Nov. 21, 1950 O. F. ARTHUR 2,530,797

CRATE

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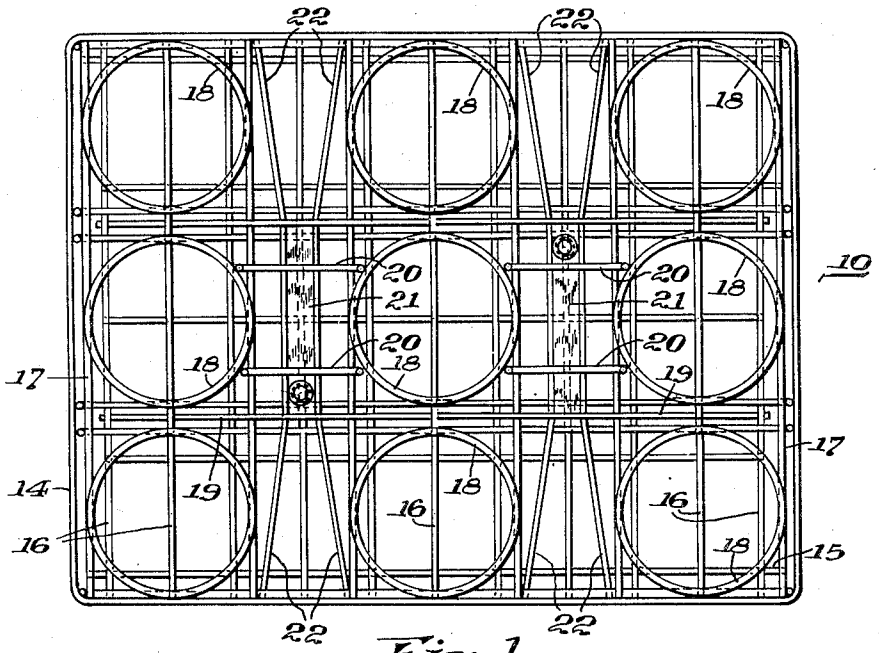


Fig. 1.

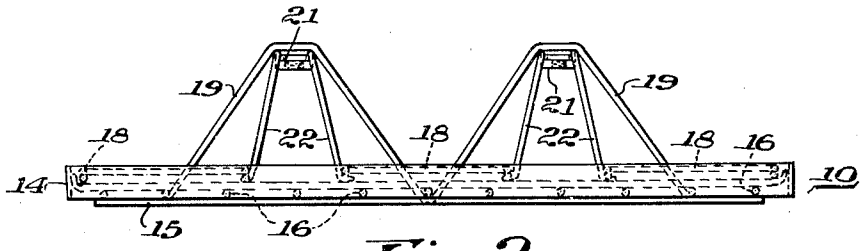


Fig. 2.

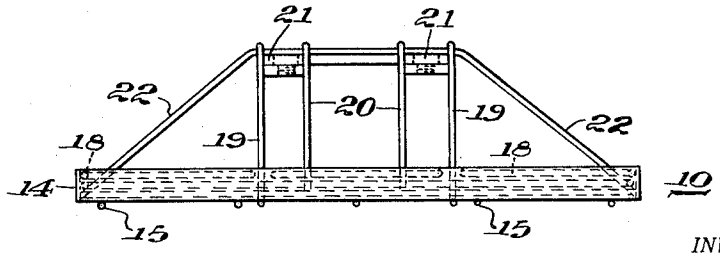


Fig. 3.

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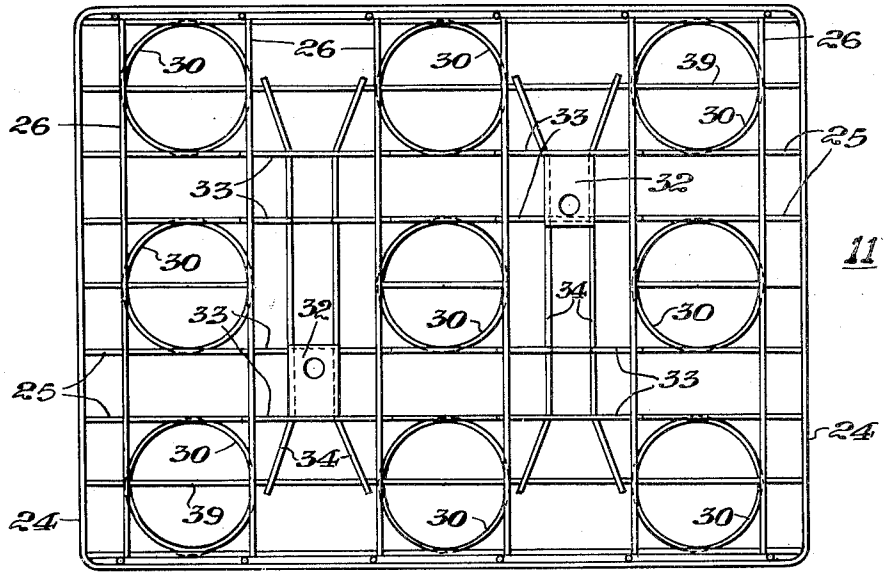


Fig. 4.

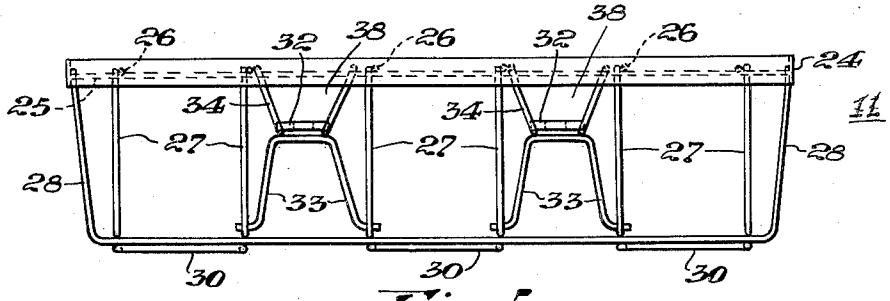


Fig. 5.

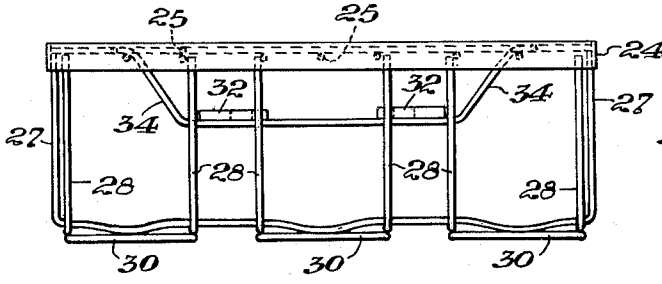


Fig. 6.

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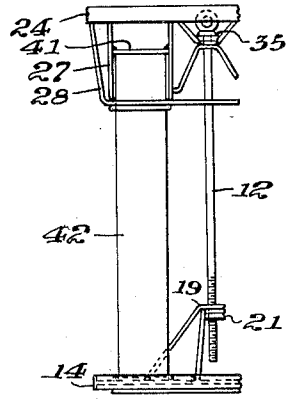


Fig. 8.

Fig. 7.

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Patented Nov. 21, 1950 2,530,797

UNITED STATES PATENT OFFICE

2,530,797

CRATE

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Application September 4, 1948, Serial No. 47,846

9 Claims. (Cl. 294—67)

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My invention relates to a crate of a form especially suited for use in transporting and storing munitions shells or other articles which can be held between a base and a cover that are adjustable perpendicularly to each other to engage end portions of the articles.

One object of my invention is to provide a crate or carrier of such form that it will be adequate to contain a plurality of articles in a unitary group for transport or storage, without the necessity of having the articles completely enclosed and which is adaptable to use with articles of various vertical dimensions.

Another object of my invention is to provide a crate of the character referred to which may be of light weight relative to the articles to be carried thereby and which is provided with hoisting-engaging elements of such form that they will be contained within the marginal vertical and horizontal planes of the crate when they are not in use, to facilitate stacking of the crates.

In the accompanying drawings, Figure 1 is a plan view showing the base portion of the crate; Fig. 2 is a side view; Fig. 3 is an end view; Fig. 4 is a plan view of the upper portion of the crate; Fig. 5 is a side view thereof; Fig. 6 is an end view; Fig. 7 is a side view showing the crate in use and as a container for shells, and Fig. 8 shows a modified form of crate.

As shown in Fig. 7, the crate comprises a base portion 10 and a combined cover and rack 11 held together by anchoring rods 12 to contain shells 13.

Referring first to Figs. 1, 2 and 3 which show details of the base 10, this base comprises a marginal metal band 14 that has heavy wires or rods 15 welded to its undersurface and wires or rods 16 and 17 welded to the band 14 and to one another, to thereby form lattice work for supporting the shells 13. Retaining rings 18 are welded to the upper surface of the mesh for supporting the lower ends of the shells against shifting laterally.

Tie rods 19 and 20 are welded to the base rods in generally crosswise relation to anchoring bars 21 that are threaded to receive the lower ends of the anchoring rods 12. Other tie rods 22 extend in generally crosswise relation to the bars 21 and the rods 19 and 20 and are welded thereto to assist in supporting the bars.

The cover 11 has a top sheet of lattice form that comprises an encircling metal band 24 to which are welded longitudinal and transverse rods or heavy wires 25 and 26. The cover sheet has depending therefrom a rack portion that

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comprises wires 27 and 28 that may suitably be of yoke-like form having their upper ends welded to the frame band 24, and welded to one another at their lower planes. Shell-retaining rings 30 are welded to the underfaces of the members 27—28 to encircle the upper ends of the shells 13.

Anchoring bars or plates 32 to receive the anchoring rods 12 are supported in the cover by stirrup or yoke-shaped brace rods 33 and 34 that are welded at their lower and upper ends respectively, to the rack and the cover sheet.

The anchoring rods 12 are in the form of eye bolts that have shoulders 35 formed thereon for engagement with the bars or plates 32 when the rods are screwed down to draw the cover and the base toward one another and to thereby securely grip or clamp the shells 13. Lifting links 36 are carried by the rods 12 for engagement with a crane hook 37. When the crane hook is not in use, and particularly when the crates are to be stacked on one another, the links can lie within the depressions or pockets 38, below the top plane of the cover.

It will be seen that the shells are held firmly against lateral and vertical movements and with their upper ends and below the topmost plane of the cover. Also, if cylindrical articles are to be carried, the rings 18 and 30 will be made of the required diameter, the wires 39 in the top of the cover serving to engage the upper ends of cylindrical or other shapes, the rings being formed to suit the articles to be carried.

Fig. 8 shows a form of structure wherein the upper and lower ends of articles 42 are held against lateral movements as in Fig. 7. The articles 42 can be long, or short (as in the case of battery cases, for example) and of any cross-sectional shape. A stop bar 41 limits upward movements of the articles 42 and reduces danger of damage to the upper ends of the articles through impacts on the cover, because of the clearance above 41.

While the crates can be made of steel rods or other suitable materials, if they are to be used around munition depots, it is desirable that they be made of non-ferrous material, aluminum alloy or other non-ferrous alloy, or of wood, so that when being pushed along a floor or stacked, sparks will not be created.

I claim as my invention:

1. A crate comprising a fabricated metal base having a plurality of retaining members on its upper face, to prevent lateral shifting of shells and the like that are placed in upright position

on the base, tie rods secured to the base and extending upwardly therefrom, bars attached to the upper ends of the rods and having vertically-disposed threaded holes, a cover having depending rack members in position to receive upper portions of the shells and to support them against lateral movements, the cover having a top sheet spaced above the rack members, and threaded anchoring rods extending through the cover and having threaded engagement at their inner ends with the said bars and at their outer ends having shouldered engagement with the cover, whereby the cover and base are detachably connected together to retain shells in the crate.

2. A crate comprising a fabricated metal base having a plurality of retaining members on its upper face, to prevent lateral shifting of shells and the like that are placed in upright position on the base, tie rods secured to the base and extending upwardly therefrom, bars attached to the upper ends of the tie rods and having vertically-disposed threaded holes, a cover having depending rack members in position to receive upper portions of the shells and to support them against lateral movements, the cover having a top sheet spaced above the rack members, threaded anchoring rods extending through the cover and having threaded engagement at their inner ends with the said bars and at their outer ends having shouldered engagement with the cover and being below the top surface of the cover, whereby the cover and base are detachably connected together to retain shells in the crate, and lifting links connected to the upper ends of the rods.

3. A crate as recited in claim 2, wherein there are depressions in the top of the crate, to receive the links when they are released from hoisting hooks.

4. A crate comprising a base having a plurality of retaining members on its upper face to prevent lateral shifting of shells and the like that are placed in upright position on the base, anchoring bars carried by the base, in elevated position with respect to the retaining members, a cover having depending rack members in position to receive upper portions of the shells and to support them against lateral and upward movements, the cover having a top sheet spaced above the rack members and anchoring rods detachably connecting the cover to the said bars and longitudinally adjustable with respect thereto.

5. A crate comprising a fabricated metal base having a plurality of circular rings on its upper surface, to receive the lower ends of shells and prevent lateral shifting thereof, a cover having depending rack members that include rings of smaller diameter than the first-named rings, in position to receive upper portions of the shells and to support them against lateral movements, the cover having a top sheet spaced above the rack members, means detachably connecting the cover to the base, the last-named means comprising an anchoring bar supporting in elevated position by the base, and an anchoring bar carried by the cover adjacent to its mid plane, together with a shouldered rod extending through one of the said bars and having threaded connection with the other bar.

6. A crate comprising a fabricated metal base having a plurality of retaining members on its upper face, to prevent lateral shifting of shells and the like that are placed in upright position

on the base, anchoring bars positioned in elevated position with respect to said retaining members, tie rods extending in downwardly and relatively flared relation and connected at their upper and lower portions to the bars and the base, respectively, a cover having a top plate of lattice form and a depending rack of metal rods welded to the top plate, the said rack having openings to receive the upper ends of shells, and means for detachably connecting the cover to the anchoring bars.

7. A crate comprising a fabricated metal base having a plurality of retaining members on its upper face, to prevent lateral shifting of shells and the like that are placed in upright position on the base, anchoring bars positioned in elevated position with respect to said retaining members, tie rods connected to the bars and the base, along angularly disposed lines between the retaining members and welded to the base, a cover having a top plate of lattice form and a depending rack of metal rods welded to the top plate, the said rack having openings to receive the upper ends of shells, and means for detachably connecting the cover to the base, the last-named means comprising tie rods depending through plates carried by the cover at an intermediate plane thereof and having threaded connection with the first-named bars.

8. A crate as recited in claim 7 wherein the rods are of an eye-bolt form and carry elongated links whose ends are movable upwardly through the top plane of the cover for connection of hoisting hooks.

9. A crate comprising a base having a plurality of retaining members on its upper face, to prevent lateral shifting of articles that are placed on the base, anchoring bars positioned in elevated position with respect to said retaining members, tie rods connected to the bars and the base and extending downwardly in relatively flared relation to points between the retaining members and there secured to the base, a cover having recesses in its upper side and having secured thereto and depending therefrom a rack that is provided with openings to receive the upper ends of the articles on the base, and threaded anchoring rods extending through the cover and having threaded connection near their lower ends with the anchoring bars, the rods having heads that lie within said recesses and having shouldered engagement with upwardly exposed surfaces on said rack.

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