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DEVICE FOR TESTING THE CONSISTENCY OF CATSUP, TOMATO PULP, AND OTHER THICK LIQUIDS.

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943,830. Patented Dec. 21, 1909.

Fig. 2.

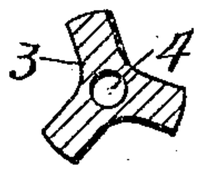


Fig. 1.

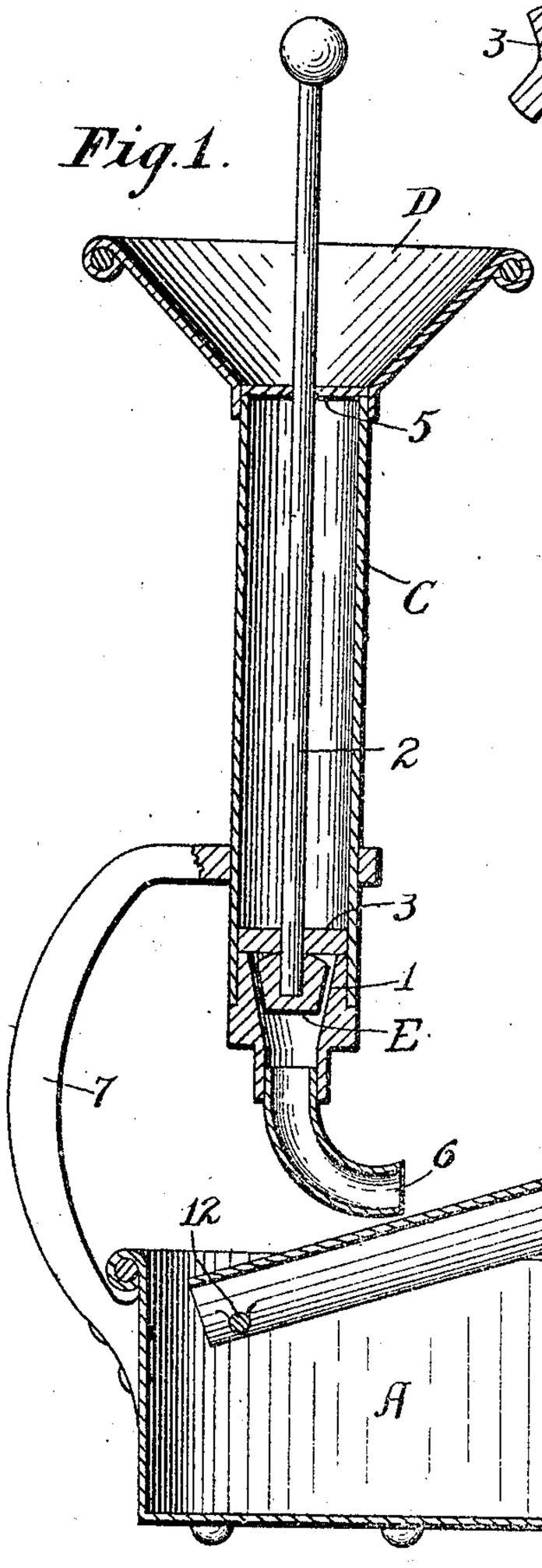


Fig. 3.

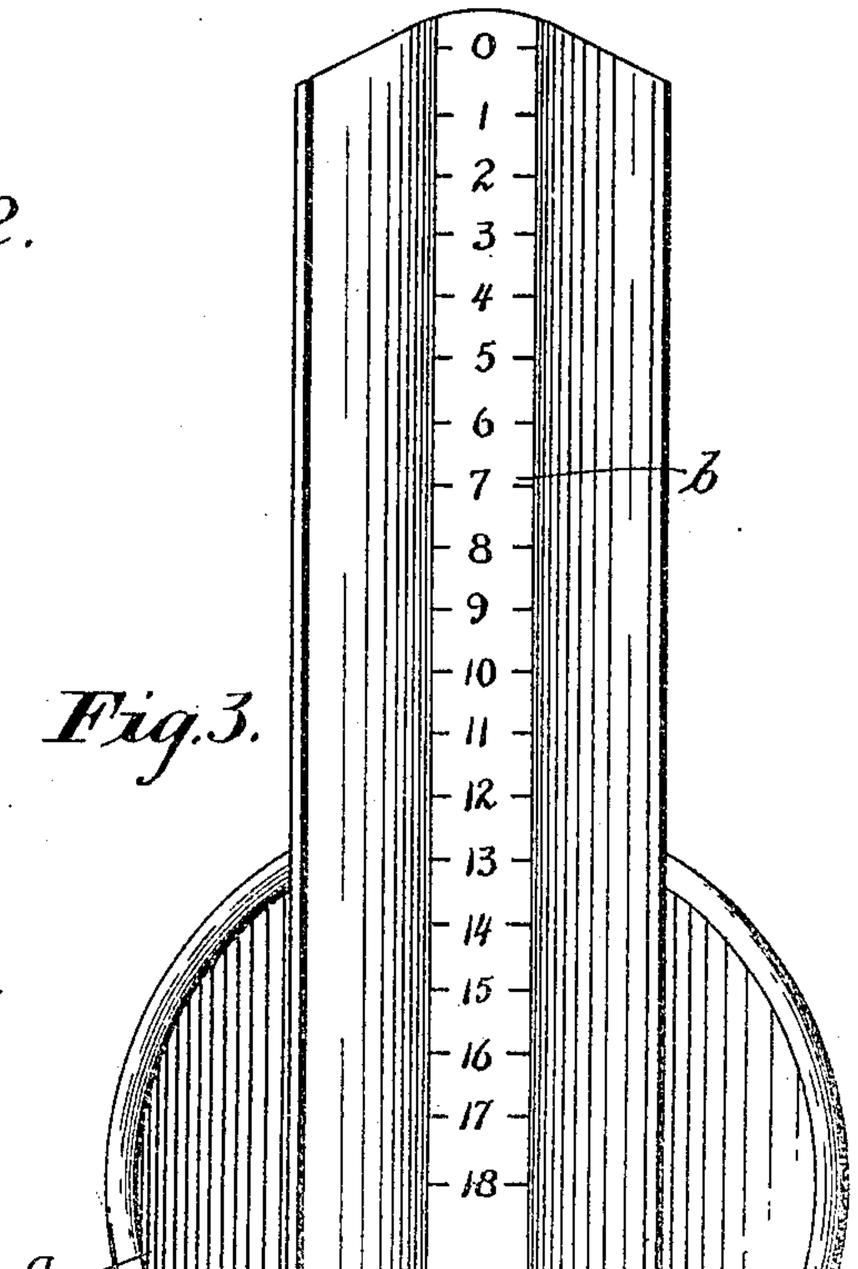
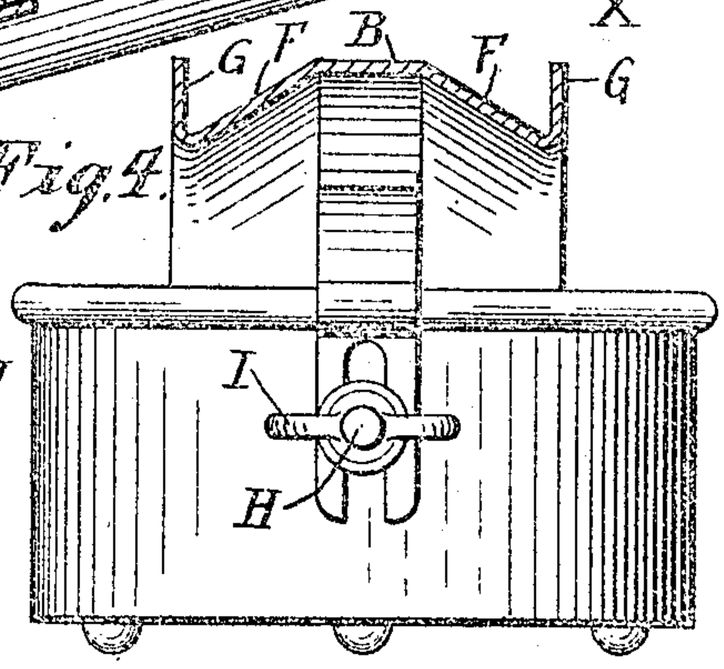


Fig. 4.



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UNITED STATES PATENT OFFICE.

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DEVICE FOR TESTING THE CONSISTENCY OF CATSUP, TOMATO-PULP, AND OTHER THICK LIQUIDS.

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To all whom it may concern:

Be it known that I, RUDOLPH W. HUSS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Devices for Testing the Consistency of Catsup, Tomato-Pulp and other Thick Liquids, of which the following is a specification.

Prior to my invention, catsup and tomato pulp prepared at factories have frequently contained either too much or too little water, thereby rendering the article too thin or too thick as the case may be, and frequently, expensive litigation has occurred between the buyer and seller of such articles by reason of such faults, primarily due to a missing standard for the proper consistency of catsup and tomato pulp. If for example the catsup produced is too thin it will separate, while if made too thick the manufacturer has boiled away an undesirable portion of profit and has produced an article so thick that its extraction from an ordinary catsup bottle is difficult.

Further objects are to provide a simple and easily handled device for the aforesaid purpose; to enable the cook to tell at a glance at the catsup the proper consistency thereof, and thereupon to determine whether it requires more cooking or whether it has become too thick by cooking.

To the foregoing and other useful ends my invention consists in matters hereinafter set forth.

In the accompanying drawings: Figure 1 is a section on a vertical plane through a testing device embodying the principles of my invention. Fig. 2 is a horizontal section through a spider plate which in Fig. 1 is shown resting upon the valve for the purpose of steadying the valve stem. Fig. 3 is mainly a plan view of the inclined plane, the drip cup being also indicated. Fig. 4 illustrates a cross-section through the elevated plane on line *x*—*x* in Fig. 1, and thereby includes in elevation a side portion of the drip cup with means for securing the inclined plane thereto.

A indicates a base preferably formed by a drip cup as illustrated, and B indicates an inclined plane supported upon the base or cup and having a portion of its length arranged over such drip cup. A tubular reservoir C is arranged in an upright position over the lower end portion of the inclined plane and provided at its upper end with a funnel or flaring shaped mouth-piece D, whereby the catsup or other like thick liquid can be poured into the reservoir without spilling. The reservoir is provided at its lower end with a valve seat 1 for a valve E, the valve and its seat being contracted or tapered downwardly so that the valve will seat downwardly in order to close the lower end of the reservoir C. In order to steady the valve stem 2 of said valve, the reservoir contains a loose spider frame 3 (see Fig. 2) having a central aperture 4 for the valve stem, and when therefore the valve stem having the valve fixed upon its lower end is drawn upwardly, the spider or guide 3 will rest upon and rise with the valve, and thereby steady the lower end of the valve stem. The upper end of the valve stem can also be steadied by any suitable means, for example, by a crosspiece 5 secured at its ends to the base of the funnel and adapted to form a guide for the upper portion of the valve stem. The reservoir is also provided with an eduction nozzle 6 arranged to discharge from the reservoir on to the lower end portion of the plane B, when the valve E is open to an extent to allow catsup or tomato pulp to flow from the reservoir to and through the discharge nozzle 6. As a convenient arrangement the reservoir is supported over the cup by a handle 7, which is attached to the drip cup and which forms a convenient handle for the entire apparatus. The inclined plane B is of glass or metal or metal composition having its upper surface highly polished, and if of metal or metallic composition, its upper surface is highly polished and coated with silver or the like so as to prevent corrosion. This inclined plane is also provided with a graduated scale *b* as indicated in Fig. 3.

In order to operate this device, the reservoir is suitably filled with a predetermined or determinate quantity of catsup, for example, at the boiling point, the valve is then opened so as to allow the catsup to pass into and through the discharge nozzle 6, the mouth of which latter faces toward the higher portion of the incline, whereby the catsup as it emerges from the nozzle 6 will run upwardly on and along the graduated

incline B, and the point which it will reach on such graduated incline will indicate the consistency of the catsup and show whether it is too thick or too thin. If for example No. 10 on the scale is selected as a standard point, then the unnecessary thickness of the catsup can be determined by its stopping short of such scale indication, while on the other hand its undesirable thinness, if such exists, can be determined by its flowing above the point indicated at 10. Also if for certain purposes it is desired to have the article thinner or thicker, its consistency can for such purpose be readily attained by the process hereinbefore described. A uniform predetermined quantity of the thick liquid can for each test be measured by any suitable measure and then poured into the reservoir C, or the reservoir itself may have any desired scale mark or marks indicating the degree to which it should be filled to secure therein a determined quantity, and in practice I have found it convenient to simply fill the reservoir up to the guide 5 at the base of the funnel D. In order to provide for suitably free flow of the liquid matter upward and along the inclined plane B, the latter is comparatively narrow as illustrated and in order to collect such liquid as may flow over the longitudinal edge portions of the incline B, I provide two longitudinally arranged inclined plates or portions F, F, respectively extending along and uniting with the two opposite longitudinal side edges of the incline B respectively. These inclined portions F, F, diverge transversely downward from the middle incline B and are provided or connected along their outer longitudinal edges with upwardly extending walls or flanges G, G. By this arrangement the inclined plane B has along each of its sides a trough or gutter F, G. When therefore material runs over the longitudinal edge corners of the inclined plane B, such surplus material will run into the gutters and thence downwardly along the same so as to ultimately discharge into the drip cup A.

The inclined plane and its gutter portions can be supported on the base or cup in any suitable way. As shown, it is supported by a plate 8 having a bent portion 9, which fits the eye portion 10 formed by a part of the drip cup and having a pin 11 inserted through said eye, whereby if desired, the plate 8 can be hinged upon the cup and held in place by a screw H and a nut I (Fig. 1) the screw being understood to be fastened to the cup or base, whereby a slight adjustment in the angle of the inclined plane can be made if desired by adjusting the nut which may have a swivel connection with the lower portion of plate 8. Where the base is a drip cup as shown, the eye portion 10 can be simply formed by curling over and wiring the upper edge portion of the cup, and in such case, part 9 of plate A will fit the bead thus formed and extend down between the nut and the cup.

While the foregoing described method of suitably filling the reservoir for catsup or the like while the valve is closed and then opening the valve to permit the reservoir to discharge its contents is preferable, it is also understood that a given quantity of catsup or the like could be poured into the reservoir while the valve is open, and that in such case the reservoir will discharge its contents on to the inclined plane or gage surface for the purpose already described. The inclined plane is held in position in any suitable way, for example, by a cross piece 12 extending through selected apertures in side portions of the cup. It will thus be seen that the member B provides a surface along which a quantity of catsup or the like may have a diffusive flow to an extent proportionally to the quantity of catsup, its momentum when directed upon the gage or testing surface, and the angle of the latter, it being understood that the extent of such flow is indicated by the gage and that the flow operates to attenuate the thick liquid until a point is reached where the energy of flow is exhausted. The angle of the testing surface may be varied by adjusting the member B as may be deemed best. The spout or discharge outlet directs the outflowing catsup in a direction tangential to or nearly parallel with the said testing surface, and as seen the momentum of the catsup acquired in reaching the outlet, causes it to have an initial impetus when it first contacts with the test surface, and that as it flows along the same its diffusive flow is retarded until a point of rest is reached.

What I claim as my invention is:

1. In a device for testing the consistency of thick liquid such as set forth, an inclined plane and a chamber arranged above the inclined plane, said chamber being adapted to receive a quantity of the thick liquid and having a lower discharge duct or port arranged to discharge the thick liquid from the reservoir upon the lower portion of the inclined plane in direction upwardly along the latter, whereby the consistency of the thick liquid is determined by the extent to which it will ascend the inclined plane.

2. A device for testing the consistency of thick liquids such as set forth, consisting of a reservoir for containing a quantity of the thick liquid to be tested and having a valved discharge opening; and an inclined plane for receiving the thick liquid discharged from the reservoir, the discharge opening of the reservoir being arranged to discharge upon the lower portion of the inclined plane in direction upwardly along the latter when the valve is opened, and the consistency of

the thick liquid being determined by the extent to which it will thus ascend the inclined plane.

3. A device for testing the consistency of thick liquids such as set forth, consisting of a reservoir for containing a quantity of the thick liquid to be tested and having a valved discharge opening; and an inclined plane for receiving the thick liquid discharged from the reservoir, the discharge opening of the reservoir being arranged to discharge upon the lower portion of the inclned plane in direction upward along the latter when the valve is opened, and the consistency of the thick liquid being determined by the extent to which it will thus ascend the inclined plane, said inclined plane being provided with a graduated scale.

4. A device for testing the consistency of thick liquids such as set forth, consisting of a reservoir for containing a quantity of the thick liquid to be tested and having a valved discharge opening; and an inclined plane for receiving the thick liquid discharged from the reservoir, the discharge opening of the reservoir being arranged to discharge upon the lower portion of the inclined plane in direction upwardly along the latter when the valve is opened, and the consistency of the thick liquid being determined by the extent to which it will thus ascend the inclined plane, said inclined plane being adjustable.

5. A device for testing the consistency of thick liquids, such as set forth, comprising a reservoir having a valved outlet, a drip cup upon which the reservoir is supported, and an inclined plane supported upon the cup and arranged to extend under the valved outlet of the reservoir, said valved outlet being arranged to direct the discharge therefrom upwardly along the incline.

6. A device for testing the consistency of thick liquids such as set forth, comprising a reservoir having a valved outlet, a drip cup upon which the reservoir is supported, and an inclined plane supported upon the cup and arranged to extend under the valved outlet of the reservoir, said valved outlet being arranged to direct the discharge therefrom upwardly along the incline, said incline being provided at each longitudinal marginal portion with a gutter for the purpose set forth.

7. A device adapted for testing the consistency of tomato catsup and other thick liquid and comprising a member having an inclined test surface for the upward diffusive flow thereon of the catsup or other thick liquid, and means for discharging a predetermined quantity of catsup or thick liquid upon the inclined test surface in direction for flow upwardly along such test surface, substantially as described.

8. In a device for testing the consistency of catsup or other thick liquid, an inclined test surface having a gage thereon, and means for discharging thereon a quantity of the catsup or thick liquid in direction to cause a diffusive flow thereof upwardly along the inclined surface.

9. In a device for testing the consistency of catsup or other thick liquid, a member having a surface portion forming an incline for the diffusive upward flow of catsup or other thick liquid; and means for discharging a predetermined quantity of catsup or other thick liquid tangentially to and upon the inclined test surface in direction to cause the catsup or thick liquid to flow upwardly along the test surface.

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