugar, contained in the annular space between the walls of the containing vessel and the interior receptacle, so that the menstruum flowing from the inner receptacle always encounters and is forced to pass through a layer of sugar of sufficient depth to insure the desired degree of saturation of the syrup.

It is desirable to avoid pouring water directly into the cylindrical receptacle E, for the reason that it will agitate the sugar below the said cylinder and cause it to rise in the cylinder to substantially the level of that on

the outside of said cylinder. But when the water is poured on the sugar outside of the cylindrical receptacle E, it flows gently into the cylinder through the enveloping cloth and foramina in the walls thereof without disturbing the sugar below the cylinder, so that the normal depth of the latter is not disturbed.

Having thus described my invention, what I claim is:—

1. In a percolator, the combination of an imperforate walled vessel A having a removable perforate bottom B and a covering of textile material C, an open-ended perforate cylinder E, a cover of textile material G therefor, and rods H for supporting said cylinder E centrally within said vessel with its lower edge at a distance above the bottom of said vessel.

2. In a percolator, the combination of a containing vessel having imperforate sides and a pervious bottom and a pervious receptacle supported centrally within the vessel so that its lower edge is at a distance above the bottom of said vessel.

3. In a percolator, the combination of a containing vessel having imperforate sides and a foraminous bottom, an open-ended perforated receptacle supported centrally within the vessel so that its lower edge is at a distance above the bottom of said vessel and a covering of textile material over the perforated portion of said receptacle.

4. In a percolator, the combination of an imperforate walled vessel having a foraminous bottom, a laterally perforate open-ended receptacle, a textile covering for the perforate portion of said receptacle and supporting means for holding said receptacle centrally positioned in said vessel so that its lower edge is at a distance from the bottom of said vessel.

In testimony whereof, I have hereunto set my name in the presence of two (2) witnesses on this the 10th day of February, 1905.

JAMES CRAIG HARDESTY.

Witnesses:

H. C. KLEYMEYER,
K. C. HOFFAR.