No. 841,595. PATENTED JAN. 15, 1907.

G. E. STADTEGGER.

CRYSTALLIZING APPARATUS.

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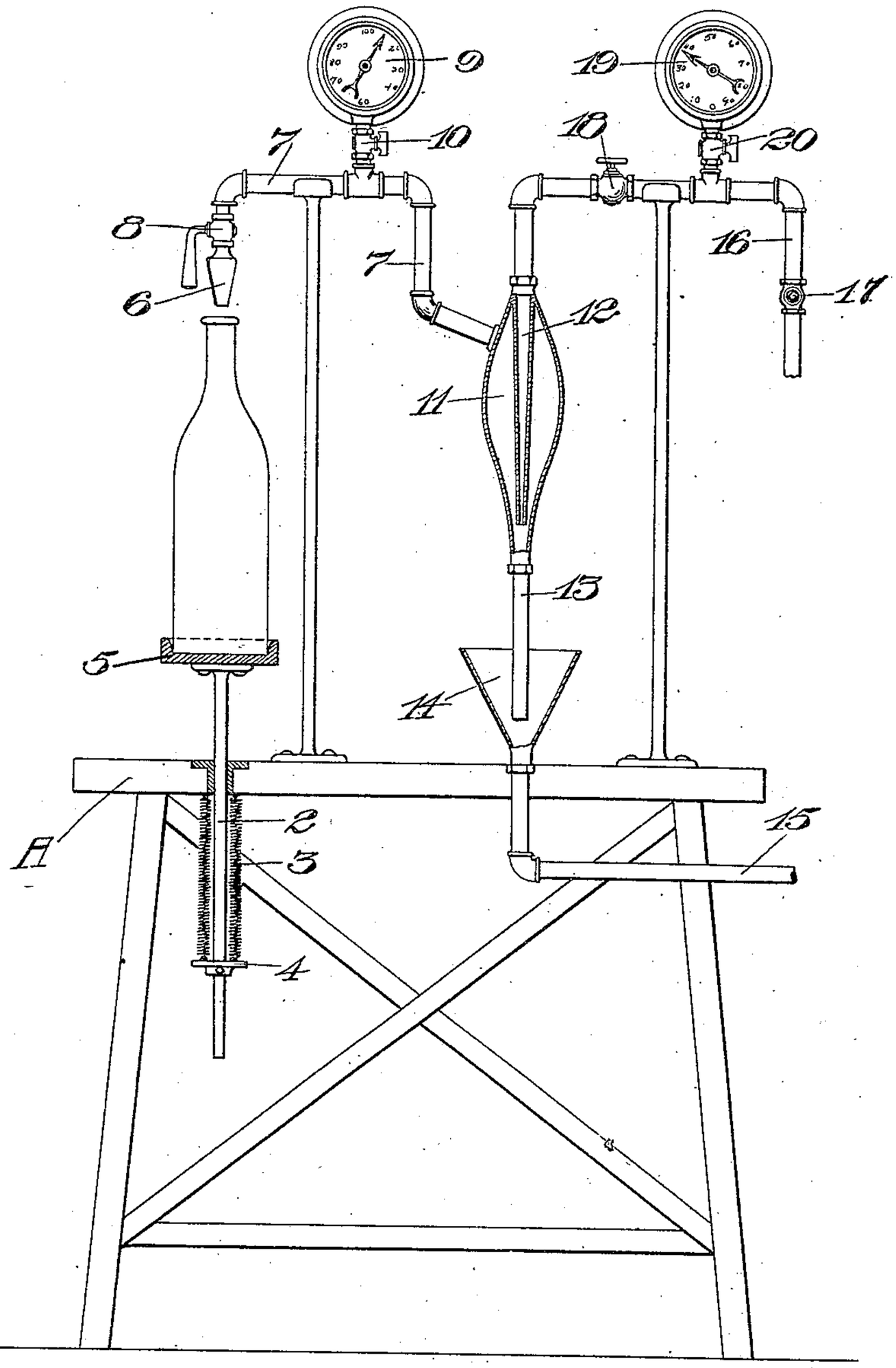

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CRYSTALLIZING APPARATUS.

No. 841,595. Specification of Letters Patent. Patented Jan. 15, 1907.

Application filed February 12, 1906. Serial No. 300,634.

To all whom it may concern:

Be it known that I, GEORGE EDMOND STADTEGGER, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Crystallizing Apparatus, of which the following is a specification.

My invention relates to an apparatus for producing and regulating a partial vacuum and connections between said apparatus and receptacles wherein a vacuum is produced for the purpose of aiding in the process of crystallization within said receptacles.

It consists in the combination of parts and in details of construction which will be more fully explained by reference to the accompanying drawing, in which the figure represents a partially-broken-away side elevation showing my crystallizing apparatus.

In Patent No. 723,496, issued to me March 24, 1903, I have described a process for crystallizing a saccharine syrup within bottles, and in connection therewith it is necessary to produce a partial vacuum at a certain stage in the operation, so as to disengage air-bubbles from the primary coating on the interior walls of the bottles in order that the subsequently-formed crystals may be even and regular.

My present apparatus is designed to produce a partial vacuum within such bottles and to regulate the amount thereof.

The apparatus consists of a table or support, as A, having a stem 2 vertically slidable therethrough and a spring 3 connected with the stem at one end and at the other with some fixed point, so as to apply pressure to move the stem upwardly.

The connection with the stem consists of an adjustable collar 4, which may be moved so as to allow the stem to be raised more or less to fit different-sized bottles. Upon the upper end of the stem is a cup 5, in which the bottom of the bottle rests.

In line above the bottle-neck is a rubber or other stopper 6 of such taper as to snugly fit and make a tight joint with the neck of any bottle. A pipe 7 passes through this stopper and connects with the partial-vacuum-producing apparatus to be hereinafter described.

8 is a cock by which communication through this pipe may be cut off when it is desired to remove a bottle from the stand.

The slidable rod 2 may be depressed by hand, foot, or other pressure (not here shown) to allow a bottle to be placed in the cup 5. Afterward by relieving the pressure the rod will raise the bottle and the stopper 6 will be inserted and make a tight joint therewith. Then by opening the cock 8 the partial vacuum will be applied and air withdrawn from the bottle to permit the proper crystallization upon its inner surface.

9 represents a vacuum-gage by which the amount of vacuum is ascertained, and 10 is a cock by which it may be cut off.

The partial-vacuum-producing device consists of a glass or metal bulb 11, which is here shown as an elongated oval with one side of which the pipe 7 connects.

The chamber 11 is here shown standing vertically and into the upper end of which extends a nozzle 12.

The lower or discharge end of the nozzle is located in the narrow convergent portion of the chamber 11, so that a discharge of water under pressure through the nozzle produces a vacuum within the chamber and by means of the pipe 7 in the bottle, this vacuum depending upon the pressure on the discharging column.

The water discharged through the nozzle is conveyed away by any suitable pipe or hose 13, which may deliver into a funnel 14, and from this point it is conveyed away by any suitable waste-pipe, as at 15.

Water under pressure is supplied to the pipe and nozzle 12 from a main water-pipe 16, supplied by pressure either from mains or by a pump, as may be convenient.

17 is a stop-cock by which the supply of water may be cut off, and 18 is a cock by which the discharge through the nozzle 12 is regulated.

19 is a pressure-gage having also a cut-off cock, as at 20. By means of this gage the pressure of water in the supply-pipe can always be ascertained.

The vacuum-gage 9 indicates the amount of vacuum, and this may be regulated by means of the cock 18.

Thus the proper degree of vacuum being ascertained to produce the best results water may be turned on, and the vacuum-gage will indicate the degree of exhaustion, which may be regulated by means of the stop-cock supplying the water by which the vacuum is produced, and the air being expanded within

the bottle any bubbles which adhere to the interior surface thereof will become detached, rising through the saccharine liquid with which the bottle has been previously filled, thus allowing the liquid to take the place of the air and fill any cavities thus exposed, and crystallization in proper form will thus be assured.

The bottles can be removed as fast as the operation is complete and set aside to allow the crystallization to be completed.

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

An apparatus for crystallizing a saccharine syrup in a bottle, said apparatus comprising a table, a cup upon which the bottle containing the syrup is seated, a stem fixed to the cup and slidably mounted in the table, a collar on the stem adapted to be adjusted vertically thereon to accommodate bottles of different heights, a spring connected with the collar and table adapted to elevate the stem and its cup, an air-exhaust pipe having a valve-controlled stopper fixedly supported in line above the bottle and adapted to be entered into the mouth of the latter, means for creating a suction through said pipe to exhaust the air contents of the bottle, and means for indicating the amount of suction through said pipe.

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

GEORGE EDMOND STADTEGGER.

Witnesses:

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