A. J. RICE & C. S. ADAMS.

BOTTLE CASE OR CRATE.

APPLICATION FILED APR. 4, 1908.

933,266.

Patented Sept. 7, 1909.

2 SHEETS—SHEET 1.

Fig. 1,

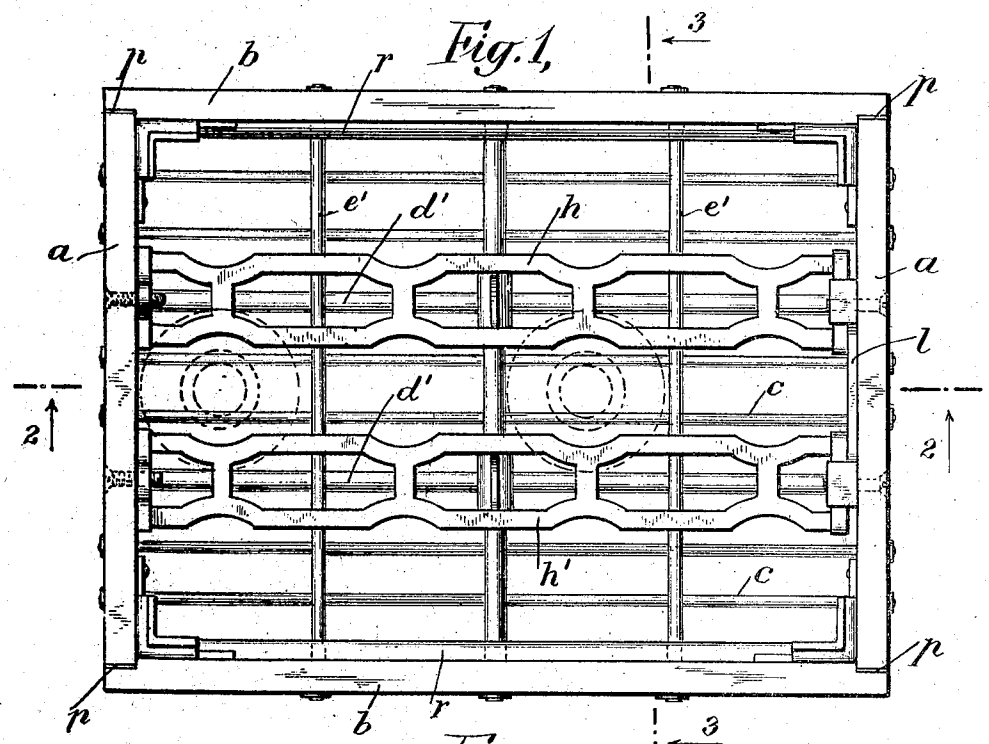
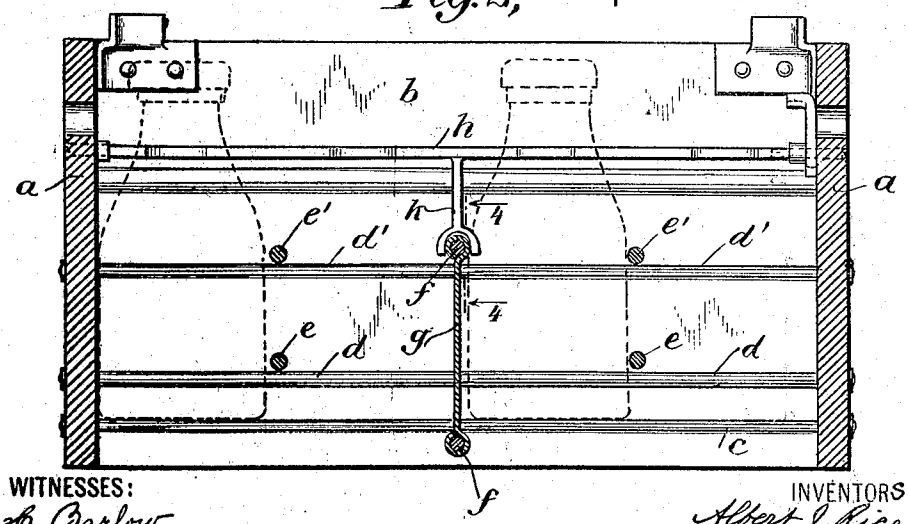


Fig. 2,



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Fig. 3,

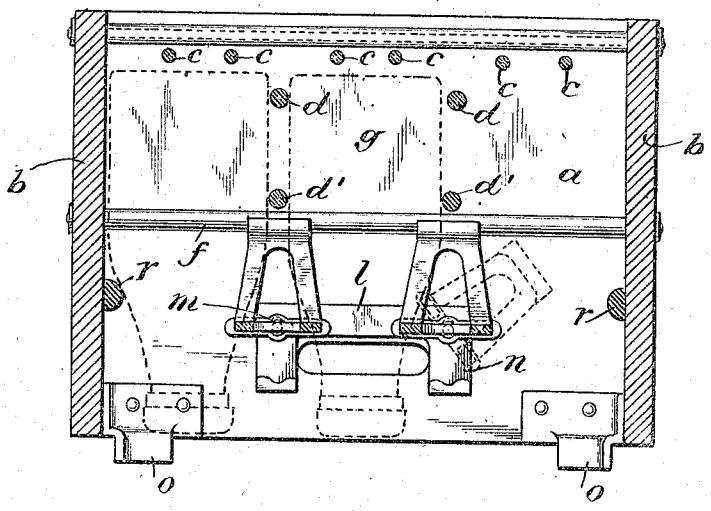


Fig. 4,

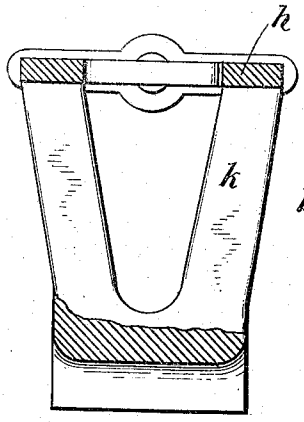
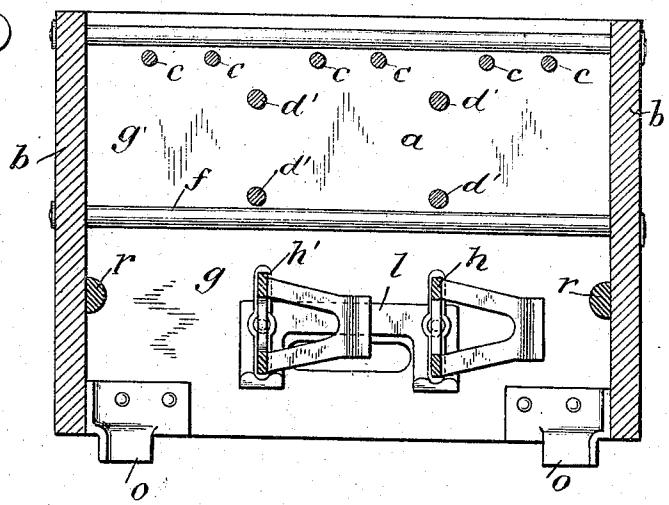


Fig. 5,



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UNITED STATES PATENT OFFICE.

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BOTTLE CASE OR CRATE.

933,266. Specification of Letters Patent. Patented Sept. 7, 1909.

Application filed April 4, 1908. Serial No. 425,143.

To all whom it may concern:

Be it known that we, ALBERT J. RICE and CHARLES S. ADAMS, citizens of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Bottle Cases or Crates; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

In Letters Patent No. 804,081 granted to us on November 7th, 1905, we have illustrated and described a bottle case or crate of the general class to which the present invention is applied. These cases or crates are used in the handling of bottles, (for example, milk bottles) as receptacles for the bottles during washing, storing, filling and delivering. It is desirable that such a case or crate should be provided with means for holding the bottles in place when the crate is inverted in order that the crates may be stored in an inverted position so that the bottles drain themselves and there is no possibility of dirt or dust or foreign substances falling into the bottles. For the purpose of so retaining the bottles in the crate when the crate is inverted we have provided retaining guards of the type hereinafter described.

In the drawings we have illustrated the improved retaining guards as applied to a crate of the particular type illustrated in the patent above mentioned, though, as will readily be understood, the retaining guards may be applied to various types of crates. Furthermore, we have added to the crate projecting feet at the upper corners, of such character that the feet on one box fit within the corners of the box next below it when the crates are inverted and piled on top of one another. We have also added metal strips at the edges of the end pieces of the box to strengthen them and prevent splitting, which is likely to occur because of the fact that the crates during the washing of the bottles are subjected to the action of boiling water and steam, and during the storing and delivery they are subjected to rough handling.

Referring to the drawings, in which the same reference characters indicate like parts throughout, Figure 1 is a top plan view of the improved crate; Fig. 2 is a longitudinal section on the line 2—2 of Fig. 1; Fig. 3 is a section on the line 3—3 of Fig. 1; Fig. 4 is a section of one of the retaining guards showing the depending locking foot partly in section on the line 4—4 of Fig. 2, and Fig. 5 is a view similar to Fig. 3 showing the retaining guards in their open position.

The crate comprises an open frame made up of the end pieces *a* and the side pieces *b*, and having an open-work bottom made up of spaced longitudinal rods *c*. The interior of the case is divided into separate pockets for the reception of the individual bottles by the longitudinally extending rods *d* and *d'* and the transversely extending rods *e* and *e'* and by a central cross-partition *g*, which in the preferred form is made of metal and has a bead at the top and bottom and is supported and held in place by the cross-rods *f* and *f'* passing through the beads. As indicated in the drawings, the longitudinal rods *c*, *d* and *d'* pass through the partition *g* and are supported thereby intermediate their ends, the rods *c* lying immediately above the lower cross-rods *f*.

The construction thus far described is that of our prior patent above mentioned, and is the construction which we prefer to use, though, as has already been pointed out, the utility of the attachments now to be described is not in any way limited to that particular form of crate. It will be observed that the crate illustrated is adapted to hold one dozen bottles which is the size commonly employed, but obviously the crate may be made of any desired size.

For the purpose of retaining the bottles within the crate when the crate is inverted, we provide the retaining guards *h* and *h'* extending longitudinally of the crate and recessed along their edges at proper intervals to engage the upper portions of the bottles. Each of these retaining guards is provided with a depending locking foot *k* having a grooved cam surface at its lower end as indicated more particularly in Fig. 4. The retaining guards are mounted on journals in the ends of the crate so that they may be swung into and out of the retaining posi-

tion in which they over-lap the bottles, and when they are so swung into the retaining position the grooved cam surface at the lower ends of the locking foot takes over the cross-rod or upper bead of the cross partition as shown in Figs. 2 and 3 of the drawings. The length of the foot *k* is such that when the retaining guard is swung into the position indicated in these figures the guard is raised slightly at the center, thereby exerting a spring pressure through the foot *k* on the cross-rod or bead so that the parts are securely locked in position. These retaining guards may be so mounted in the crate that their flat ends have a frictional engagement with the end pieces of the crate so that the friction will serve to hold the retaining guards in their releasing position with sufficient security, but we have found that there is a tendency for the end-pieces of the crate to be worn by the repeated movement of the retaining guards, and thereby the engagement is reduced to such an extent that the retaining guards will be loose, and we, therefore, find it desirable in some cases to supply a definite means for retaining the guards in their releasing position. To this end, we have adopted the means indicated on the drawings, which comprise plates extending along one end piece of the crate and provided with slots *m* through which the axles of the retaining guards pass, so that the plates *l* are supported by these axles. The plates *l* have at each end an upwardly extending arm *n* turned over at the top and provided with curved under surfaces as indicated in Figs. 3 and 5. When the retaining guards are turned into their release position as indicated in Fig. 5, the end pieces of the retaining guards engage these curved surfaces and lift the plate *l* until the end pieces of the guards engage the central grooves of the arms *n* thereby retaining the guards in their releasing position.

Extending along the side pieces of the crate, and in the position indicated in Figs. 1, 3 and 5, are provided longitudinal rounded strips *r* which coöperate with the retaining guards to hold in place the bottles in the side pockets when the crate is inverted, as will be understood from the illustration in Fig. 3, which shows a bottle in dotted lines. It will also be observed from this figure that the retaining devices are so placed that when the crate is inverted the bottles fall away from the bottom to some extent. This is a convenient arrangement in that it avoids the necessity of making a close fit of the engaging edges of the retaining guards against the sides of the bottle so that the crate may hold bottles of varying sizes and shapes.

In order that the crates may be readily stacked one upon another in their inverted position, we provide the feet *o* at the corners of the crate of such shape that the feet are adapted to fit into the corners of the crate immediately below.

For the purpose of strengthening the end-pieces of the crate and preventing the splitting thereof, we attach to the vertical edges thereof to which the side pieces are nailed, metal strips *p* as indicated in Fig. 1. Obviously, if the construction is changed so that the end-pieces of the crate are nailed to the side pieces, the metal plate will be secured to the vertical edges of the side pieces.

What we claim is:—

1. A case for holding bottles comprising a series of cross-rods forming separate pockets for the reception of individual bottles, and retaining guards to prevent the bottles from falling out of the case when the case is inverted, said retaining guards consisting of plates overlapping the bottles when in locking position, and mounted to swing into a releasing position to permit insertion or removal of the bottles, said plates having depending locking feet engaging with a cross rod of the case; substantially as described.

2. A case for holding bottles comprising a series of cross-rods forming separate pockets for the reception of individual bottles, and retaining guards to prevent the bottles from falling out of the case when the case is inverted, said retaining guards consisting of plates overlapping the bottles when in locking position, and mounted to swing into a releasing position to permit insertion or removal of the bottles, said plates having depending locking feet engaging with a cross rod of the case, and the sides of the case having longitudinal strips coöperating with the said plates; substantially as described.

3. In a case for holding bottles, a retaining guard consisting of a plate overlapping the bottles when in retaining position and mounted to swing into releasing position to permit insertion or removal of the bottles, a cross-piece in the case below the guard, and a dependent foot on the guard having locking engagement with the cross-piece; substantially as described.

4. In a case for holding bottles, a retaining guard consisting of a plate overlapping the bottles when in retaining position and mounted to swing into releasing position to permit insertion or removal of the bottles, a cross-piece in the case below the guard and a dependent foot on the guard having a cam surface for engaging the cross-piece to lift slightly the center of the guard, whereby locking engagement is attained; substantially as described.

5. In a case for holding bottles, a retaining guard consisting of a plate overlapping the bottles when in retaining position and

mounted to swing into releasing position to permit insertion or removal of the bottles, a cross-piece in the case below the guard, a dependent foot on the guard having locking engagement with the cross-piece, and means for locking the guard in its releasing position; substantially as described.

6. A bottle case or crate comprising an open frame made up of wooden end pieces and side pieces fastened together by nails or screws, and having spaced rods supported in the end-pieces and side pieces to form a bottom, and a metal strip *p* at each joint between the end of one frame-piece and the abutting face of the attached frame-piece and through which the attaching nails or screws pass; substantially as described.

In testimony whereof we affix our signatures, in presence of two witnesses.

ALBERT J. RICE.
CHARLES S. ADAMS.

Witnesses to signature of A. J. Rice:
WILLIAM H. DAVIS,
LAURA B. PENFIELD.
Witnesses to signature of C. S. Adams:
GEO. D. SEARS,
MYRON S. HALL.