

No. 676,974.

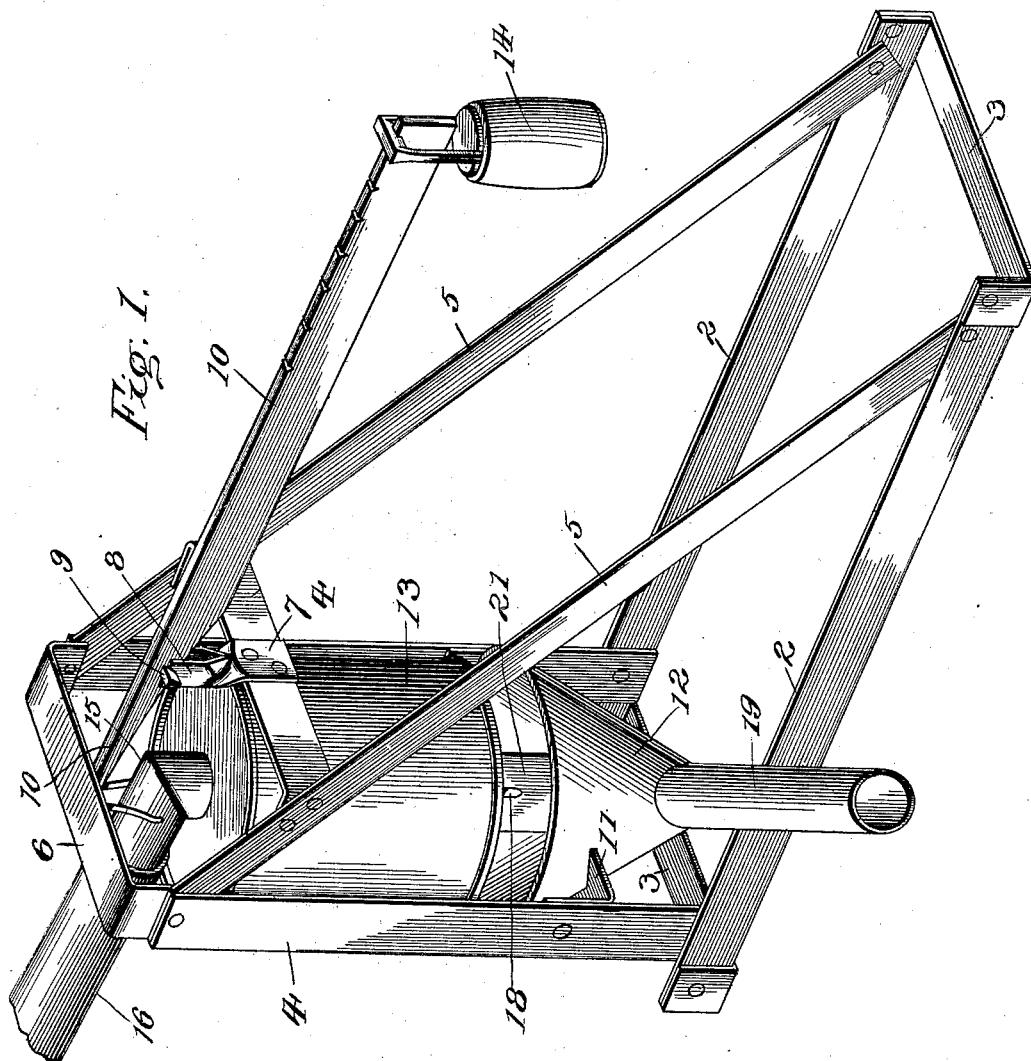
Patented June 25, 1901.

C. S. BEDIANT.
AUTOMATIC DRAW-OFF FOR SYRUP.

(Application filed Feb. 12, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

John F. Roll

Inventor
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By *W. H. Racy* his Attorney

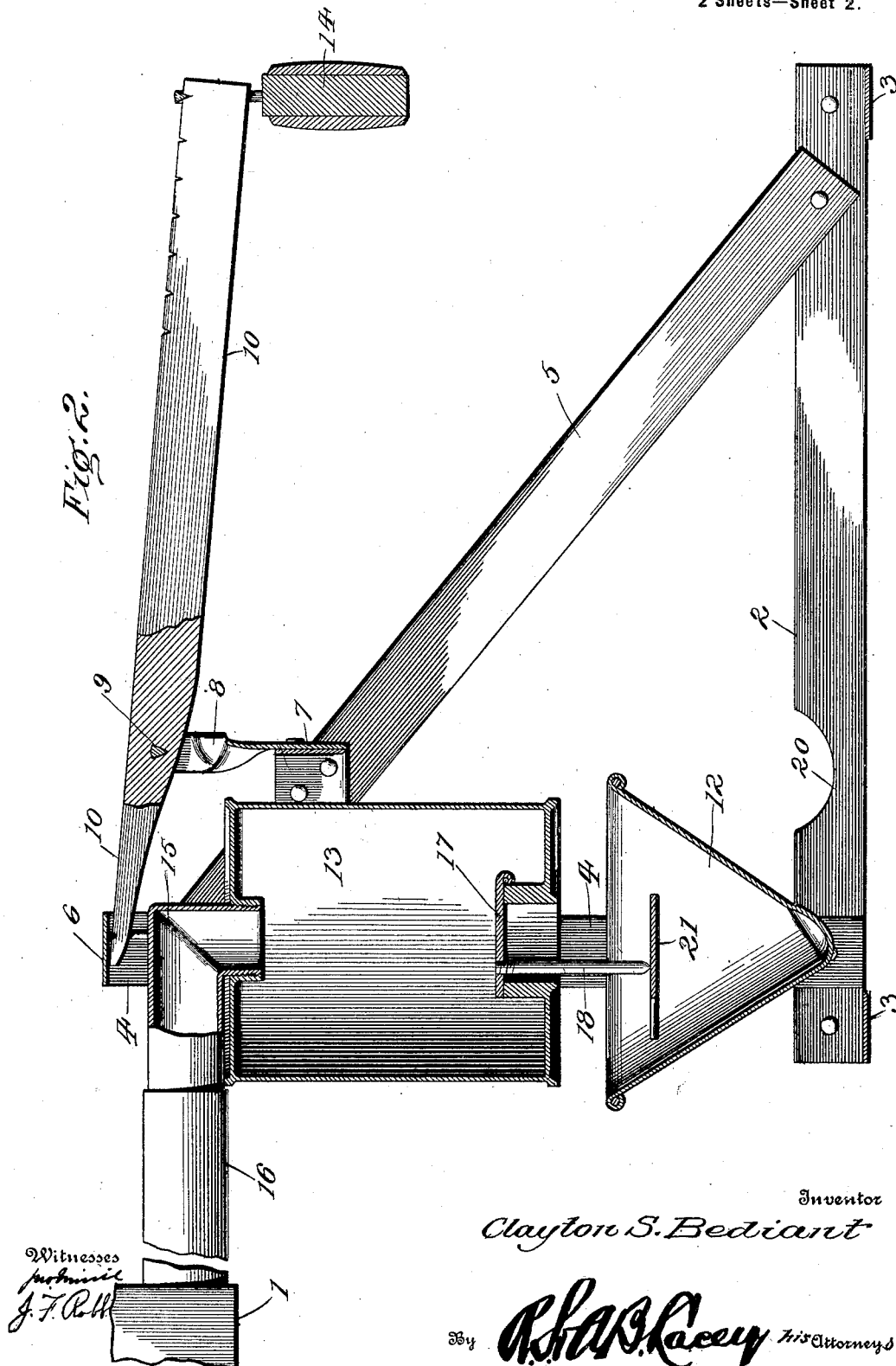
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AUTOMATIC DRAW-OFF FOR SYRUP.

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2 Sheets—Sheet 2.



UNITED STATES PATENT OFFICE.

CLAYTON S. BEDIANT, OF HUDSON, OHIO, ASSIGNOR OF ONE-HALF TO
ORLANDO CRITTENDEN, OF SAME PLACE.

AUTOMATIC DRAW-OFF FOR SYRUP.

SPECIFICATION forming part of Letters Patent No. 673,974, dated June 25, 1901.

Application filed February 12, 1901. Serial No. 47,074. (No model.)

To all whom it may concern:

Be it known that I, CLAYTON S. BEDIANT, a citizen of the United States, residing at Hudson, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Automatic Draw-Offs for Syrup and Condensable Liquids; and I do hereby 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.

As generally practiced heretofore in reducing sap, juices of fruits, and like liquids the liquid is frequently tested until the required density has been reached, when it is drawn off for packing. This operation is tedious and requires constant attention.

This invention provides means for automatically drawing off the liquid as soon as the predetermined specific gravity has been reached, thereby insuring a uniform product and cheapening the operation, as costly testing instruments, which are frequently broken, and the services of an attendant are not required.

The apparatus comprises a counterbalanced can, tank, or receptacle having an automatically-operated valve at its bottom, a flexible connection between the can and the evaporator or concentrating mechanism to admit of the vertical movements of the can, a receiver and conductor for the finished product, and a stop to open the valve on the descent of the can for effecting a discharge of the liquid therefrom.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are necessarily susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of an apparatus embodying the invention. Fig. 2 is a sectional view thereof.

Corresponding and like parts are referred to in the following description and indicated

in both views of the drawings by the same reference characters.

The apparatus is designed for use in connection with an evaporating-pan 1 or other device generally employed for boiling sap and concentrating liquids of various kinds to increase their density and specific gravity. The operating parts are mounted upon a framework of suitable construction and which in the present instance comprises longitudinal sills 2, cross-pieces 3, uprights 4, braces 5, and transverse connecting-pieces 6 and 7. A standard 8 rises from the connecting-piece 7 and is forked at its upper end and notched to receive the pivot-bar 9 of the scale-beam 10, the short arm of the scale-beam being limited in its upward movement by contact with the connecting-piece 6, joining the upper ends of the parts 4. Notched brackets 11 are secured to the lower portions of the uprights 4 and extend inward and support the funnel or receiver 12, into which the syrup or concentrated liquid is discharged from the can, tank, or receptacle 13, suspended from the short arm of the scale-beam 10. The scale-beam 10 has its long arm graduated and adapted to receive a weight 14, adjustable thereon for supporting the can 13 and contents until the liquid reaches the predetermined density or specific gravity, when said weight is overbalanced and the can 13 descends to discharge a portion of its contents into the funnel or receiver 12. An elbow 15 has its vertical member attached to the can or receptacle 13, and its horizontal member is flexibly connected with the evaporating-pan or concentrator 1 in such a manner as to admit of the can 13 freely rising and falling. A rubber tube 16 is the means employed for connecting the elbow 15 with the concentrator 1, and the parts 15 and 16 must be of such a size as to admit of a free circulation therethrough in reverse directions of the syrup or liquid being concentrated.

A valve 17 is provided in the bottom of the can or receptacle 13 and opens upwardly therein and is provided with a pendent pin 18 to effect an opening of the valve upon the descent of the can or receptacle, whereby the concentrated solution or liquid is permitted to discharge into the funnel or receiver 12.

This can or receptacle 13 may be of any capacity and construction best suited to the work in hand and is suspended from the short arm of the scale-beam in such a manner as to maintain an upright position at all times.

The receiver 12 is preferably of funnel shape and is supported beneath the counterbalanced can or receptacle 13 in such a manner as to catch all the liquid discharged therefrom and prevent any waste. A pipe 19 connects with the funnel or receiver 12 and serves to convey the concentrated liquid to the required point of discharge. The longitudinal sills 2 are notched, as shown at 20, to receive the pipe 19, thereby supplementing the action of the notched brackets 11 in fixing the position of the receiver 12 and pipe 19. A bar or plate 21 is located in the funnel or receiver 12 and constitutes a stop for engagement therewith of the pin 18, whereby the valve 17 is opened to permit the discharge of the liquid from the can or receptacle 13.

In practice the can or receptacle 13 is flexibly connected with the concentrator 1, and the weight 14 is adjusted upon the outer arm of the scale-beam, so as to overbalance the can and the liquid therein prior to concentration. As the liquid is concentrated it flows into the can or receptacle 13 and displaces the lighter liquid therein, which flows into the concentrator, and this process is kept up until the liquid in the can or receptacle 13 reaches a predetermined density or specific gravity, when the weight 14 becomes overbalanced and the can descends by gravity and brings the pin 18 of the valve 17 into contact with the bar or plate 21, whereby said valve is opened and a portion of the liquid discharged, thereby lightening the can or receptacle, which will ascend under the action of the

weight 14 until again overbalanced. As the concentrated liquid escapes from the lower portion of the receptacle 13, lighter liquid from the concentrator takes its place. Hence the can or receptacle 13 is filled at all times. It will be observed that the operation is continuous and automatic. While the process is continuous, the discharge of the concentrated solution is intermittent, this being due to the rising and falling movements of the can and receiver 12.

Having thus described the invention, what is claimed as new is—

1. The combination of an evaporator or concentrator, and an automatic draw-off for the syrup, the same comprising a can, a circulating connection between the can and the evaporator, a valved discharge for the can, and means for regulating the gravitative action of the can according to the required density or specific gravity of the syrup, substantially as described.

2. The combination of an evaporator or concentrator, and an automatic draw-off for the syrup, the same comprising a can, a single pipe connecting the upper part of the can with the evaporator and adapted to establish circulation between the can and the evaporator, a valved discharge applied to the can for automatic actuation by the descent of the can, and regulating means for controlling the gravitative action of the can according to the required gravity or density of the syrup, substantially as set forth.

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

CLAYTON S. BEDIANT. [L. S.]

Witnesses:

WM. B. PARMELEE,
Mrs. C. S. BEDIANT.