

May 13, 1952

F. E. WHITE

2,596,881

MATERIAL STORAGE AND HANDLING CONTAINER

Filed March 21, 1950

2 SHEETS—SHEET 1

Fig-1

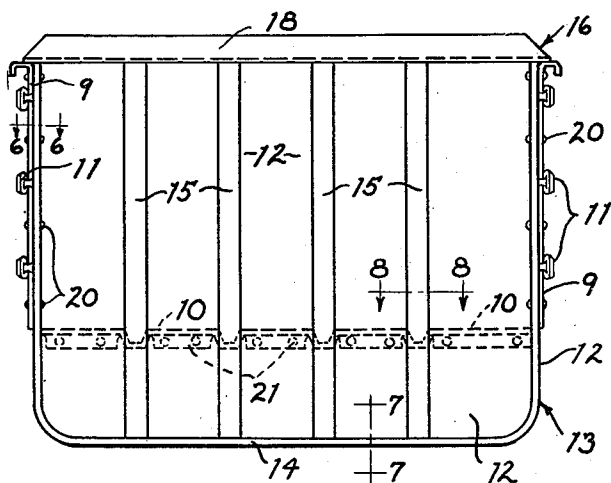
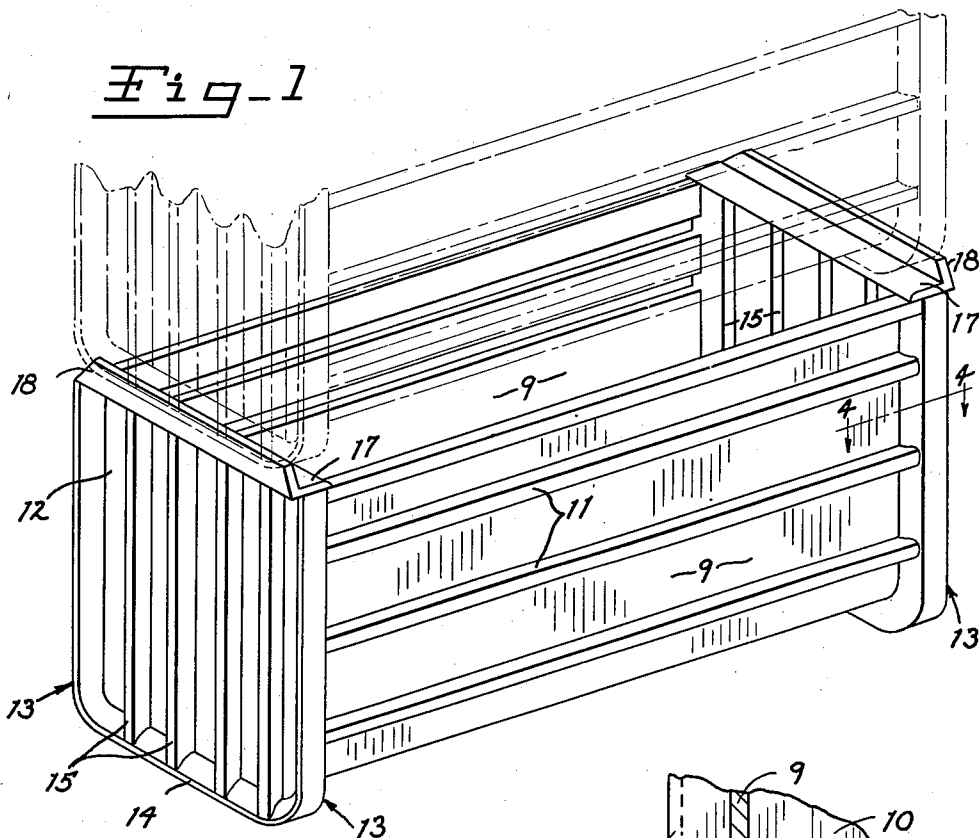


Fig-5

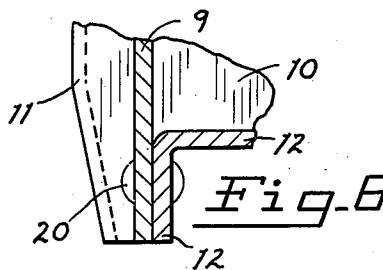


Fig-6

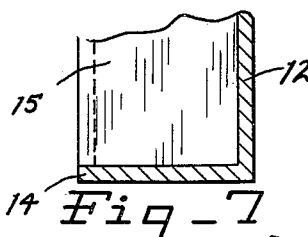


Fig-7

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2 SHEETS—SHEET 2

Fig-2

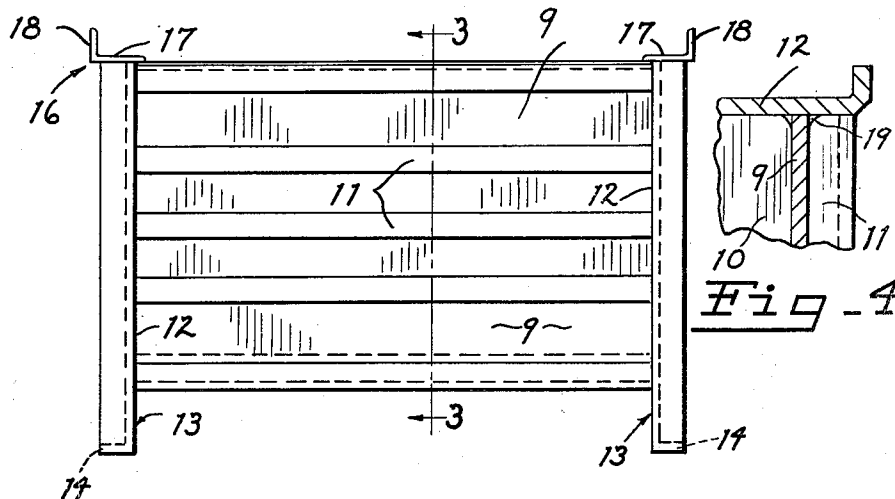


Fig-4

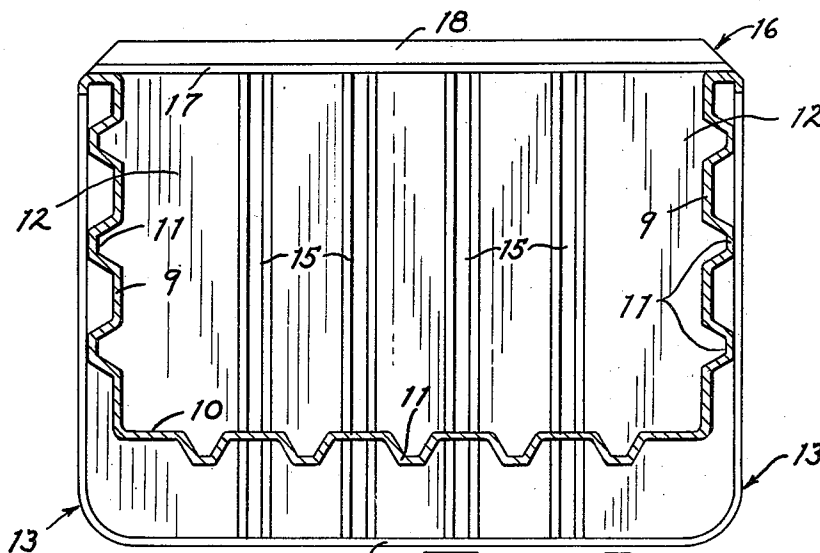


Fig-3

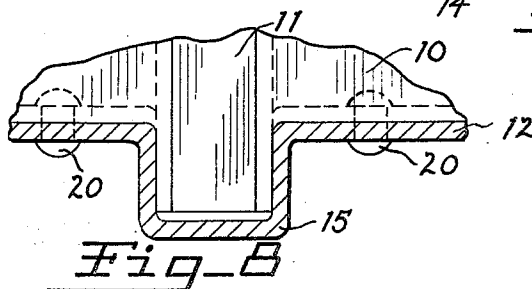


Fig-6

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UNITED STATES PATENT OFFICE

2,596,881

MATERIAL STORAGE AND HANDLING
CONTAINERFrancis E. White, Birmingham, Ala., assignor to
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2 Claims. (Cl. 220—4)

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This invention relates to improvements in material storage and handling containers of the type designed to be stacked one on top of the other, usually with a fork lift truck.

It is already known in the art to provide auxiliary means to permit tiering of containers in superimposed relation. With the present invention the inherent construction of the containers permits superimposing in nested relation, to prevent lateral displacement, without the use of tiering lugs or other extraneous means.

Attempts have been made in the art, as exemplified in the patent to Powell No. 1,875,141 of August 30, 1932, to provide containers susceptible of tiering but it has been found necessary to utilize separate base units for the containers engageable by fork lift trucks for elevating the containers into the desired position. Containers made in accordance with the teaching of this invention are self-sufficient and eliminate the cumbersome, costly, separate bases. This is accomplished by constructing the container of a unit bottom and sides, the terminals of the sides being engaged by end walls which are extended below the bottom to form legs. The space below the container bottom within the confines of the legs is sufficient to accommodate the fork of a lift truck.

Another object of the invention is to equip the upper terminals of the container end walls with combination support and guard rails constructed and arranged to support containers in vertical alignment and positively prevent longitudinal displacement or skewing of the containers when nested.

A still further object of the invention is the provision of a container which has strengthening corrugations in the sides, ends and bottom, the corrugations in the ends being vertical throughout and running at right angles to those in the sides and bottom.

Other objects of the invention will be apparent from the following description of the invention taken in connection with the accompanying drawings wherein:

Figure 1 is a perspective view of a container constructed in accordance with the present invention and showing in fragmentary phantom lines another container superimposed thereon;

Figure 2 is a side elevational view of the container;

Figure 3 is a vertical sectional view taken along the line 3—3 of Figure 2, looking in the direction of the arrows, and showing to advantage the relation of the corrugations in the ends, sides and bottom;

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Figure 4 is an enlarged, fragmentary, sectional view taken along the line 4—4 of Figure 1, looking in the direction of the arrows, and illustrating the manner of securing an end and side of the container;

Figure 5 is an end elevational view of a modified form of the invention, with the bottom shown in dotted lines, wherein rivets are employed to secure the ends to the sides and bottom;

Figure 6 is an enlarged, fragmentary sectional view taken along the line 6—6 of Figure 5, looking in the direction of the arrows, and showing in detail the manner of securing an end and side of the container;

Figure 7 is an enlarged, fragmentary, sectional view taken along the line 7—7 of Figure 5, illustrating the relative positions of the runner, end and vertical corrugation; and

Figure 8 is an enlarged, fragmentary sectional view taken along the line 8—8 of Figure 5, looking in the direction of the arrows, and showing to advantage the manner of riveting the bottom to a container side.

In the drawings is shown a metal container which includes side walls 9 and a bottom wall 10. As shown advantageously in Figure 3, said walls and bottom are formed from a single sheet of metal and are provided with strengthening corrugations 11 extending horizontally along the entire length of the sides. These corrugations protrude outwardly from the sides. The container also includes end walls 12 which are welded or otherwise secured to the terminals of the side walls 9 and extend below the bottom 10 of the container to form legs 13. The legs issue into runners 14 each substantially coextensive with the breadth of its leg. Vertical corrugations 15, formed in the ends, protrude outwardly, and extend uninterruptedly from the top to the bottom of the legs. At the top of each end wall and running the length thereof are angle irons each designated 16 and each comprising a support or seat portion 17 and a guard rail 18.

In the preferred form of the invention, ends 12 are fused to the margins of walls 9 and bottom 10 as indicated at 19. A continuous weld has been found to be the most effective fusion means to withstand the stresses to which these containers are subjected.

In the modified form of the invention shown in Figure 5, the side walls and bottom are riveted to the end walls, as indicated at 20. Figure 6 clearly shows a preferred form of riveted joint. In this embodiment the lateral extremities of bottom 10 are bent downwardly at points intermediate the horizontal corrugations 11 to form

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flanges 21 through which rivets 20 are driven to secure the bottom and end walls together. The extremities of horizontal corrugations 11 of bottom 10 fit into the recess in the vertical corrugations 15 to effect a contiguous joint between the bottom and end walls.

In use, the underside of the bottom wall 10 is engaged by the projecting fork of the lift truck and the container elevated to a point above a similar container. By proper manipulation of the truck, the container is lowered until its runners 14 engage the seat portion 17 of angle iron 16. Guard rails 18 eliminate the danger of a container skewing or longitudinal displacement. The reverse procedure is followed in removing the container.

Many advantages flow from a container constructed in the foregoing manner. First of all by running the corrugations vertically in the ends and legs, the stiffness of the corrugations is continuous from the angle irons to the runners. Also, when the containers are stacked, these vertical corrugations act as efficient columns and transmit the loads straight through from the topmost container to the bottom of the stack. Furthermore, a container constructed in accordance with this invention, permits the use of heavy corrugations since with this structure it is not necessary to bend corrugations around corners.

Although I have herein described the preferred form of my invention, it is to be understood that I am not to be limited thereto and that many changes could be made without departing from the scope of the claims hereto appended.

I claim:

1. A container comprising integral side walls and a bottom wall, the walls being provided at intervals with horizontally arranged corrugations, and end walls secured to the margins of the side and bottom walls and extending downwardly below the latter to form therewith an external space for accommodating the lifting

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forks of a hydraulic lift, the end walls being provided with vertical corrugations, and a combined support and guard rail secured to the top of each end wall for accommodating the lower portions of the end walls of an identical container whereby a plurality of identical containers may be stacked and held in stacked condition against skewing or longitudinal displacement.

2. A container comprising a unit including parallel side walls and a connecting bottom wall formed from a single sheet, horizontally arranged corrugations extending at intervals in the side and bottom walls, end walls secured to the opposite terminals of the side and bottom walls, the lower ends of said end walls extending below the side and bottom walls to provide therewith an external space for accommodating the lifting forks of a hydraulic lift, vertical corrugations in said end walls, and a right angle bar secured to the top of each end wall to provide a support and guard rail for a superimposed identical container unit.

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