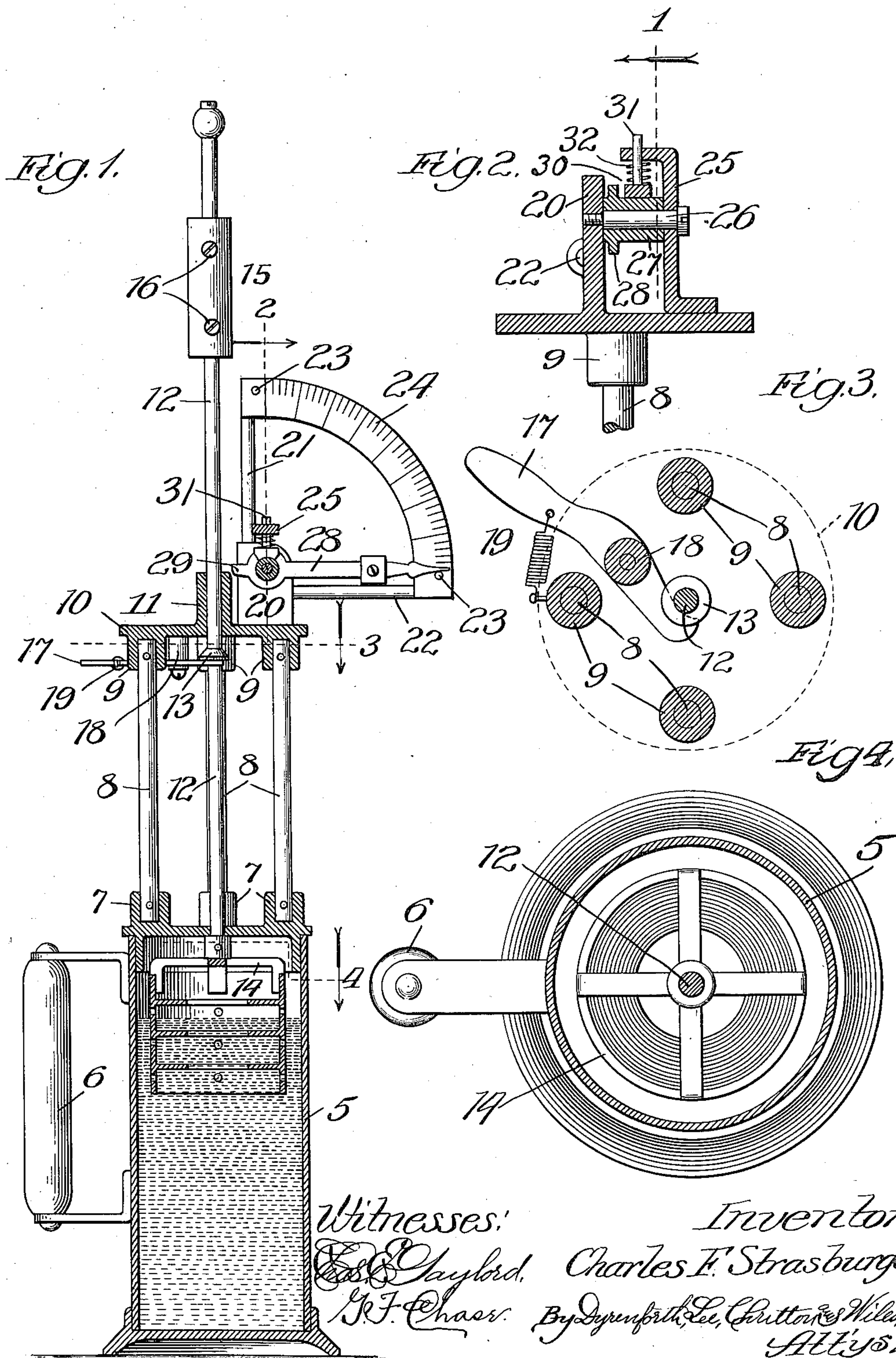


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 APPARATUS FOR TESTING THE CONSISTENCY OF LIQUIDS.  
 APPLICATION FILED JULY 1, 1910.

989,822.

Patented Apr. 18, 1911.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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APPARATUS FOR TESTING THE CONSISTENCY OF LIQUIDS.

989,822.

Specification of Letters Patent. Patented Apr. 18, 1911.

Application filed July 1, 1910. Serial No. 569,955.

*To all whom it may concern:*

Be it known that I, CHARLES F. STRASBURGER, a citizen of the United States, residing at 616 West Kinzie street, Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Apparatus for Testing the Consistency of Liquids, of which the following is a specification.

10 The object of my invention is to provide a self-contained apparatus, which shall involve a simple construction and operate on the plunger principle to reliably measure and indicate, by comparison, the consistency of liquids, including semi-liquids such as catsup and others of analogous density.

15 In the manufacture, for example, of catsup, for testing which I have more especially devised my improvement, the matter of obtaining requisite density or consistency of the product is the result of boiling for the proper time, which is liable to be too short or too long, and is not reliably determinable by inspection while the material is in hot condition. If the boiling be too little, the product, upon cooling, will be unduly thin and accordingly objectionable to the trade and consumer, while if the boiling be excessive the product will be rendered unduly thick by cooling and fail to discharge properly from the bottles in which it is used, which not only injuriously affects the salability of the article but decreases the profit of manufacture by depriving it to an unnecessary extent of the cheapest of its contained elements, namely, water. By means of my improved apparatus, the consistency may be ascertained at a glance to determine whether more cooking is required or the product has been cooked to excess.

20 In the accompanying drawing, Figure 1 is a view of my improved device in sectional elevation, the section being taken at the line 1 on Fig. 2, and Figs. 2, 3 and 4 are enlarged sections taken, respectively, on lines 2, 3 and 4 of Fig. 1.

25 A reservoir 5 for the matter to be tested is shown as a part of the apparatus, though the actual testing means may be applied to

any such holder, including the kettle in which such matter is prepared. The holder shown is adapted to receive a mere sample of said matter and is shown as a cylinder provided with a handle 6 by which to carry it and closed at its ends. The removable top of the holder has sockets 7 rising from it, of which four are shown. Posts 8 are seated and fastened in these sockets and extend into and are fastened in sockets 9 alining with the sockets 7 and depending from a head 10 having a central sleeve 11 extending upwardly from it for guiding the rod 12, provided with a stop 13, of a plunger 14 in the holder and of the open construction represented or of any analogous suitable construction. The rod 12, which works through the head 10, carries, for the tripping purpose hereinafter described, an abutment which is practically a part of the rod but is shown as a sleeve 15 fastened, as by set-screws 16, to render its position on the rod adjustable. A spring-pressed lever 17 fulcrumed between its ends on a stud 18 depending from the head 10, is maintained by its controlling spring 19 with its inner end normally in the path of the stop 13 for releasably holding the plunger and rod in its uppermost elevated position ready to descend on disengaging the lever from the stop for the purpose hereinafter explained.

30 A wall 20 rises from the head 10 and has projecting from it, at right-angles to each other, arms 21 and 22 between the outer ends of which extends and has fastened at its end-portions to them, as by pins 23, a segmental gage-plate 24 bearing upon its display-surface an arbitrary indication of measurement. A wall 25, shown of general Z-shape, rises from the head 10 in spaced and parallel relation to the wall 20; and on a pin 26 supported in these two walls to extend across the space between them is journaled the hub 27 of an index-finger 28, the forward end of which is adapted to engage the lower pin 23 as a stop to arrest its movement beyond its normal horizontal position, and the opposite end of which forms a projection 29 extending into the path of



the sleeve 15. A brake-shoe 30 is provided on a stem 31 reciprocatingly supported on the upper horizontal end of the Z-shaped wall 25 to cause the shoe to bear, under the pressure of a spring 32, against the hub 27.

To apply the apparatus to its purpose, the reservoir is filled with a predetermined quantity of the matter to be tested, say catsup in the hot condition in which it is taken from the kettle wherein it has been boiled. Thereupon the lever 17 is turned to release the rod 12, permitting the plunger 14 to descend in the reservoir with a degree of force according to the density of the contents, and in the descent the sleeve 15 encounters the finger-projection 29 with impact-force sufficient to suddenly turn the index-finger upon its axis. The extreme point on the gage with which the force of the impact causes the finger to register, and at which the pressure of the brake will arrest it, denotes the density of the contents of the reservoir as compared with a predetermined point on the gage ascertained by using it on similar contents of known consistency.

After making a test in the manner described, the apparatus may be restored to its normal condition to prepare it for another test by raising the plunger into the position wherein the lever 17 will engage its rod to hold it, and turning the index-finger back to the stop 23.

What I claim as my invention is:

1. In a testing apparatus for the purpose set forth, the combination with a reservoir, of a plunger, a rod carrying the plunger, rod-supporting means releasable to drop the plunger in the reservoir, tripping means on the rod, a gage supported adjacent to said rod and an index-finger cooperating with the gage and projecting into the path of said tripping-means for turning said finger under the impact-force of said means in the descent of the plunger.

2. In a testing apparatus for the purpose set forth, the combination with a reservoir, of a plunger, a rod carrying the plunger, rod-supporting means releasable to drop the plunger in the reservoir, an abutment on the rod, a gage supported adjacent to said rod, and an index-finger pivotally supported between its ends to cooperate with the gage and having on its rear end a projection extending into the path of the abutment to be turned by its impact-force in the descent of the plunger.

3. In a testing apparatus for the purpose set forth, the combination with a reservoir, of a plunger, a rod carrying the plunger, rod-supporting means releasable to drop the plunger in the reservoir, a sleeve adjustably supported on the rod, a gage supported adjacent to said rod, and an index-finger pivotally supported between its ends to cooperate

with the gage and projecting at its rear end into the path of said sleeve to be turned by its impact-force in the descent of the plunger.

4. A testing apparatus for the purpose set forth, comprising, in combination, a reservoir, a head supported in elevated position above the reservoir, a plunger-rod working through said head, a plunger on said rod in the reservoir, tripping means on said rod, rod-supporting means releasable to drop the plunger, a gage supported adjacent to said rod, and an index-finger cooperating with the gage and projecting into the path of said tripping-means for turning said finger under the impact-force of the tripping means in the descent of the plunger.

5. A testing apparatus for the purpose set forth, comprising, in combination, a reservoir having a cover, a head supported in elevated position above the cover, a plunger-rod provided with tripping means and working through said head and cover, a plunger on said rod in the reservoir, means for releasably retaining the plunger-rod in elevated position, a gage supported on said head, and a pivotal index-finger cooperating with the gage and projecting into the path of said tripping-means to be turned by the impact-force thereof in the descent of the plunger.

6. A testing apparatus for the purpose set forth, comprising, in combination, a reservoir having a cover, a head supported in elevated position above the cover, a plunger-rod provided with tripping-means and a stop and working through the head and cover, a plunger on the rod in the reservoir, a spring-pressed lever normally engaging said stop to releasably retain the rod in elevated position, a gage supported on said head, and a pivotal index-finger cooperating with the gage and projecting into the path of the tripping-means to be turned by the impact-force thereof in the descent of the plunger.

7. A testing apparatus, for the purpose set forth, comprising, in combination, a reservoir having a cover, a head supported in elevated position above the cover, a plunger-rod provided with tripping-means and working through said head and cover, a plunger on said rod in the reservoir, a gage supported adjacent to said rod, and a spring-pressed pivotal index-finger cooperating with the gage and projecting into the path of said tripping-means to be turned by the impact-force thereof in the descent of the plunger.

8. A testing apparatus, for the purpose set forth, comprising, in combination, a reservoir having a cover, posts rising from said cover, a head supported on the posts, a plunger-rod provided with tripping-means and working through the head and cover, a



plunger on the rod in the reservoir, walls  
on said head, arms extending from said  
walls, a gage supported on said arms, an  
index-finger journaled between said walls  
5 and projecting at one end into the path of  
the tripping-means to be turned by the im-  
pact thereof in the descent of the plunger,

and a spring-pressed brake supported on one  
of said walls in engagement with the jour-  
nal of said finger.

CHARLES F. STRASBURGER.

In the presence of—

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