March 29, 1938. J. J. GOUGH 2,112,696

BRIDGE LATCH FOR ICE CREAM FREEZERS

Original Filed Oct. 26, 1935

Fig. 1

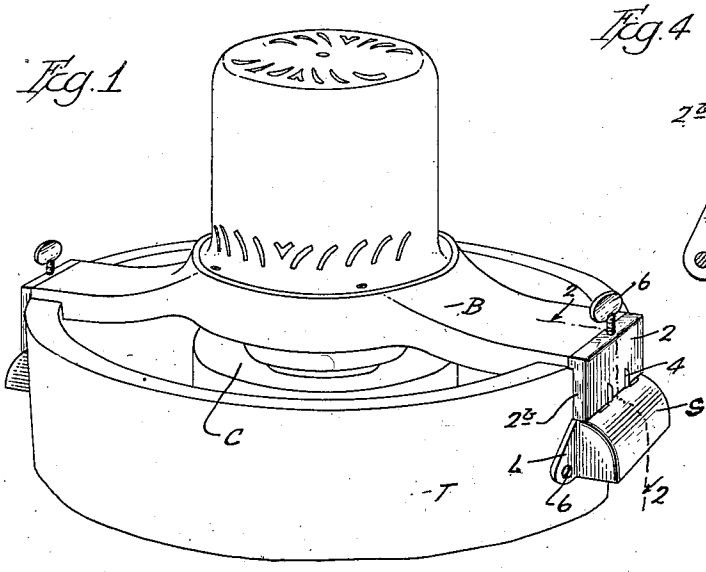


Fig. 4

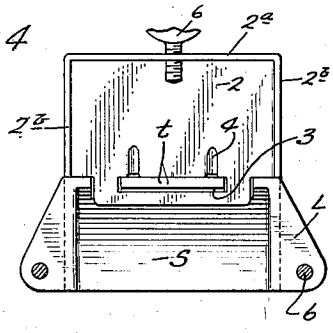


Fig. 5

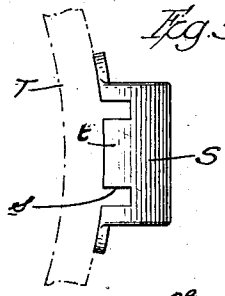


Fig. 2

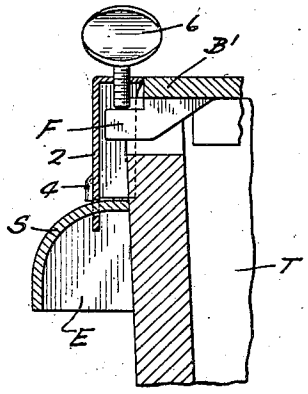


Fig. 3

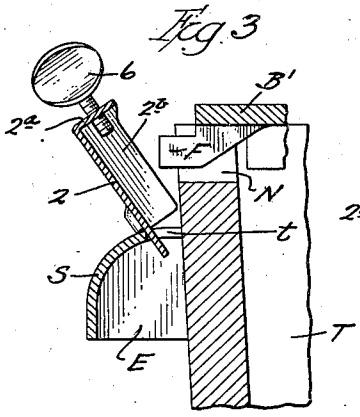


Fig. 6

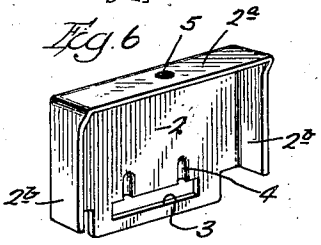


Fig. 7

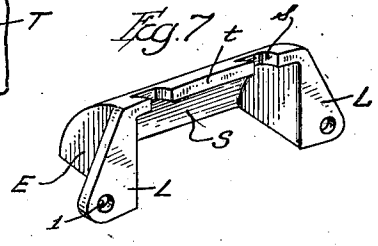


Fig. 8

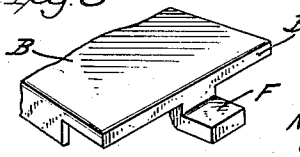
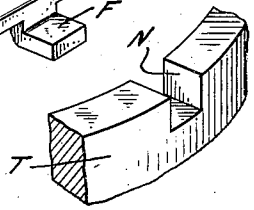


Fig. 9



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2,112,696

BRIDGE LATCH FOR ICE CREAM FREEZERS

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Refiled for abandoned application Serial No. 73,566, April 9, 1936, which is a division of Serial No. 46,924, October 26, 1935. Also a division of Serial No. 168,413, October 11, 1937, which is a refile of Serial No. 46,924, October 26, 1935. This application November 22, 1937, Serial No. 175,974

6 Claims. (Cl. 259—1)

This application is a refile of my application Serial #73,566, filed April 9, 1936, for Bridge latch for ice-cream freezers which is a division of my application Serial No. 46,924 filed October 26, 1935 for Electric actuating mechanism for ice-cream freezers, and this application is a division of my application Serial No. 168,413, filed October 11, 1937 for Electric actuating mechanism for ice-cream freezers which is a refile of my aforesaid application Serial #46,924.

My invention relates to latching means for releasably fastening an end of a bridge or the like to a tub (or other receptacle) across the mouth of which the bridge extends, as for example the tub of a household type of ice-cream freezer, and more particularly to a bridge latch in which the movable member is supported by a stationary member which constitutes a handle for lifting the tub.

In one of its major aspects, my invention aims to provide a combined handle and bridge latch in which the said two members have interengageable formations for supporting the movable latching member on the stationary member and for limiting the outward swinging of the movable member, without requiring any auxiliary parts or elements for this purpose. More particularly, my invention aims to provide a construction for this purpose in which the stationary member has a tongue extending through a slot in the movable member, in which these two members can be assembled by merely sliding the said tongue through the said slot, and in which the nearness of the adjacent side of the tub to this tongue prevents a detaching of the movable member from the stationary member.

Furthermore, my invention aims to provide a two-member latching means of the just recited characteristics, in which the movable member includes a digitally adjustable screw disposed for engaging the bridge, adapted to latch the movable member in its operative position, and also adapted to compensate for variations in the vertical spacing of a part of the stationary member from the screw-engaged end part of the bridge.

In addition, my invention aims to provide a two-member latching means in which the entire stationary member and the major part of the movable member may be simple castings or stampings requiring very little finishing, and in which the stationary member also will constitute a convenient handle for lifting the tub to which it is fastened.

Illustrative of my invention, Fig. 1 is a perspective view of the upper portion of a tub-type electric household ice-cream freezer in which each end of the bridge which supports the electric actuating mechanism is releasably fastened to the tub by an embodiment of my invention.

Fig. 2 is an enlarged and fragmentary vertical section taken along the line 2—2 of Fig. 1.

Fig. 3 is a section allied to Fig. 2, but showing the movable latching member in its released and outwardly swung position.

Fig. 4 is an interior view of the combined handle and bridge latch shown at either end of the bridge in Fig. 1, drawn on the same scale as Fig. 2 and with the movable member positioned for latching an adjacent bridge end.

Fig. 5 is a plan view of the handle-forming stationary member of my bridge latch, drawn on a scale intermediate that of Figs. 1 and 4, with dash-dotted lines indicating the tub wall to which this stationary member is fastened.

Figs. 6 and 7 are separate interior views respectively of the movable and of the stationary member of my bridge latch.

Fig. 8 is a perspective view of one end of the bridge, and Fig. 9 a perspective view of the notched mouth end of the portion of the tub through which the tongue on the bridge end of Fig. 8 extends, both drawn on the same scale as Figs. 2, 3, and 4.

In Fig. 1, the usually wooden tub T, in which the cream container C is rotatable, has diametrically opposite notches N (Fig. 9) in its mouth end, each of which notches corresponds in width to a depressed finger F projecting endwardly from a flattened end portion B^1 of the bridge B, which flattened portion seats on the upper or mouth end of the tub when the bridge and mechanism assembly is in its normal position.

Fastened to each side of the tub, symmetrically with respect to the medial plane of the two notches N and with its upper edge lower than the bottom of the adjacent notch, is a stationary member, shown separately in Figs. 5 and 7. Each such stationary member comprises a side portion S formed as a quarter of a tube having a horizontal axis contiguous to the tub, and having two longitudinally spaced slots *s* formed in its upper edge to leave a tongue *t* between these slots. The quarter-tubular side portion S has each end closed by a quarter-circular end E, thus forming a handle in the form of a quarter-can. The stationary member also includes two ears L projecting in opposite directions respectively from the inward and upright edges of the said ends E, each of which ears has a screw-receiving bore *l*.

The movable member of each latch, as shown

separately in Fig. 6, includes a normally upright rectangular plate **2**, the lower end of which is shaped as an eye presenting a horizontal slot **3**, which slot desirably corresponds in length to the tongue *t* of the stationary member but has its width somewhat greater than the thickness of the said tongue. Extending inwardly (or toward the tub) from the upper edge of the riser plate **2** is a top ledge **2***a* which desirably is effectively stiffened by two end ledges **2***b* extending downwardly from the said top ledge along opposite ends of the said riser plate **2**.

In addition, the movable member has a threaded bore **5** formed in the center of its top flange **2***a*, through which the shank of a thumb-screw **6** is threaded downwardly before the two members of my latch are assembled by merely sliding the tongue *t* of the stationary member through the slot **3** of the eye-like lower part of the riser plate **2** of the stationary member.

When the said two members of one of my latches have thus been slidably assembled, the stationary member is fastened to the tub (at an easily determined distance below the mouth end of the tub) by screws **6** extending respectively through the lug bores **1**. The projecting of the tongue *t* through the slot **3** then prevents a detaching of the movable member from the stationary member, but the difference between the thickness of the said tongue and the width of the said slot permits the movable member to rock to a limited extent upon the said tongue.

If this movement of the movable member were about a stationary axis, as by having the tongue continually engage the outer edge of the upper wall of the slot **3**, the said outer edge would soon dig into the tongue to prevent the movable member from also sliding freely (along the tongue) upon this tongue while the movable member is being swung to and from the two extreme positions of Figs. 2 and 3. To avoid this, I preferably provide the part of the riser plate **2** contiguous to the upper edge of the slot **3** with two portions **4**, spaced longitudinally of the said slot and are embossed outwardly so that the detachable member (when tilted as in Fig. 3 to its latch-releasing position) will have these embossed portions seat upon the part S of the stationary member.

In practice, the inward faces of the ears L are desirably formed as portions of a common cylindrical surface, as in Fig. 5, and the downward offsetting of the fingers F from the adjacent part of the bridge end part is desirably such that these fingers do not engage the bottoms of the tub notches N, thus allowing for the usual manufacturing variations.

By shaping the stationary member of my latch generally as a downwardly open quarter of a cylindrical can and having the tongue-guiding eye on the movable member depend only slightly into the interior of this stationary member, I allow each such quarter-can-like stationary member to serve also as a convenient handle for lifting the tub. Thus I eliminate the use of the usual lifting bail on the tub, thus effecting an appreciable saving in the total cost of the ice-cream freezer and also permitting the freezer to be packed more compactly.

By forming the main part of each movable member of my latch as above described, I enable this to house and conceal the adjacent bridge finger when the bridge is latched, thus leaving only the thumb-screw exposed, so that my combined latch and handle can be formed to harmonize with the general design of the bridge and mechanism assembly. Moreover, by employing my recited eye and tongue assembly I also eliminate the loosening and bending of pivot pins heretofore employed in bridge latches.

However, while I have heretofore described my invention in connection with an embodiment including numerous desirable details, many changes might obviously be made without departing either from the spirit of my invention or from the appended claims.

I claim as my invention:

1. A latch for detachably fastening an upright tub or the like to an end of a bridge which extends across and is seated upon the mouth of the tub, comprising: a stationary member fastened to the side of the tub below the said bridge end, the upper part of the said member including a substantially horizontal tongue presenting its free end close to the said side of the tub; a movable and normally upright latch plate having its lower portion provided with a horizontal slot of greater width than the thickness of said tongue and through which the said tongue loosely extends to afford a rocking and sliding movement of said latch on said tongue, the latch plate having its upper end provided with a normally horizontal ledge extending toward the axis of the tub; and a screw threaded downwardly through the said ledge and normally bearing downwardly upon the said bridge end.

2. A latch as per claim 1, in which a portion of the latch plate adjacent to the upper edge of the said slot is embossed away from the tub to overhang a part of the stationary member, the said latch plate portion being adapted to seat and slide upon the upper portion of the stationary member when the said screw is loosened and the latch plate is thereafter rocked away from the axis of the tub upon the said tongue.

3. A latch as per claim 1, in which the stationary member is generally formed as a longitudinal quarter sector of a can having a horizontal axis contiguous to the tub and opening both downwardly and toward the tub, whereby the stationary member can serve also as a handle for lifting the tub.

4. A latch for detachably fastening an upright tub to an end of a bridge which extends across and is seated upon the mouth end of the tub, and each end of which bridge has a finger extending beyond the tub radially of the latter, comprising: a handle attached to the tub below each bridge finger, each handle including a main portion formed substantially as a quarter of an axially horizontal tube, which tube quarter opens both downwardly and toward the tub, the said tube quarter having its upper edge provided with two spaced notches opening toward the tub; a normally upright latch plate having its lower end formed as an eye freely housing the part of the said quarter-tube edge which is disposed between the said notches, the latch plate having at its upper end a flange directed toward the axis of the tub and normally freely overhanging the adjacent finger on the bridge; and a thumb-screw threaded downwardly through the said flange on each latch plate and disposed for having the tip of the screw press downwardly on the adjacent bridge finger; each latch plate being adapted to have the upper edge of its said eye rock on the part of the quarter-tube which is housed by the eye during the swinging of the latch plate to a position on which the flange on the latch plate will clear the adjacent bridge fin-

ger when the bridge is thereafter lifted off the tub.

5. A latch as per claim 1, in which the said movable latch plate has flanges extending toward the axis of the tub from the two side edges and the upper edge of the said plate, the said flanges co-operating with the adjacent side of the tub for normally housing the said bridge end.

6. A latch as per claim 1, in which the said upper portion of the movable plate is disposed for engaging the said end portion of the bridge to halt the inward rocking of the said latch plate in a position in which the said screw overlies the said bridge end.

JAMES J. GOUGH.