H. J. BROECKER.

BOTTLE WASHING MACHINE.

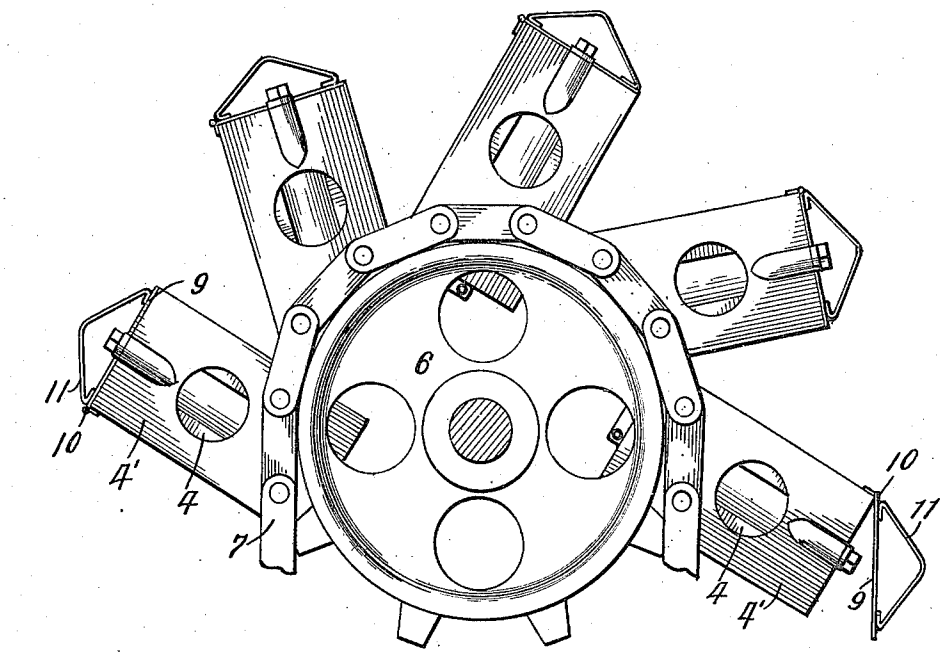
APPLICATION FILED MAR. 12, 1910. RENEWED NOV. 10, 1910.

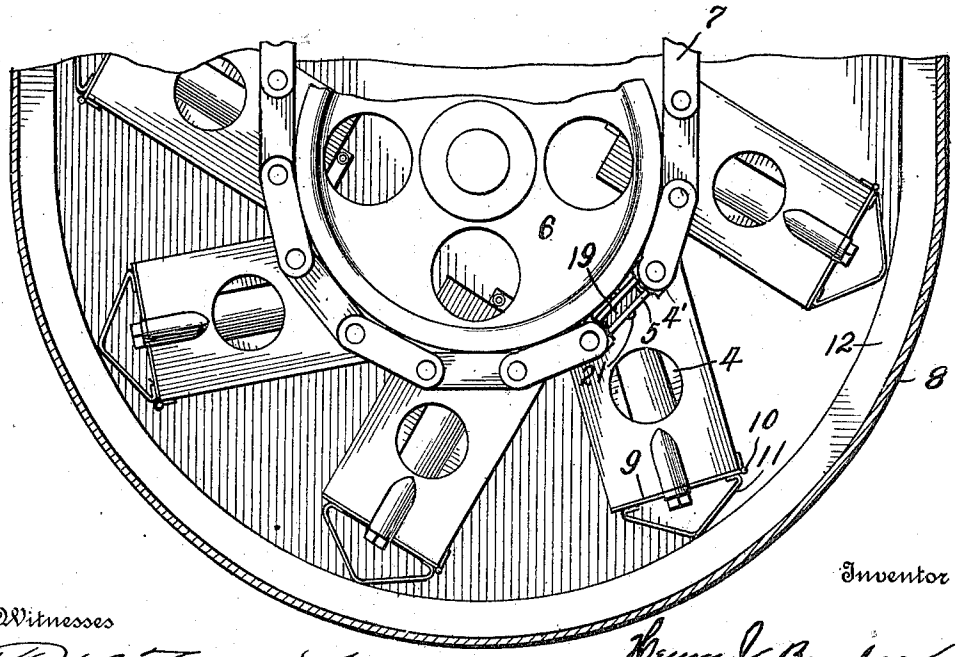
984,069.

Patented Feb. 14, 1911

2 SHEETS—SHEET 1.

Fig. 1.





Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

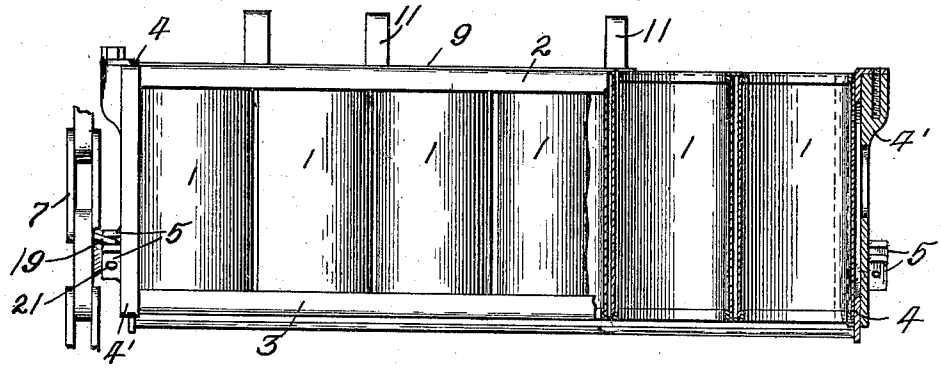

Fig. 3.

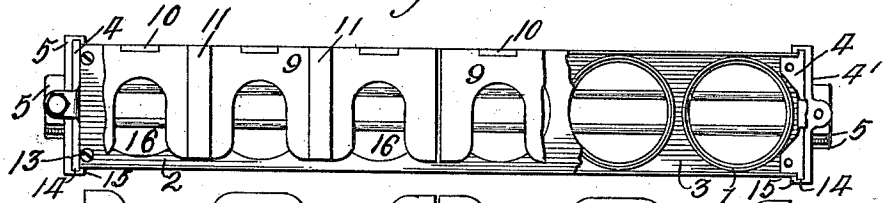

Fig. 4.

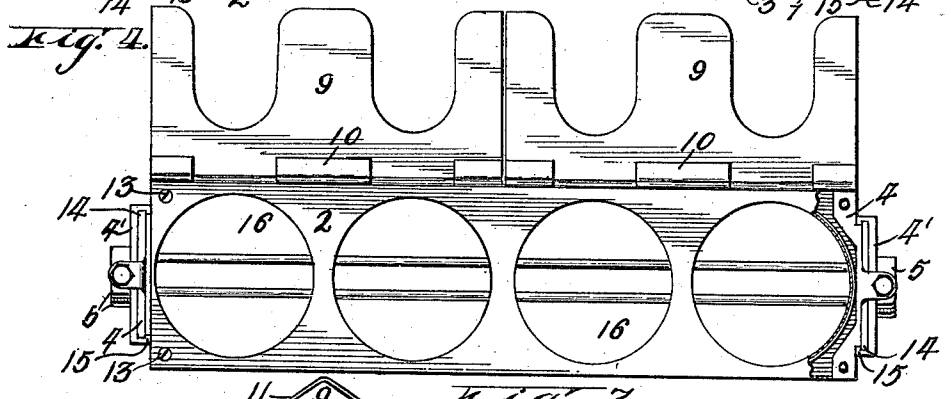

Fig. 5.

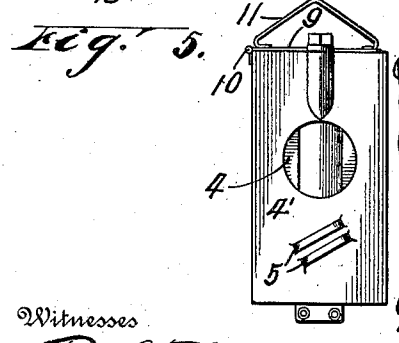

Fig. 7.

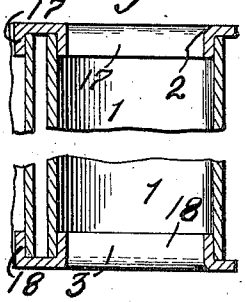

Fig. 6.

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UNITED STATES PATENT OFFICE.

HENRY J. BROECKER, OF WAUKEGAN, ILLINOIS, ASSIGNOR OF ONE-THIRD TO EDWIN P. HAUK, OF MILWAUKEE, WISCONSIN, AND ONE-THIRD TO WILLIAM C. DOLEN, OF WAUKEGAN, ILLINOIS.

BOTTLE-WASHING MACHINE.

984,069. Specification of Letters Patent. Patented Feb. 14, 1911.

Application filed March 12, 1910, Serial No. 548,983. Renewed November 10, 1910. Serial No. 591,676.

To all whom it may concern:

Be it known that I, HENRY J. BROECKER, a citizen of the United States, residing at Waukegan, county of Lake, and State of Illinois, have invented new and useful Improvements in Bottle-Washing Machines, of which the following is a specification.

My invention relates to improvements in that class of bottle washing machines in and by which a plurality of bottle crates are suspended at their respective ends from a pair of endless sprocket chains, which chains are each suspended from a pair of sprocket wheels within a water tank, in such a manner that as said wheels are revolved, said bottle racks will be submerged and carried by said chains down one side of said tanks and up the other, and the bottles thereby cleansed, and my present invention pertains more especially, among other things, to the construction—1st, of the end members of the bottle supporting racks by which racks of various widths corresponding with the various sizes of bottles may be used in the same machine, and 2nd, to the construction of the sheet metal cylinders and cylinder supporting members of the rack, whereby any one or more of said cylinders may be readily removed and replaced without changing or injuring the other parts of the rack, and whereby a given sized machine may be used for washing all of the various sizes of bottles and the cost of keeping the racks in repair is reduced to the minimum.

The construction of my invention is explained by reference to the accompanying drawings, in which—

Figure 1 is an end view, part broken away, showing a series of bottle racks, rack supporting chains and chain supporting wheels in connection with a water tank, which tank is shown in section. Fig. 2 is a side view, part in section, of a bottle rack, showing a portion of one of the suspension chains and the device for connecting the rack with such chains. Fig. 3 is a top view of the rack shown in Fig. 2. Fig. 4 is a top view of the rack as it is made for larger bottles than those shown in the previous figures. Fig. 5 is a front view of one of the end members of the rack, which is adapted to be permanently connected with the supporting chain. Fig. 6 is a perspective view of one of the bottle cylinders removed from the end members of the rack, and Fig. 7 is a vertical section, showing the manner of retaining the cylinders 1 between the horizontal members 2 and 3 of the bottle rack.

Like parts are identified by the same reference numerals throughout the several views.

It will be understood that bottle racks comprising a series of bottle receiving cylinders 1, horizontal upper member 2, horizontal lower member 3 connected together by end members 4, chain supported end members 4′ provided with lugs 5, have previously been suspended from sprocket wheels 6, 6, by a pair of sprocket chains 7, within a water tank 8, and that the bottles to be washed have been retained in said cylinders by covers 9, which are secured to one edge of the upper member 2 by hinges 10; also that said covers 9 have previously been provided with contact bearings 11, which, as the bottles are moved through the tank, are adapted to bear against the inner edge of the radial rib or flange 12, whereby the bottle retaining covers are retained in their closed position and the bottles prevented from escaping therefrom as they are drawn upwardly from the tank by said chains. In view of the foregoing, invention in this application is predicated more especially upon the improved construction of such sheet metal cylinders 1, the upper and lower members 2 and 3, removable end members 4, and the device for connecting crates of various sizes with the fixed members 4′, all of which end members 4′ are made of a predetermined width, whereby crates of various widths required for bottles of different sizes may be suspended from the same fixed end members 4′ and the necessity of having different machines for washing bottles of different sizes as heretofore is thereby avoided, while the cylinders 1 are so connected with the upper and lower members 2 and 3 that any one or more of said cylinders may be readily removed from and replaced between said end members by simply removing the retaining screws 13 from the upper horizontal member 2.

In bottle racks as heretofore constructed, the interlocking flanges 14 of the end members varied in width according to the width

of the rack and as a consequence, racks of but one size could be used in connection with one set or series of fixed end members 4'. By my improvement, however, the interlocking flanges 14 are all made of uniform width to conform to the grooves of the flanges 15 of said end members 4'.

Referring to Fig. 3, it will be noticed that a crate of a given length is made for six bottles of the smaller size, while the crate shown in Fig. 4 is made for four bottles of a larger size, and that by the construction shown in Fig. 4, the end members 4 extend outwardly toward the right and left past the fixed end members 4', and that said interlocking flanges 14, 14, of the end members 4, are adapted to engage in grooves of said flanges 15, 15, regardless of the width of the racks or the size of bottles used therein.

Heretofore it has been common to extend the respective ends of the bottle retaining cylinders 1 through apertures 16 in both the upper and lower members 2 and 3, when the respective ends of said cylinders have been turned over against the outer surfaces of said upper and lower members, so as to retain said cylinders in place in said apertures. By my present improvement, however, the cylinders 1 do not extend through said apertures but instead terminate at their respective ends against the opposing inner surfaces of said upper and lower members, and said cylinders are retained in place in said apertures by the annular inwardly extending flanges 17 and 18 of said upper and lower members 2 and 3, as more clearly shown in Fig. 7, whereby it is obvious that by removing the screws 13, the upper horizontal member 2 may be withdrawn from the rack, when any one or more of said cylinders 1 may be readily removed and replaced with others without destroying or in any way affecting any of the other parts of the rack. The lugs 5, 5, are connected with the chains 7, 7, by the laterally projecting lugs 19 formed on the inner side of the next adjacent links and said lugs 19 are retained between the lugs 5, 5, by the bolts 21, as shown in Fig. 2 and Fig. 3.

In view of the fact that the cylinders 1 are made of thin sheet metal, which is liable to rust in a short time and that the other parts of the machine are of more durable and substantial construction, it becomes of great importance to be able to remove such cylinders and replace the same with others without injuriously affecting such other cooperating parts, which desirable object is conveniently accomplished by the device shown at a minimum expense.

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

1. In a device of the described class, a bottle rack comprising a plurality of detachable cylinders vertically disposed between a pair of horizontal members provided with apertures registering with the openings in said cylinders, a pair of transversely arranged end members connected at their respective ends with said horizontal members, said cylinders terminating at their respective ends against the opposing inner surfaces of said upper and lower horizontal members, said horizontal members being provided with annular inwardly extending flanges adapted to bear against the inner vertical walls of said cylinders, and means for detachably connecting the end members of said rack with a pair of rack supporting chains.

2. In a bottle washing machine of the described class, the device for interchangeably connecting bottle racks of different widths with a pair of revoluble rack carrying chains consisting in the combination with the interlocking flanges of the end members which are permanently connected with said chains, of detachable rack end members of various widths conforming to the various widths of said racks, the members of said racks being provided with flanges conforming in width and adapted to interlock with the flanges of the chain supported end members.

In testimony whereof I affix my signature in the presence of two witnesses.

HENRY J. BROECKER.

Witnesses:
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CLARENCE E. HICKS.