United States Patent [19]

Ramer

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[54] **REFUSE CONTAINER**

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[52] **U.S. Cl.** **294/73,** 214/302, 220/1.5, 220/23.4

[51] **Int. Cl.** **B65d 21/02**

[58] **Field of Search** ..... 220/4 D, 1.5, 23.4; 214/302; 312/107, 111, 198; 297/248; 403/315, 341, 349, 361; 294/69, 73

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[57] **ABSTRACT**

A refuse container of the type adapted to be lifted up by lifting tines on a front loader. Two or more containers may be removably coupled together so as to form one large container.

10 Claims, 7 Drawing Figures

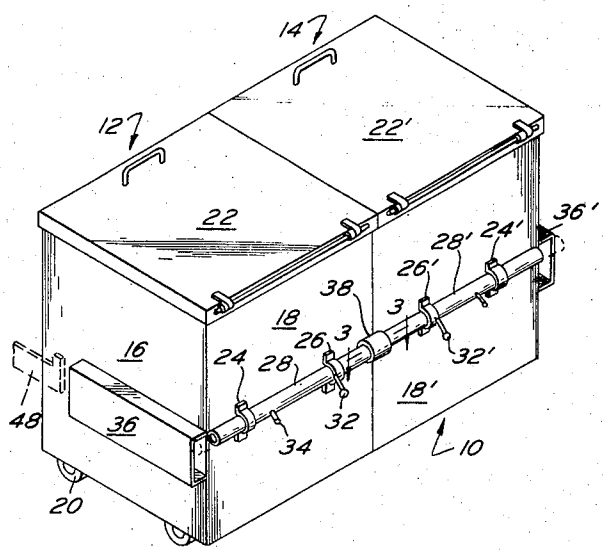
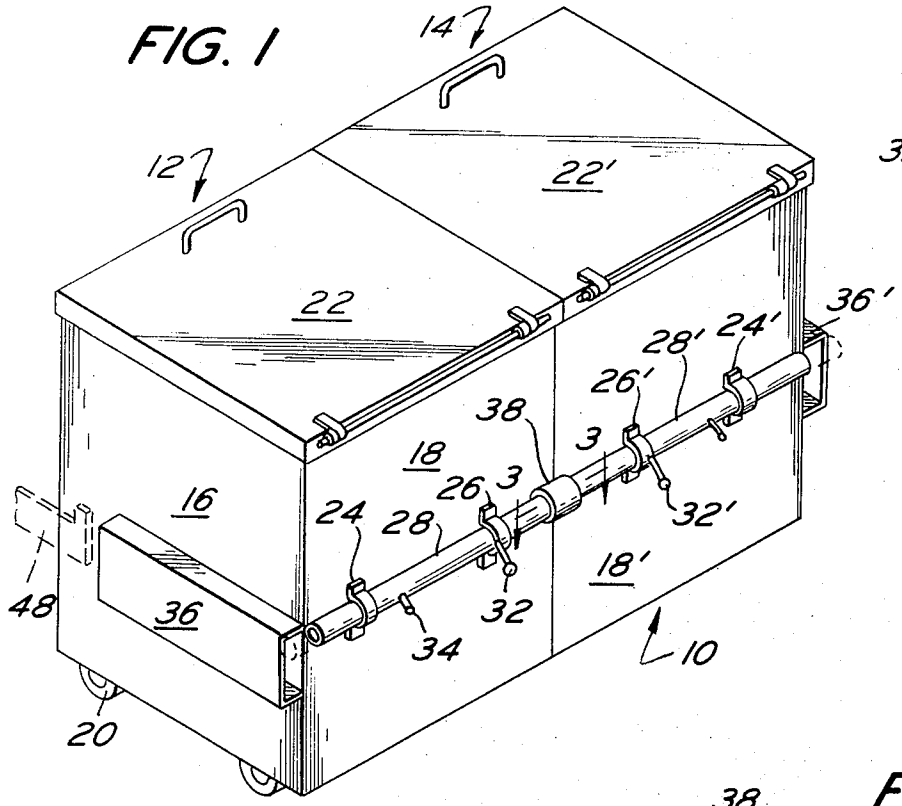


FIG. 1



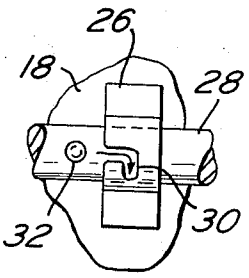


FIG. 2

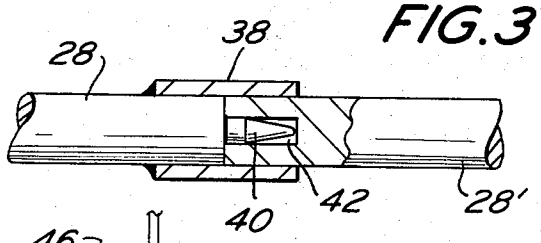


FIG. 3

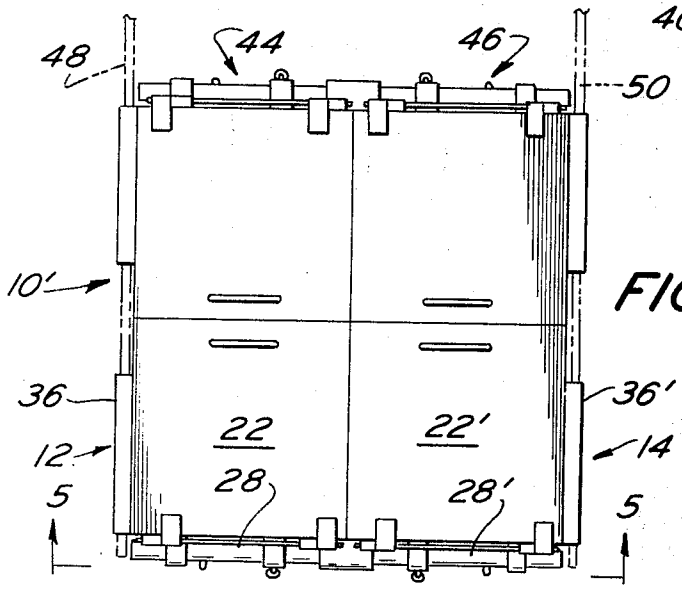


FIG. 4

FIG. 5

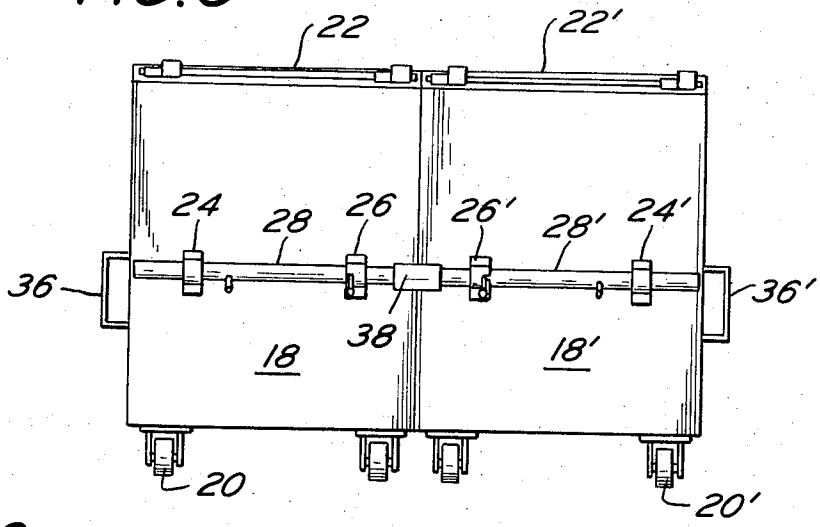
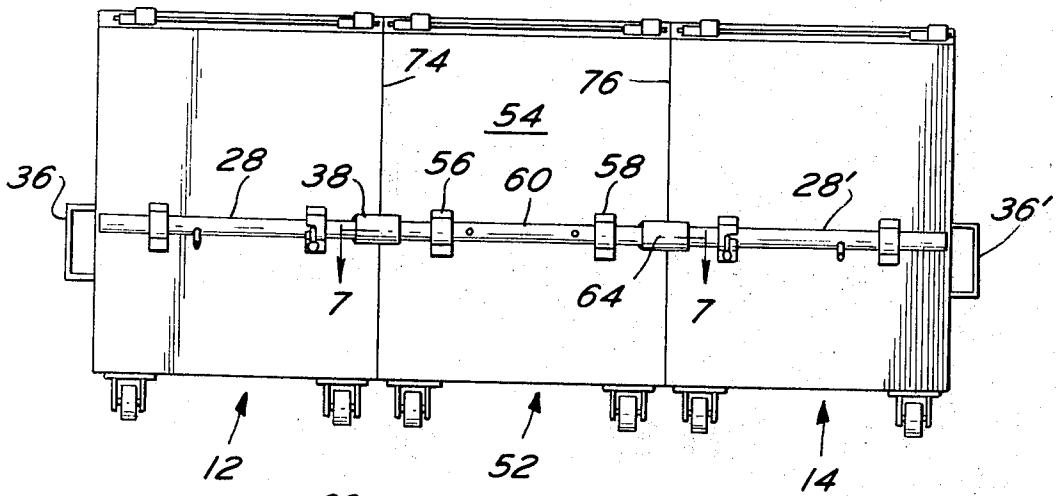


FIG. 6



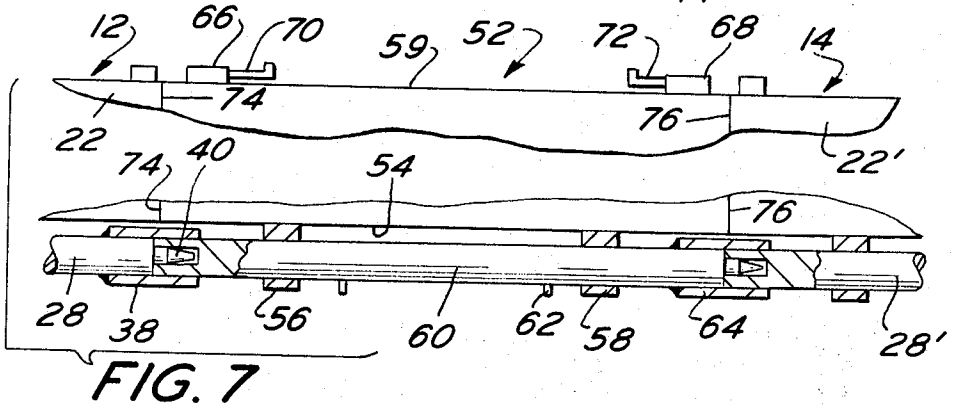


FIG. 7

REFUSE CONTAINER

The refuse container of the present invention is of the type adapted to be used in apartment houses, factories, office buildings, etc. which heretofore did not use refuse containers or in the alternative utilized one large refuse container. For flexibility so that it can be used in existing locations, the refuse container is preferably in the form of a small module. In order that the modules can be used with existing front end loader type refuse vehicles, the modules are adapted to be rigidly coupled together. Thus, the present invention does not require existing storage locations to be modified nor do the existing vehicles have to be modified.

The closest prior art that is known is U.S. Pat. No. 3,122,249. In said patent, there is disclosed a refuse container comprised of a plurality of containers held in an assembled relationship by means of a torque bar on the lifting tines of the vehicle cooperating with brackets on one side and by means of a torque bar removably attached to the opposite side. The refuse container disclosed in said patent is cumbersome, inefficient in that it is time consuming to use the same, and is not adapted for use with all types of lifting tines on front end loaders.

Each module of the refuse container of the present invention may be mounted on wheels if desired. This facilitates the ease with which the containers may be manipulated. Also, each module may have a movable cover. A coupling means is permanently provided on each module for cooperation with a mating coupling means on an adjacent module. As a safety feature, each coupling means must be properly orientated with respect to the mating coupling means, otherwise the lifting tines cannot properly pick up the refuse container. This feature prevents the tines from lifting the refuse container wherein the modules are improperly coupled together. The coupling bar member on each module is a captive member, that is it remains with the module.

It is an object of the present invention to provide a novel refuse container.

It is another object of the present invention to provide a refuse container comprised of modules which are easily transported into small areas for receiving rubbish and adapted to be coupled together to form a large container for emptying mechanically by means of a front end loader vehicle.

It is another object of the present invention to provide a refuse container comprised of modules, each having a captive coupling bar member in a manner which is simple, inexpensive and reliable.

Other objects will appear hereinafter.

For the purpose of illustrating the invention, there is shown in the drawings a form which is presently preferred; it being understood, however, that this invention is not limited to the precise arrangements and instrumentalities shown.

FIG. 1 is a perspective view of a refuse container in accordance with the present invention.

FIG. 2 is an enlarged detail view of a latch mechanism associated with a coupling bar member on one module as shown in FIG. 1.

FIG. 3 is a sectional view taken along the line 3—3 in FIG. 1, but on an enlarged scale.

FIG. 4 is a top plan view of a refuse container comprised of two sets of modules as shown in FIG. 1.

FIG. 5 is an elevation view taken along the line 5—5 in FIG. 4.

FIG. 6 is an elevation view similar to FIG. 5, but showing another embodiment of the present invention wherein the refuse container is comprised of three modules.

FIG. 7 is a sectional view taken along the line 7—7 in FIG. 6.

Referring to the drawing in detail, wherein like numerals indicate like elements, there is shown in FIG. 1 a refuse container designated generally as **10**. The refuse container **10** is comprised of modules **12** and **14**. The modules **12** and **14** are identical. Accordingly, only module **12** will be described in detail with corresponding primed numerals being applied to corresponding structure on the module **14**.

The module **12** is comprised of a rectangular or square housing having vertical walls including walls **16** and **18**. The housing is preferably mounted on wheels for ease of manipulation within the building whereby the module may be located in one position for receiving rubbish and easily moved to another location for emptying of rubbish. The housing is also preferably provided with a movable or pivotably mounted cover **22** having a handle thereon.

The housing of module **12** has brackets **24** and **26** fixedly secured to a wall thereof such as wall **18**. A coupling bar member **28** is positioned so that it extends through the brackets **24** and **26** and is mounted for limited horizontal reciprocable movement. The coupling bar member **28** may be hollow, but is preferably solid metal.

As shown more clearly in FIG. 2, one of the brackets, namely bracket **26**, is provided with a bayonet slot **30**. The coupling bar member **28** is provided with a latch **32** adapted to be received in the bayonet slot **30**. The coupling bar member **28** is also provided with a limit stop **34** adapted to cooperate with the bracket **24** to limit the extent of movement of the coupling bar member **28**. Thus, the coupling bar member **28** is rotatably and reciprocably supported by the brackets **24** and **26** and held captive on the housing of module **12**.

The housing of module **12** is provided with a means defining a channel through which the tine on a front end loader may extend. Such means may be in the form of a C-shaped channel **36** which is fixedly secured to wall **16** on the housing of module **12**. It is to be noted that the walls **16** and **18** are perpendicular to one another and that the elevation of the channel member **36** is so located that a tine cannot extend therethrough if the coupling bar member **28** is not properly latched. That is, when latch member **32** is not positioned within the bayonet slot **30**, one end of the coupling bar member **28** blocks the opening defined by wall **16** and channel member **36**. This prevents an operator from lifting the refuse container **10** when the modules **12** and **14** are not coupled together.

The coupling bar members **28** and **28'** are provided with a means for interconnecting the same. As shown more clearly in FIG. 3, the end of bar member **28** remote from the channel member **36** is provided with a tubular portion **38**. Tubular portion **38** receives the adjacent end of coupling bar member **28'** with a telescoping relationship. If desired, bar member **28** may be provided with a pin **40** which telescopes into a socket **42** on the coupling bar member **28'**. The elements as shown in FIG. 3 assume this relationship when each of

the latch members 32 and 32' are latched to their respective brackets 26 and 26'.

The modules 12 and 14 in FIG. 1 may be of a size such as 36 inches square so as to be combinable into a refuse container 10 which is 36"×72" and capable of being handled by the tines 48 and 50 on the front end loader vehicle. If desired, two of the refuse containers 10 may be coupled together back to back as shown in FIG. 4 to define a refuse container 10' comprised of modules 12, 14, 44, and 46. It will be noted that the channel members for receiving the tines on modules 44 and 46 are aligned with the channel members 36 and 36' respectively whereby tine 48 will extend through the channel member on modules 12 and 44 while tine 50 extends through the channel members on modules 14 and 46.

In FIG. 6, there is illustrated another embodiment of the present invention wherein a refuse container is comprised of a module 52 sandwiched between and coupled to the modules 12 and 14. Module 52 is identical with module 12 except that it does not have a channel member on its side face thereof corresponding to channel member 36. Hence, the side walls of the housing of module 52 may be juxtaposed to smooth side walls of each of the modules 12 and 14.

The exposed wall of the module 52 in FIG. 6 is designated as 54. Brackets 56 and 58 are mounted on wall 54. A coupling bar member 60 is reciprocably and rotatably supported by the brackets 56 and 58 for limited reciprocal movement. The reciprocal movement of bar member 60 is defined by limit stops 62.

The lefthand end of coupling bar member 60 in FIGS. 6 and 7 is provided with a socket adapted to receive the pin 40 on the coupling bar member 28 with a telescoping relationship as described above. The righthand end of coupling bar member 60 is provided with a tubular portion 64. Tubular portion 64 cooperates with the adjacent end of coupling bar member 28' in the same manner as did the portion 38 described above.

On the front wall 59 on the module 52, there is provided brackets 64 and 68. A bolt 70 is slidably supported by bracket 66. The bolt 72 is slidably supported by bracket 68. Bolt 70 may be slid to the left in FIG. 7 so as to overlie the joint 74 between modules 12 and 52. Bolt 74 may be slid to the right in FIG. 7 to overlie the joint 76 between modules 52 and 14. The bolts 70 and 72 prevent the module 52 from rotating when lifting tines are raising the entire refuse container shown in FIGS. 6 and 7.

While the modules preferably are square 36' on a side, the size of the modules may be varied as desired. Since the only portion of the refuse container which cooperates with the lifting tines is the channel members on opposite side faces of the refuse container, no special structure need be provided on the containers for cooperation with any other portion of the lifting tines. In this manner, the modules may be grouped together and coupled as shown in FIG. 1 or FIG. 4 or FIG. 6. If desired, the coupling bars and their respective supporting brackets may be mounted on a recessed portion of the wall of the module whereby the wall will be flush without any projecting elements. The channel members for cooperation with the lifting tines are a permanent part of the modules as well as the coupling bars which are a captive portion of each module. These features aid in reliability since there are no components which are necessary for lifting the refuse container and yet are capable of being lost or stolen.

If desired, each of the above modules can be provided with means for compacting refuse therein. A wide variety of compacting means are known to those skilled in this art. It is to be understood that the dimensions of the modules referred to above are only illustrative and may be increased or decreased as desired.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof and, accordingly, reference should be made to the appended claims, rather than to the foregoing specification as indicating the scope of the invention.

I claim:

1. A refuse container comprising a rectangular housing having an access opening through which refuse may be introduced into the housing, a horizontally disposed member fixedly secured to a first side wall of the housing to define a channel for receiving a lifting tine, a side wall on said housing opposite said first side wall being substantially planar and lacking any structure to facilitate lifting the housing, a coupling bar supported by brackets on a second wall of said housing, said second wall being generally perpendicular to said first wall, said brackets supporting said bar for reciprocation in a horizontal direction, and means on the coupling bar for latching said bar to said second wall in a position wherein said bar does not obstruct said channel.

2. A refuse container in accordance with claim 1 wherein said last-mentioned means includes a latch on the coupling bar, one of said brackets including a bayonet slot for receiving the latch, said coupling bar being supported for rotation about its longitudinal axis by said brackets.

3. A refuse container in accordance with claim 2 including a pivotable cover for said opening, and said housing being mounted on wheels.

4. A refuse container in accordance with claim 1 including a second housing juxtaposed to said first-mentioned housing, a coupling bar supported by brackets on said second housing, said coupling bars being coupled together adjacent the interface between said housings, and a wall of second housing remote from said interface having thereon a horizontally disposed member to define a second channel for receiving a lifting tine, the horizontally disposed members defining channels being at the same elevation and parallel to one another.

5. A refuse container in accordance with claim 4 wherein said coupling bars are coaxial and have their juxtaposed ends in a telescopic relationship.

6. A refuse container in accordance with claim 1 including a second housing adjacent said first-mentioned housing, a coupling bar on said second housing being coupled to said first-mentioned bar, a third housing identical with said first-mentioned housing, said third housing having a coupling bar which is coupled to the bar on the second housing, and means on the second housing for cooperation with the first and third housings to prevent the second housing from pivoting relative to the first and third housings.

7. A refuse container comprising first and second rectangular housings each having an access opening at the top thereof through which refuse may be introduced into the housings, each housing having a planar side wall juxtaposed to a planar side wall of the adja-

cent housing at an interface, a side wall of each housing remote from and parallel to the interface having thereon an elongated horizontally disposed member for defining a channel to receive a lifting tine, said members being at the same elevation, each housing having a second wall which is perpendicular to the interface, a coupling bar supported on the second wall of each housing, each coupling bar being at the same elevation as the channel on its respective housing, means for removably interconnecting the adjacent ends of the coupling bars, means for preventing the coupling bars from being removed from their respective housings, each coupling bar being supported on its respective housing for limited reciprocal movement wherein an end portion of the bar may obstruct free passage through its adjacent channel, and means for latching said bars to their respective housings in a position wherein the bars do not obstruct the channel on their respective housing.

8. A refuse container in accordance with claim 7 wherein said last-mentioned means includes a latch on each coupling bar cooperating with mating structure on the second wall of its respective housing.

9. A refuse container in accordance with claim 7 wherein said means for interconnecting the bars is integral with one bar and includes a tubular portion which extends across said interface.

10. A refuse container in accordance with claim 7 wherein the housings are square and said rods being coaxial.

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