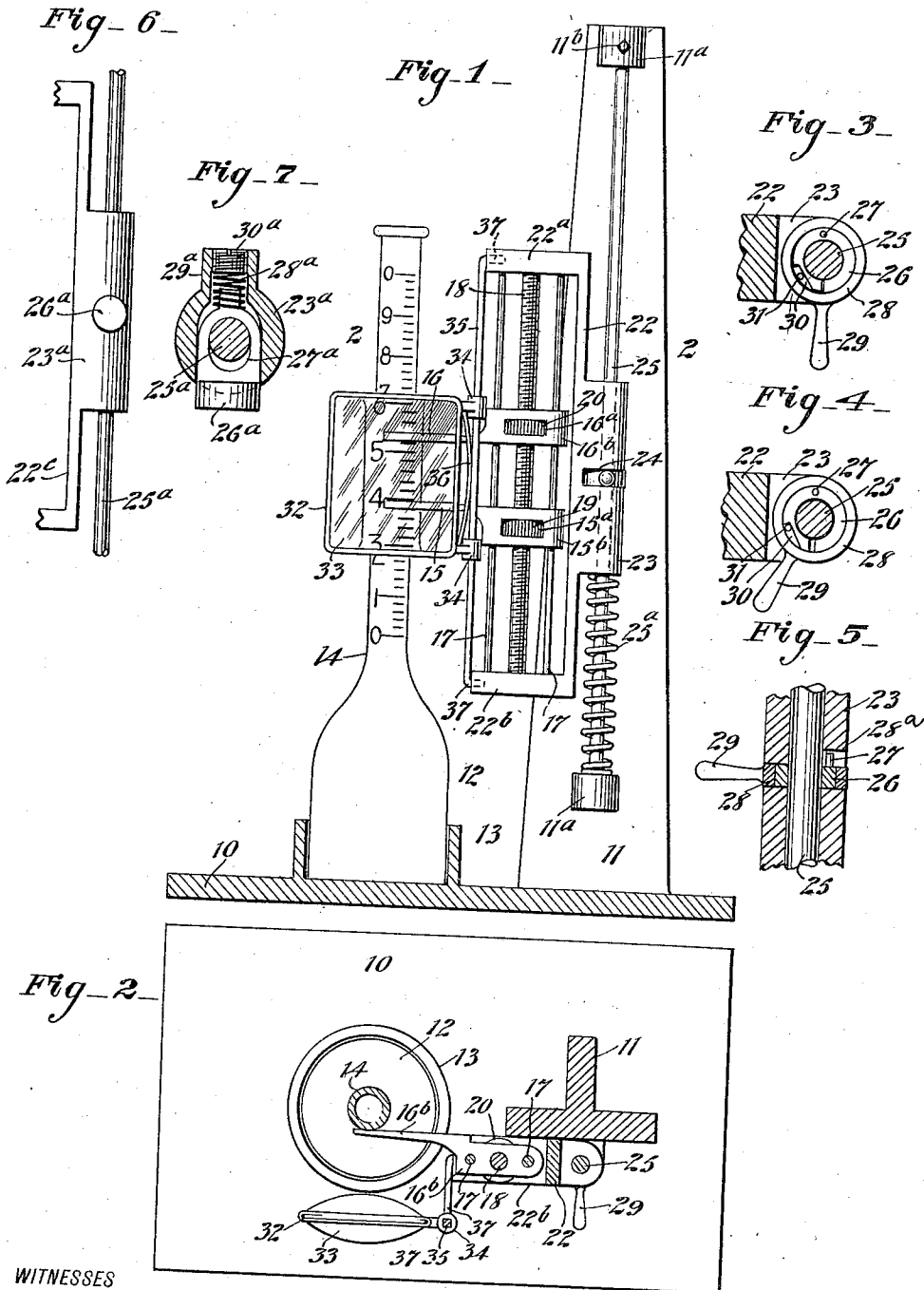


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BUTTER FAT GAGE.
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BUTTER-FAT GAGE.

1,312,358.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ERNEST R. ROBINSON, a citizen of the United States, and resident of Carneys Point, in the county of Salem and State of New Jersey, have invented a new and Improved Butter-Fat Gage, of which the following is a description.

My present invention is designed as an improvement on the gage forming the subject matter of United States Patent No. 1,186,334, granted to me on June 6, 1916. Comprised in the gage referred to is a stand of suitable form having means to support a bottle in upright position. Horizontally disposed gage fingers are separately adjustable vertically to position the gages relatively to each other and to the neck of the bottle, the fingers and their adjusting means being mounted on a carriage or frame adapted to be bodily adjusted vertically or to be swung laterally to or from the position of the bottle. The device includes also a swinging frame carrying a magnifying glass whereby said glass may be swung laterally in front of the graduated neck of the bottle or swung away from the latter.

The present invention resides in an improved means to mount and adjust the gage fingers on the vertically adjustable frame; a cushioning spring to facilitate the accurate adjustment of the vertical frame; novel means to hold the frame in adjusted position; and a novel manner of mounting the magnifying glass whereby it may be swung with the swinging of the fingers and their carrying frame, all as will clearly appear from the specific description following.

Reference is to be had to the accompanying drawing forming part of this specification, in which similar reference characters indicate corresponding parts in all the views.

Figure 1 is a front elevation of a gage constituting a practical embodiment of my invention, the base being shown in vertical section;

Fig. 2 is a horizontal section on the line 2-2, Fig. 1;

Fig. 3 is a detail in horizontal section given to show the means for locking the vertically adjustable frame on its guide spindle, showing the locking device in the locked position;

Fig. 4 is a view similar to Fig. 3 but showing the locking device in the unlocked position to permit vertical movement of the finger carrying frame;

Fig. 5 is a detail in transverse vertical section of the elements shown in Figs. 3 and 4;

Fig. 6 is a fragmentary side elevation showing a modified locking means for the vertically adjustable frame;

Fig. 7 is an enlarged cross sectional view of the locking device shown in Fig. 6.

In carrying out my invention in practice in accordance with the illustrated example, a suitable support is provided which may consist of a base 10 and a standard 11 thereon. Adjacent to the standard a socket 13 or other suitable holder is provided on the base to receive a bottle 12 having an elongated graduated neck 14. Gage fingers 15, 16 are provided and disposed horizontally or substantially so, one above the other. The gage fingers are movable vertically on guide rods 17, and actuating means for the fingers are provided, consisting of a fixed screw rod 18 in the upper and lower flanges 22^a, 22^b of the frame or carriage 22. Said screw has nuts 19, 20 thereon turning respectively in slots 15^a, 16^a in slide blocks 15^b, 16^b carrying said fingers 15, 16, the arrangement being such that a turning of the nuts 19, 20 will raise or lower the respective fingers. The frame 22 has a sleeve 23 loose on a vertical spindle 25, here shown as supported in upper and lower brackets 11^a on the standard 11, the upper bracket having a set screw 11^b to detachably hold the spindle. The sleeve 23 has a transverse slot 24 accommodating a locking device consisting of a split ring 26 loose on the spindle 25, said ring having a vertical pin 27 extending into a transverse slot 28^a complementary to the slot 24; the split ring 26 is within a ring 28 having a handle 29 for turning the same through an angle about said ring 26. In a side of the split ring 26 is a recess 30 disposed oblique to the periphery of the ring 26, there being a roller 31 in said recess which acts in a well-known manner to clutch the ring upon the turning of the ring 28 to cause the split ring to be constricted to have a clutching action on the spindle 25 to thereby hold the sleeve 23 and frame 22 against vertical movement.

A modified locking device for the frame 22 is shown in Figs. 6 and 7, in which the frame 22^c corresponding with the frame 22, has a sleeve 23^a slidable on a spindle 25^a. In said sleeve is a push-button 26^a having a slot 27^a through which said spindle 25^a passes, said slot being slightly flaring so that at

one end the push-button may bind against the spindle 25^a, while the opposite end of said slot is sufficiently large to freely accommodate the spindle. A coil spring 28^a is accommodated in a lateral tubular extension 29^a of the sleeve 23^a, said spring abutting at its inner end against the push-button 26^a and at its outer end against a screw plug 30^a in the extension 29^a. Thus, the spring normally tends to press the push-button 26^a into clutching engagement with the spring 25^b, the clutching engagement being relieved by an inward movement of the push-button against the tension of the spring.

15 A magnifying glass 33 is disposed vertically, and the frame 32 of said glass, in accordance with the present invention, is carried by the frame 22 to swing with the latter. In the illustrated example the frame 32 20 has eyes 34 slidable on a vertical bar 35 carried by the frame 32 and a bowed spring 36 is disposed between the frame 32 and the bar 35 to hold the magnifying glass in any adjusted position vertically on the bar 35. 25 The bar 35 is more or less resilient and has laterally projecting upper and lower arms 37, the bent ends 38 of which may be sprung into or out of sockets in the upper and lower flanges 22^a, 22^b of the frame 22. Thus, the 30 gage glass may be disconnected from the frame 22 if desired.

That the use of my improved gage may be understood, it is explained that the addition of acid to milk by dairy men causes the butter fat in the milk to rise into the graduated 35 neck of the testing bottle 12 and water is added after the chemical action on the milk has taken place. The butter fat having risen in the neck of the bottle, the gage fingers 15, 16 are adjusted opposite the top and bottom 40 lines of the butterfat to gage the quantity of the latter in the bottle neck, the fingers are then moved in unison until the lower gage finger is at zero at the graduation of 45 the bottle neck so that the quantity of butterfat may be instantly read off.

The described arrangement materially simplifies the construction and facilitates the swinging of the frame 22 bodily to generally 50 position the gage fingers 15, 16 in a vertical plane adjacent to the bottle neck, while the nuts 19, 20 may be individually turned to vary the relative positions of said fingers.

Beneath the sleeve 23^a in accordance with 55 the present invention, I provide a coil spring 25^a on the spindle 25 to cushion the frame 22 and to enable the operator to readily set the frame at a given point without making several attempts due for example to 60 sliding the frame too far or not far enough. The spring has a tendency to raise the said

frame 22 or permit of its being lowered and the reaction of the spring enables the operator to position the fingers at the proper point with despatch. The form of the bar 65 and the manner of supporting the same on the carriage or frame 22 not only detachably and adjustably supports the magnifying glass but disposes the same in a vertical plane at a side of the gage fingers so that the 70 graduations as indicated by the fingers may be read through the glass.

I would state in conclusion that while the illustrated example constitutes a practical embodiment of my invention, I do not limit 75 myself strictly to the mechanical details herein illustrated, since manifestly the same can be considerably varied without departure from the spirit of the invention as defined in the appended claims. 80

Having thus described my invention, I claim as new, and desire to secure by Letters Patent:

1. A gage of the character described including a support, a frame vertically adjustable on the support, guides on said 85 frame, fingers separately adjustable vertically on said guides, a fixed screw in said frame, and nuts on said screw and engaging respectively with said fingers to move 90 the latter by the turning of the respective nuts.

2. A gage of the class described including a support, a vertically disposed, fixed spindle on said support, a frame loosely 95 sleeved on said spindle, gage elements carried by said frame, a spring on the spindle beneath and engaging said frame, and thus tending to raise the same, and means to lock the frame in adjusted position on the 100 spindle.

3. A gage of the class described, including a vertically adjustable and horizontally movable frame, gage elements on said 105 frame, and a magnifying glass vertically adjustable on said frame and horizontally movable with said frame and the gage elements thereof.

4. A gage of the class described including a vertically adjustable frame, gage elements on said frame, a vertical bar detachably 110 secured to said frame and a magnifying glass vertically adjustable on said bar.

5. A gage of the class described including a vertically adjustable frame, gage elements on said frame, a resilient vertical bar 115 on said frame, said bar having laterally bent ends terminating in pins, and the frame having sockets adapted to receive said pins, and a magnifying glass vertically adjustable on said bar. 120

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