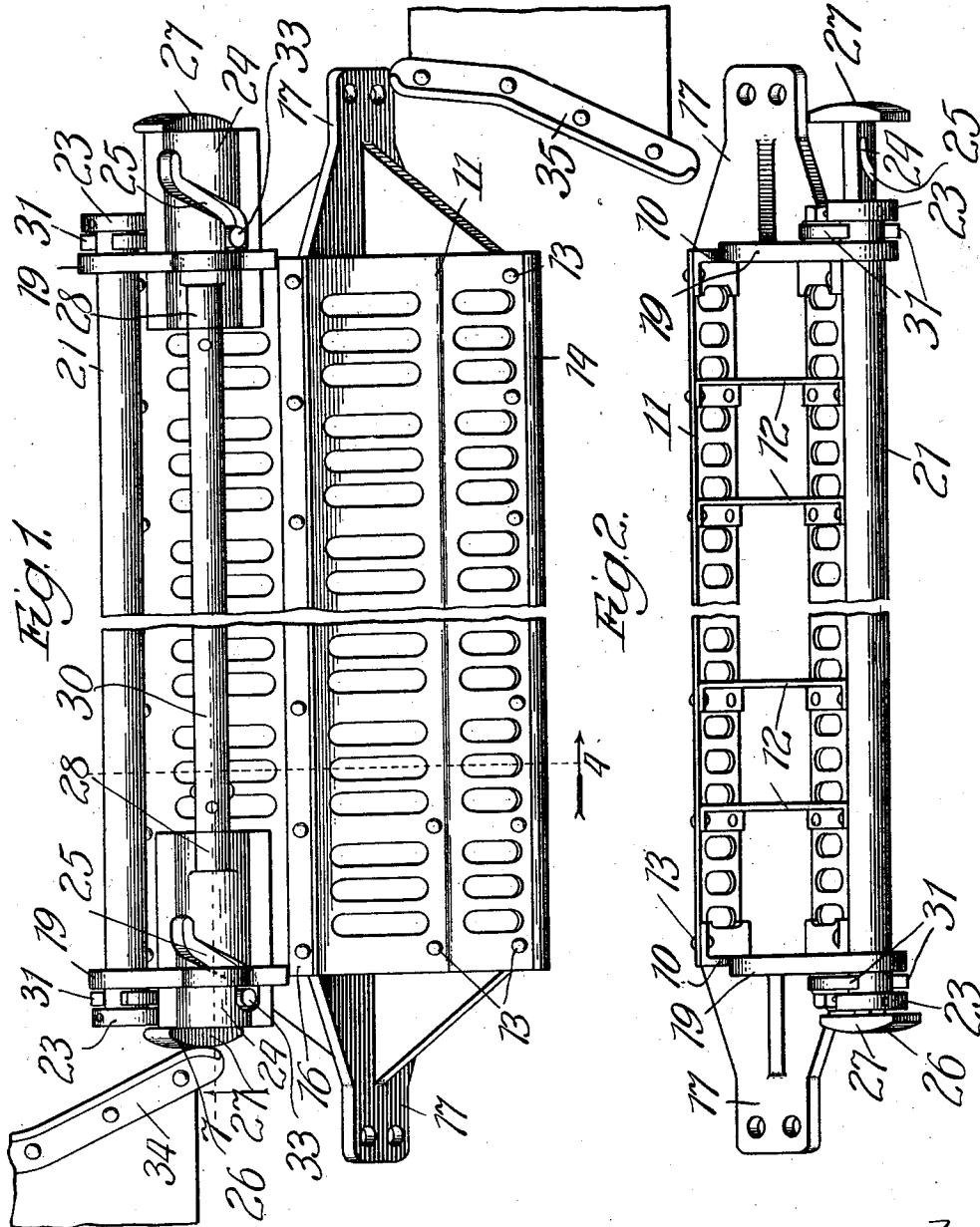


S. L. GOLDMAN.
BOTTLE RACK.
APPLICATION FILED OCT. 5, 1911.

1,012,843.

Patented Dec. 26, 1911.

4 SHEETS—SHEET 1.



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4 SHEETS—SHEET 2.

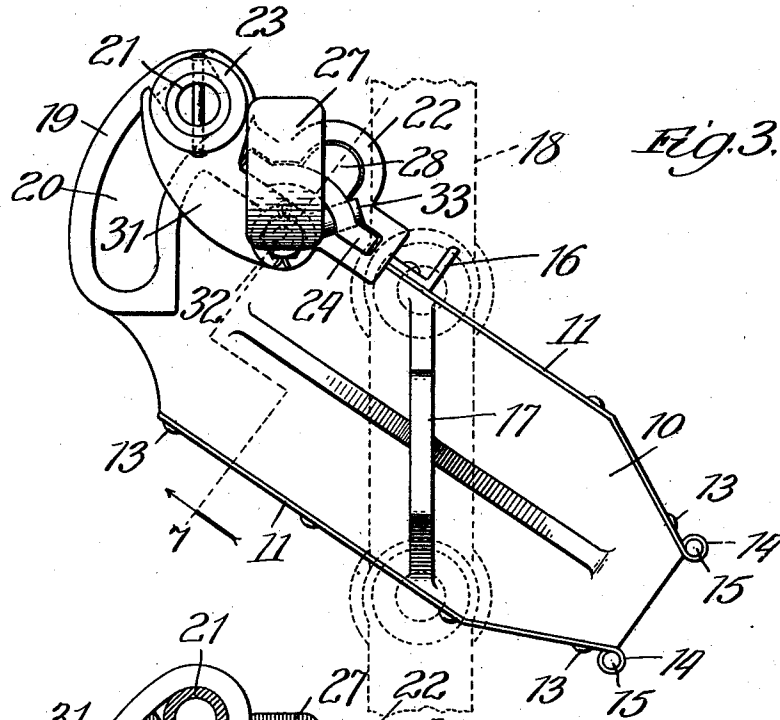


Fig. 3.

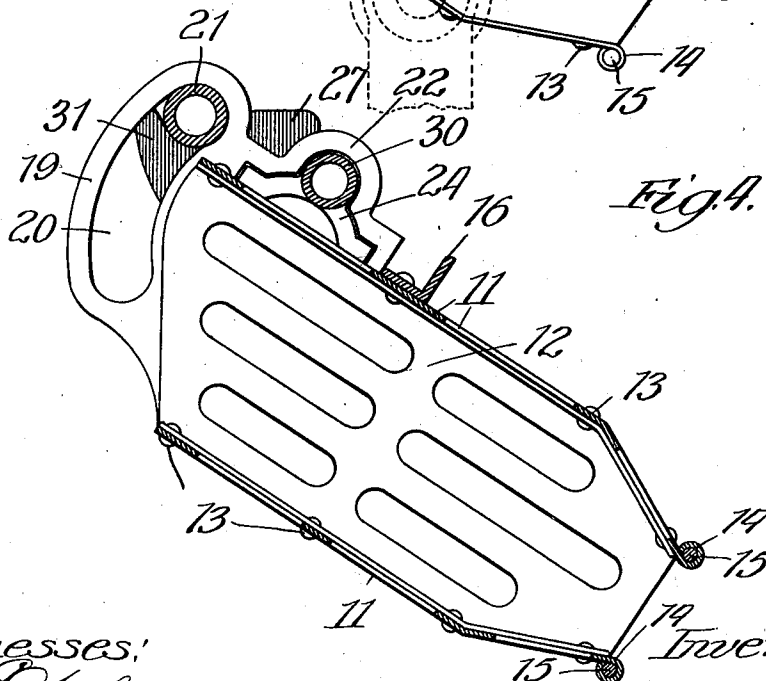


Fig. 4.

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4 SHEETS—SHEET 3.

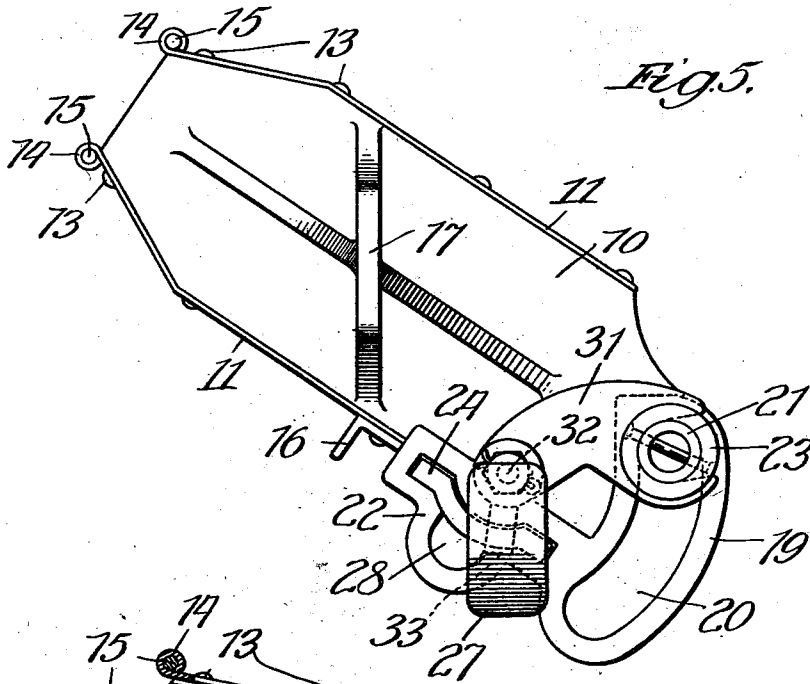


Fig. 5.

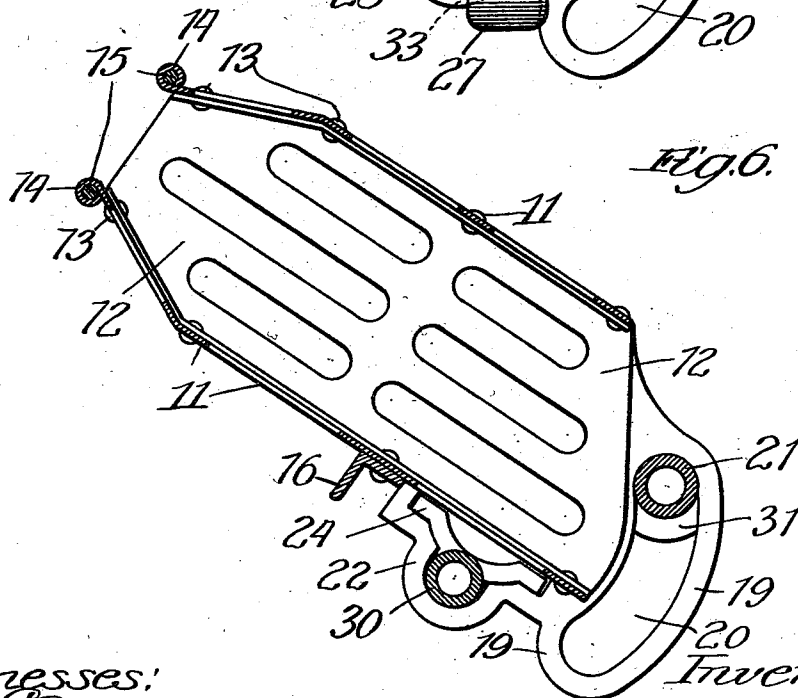


Fig. 6.

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4 SHEETS—SHEET 4.

Fig. 7.

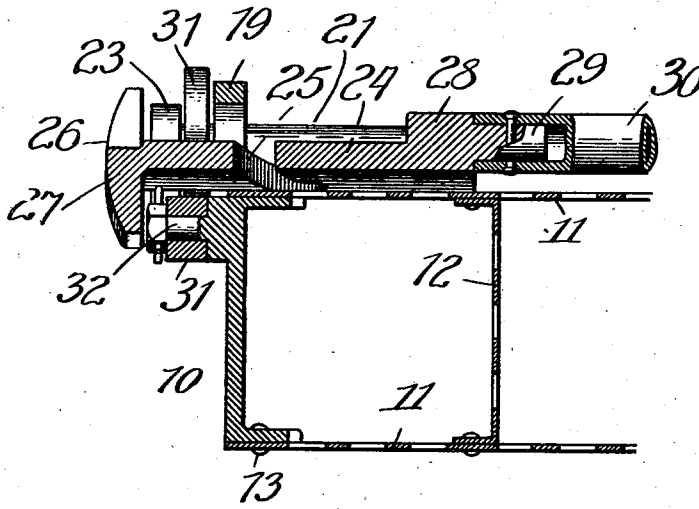


Fig. 8.

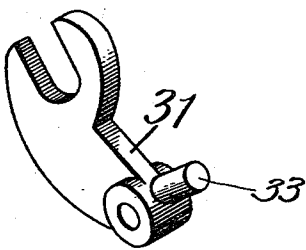
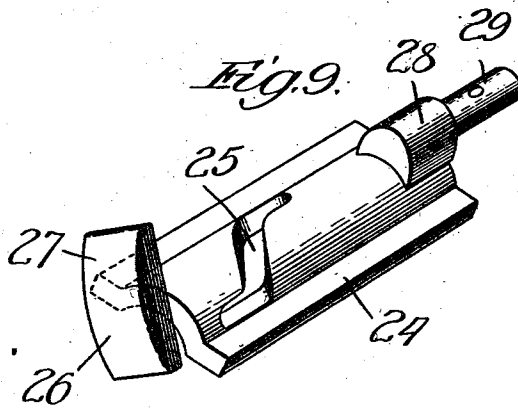


Fig. 9.



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UNITED STATES PATENT OFFICE.

SIGMUND L. GOLDMAN, OF CHICAGO, ILLINOIS.

BOTTLE-RACK.

1,012,843.

Specification of Letters Patent.

Patented Dec. 26, 1911.

Application filed October 5, 1911. Serial No. 653,073.

To all whom it may concern:

Be it known that I, SIGMUND L. GOLDMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Bottle-Racks, of which the following is a specification.

The present invention relates to an improvement in racks for receiving bottles and carrying them through a washing or soaking machine, of the type of the machine exemplified in Letters Patent No. 920,564, granted to me May 4, 1909, and automatically discharging them from the machine after undergoing its cleansing operation.

More particularly, my present invention is designed as an improvement upon the construction of the rack of my Patent No. 966,008, dated August 2, 1910; my primary object being to provide for automatically operating the carrier-gate, to close the rack for confining the bottles while traveling through the machine to the point of their discharge and to open it for the discharge at that point of the bottles, by durable and positively-acting means, thereby to avoid the use of spring-mechanism for controlling the gate, which tends to get out of order and is insufficiently reliable in operation.

In the accompanying drawings, Figure 1 is a broken view in elevation of my improved rack, showing, in a diagrammatic way, cams interposed in the paths of means at opposite ends of the gate for opening the latter in one position of the rack in traveling through the cleansing machine, and thereafter closing it; Fig. 2 is a plan view of the rack; Fig. 3 is an end view of the rack, showing the angle of inclination at which it is supported on a pair of endless carrier-chains of which one is illustrated by dotted representation, and also showing the direction in which it extends when at one side of the machine; Fig. 4 is a section on line 4, Fig. 1; Fig. 5 is a view of the rack like that presented in Fig. 3, but showing it extending in the reverse direction, or that in which it extends when on the opposite side of the machine; Fig. 6 is a longitudinal vertical section through the rack as represented in Fig. 5; Fig. 7 is a broken section on line 7, Fig. 3; Fig. 8 is a perspective view of one of the two similar levers fulcrumed on opposite ends of the gate-forming tubular bar for carrying the cam-engaging fingers, and Fig. 9 is a similar view

of one of the two similar connected gate-locking and operating slotted cam-heads provided on the rack to work upon one face thereof near its opposite ends.

The preferred general construction of the body of the rack is the same as that set forth in said former Patent No. 966,008, comprising the two similar tapered end-heads 10, 10 and perforate sides 11, 11 forming the open base of the rack, with perforated partitions 12 at intervals between the sides, to which they are shown to be fastened by rivets at 13. At the open base of the rack the edges of the sides 11 are tubularly beaded, as shown at 14, with rods 15 confined in the beads for reinforcement; and a reinforcing angle-bar 16 is riveted to the face of one side to extend across it for a similar purpose. Centrally from the outer faces of the opposite heads 10 project reinforced perforated ears 17 adapted to be riveted to the endless chains forming the vertically-traveling conveyer 18 of the machine, substantially as shown in said Patent No. 920,564. Each head 10 is provided on its wider end, preferably as an integral part thereof, with a bracket 19, forming an arc-shaped guiding-loop 20 at that end of the rack for the gate 21 and an arched guiding-loop 22 on the edge of the head for a cam-slotted head 24, hereinafter described. The gate 21 is shown as a cylindrical tubular bar projecting at its ends through the guides 20, which support it and in which it is confined against longitudinal shifting by collars 23 secured about its projecting ends. The cam-slot 25 is alike in each head 24, being formed with an arc-shaped central section and straight end-sections, as most clearly shown in Figs. 1 and 9; and each cam-head has formed on its outer end a shoe 27 having a convex face 26, and centrally on its inner end a boss 28 with a stud 29 projecting from it. The two studs 29 enter and are rigidly fastened in the opposite ends of a tube 30 to unite the two cam-heads 24 and cause them to move together. Each end of the gate-forming bar 21 is embraced, between the collar 23 thereon and the outer face of the adjacent head 10, by the forked end of a curved lever 31 fulcrumed at its opposite end on a stud 32 projecting from that face of the rack-head and having a finger 33 projecting at a suitable angle from its fulcrumed end to project through and work in a cam-slot 25.

In the use of my improved rack it forms, in the manner shown and described in said Patent No. 920,564, one of an endless series of racks extending between chains forming a vertically-traveling endless conveyer, to which they are fastened at the ears 17, in the present instance to alternate links of each chain. Into the path of the shoes 27, or projections on the cam-heads, at the rear or filling side of the machine projects a cam 34 (Fig. 1); and a similar cam 35, but inverted relative to the cam 34, projects, at the same side of the machine, into the path of the opposite shoes 27. A third cam (not shown but like the cam 34) projects into the path of the shoes into which the cam 34 projects, at the discharging side of the machine. When, in the travel of a rack, the shoe on one end thereof encounters the cam 34, the latter bears against that shoe to force the cam-heads 24 in the direction to cause the cam-slots 25 by their action against the fingers 33, to shift the latter from corresponding straight ends of the cam-slots to the opposite straight ends thereof, thereby turning the levers 31 on their fulcrums to throw the gate 21 to its rack-opening position represented in the drawing. This occurs on the rear or filling side of the machine; and while the rack is thus open, an attendant fills its pockets, formed by the partitions 12, each with a bottle introduced therein neck foremost. Upon leaving such filling position, the shoe 27 on the opposite end of the rack encounters the cam 35, which forces the cam-heads in the direction opposite that described, to swing the gate back to its normal closing position of extending centrally along the open mouth of the rack. In undergoing the operation for opening the gate to fill a rack, the latter would extend as represented in Figs. 3 and 4. The continued travel of the rack, after this closure of its gate, brings it, to extend as represented in Figs. 4 and 5, to the discharge-side of the machine, where the shoe on its end previously acted on by the cam 34 encounters the third cam, referred to, which forces the cam-heads 27 again in the direction to throw the gate to its rack-opening position and permit the automatic discharge of the cleansed bottles, which slide out of the opened rack-mouth. The rack remains thus open until, in its continued travel, it arrives on the filling side of the machine and the cam 34 is again encountered by the respective shoe to shift the cam-heads 27 in the direction to again effect throwing of the gate to its open position for the filling purpose. The arched form of the loops 22 expands them where the projecting ends of the fingers 33 traverse them to permit the fingers to pass.

As will be observed, the straight ends of the cam-slots 25, in which the fingers 33 are contained in the opened or closed condition of the gate, afford seats for the fingers, requiring considerable force to dislodge them into the inclined gate-throwing sections of the slots, whereby they serve to retain the gate in its thrown position against any tendency of the fingers to become dislodged from their seats and thus accidentally and improperly throw the gate.

What I claim as new and desire to secure by Letters Patent is—

1. In combination with a bottle-rack body, a gate supported near its ends to swing at right-angles to its support, and cam-heads connected with said gate and supported to be shifted lengthwise thereof for swinging it.

2. In combination with a bottle-rack body, a swinging gate for the mouth of said body, and positively-operating means for throwing the gate to open and close said mouth, comprising connected, longitudinally-shifting heads containing cam-slots and means connecting the gate with said slots.

3. In combination with a bottle-rack body, a gate for the mouth of said body, and means for throwing the gate to open and close said mouth, comprising connected, longitudinally-shifting heads containing cam-slots, levers on the rack-heads carrying said gate, and fingers extending from the levers into engagement with said cam-slots.

4. In combination with a bottle-rack body, a gate for the mouth of said body, and means for throwing the gate to open and close said mouth, comprising connected, longitudinally-shifting heads, cam-slots in said heads having intermediate curved sections and straight end-sections, levers fulcrumed on the rack-heads and carrying on corresponding ends the gate, and fingers extending from the levers into the cam-slots.

5. In combination with a bottle-rack body, a gate-bar for the mouth of said body, and means for throwing the gate to open and close it, comprising brackets on the rack-heads containing arc-shaped loops in which the gate-bar is movably confined near its opposite ends, and head-guiding loops, connected heads movably supported in said guiding-loops and having shoes projecting from their outer ends, cam-slots in the heads having intermediate curved sections and straight end-sections, levers fulcrumed on the rack-heads to carry the gate-bar, and fingers extending from the levers into the cam-slots.

SIGMUND L. GOLDMAN.

In the presence of—
R. A. SCHAEFER,
JOHN WILSON.