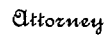


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Howard Dorr.
H. J. Perry.

UNITED STATES PATENT OFFICE.

CHARLES S. WAYBRIGHT, OF CRABBOTTOM, VIRGINIA.

CHURN.

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To all whom it may concern:

Be it known that I, CHARLES S. WAYBRIGHT, a citizen of the United States, residing at Crabbottom, in the county of Highland and State of Virginia, have invented a new and useful Churn, of which the following is a specification.

The invention relates to improvements in churns.

10 The object of the present invention is to improve the construction of churns, and to provide a simple, efficient and easy running churn, equipped with means adapted to suspend the dasher close to the bottom of the
15 churn body but out of contact with the same, and capable of permitting the dasher to be readily removed and of also supporting the dasher in an elevated position.

With these and other objects in view, the
20 invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claims hereto appended; it being understood that various
25 changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.
30

In the drawing:—Figure 1 is a vertical sectional view of a churn, constructed in accordance with this invention. Fig. 2 is an enlarged central vertical sectional view
35 through the gearing of the churn. Fig. 3 is a front elevation of the same. Fig. 4 is a detail sectional view, illustrating the manner of clamping the vertical dasher carrying shaft in an elevated position.

40 Like numerals of reference designate corresponding parts in all the figures of the drawing.

In the accompanying drawing in which is illustrated the preferred embodiment of the
45 invention, 1 designates a bearing bracket, consisting preferably of a casting and composed of a horizontal base 2 and front and rear vertical supporting portions 3 and 4. The base 2, which is designed to be screwed,
50 or otherwise secured to a suitable frame or stand 5, is provided with an opening 6 to lighten the construction, and the front and rear vertical supporting portions are approximately inverted U-shaped or Y-shaped
55 to form front and rear openings 7 and 8.

The front and rear supporting portions are provided at the top with horizontally alined openings for the reception of a horizontal shaft 9 upon which is mounted a vertical oscillatory gear 10. The horizontal shaft 9 60 is preferably in the form of a bolt, being provided at the front end with a head and having its rear end reduced and threaded for the reception of a nut 11. The reduced rear end of the shaft 9 forms a shoulder, 65 which abuts against the inner face of the rear supporting portion at the top thereof, as clearly illustrated in Fig. 2 of the drawing.

The oscillatory gear, which is preferably 70 in the form of a toothed segment, is provided with an extended hub portion 12 of a length to extend across the space between the front and rear upright supporting portions of the bearing bracket. The segmental 75 gear 10, which meshes with a horizontal pinion 13, is preferably provided with an upwardly extending integral bar 14 to which a suitable handle 15 is adjustably secured by bolts 16, operating in a longitudinal slot 17 80 of the bar 14. The handle is oscillated and through the segmental gear imparts reciprocal rotary motion to the horizontal pinion.

The horizontal pinion is fixed to a vertical shaft 18 by means of a clamping screw 19, 85 mounted in a threaded perforation of the hub 20 of the pinion and engaging the shaft 18. The hub 20 of the pinion 13 is formed on the lower side thereof and rests upon a series of anti-friction balls 21, arranged in 90 an annular ball race 22, formed in the upper face of the base of the bearing bracket and surrounding a bearing opening 23, through which the vertical shaft 18 passes. The horizontal pinion is preferably pro- 95 vided with beveled teeth to mesh with beveled teeth of the segmental gear, and the latter is maintained in proper mesh with the pinion by means of a horizontal screw 24, mounted in a threaded opening of a vertical 100 arm 25 of the bracket and provided in its inner end with a bearing recess 26, receiving a ball 27, which bears against the rear face of the segmental gear. The arm 25 extends 105 upwardly from the base of the bearing bracket and is located in the rear opening 8 of the rear supporting portion 4, and the screw 24 is locked in its adjustment by means of a nut 28, mounted on the outer portion of the screw and engaging the rear 110

face of the arm 25. This construction provides a ball bearing for the segmental gear and maintains the same in proper mesh with the horizontal pinion.

5 The vertical shaft is provided at its lower end with a socket 29, adapted to receive the upper end of the stem 30 of a dasher 31, or other agitator, and equipped with a clamping screw 32 for detachably securing the
10 stem in the socket. The dasher is designed to be constructed of metal and to operate within a churn body or receptacle 33, constructed of glass, pottery or analogous material, and is equipped with a cover 34 of
15 similar material, having a central opening through which the stem of the dasher passes. When a stone jar or receptacle 33 and cover or lid 34 are employed, the lid or cover, which is provided with a central opening to
20 receive the stem of the metallic dasher, is preferably equipped with a soft metal bushing or bearing 34^a, consisting of a sleeve or thimble, loosely arranged in the central opening of the lid and having a supporting
25 flange resting upon the upper face of the lid or cover. This will maintain the metallic stem out of contact with the stone lid or cover and will prevent grit from dropping into the churn body or receptacle. The
30 receptacle 33 is supported upon the base 35 of the supporting frame or stand, which is equipped with a stop piece 36, having a curved front face and adapted to center the churn body on the base 35 of the sup-
35 porting frame or stand 5.

The front vertical supporting portion 3 is provided in its top portion with a vertical bearing opening 37, extending upwardly
40 from the opening 7 and receiving the upper portion of the vertical shaft 18, and an upper shaft section 38. The upper end of the vertical shaft 18 is provided with a bearing recess 39, and the lower end of the
45 upper shaft section is provided with a bearing recess 40, and a ball 41, which is interposed between the vertical shaft 18 and the upper shaft section 38, and arranged in the said bearing recesses 37 and 40. The anti-
50 friction ball 41 takes care of the end thrust of the vertical shaft 18. The front supporting portion 3 is provided with a lubricant passage 42, communicating with the upper portion of the vertical bearing opening
55 37 and adapted to lubricate the anti-friction ball and the bearing of the upper end of the vertical shaft, and a coiled spring 43 is arranged within the upper portion of the opening 37 and is interposed between
60 the top wall thereof and the upper shaft section 38 to positively maintain the latter in engagement with the anti-friction ball and to retain the latter in the bearing recess of the vertical shaft 18. The front
65 supporting portion 3 is provided at a point intermediate of the ends of the vertical

bearing opening 37 with a horizontal threaded opening 44 for the reception of a clamping screw 45, adapted to engage and hold the upper shaft section rigid with the bearing bracket when the vertical shaft 18
70 is at the limit of its downward movement. This will prevent the shaft section 38 from yielding under the pressure exerted by the vertical shaft 18 when there is an end thrust
75 of the latter. When the clamping screw 45 is loosened the vertical shaft may be raised to permit the removal of the dasher and the clamping screw may also be employed for holding the vertical shaft 18 in
80 an elevated position, as illustrated in Fig. 4 of the drawing. The clamping screw 45 also holds the shaft 18 and the pinion 13 against vertical movement, and thereby retains the anti-friction ball 21 in the ball
85 race 22. The mounting of the vertical shaft in this manner not only reduces the friction, but enables the dasher to be supported within the churn body above the bottom thereof and permits the ready removal of
90 the dasher from the churn body.

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

1. The combination of a bearing bracket provided with a supporting portion having
95 a vertical bearing opening extending upward and open at the bottom, said bearing bracket being also provided at a point intermediate of the ends of the said opening with a horizontal threaded opening, a ver-
100 tical shaft extending into the vertical bearing opening, an upper shaft section located within the said bearing opening, an anti-friction ball interposed between the vertical shaft and the upper shaft section, a coiled
105 spring located within the bearing opening and bearing against the upper end of the upper shaft section for yieldably maintaining the ball in contact with the upper end of the vertical shaft and adapted to permit
110 the latter to be raised, a clamping screw mounted in the threaded opening of the bearing bracket and adapted to engage either the upper shaft section or the vertical shaft, and gearing for actuating the vertical
115 shaft.

2. The combination of a bearing bracket comprising a base, front and rear vertical supporting portions having openings, and
120 a vertical arm extending upward from the base and located in the opening of the rear supporting portion, a horizontal shaft supported by the front and rear portions of the bracket, a vertical gear mounted on the hori-
125 zontal shaft and located between the front and rear supporting portions of the bracket, a vertical shaft journaled in the base and in the top of the front supporting portion of the bracket, a horizontal pinion mounted on
130 the vertical shaft and located within the

opening of the front supporting portion of the bracket and meshing with the vertical gear, a screw mounted in the threaded opening of the arm of the bracket and provided
5 at its inner end with an anti-friction device bearing against the vertical gear, and means for locking the screw in its adjustment.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CHARLES S. WAYBRIGHT.

Witnesses:

S. H. RALSTON,
M. K. SIMMONS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."