

April 11, 1944.

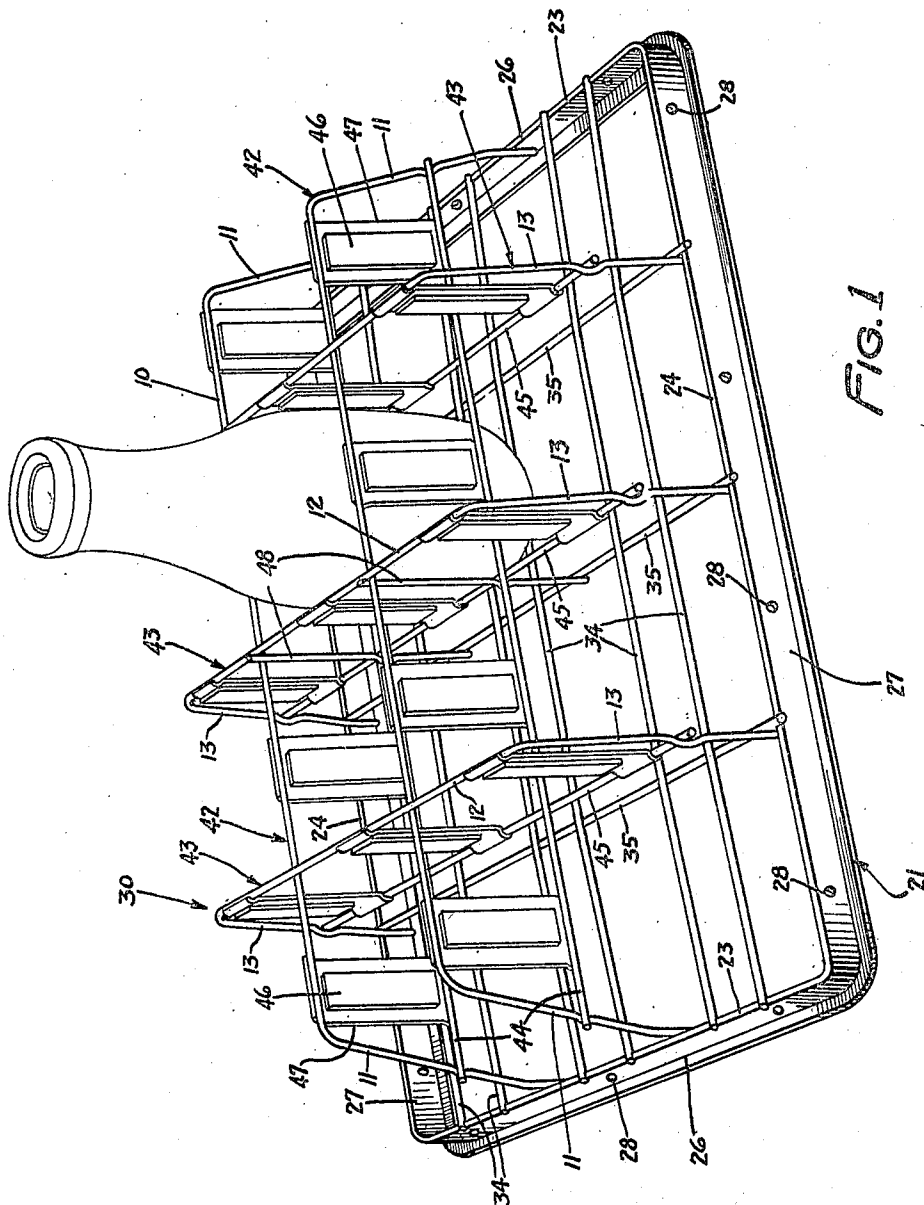
H. V. BOWMAN

2,346,205

CRATE

Original Filed Aug. 18, 1939

2 Sheets-Sheet 1



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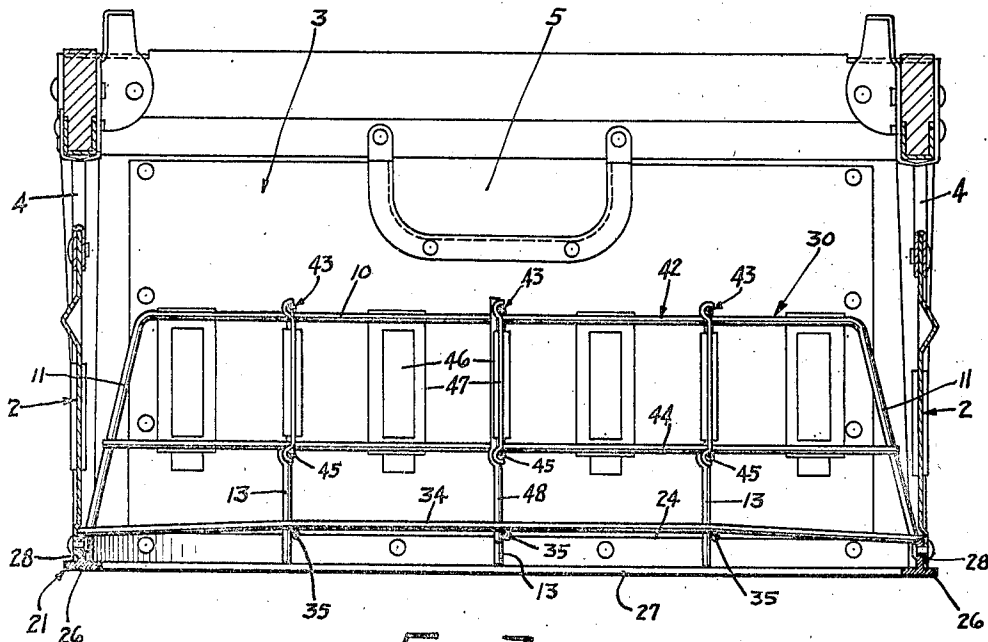


FIG. 3

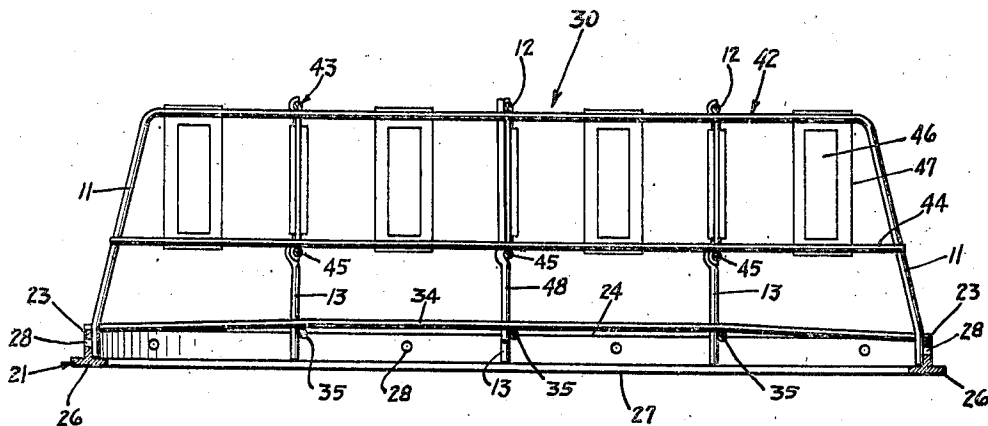


FIG. 2

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UNITED STATES PATENT OFFICE

2,346,205

CRATE

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Original application August 18, 1939, Serial No.
290,835. Divided and this application Decem-
ber 23, 1940, Serial No. 371,315

3 Claims. (Cl. 220—21)

This invention relates to new and useful im-
provements in bottle crates and more particular-
ly to the grid construction thereof. The pres-
ent application is a division of my application,
Serial No. 290,835, filed August 18, 1939, now
Patent No. 2,312,621.

An object of the present invention resides in
the unique construction of the grid which consti-
tutes the crate bottom and the separators for
bottles placed in the crate.

A further object is to provide a grid for a
bottle crate which may be completely constructed
independently of the walls of the crate and in-
serted in the lower portion of the crate and
suitably secured to the walls thereof, as a unitary
structure.

A further object is to provide a grid compris-
ing an annular bottom rail, preferably of T-
shaped cross-section, having its intermediate web
extending upwardly and having a plurality of
horizontally disposed metallic elements secured
thereto to provide the bottom for the crate, and
a plurality of upright bottle spacing elements
being secured to said rail and arranged in crossed
relation and cooperating with the walls of the
crate to provide a plurality of bottle receiving
compartments.

Other objects of the invention reside in the
simplified construction of the grid which com-
prises a bottom supporting rail and a plurality of
wire elements having their terminals suitably
secured thereto in such manner as to provide a
bottom for the crate and a plurality of upright
bottle separators; in the provision of suitable
cushioning elements on the bottle separators;
and, in the provision of a unitary grid structure
comprising an annular bottom rail adapted to be
detachably secured to the lower edge portions of
the walls of a crate, whereby said bottom rail,
in addition to providing the sole support for the
bottle separators, also provides a bottom support-
ing rail for the walls of the crate.

Other objects of the invention will appear from
the following description and accompanying
drawings and will be pointed out in the annexed
claims.

In the accompanying drawings there has been
disclosed a structure designed to carry out the
various objects of the invention, but it is to be

understood that the invention is not confined to
the exact features shown as various changes may
be made within the scope of the claims which
follow.

In the drawings:

Figure 1 is a perspective view showing my
improved grid detached from the crate;

Figure 2 is a sectional elevation of Figure 1;
and

Figure 3 is a sectional elevation of a crate
showing the grid in position therein.

In the selected embodiment of the invention
here shown, there is illustrated in Figure 3, for
purposes of disclosure, a crate comprising end
walls 2 and side walls 3, shown provided with
suitable hand holes 4 and 5, respectively, to
facilitate moving the crate about from place
to place.

The important feature of the present inven-
tion resides in the novel construction of the
bottle supporting and separating means provid-
ed in the crate, which will hereinafter be referred
to as the grid, and is generally designated by the
numeral 30. The grid, as best shown in Figure 1,
comprises a bottom rail, generally designated
by the numeral 21, which defines the perimeter
of the grid, and comprises end wall portions 26
and side wall portions 27, having suitable aper-
tures 28 therein, to facilitate securing the rail
to the lower marginal edges of the end and
side walls 2 and 3 of the crate, as clearly illus-
trated in Figure 3. The grid may be convenient-
ly secured to the crate walls by suitable rivets or
bolts 22, indicated in Figure 3.

The grid, as best shown in Figure 1, comprises
a plurality of horizontally disposed rods 34,
which extend lengthwise of the crate and have
their terminals suitably secured to the upright
webs 23 of the end wall portions 26 of the bot-
tom rail. Relatively shorter rods 35 are disposed
in crosswise relation to the rods 34 and have
their terminals similarly secured to the webs
24 of the side wall portions 27 of the rail 21.
The cross rods 35 preferably pass under the rods
34 and provide a support for the intermediate
portions thereof to prevent said rods from de-
fecting, when bottles or other articles are
placed thereon. The rods 34 and 35 constitute

the bottom of the crate and provide the sole support for the bottles placed therein.

To separate the bottles from one another, suitable separators, generally indicated by the numerals 42 and 43, are provided on the grid 30, as best shown in Figure 1. The separators 42 extend lengthwise of the crate, and each is shown formed from a piece of suitable wire or rod, comprising an upper portion 10 having its end portions bent downwardly to provide legs 11 whose lower terminals are suitably secured to the end wall portions 26 of the rail 21. The separators 43 are similarly formed, and each comprises an upper horizontal portion 12 having depending legs 13 secured to the side wall portions 27 of the bottom rail 21. The rods 10 and 12 are thus in the form of inverted U's, as clearly shown in Figure 1. The inverted U-shaped separators 42 and 43 extend upwardly from the rail 21 into the crate, and are disposed in crossed relation, whereby they cooperate with the walls of the crate to provide a plurality of bottle receiving compartments, as will readily be understood by reference to the drawings.

Longitudinally extending rods 44 are secured to the intermediate portions of the legs 11 of the separators 42, and similar rods 45 are secured to the intermediate portions of the legs 13 of the separators 43. The rods 44 and 45 are disposed substantially in the planes of their respective U-shaped separators 42 and 43, and are preferably suitably secured together at the points where they intersect one another. The upper wire portions 10 and 12 of the separators are similarly secured together at their intersections, whereby a very rigid and substantial grid structure is provided, which may be completely assembled independently of the crate. In other words, the grid may be made independently of the walls of the crate, as the bottom-forming rods 34 and 35, and the separators 42 and 43, are supported entirely by the rail 21, as will readily be understood by reference to Figures 1 and 2. Suitable cushion elements, generally designated by the numeral 46 may be secured to the separators 42 and 43 of the grid to prevent the bottles from contacting directly with the metal thereof. The cushion elements may be secured to the wire elements by suitable plates 47, shown in Figure 1.

The novel grid herein disclosed is extremely simple and inexpensive in construction, as will be noted by reference to Figure 1. The rods forming the bottom of the grid and the separators for the bottles may be secured to the bottom rail 21 by welding or other suitable means and the rods are similarly secured together, as hereinbefore stated, whereby a very rigid light weight structure is provided. As shown in Figure 1, upright rods 48 may be interposed between and secured to the upper horizontal portions 10 and 12 of the separators 42 and 43 and the bottom cross rods 35, thereby forming in effect, a structural arch which greatly strengthens the intermediate portions of the bottom forming rods 34, as will readily be understood by reference to Figure 1.

All of the parts of the entire grid, including the bottom T-shaped rail 21, bottom forming rods 34, and the U-shaped rods forming the bottle separators 42 and 43, are welded or otherwise permanently secured together to provide a

unitary, self-supporting structure of great strength, which, when fitted into the crate and secured to the lower marginal portions of the walls thereof, does not exert any strains against the crate walls, when the crate is positioned on a floor, even should a heavy load be imposed thereon, as the entire load imposed on the grid is transmitted to the bottom rail 21, as will readily be understood by reference to Figure 3. Another advantage gained by constructing the grid independently of the walls of the crate is that it greatly minimizes and simplifies repair work, as there is little danger of damaging the grid, should one or more of the crate walls become damaged in handling. Should one or more of the crate walls become damaged, they may readily and conveniently be repaired, by simply detaching the grid from the crate as a unit, if necessary, whereby free access may be had to all of the crate walls.

In the accompanying drawings, I have shown the grid bottom and bottle separators as being formed of wires or small metallic rods, but it is to be understood that these parts may be made of other material, which may be found applicable for the purpose provided they are supported entirely on the bottom rail 21 of the grid, whereby the grid may be completely assembled as a unit independently of the crate walls.

I claim as my invention:

1. A crate comprising a plurality of walls, a bottle separating grid within the crate, said grid comprising an annular rail having an upright flange adapted to be secured to the lower edge portions of the crate walls, and whereby said rail may provide a supporting member for the lower portions of the crate walls, said rail having a plurality of bottle separating elements secured to and supported solely by the rail and, extending upwardly and inwardly therefrom into the crate and in unattached spaced relation to the crate walls and cooperating to provide individual compartments for receiving bottles, said bottle separating elements being supported by said rail independently of the crate walls.

2. A grid for a crate comprising a bottom rail having an upstanding flange, a plurality of metallic rods arranged in spaced relation lengthwise of the grid and having their end portions secured to said flange, whereby said rods provide the bottom of the grid, and a plurality of inverted U-shaped wire elements arranged in cross relation and having outwardly inclined legs the lower end portions of which are secured to said rail, said elements together with the walls of a crate providing a plurality of compartments adapted to receive bottles or other articles.

3. A grid for a crate comprising a bottom rail of T-shaped cross section having its central web extending upwardly, a plurality of metallic rods arranged in spaced relation lengthwise of the grid and having their end portions secured to said web, whereby said rods provide the bottom of the grid, and a plurality of bottle separating elements having their terminals secured to said rail and extending upwardly and inwardly therefrom and having upper horizontal portions arranged in crossed relation which together with the walls of a crate provide a plurality of bottle receiving compartments.

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