Dec. 7, 1954 R. L. TOFFOLON 2,696,235

CARGO CONTAINER

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Fig. 1

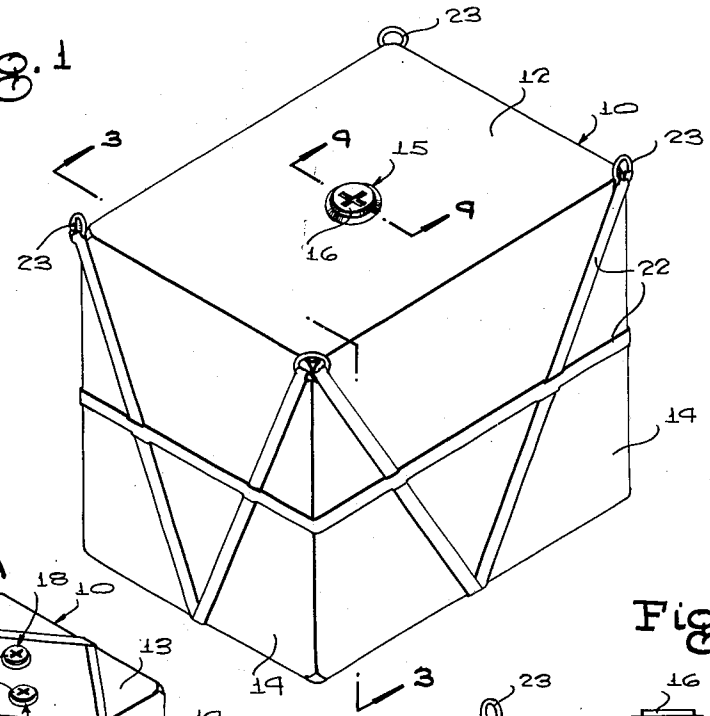

Fig. 2A

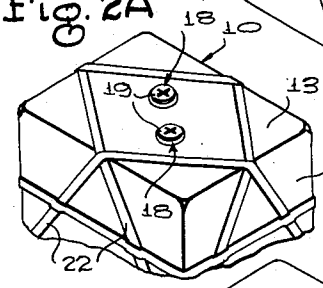

Fig. 3

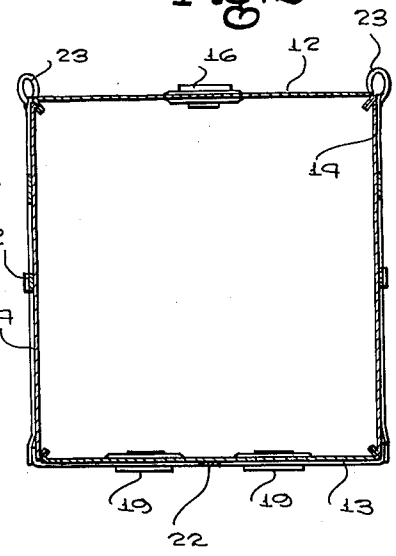

Fig. 2

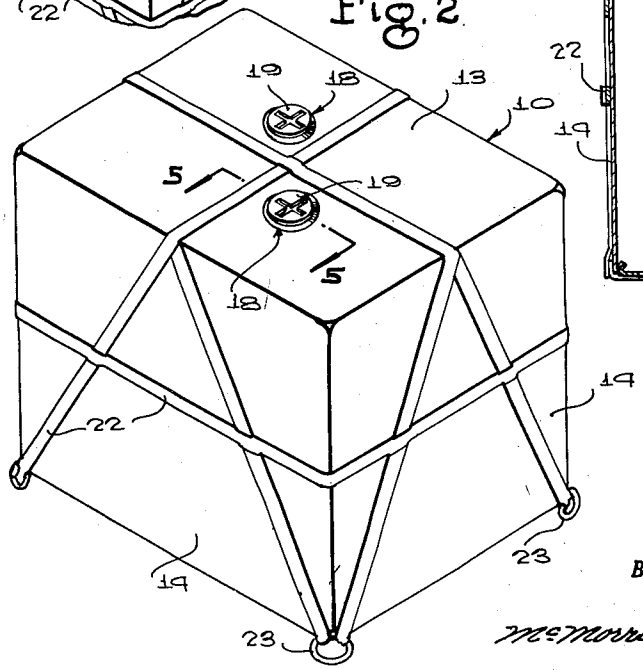

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Fig. 4

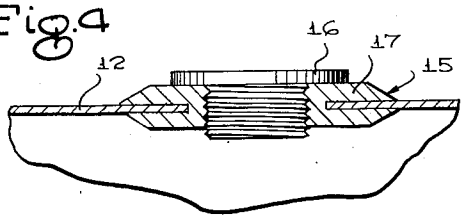


Fig. 5

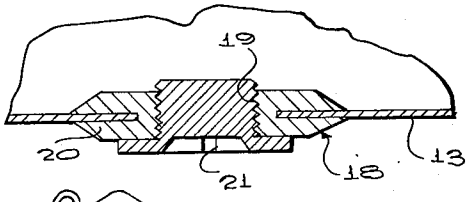
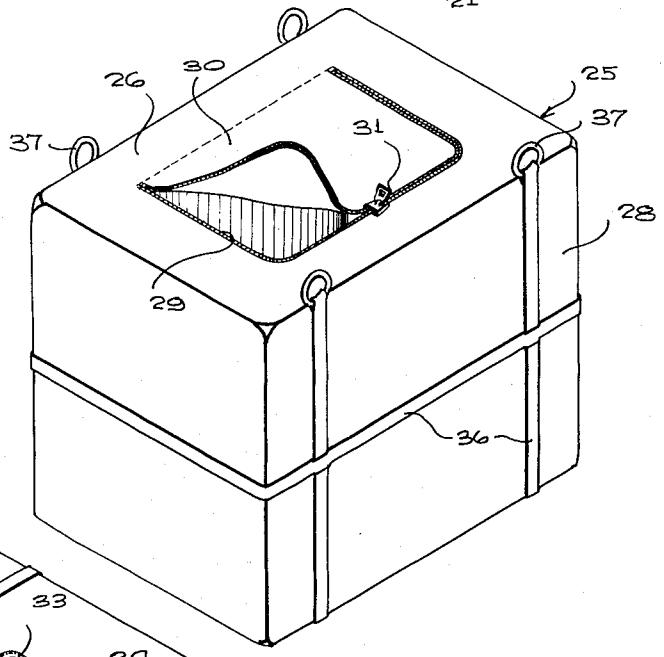


Fig. 6



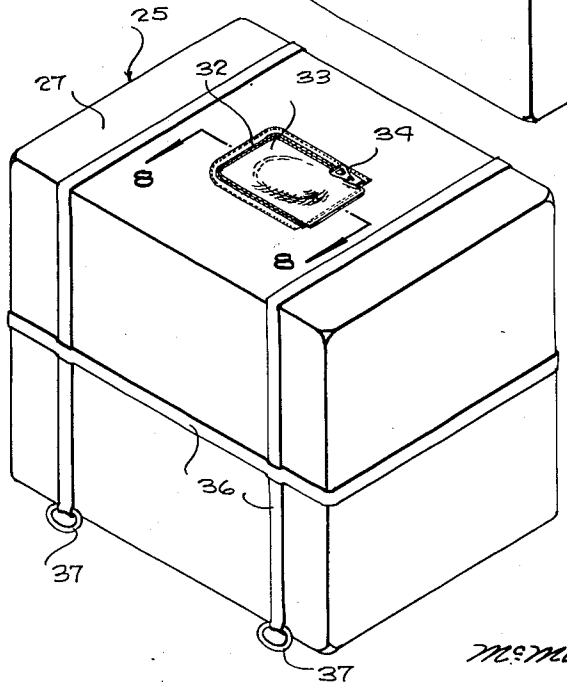


Fig. 7

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Fig. 8

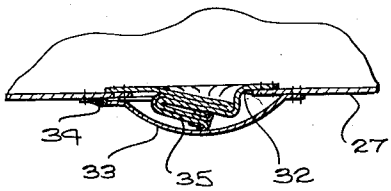

Fig. 10

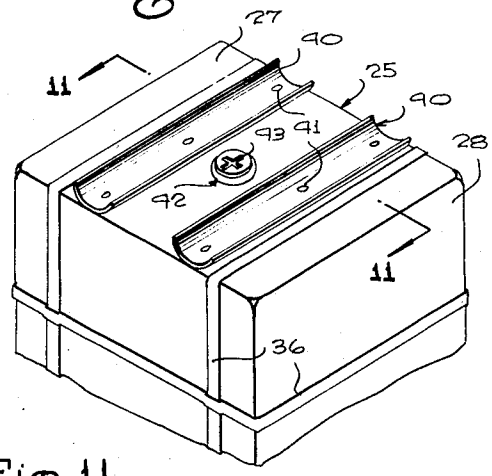

Fig. 9

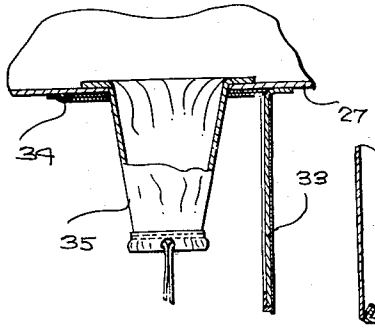

Fig. 11

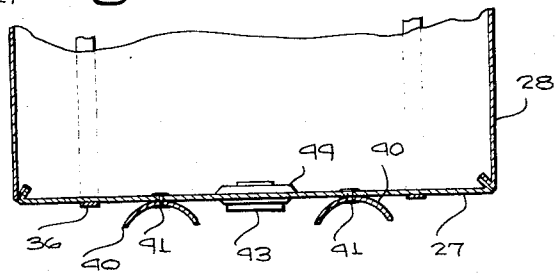

Fig. 12

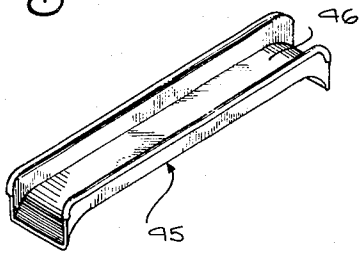

Fig. 13

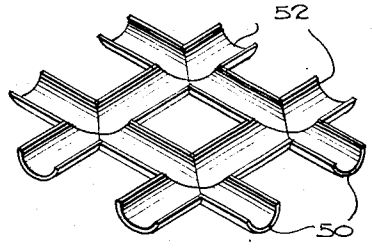

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Fig. 14

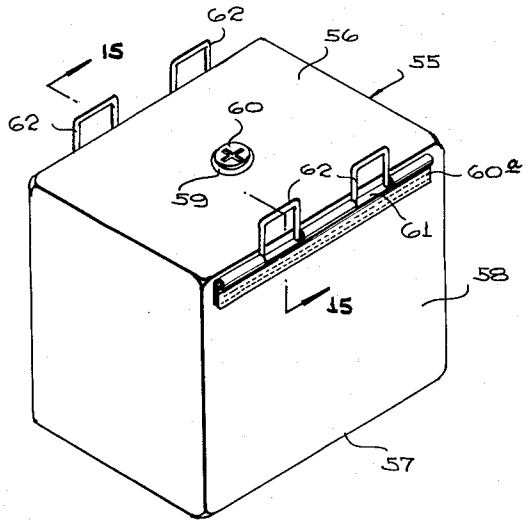

Fig. 16

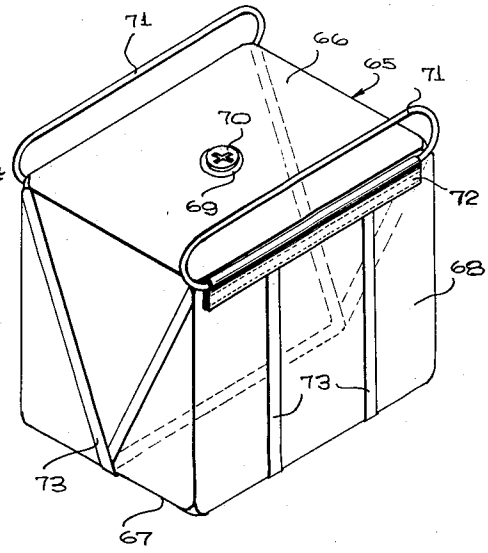

Fig. 15

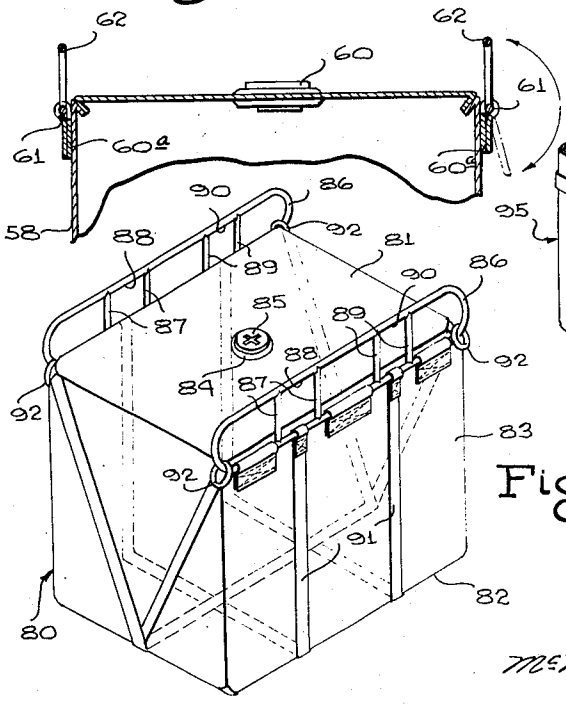

Fig. 17

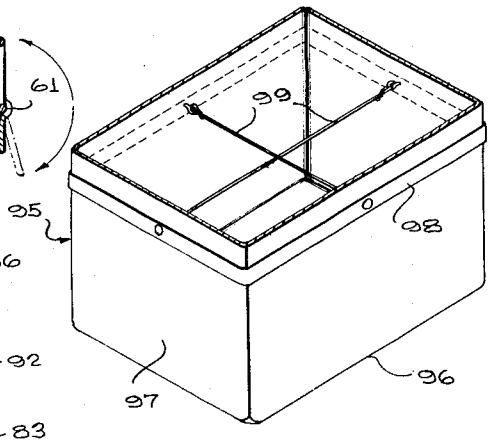

Fig. 16-A

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United States Patent Office 2,696,235 Patented Dec. 7, 1954

2,696,235

CARGO CONTAINER

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Application August 29, 1952, Serial No. 307,094

2 Claims. (Cl. 150—0.5)

This invention relates to a cargo container.

An object of the present invention is to provide a cargo container which is capable of handling and transporting a bulk of material.

Another object of the present invention is to provide a cargo container which is capable of being handled by either lifting elements of a hoist or crane or the forks of a truck lift.

A further object of the present invention is to provide a cargo container which is capable of being readily filled with a bulk of material and of readily discharging such bulk.

Other objects and advantages of the invention will become apparent from the following description taken in conjunction with the accompanying drawings, in which:

Figure 1 is a perspective view of a cargo container of the present invention.

Figure 2 is a perspective bottom view of the cargo container of Figure 1.

Figure 2A is a fragmentary reduced perspective bottom view of the cargo container of Figure 1 showing a modified form of reinforcing for the container bottom.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Figure 4 is an enlarged fragmentary sectional view taken on the line 4—4 of Figure 1.

Figure 5 is an enlarged fragmentary sectional view taken on the line 5—5 of Figure 2.

Figure 6 is a perspective view of the cargo container of the present invention having a different openable closure operatively connected to the inlet in the top and a different arrangement of the reinforcing straps.

Figure 7 is a perspective bottom view of the cargo container of Figure 6.

Figure 8 is an enlarged fragmentary sectional view taken on the line 8—8 of Figure 7 showing the openable closure for the outlet in the bottom in closed position.

Figure 9 is an enlarged fragmentary sectional view of the openable closure of Figure 8 but showing the closure in its open position.

Figure 10 is a fragmentary perspective view of the bottom portion of the cargo container of Figure 6 but showing the spaced lift elements on the receptacle bottom.

Figure 11 is a fragmentary enlarged sectional view taken on the line 11—11 of Figure 10.

Figure 12 is a perspective view of another form of lift element which may be employed in place of the lift elements of Figure 10.

Figure 13 is a perspective view of still another form of lift elements which may be employed in place of the lift elements of Figure 10.

Figure 14 is a perspective view of the cargo container of the present invention having spaced lift elements of a further form with the reinforcing straps omitted.

Figure 15 is an enlarged sectional view taken on the line 15—15 of Figure 14, the full line indicating the normal position of the loops and the dotted line indicating the position to which the loops may be shifted when the loops are swung about their pivotal connection.

Figure 16 is a perspective view of the cargo container of the present invention having spaced lift elements of a still further form and with exterior reinforcing straps.

Figure 16A is a perspective view of the cargo container of the present invention having spaced lift elements of a still further form and lifting elements of the type connectible to the ends of lifting chains, and with external reinforcing means.

Figure 17 is a perspective view of the cargo container of the present invention with the top portion cut away and showing both internal and external reinforcing means.

Referring to Figures 1 to 5 inclusive, such figures show a cargo container of the present invention for use in handling and transporting a bulk of dry granular material or liquid. The container comprises a closed receptacle 10 fabricated wholly of flexible material such as heavy canvas, plastic fabric, rubber, nylon or like material, and includes a top 12, a bottom 13 and side walls 14 extending between and connected to the top and bottom. The flexible material may be of one or more plies, and the corners of the receptacle may be of a thickness double to that of the sheet of flexible material employed in the making of such receptacle. The top 12 is provided with an inlet 15 to which is operatively connected an openable closure 16. Specifically, the inlet 15, Figure 4, comprises a threaded grommet 17 and in threaded engagement with said grommet is the openable closure 16 in the form of a threaded plug.

The bottom 13 of the receptacle 11 is provided with an outlet 18 to which is operatively connected an openable closure 19. As shown in Figures 2 and 2A the bottom 13 has two outlets 18. It is to be understood that although two outlets 18 are shown, more than two or only one may be provided.

Specifically, each outlet 18, Figure 5, comprises a threaded grommet 20 and in threaded engagement with such grommet is the openable closure 19 in the form of a threaded plug, the plug having a crossed kerf 21 in the exterior end for the reception of an end of a screwdriver.

Reinforcing means or straps 22, Figures 1, 2 and 3, extend exteriorly about and are secured to the bottom 13 and the side walls 14. In place of the portion of the reinforcing straps extending across the bottom 13 in crossed relation as shown in Figure 2, such portion may be arranged as a parallelogram, Figure 2A, with its corners connected to the adjacent parts of the portions of the straps carried by the side walls 14. Spaced lift elements of the type adapted to detachably receive the lifting members of a power lift, such as a hoist, crane or truck lift, are positioned exteriorly of and are carried by the receptacle 10. As shown in Figures 1, 2 and 3, the spaced lifting elements are of the type connectible to the ends of lifting chains and are in the form of rings 23, the rings being adjacent the top 12 of the receptacle 10 and are pivotally carried by the sides 14 of the receptacle. Specifically, each ring is pivotally carried by a top portion of the reinforcing straps 22.

In the form illustrated in Figures 6 and 7, the cargo container of the present invention comprises a closed receptacle 25 fabricated wholly of flexible material of the type described in connection with the receptacle 10 of the form of Figures 1 to 3 inclusive, the receptacle including a top 26, a bottom 27 and side walls 28 extending between and connected to the top and bottom. Reinforcing means or straps 36 extend exteriorly about and are secured to the bottom 27 and the side walls 28, and spaced lifting elements in the form of rings 37 are positioned adjacent the top 26 of the receptacle 25 and are carried by the sides 28 of the receptacle. Specifically, each ring is pivotally carried by a top end of a reinforcing strap 36. The top 26 is provided with an inlet 29 to which is operatively connected an openable closure 30. As shown in Figure 6, the openable closure 30 is in the form of a flexible flap which is hingedly connected along one of its side edges to the top 26 and which is openable and closable by means of a slide fastener 31 operatively connected thereto. The bottom 27 is provided with an outlet 32 to which is operatively connected an openable closure 33. As shown in Figure 7, the openable closure 33 is in the form of a flexible flap which is hingedly connected along one of its side edges to the bottom 27 and which is openable and closable by means of a slide fastener 34 which is operatively connected thereto. Specifically, the outlet 32, Figure 8, has attached thereto a flexible spout 35 which is foldable upon itself and is held in such folded position by means of the flap 33 when in closed position. With the shifting of the slide fastener 34 to the position such as to permit

the flap 33 to swing downwardly and away from the outlet 32 the flexible spout likewise drops downwardly and assumes a discharge position, the position illustrated in Figure 9.

For some conditions of use it is desirable and advantageous to have the bottom of the cargo container of the present invention provided with spaced lift elements of the type to accommodate the two spaced forks of a truck lift. One form that such elements may take is illustrated in Figures 10 and 11, and comprises two concavely curved channels 40 positioned in parallel laterally spaced relation along the under face of the bottom 27 of the receptacle 25 and fixedly secured to the bottom 27 by means of spaced rivets 41. The bottom 27 also has an outlet 42 to which is operatively connected an openable closure 43, the closure being in the form of a threaded plug and in threaded engagement with a grommet 44 as described in connection with outlet 18 in Figure 5.

In place of lift elements of the type to accommodate the forks of a truck lift as shown in Figure 10, each of such elements may be of the type illustrated in Figure 12 wherein the channel 45 is rectangular shaped with the ends of the web 46 curved inwardly to fit over the edges of the bottom 27 and bear against the adjacent portion of the side walls 28.

In some instances, the lift elements of the type to accommodate the spaced forks of a truck lift may be of the type illustrated in Figure 13. In such Figure, there is a first pair of concavely curved channels 50 positioned in parallel laterally spaced relation and a second pair of concavely curved channels 52 positioned in parallel intersecting spaced relation with respect to the pair of channels 50. This form of lift receiving elements has the advantage that the two spaced forks of a truck lift may enter the adjacent channels from either one of the sides of the receptacle 25.

Reverting to Figures 14 and 15 there is shown in such figures a cargo container of the present invention which also comprises a closed receptacle 55 fabricated wholly of flexible material of the type described in connection with the receptacle 10 of the form of Figures 1 to 3 inclusive, the receptacle including a top 56, a bottom 57 and side walls 58 extending between and connected to the top and bottom. The top 56 is provided with an inlet 59 to which is operatively connected an openable closure 60 of the type previously described in connection with the form of Figures 1 and 4. Spaced lift elements of the type to accommodate the two spaced forks of a truck lift are disposed adjacent the top 56 of the receptacle and are pivotally carried by the adjacent side walls 58 of the receptacle. Specifically, there are two flexible backings 60*a* arranged in opposed parallel relation positioned exteriorly of the receptacle 55 adjacent the top 56 thereof and each attached to the adjacent one of the side walls 58, each backing having a rod 61 pivotally supported thereon. Each of the rods has two upstanding loops 62 arranged in spaced relation, the loops of the two rods being in registry and adapted to receive the two forks of a lift truck. By virtue of the pivotal connection of the rods 61 to the flexible backings 60*a*, the loops 62 and their adjacent rods may be swung from the full line normal upright position to the dotted line position as shown in Figure 15.

The cargo container of the present invention illustrated in Figure 16 also comprises a closed receptacle 65 fabricated wholly of flexible material of the type described in conjunction with the receptacle 10 of the form of Figures 1 to 3 inclusive, the receptacle including a top 66, a bottom 67 and side walls 68 extending between and connected to the top and bottom. The top 66 is provided with an inlet 69 to which is operatively connected an openable closure 70 of the type previously described in connection with the form of Figures 1 and 4. Disposed adjacent the top 66 of the receptacle 65 and pivotally carried by the adjacent side walls 68 of the receptacle 65 are two single elongated loops 71. As shown in Figure 16, each loop is pivotally supported in a backing 72 which is attached to the adjacent one of the side walls 68, the loops being in registry and adapted to receive the two lift forks of a lift truck. Reinforcing means or straps 73 extend exteriorly about and are secured to the bottom 67 and the side walls 68.

Reverting to Figure 16A, such figure shows a cargo container of the present invention which comprises a closed receptacle 80 fabricated wholly of flexible material of the type described in conjunction with the receptacle 10 of the form of Figures 1 to 3 inclusive, the receptacle including a top 81, a bottom 82, and side walls 83 extending between and connected to the top and bottom. The top is provided with an inlet 84 to which is operatively connected an openable closure 85 of the type previously described in connection with the form of Figures 1 and 4. Disposed adjacent the top 81 of the receptacle 80 and pivotally carried by the adjacent side walls 83 of the receptacle 80 are two single elongated loops 86. Each loop 86 has a pair of spaced bars 87 extending transversely across adjacent one end and forming therebetween a subsidiary loop 88 and another pair of spaced bars 89 likewise extending transversely across adjacent the other end and forming therebetween another subsidiary loop 90, the subsidiary loops 88 and 90 being in registry and adapted to receive the two lift forks of a lift truck. Reinforcing means or straps 91 extend exteriorly about and are secured to the bottom 82 and the side walls 83. On each of the loops 86 are two rings 92 which are adapted to be connected to the ends of lifting chains.

In Figure 17 there is shown a cargo container of the present invention which comprises a closed receptacle 95 fabricated wholly of flexible material of the type described in conjunction with the receptacle 10 of the form of Figures 1 to 3 inclusive, the receptacle including a bottom 96 and side walls 97 extending about and connected to the bottom, the closed top being cut away to show the interior of the receptacle. Reinforcing means are on both the interior and exterior of the receptacle 95, such means embodying a reinforcing strap 98 extending exteriorly about and secured to the side walls 97 adjacent the top thereof, and a pair of wires 99 arranged in crossed relation disposed within the receptacle 95 and having their ends extending through the adjacent portions of the side walls 97 and secured to the adjacent portions of the straps 98.

In use of the cargo container of the present invention, the granular material or liquid is introduced through the inlet provided in the top until the receptacle is substantially filled and then the openable closure is inserted in the inlet and shifted to closed position, whereupon the lifting elements of a hoist or crane or the lifting forks of a truck lift are caused to engage the lift receiving elements on the receptacle corresponding to the particular type of lifting elements. The cargo container is then transported to the desired location, whereupon the material contained therein is discharged therefrom upon removal of the openable closure from the outlet in the receptacle bottom.

Having fully described the invention, what I claim as new and desire to secure by Letters Patent is:

1. A cargo container comprising a closed receptacle fabricated wholly of flexible material and including a top and a bottom, an inlet in said top, an openable closure operatively connected to said inlet, an outlet in said bottom, an openable closure operatively connected to said outlet, reinforcing means extending exteriorly about and secured to said receptacle, reinforcing means positioned within and secured to said receptacle, and spaced lift elements of the type adapted to detachably receive the lifting members of a power lift positioned exteriorly of and below the receptacle bottom and fixedly carried by the latter, said lift elements embodying two concavely curved channels positioned in parallel laterally spaced relation along and fixedly secured to the said under face of said receptacle bottom.

2. A cargo container comprising a closed receptacle fabricated wholly of flexible material and including a top and a bottom, an inlet in said top, an openable closure operatively connected to said inlet, an outlet in said bottom, an openable closure operatively connected to said outlet, reinforcing means extending exteriorly about and secured to said receptacle, reinforcing means positioned within and secured to said receptacle, and spaced lift elements of the type adapted to detachably receive the lifting members of a power lift positioned exteriorly of and below the receptacle bottom and fixedly carried by the latter, said lift elements embodying a first pair of concavely curved channels positioned in parallel laterally spaced relation along and fixedly secured to the under face of said receptacle bottom and a second pair of concavely curved channels positioned in parallel in-

tersecting spaced relation with respect to said first pair of channels and fixedly secured to the under face of said receptacle bottom.

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