April 29, 1958 H. W. JONES 2,832,483

RETRACTIBLE BOOM REST FOR CONTAINERS

Filed July 14, 1954

2 Sheets-Sheet 1

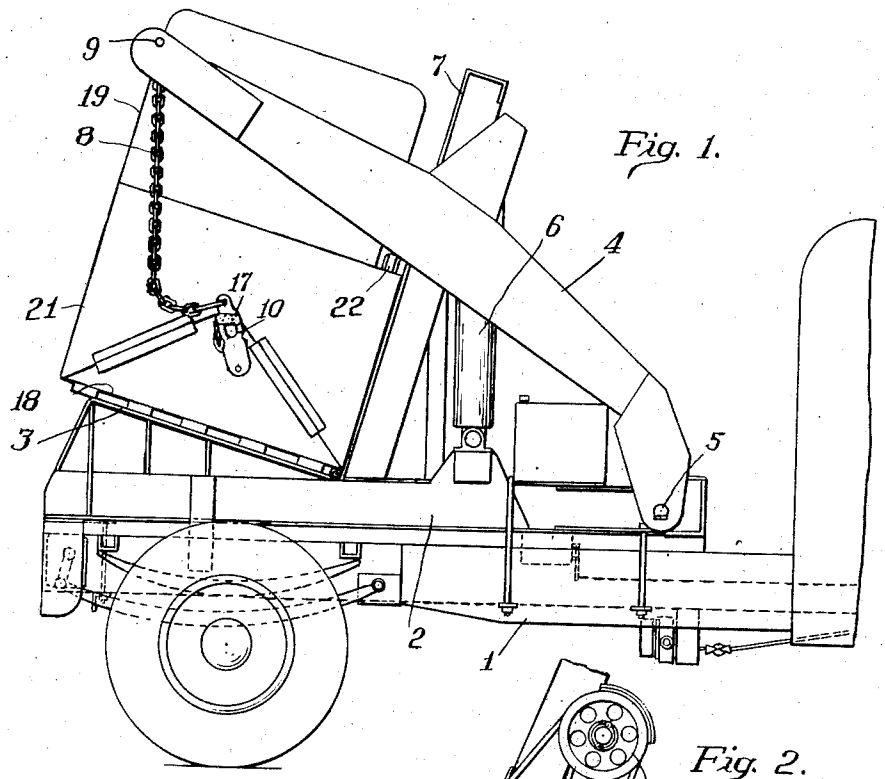

Fig. 1.

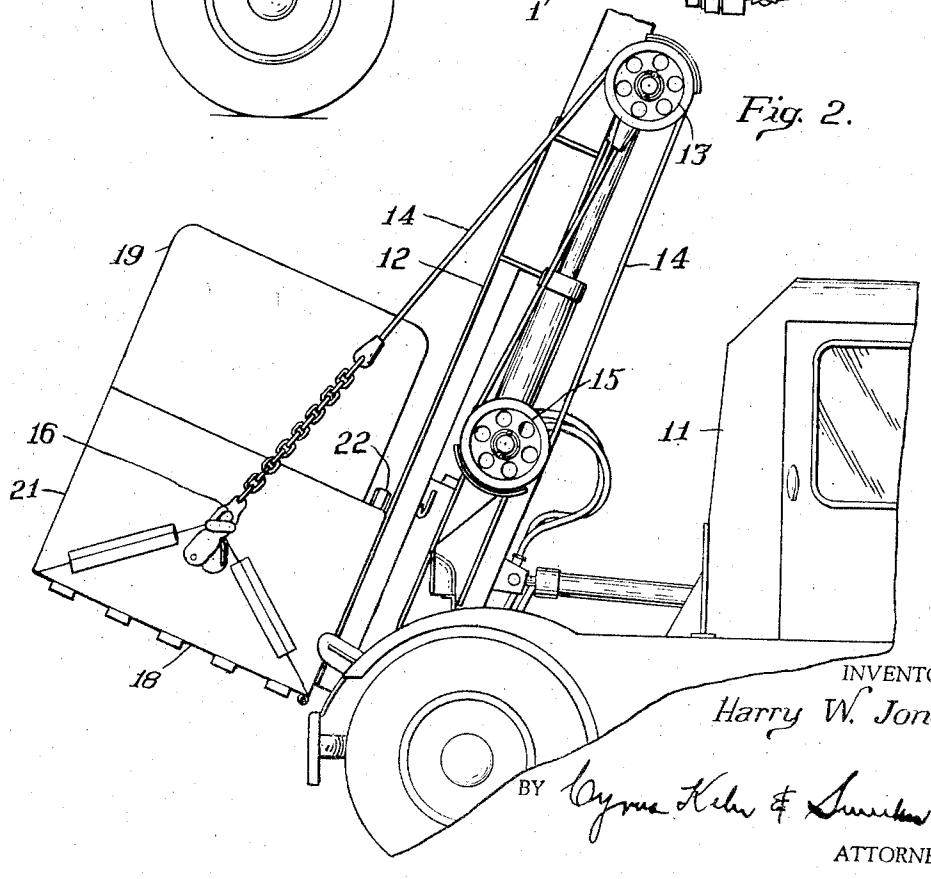

Fig. 2.

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Fig. 3.

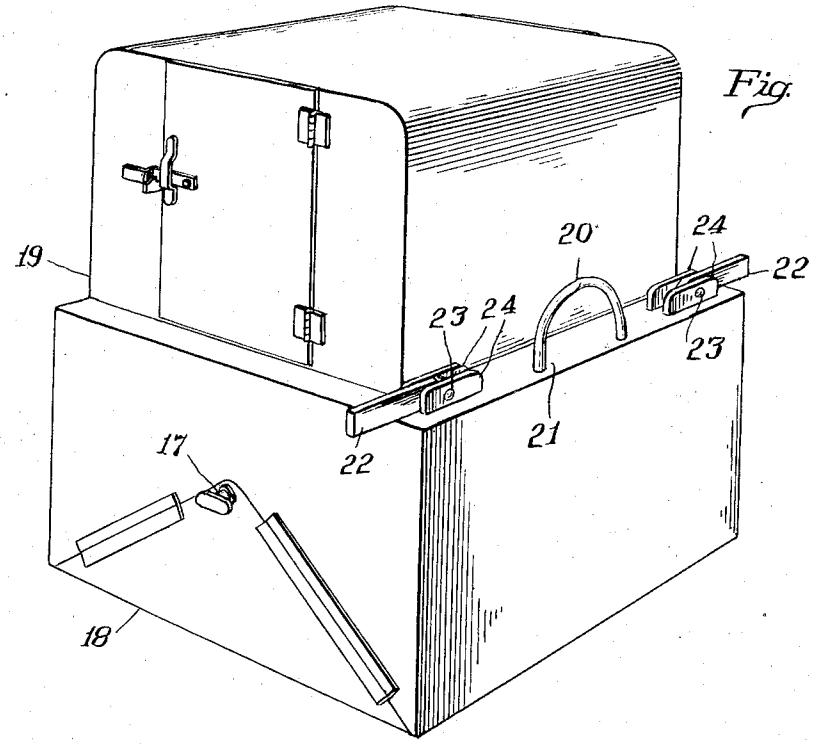


Fig. 4.

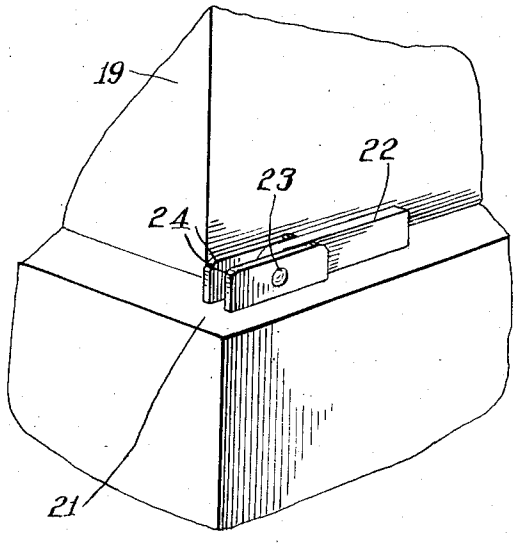
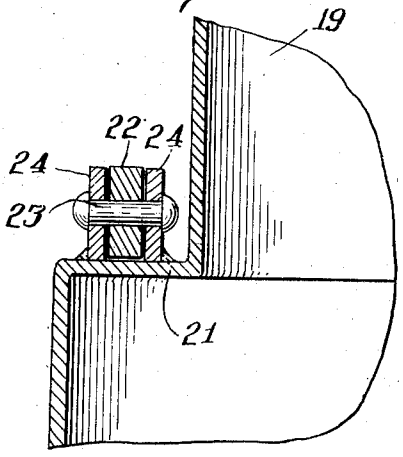


Fig. 5.



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RETRACTIBLE BOOM REST FOR CONTAINERS

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7 Claims. (Cl. 214—77)

This invention relates to improvements in containers and more particularly to the type of containers used for handling trash, garbage and other refuse.

It has been customary heretofore to handle refuse containers with transporting and dumping equipment of the type set forth in the patents to George R. Dempster, No. 2,281,183, April 28, 1942, and No. 2,369,722, February 20, 1945. Such a container customarily is filled while sitting on the ground or on a floor or street, etc., and thereafter may be picked up by the transporting and dumping equipment and lifted to an elevated position, as shown in said patents, on which devices the container may be transported to the point of dumping, the contents discharged, and the container then returned to a point of use. Such equipment has utilized an inclined platform on the vehicle on which the container is seated during transportation, and boom arms are utilized for lifting the container to the platform and for lowering it therefrom. It has been found desirable to provide boom rests on the container at the opposite ends thereof and to lower the boom arms into contact therewith to hold the container on the platform during transportation.

Other types of hoisting mechanism do not employ the inclined seat on the vehicle for the container. An example thereof is a hoisting unit that lifts the container by flexible cable means with or without a pivotal action of the skid frame. In such instances, the boom rests on the ends of the container would be undesirable because they would interfere with the flexible cable devices attached to the container.

It is often desirable to provide containers which are capable of use and handling by either type of hoisting mechanism, as described above, and to provide for boom rests where needed and to dispense with these when not required.

One object of this invention is to improve the construction of containers by providing thereon retractible boom rests which can be used when desired or moved out of the way when not required, thus adapting the container for handling by either type of hoisting means referred to above.

Another object of the invention is to provide retractible boom rests for a container and mounted thereon, capable of projecting action when required, or be retracted out of the way, either to support the boom arms when the container is mounted on a seat on the vehicle, or to be out of the way of hoisting cables when the container is handled by a cable type of hoisting mechanism.

These objects may be accomplished, according to one embodiment of the invention, by providing a container having provision for attachment of lifting means at opposite ends thereof, either of flexible type of connections with boom arms or of flexible cables, as desired.

Retractible boom rests are provided at opposite ends of the container in the form of bars pivotally connected therewith between suitable mounting plates that will support the bars rigidly on a wall of the container.

These bars are pivoted at one end so as to be projected from the container in the path of the boom arms when used with that type of hoisting unit, or they may be folded back out of the way in retracted positions when not required as, for instance, when the container is being handled by a cable-type of hoisting unit.

This embodiment of the invention is illustrated in the accompanying drawings in which:

Fig. 1 is a side elevation of one form of hoisting device that may be used with the improved container, in which the boom rests are in projecting positions;

Fig. 2 is a similar view showing the invention applied to a different form of hoisting means of the cable type, with the boom rests retracted;

Fig. 3 is a perspective view of a container detached, with the boom rests projected;

Fig. 4 is a similar view showing the boom rests retracted; and

Fig. 5 is a cross section therethrough.

The invention is shown in Figs. 1 and 2 as applied to transporting and dumping equipment of two different types, as, for example, of the different forms for which the container of this invention is adapted.

The transporting and dumping equipment illustrated in Fig. 1 includes a motor vehicle chassis, generally designated by the numeral **1**, upon which is mounted a hoisting unit comprising a sub-frame **2** having a container rest or platform **3** thereon. The container rest or platform **3** is inclined forwardly of the motor vehicle so as to support the container in an inclined position thereon. Boom arms are shown at **4**, pivotally mounted at **5** the sub-frame **2** at the forward end of the latter, and adapted to be raised and lowered by one or more hydraulic hoists **6**. A skid frame is shown at **7** mounted on the sub-frame **2** for bodily movement lengthwise relative thereto between the position shown in Fig. 1 and a position at the rear end of the sub-frame **2**. Suitable means, such as hydraulic hoists, may be provided for moving the skid frame **7** forward and rearward of the chassis, as described more fully in the Dempster patents referred to above. The free ends of the boom arms **4** support the container by flexible devices, such as chains **8**, attached to the boom arms at **9** and having plates **10** connected with the opposite ends of said chains for attachment to the container.

In the alternate form of transporting and dumping equipment, an example of which is shown in Fig. 2, the container is adapted to be supported by flexible cable devices at opposite ends thereof on a vehicle chassis, generally indicated at **11**. An upright hoisting unit is shown at **12** supported on the vehicle chassis **11**, either rigidly in upright position or pivotally mounted for swinging movement from a vertical position to a forwardly inclined position, as shown in Fig. 2. The hoisting unit includes a skid frame and an elevator, hydraulically operated for raising and lowering movements. The elevator includes a pair of sheaves, shown at **13**, over which cables **14** extend after passing around sheaves **15** mounted in fixed positions on the hoisting mechanism. One end of each cable **14** is anchored stationary, while the opposite end extends around the sheaves **15** and **13**, thence to attaching plates **16** for connection with the container. Such a cable type of hoisting device is adapted to raise the container, either by operation of the cables **14** or by forward swinging motion of the skid frame to the position shown in Fig. 2, or both, in order to accomplish the desired raising of the container for transportation and for dumping.

While the container may be of different types as desired, examples of which are shown in the aforesaid Dempster patent, No. 2,281,183, the example illustrated in the drawings is a drop bottom container provided with

lifting pins 17 connected with the drop bottom door 18 of the container, the latter being illustrated generally at 19. In either type, the skid frame 7 or 12 is provided with a dumping hook (not shown) to be engaged by a bail 20 on the forward side of the container to hold the body of the container in elevated position during dumping. The bail 20 is shown as supported on an indented wall or ledge, designated generally at 21, extending around the upper portion of the body of the container.

Also mounted on the walls of the container are boom rests 22. In the examples illustrated, these boom rests are retractible, capable of outward swinging movement, either to the positions illustrated in Figs. 1 and 3 or retracted to the positions shown in Figs. 2 and 4, according to the type of hoisting device with which the container is adapted to be used. The same container can be used with different forms of hoisting devices such, for example, as those illustrated in Figs. 1 and 2, and the boom rests 22 are capable of use with either form without interference with other operating parts, such as the cables 14.

Each boom rest 22 is shown as formed of a steel bar pivotally supported at 23 at one end thereof between upstanding plates 24 that extend lengthwise of the bar and are sufficiently elongated to brace the bar transversely in the extended position of the boom rest, as well as to form a secure connection therefor with the body of the container. In this example, the plates 24 are welded or otherwise secured rigidly to the indented wall portion 21 of the container adjacent each forward corner thereof at each opposite end of the container.

When the container is adapted to be used with the type of hoisting unit shown in Fig. 1, it is a simple matter for the opeartor to swing the boom rests outward to their projected positions, as shown in Fig. 3, in the path of the boom arms 4 when the container is supported on the seat 3, whereby the lowering of the boom arms onto the rests 22 tends to hold the container in place on the seat 3 against danger of its becoming unseated and being displaced from the vehicle.

On the other hand, when the container is to be used with a cable-type of hoisting device, as shown in Fig. 2, the booms rests 22 can be retracted to the positions shown in Fig. 4, out of the way of the cables 14, so as not to interfere with the latter during the handling of the container. Thus, there will be no difficulty with the boom rests, and the cables are not likely to hang thereon, nor to cause undue wear on the cables as might result otherwise if the container were raised to a high position when the boom rests would engage the cables and either wear the latter or interfere with the smooth operation of these. The folding boom rests enables the same container to be used with different types of hoisting devices, providing the desired construction for holding the container in place on the vehicle when used with the boom type of hoisting unit or retracted out of a position for interference when used with another type not employing such boom arms.

Furthermore, the retractible boom rests 22 may be moved aside to permit the boom arms to be moved down to a position below the boom rests for dumping, when the container has been raised to an abnormally high position.

While the invention has been illustrated and described in one embodiment, it is recognized that variations and changes may be made therein without departing from the invention as set forth in the claims.

I claim:

1. A container of the character described, comprising a body portion having opposite end walls, front and back walls and a bottom, and means forming boom rests at each opposite end of the container adjacent one of the side walls, each of the boom rests comprising an elongated bar, and means pivotally mounting the bar at one end of the bar on the body of the container in a position for projection of the bar outwardly from the adjacent end of the container and for retraction inwardly relative thereto.

2. A container of the character described, comprising a body portion having opposite end walls, front and back walls and a bottom, and means forming boom rests at each opposite end of the container adjacent one of the side walls, each of the boom rests comprising an elongated bar, means pivotally mounting the bar at one end of the bar on the body of the container in a position for projection of the bar outwardly from the adjacent end of the container and for retraction inwardly relative thereto, and upstanding plates extending on opposite sides on each bar lengthwise thereof and pivotally holding the bar therebetween in its respective positions.

3. A container of the character described, comprising a body having opposite end walls, side walls and a bottom and having an indented top wall portion, a pair of upstanding elongated plates secured to the indented top wall portion and upstanding therefrom, an elongated bar extending between said plates, means pivotally connecting the bar adjacent an end thereof to the plates intermediate the length of the latter in position for swinging motion to an extended position projecting from the adjacent end wall and for retraction therefrom, the plates extending along a substantial portion of the length of the bar in said extended position.

4. A container of the character described, comprising opposite end walls, side walls and a bottom, lifting pins connected with the container at the opposite end walls thereof and projecting outwardly therefrom for attachment of boom supported flexible hoisting devices therewith, means forming a boom rest at each opposite end of the container spaced from the lifting pin, and means mounting the boom rest on the container for movement inwardly and outwardly relative to the end wall and to positions spaced inwardly between the end walls from upright planes extending through the lifting pins.

5. In transporting and dumping equipment, the combination with a hoisting unit having boom arms mounted thereon for upward and downward swinging movement, and flexible devices connected with the boom arms, of a container having opposite end walls, side walls and a bottom, lifting pins connected with the container at the opposite end walls thereof and having supporting connections with the flexible devices for supporting the container, boom rests at the opposite ends of the container spaced from the respective lifting pins, and means mounting the boom rests on the container beneath the boom arms in the path of lowering movement thereof and for movement inwardly away from said path and to positions between upright planes through the end walls.

6. In transporting and dumping equipment, the combination with a hoisting unit having boom arms mounted thereon for upward and downward swinging movement, and flexible devices connected with the boom arms, of a container having opposite end walls and a bottom, lifting means connected with the container at the opposite end walls thereof and having supporting connections with the flexible devices for supporting the container, boom rests at the opposite ends of the container spaced from the respective lifting means, and means mounting the boom rests on the container beneath the boom arms in the path of lowering movement thereof and for movement inwardly away from said path.

7. In transporting and dumping equipment, the combination with a hoisting unit having boom arms mounted thereon for upward and downward swinging movement, and flexible devices connected with the boom arms, of a container having opposite end walls and a bottom, lifting means connected with the container at the opposite end walls thereof and having supporting connections with the flexible devices for supporting the container, boom rests at the opposite ends of the container spaced from

the respective lifting means, and means mounting the boom rests on the container beneath the boom arms in the path of lowering movement thereof and for movement inwardly away from said path and to positions between upright planes through the end walls.

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