

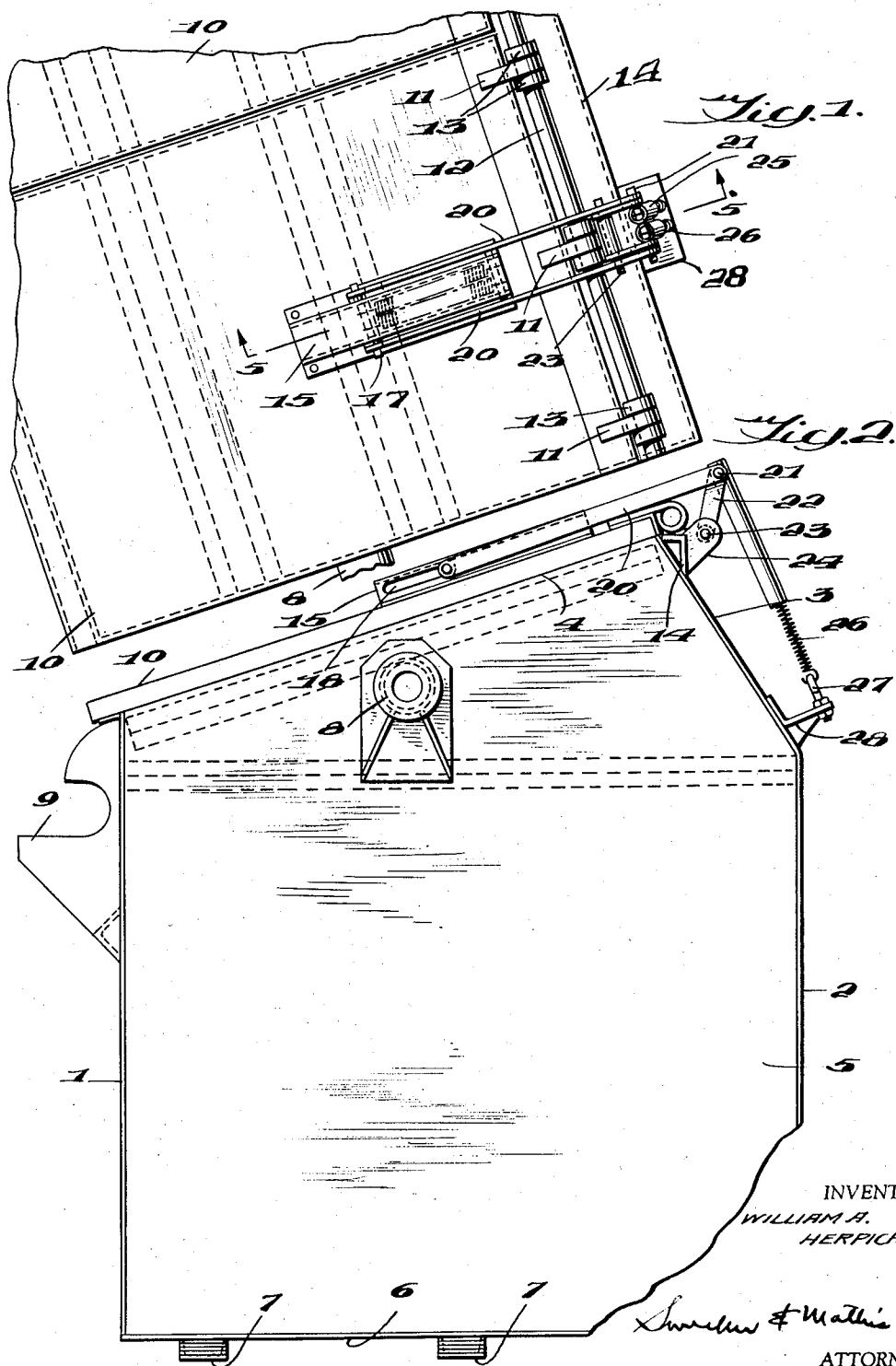
May 26, 1959

W. A. HERPICH
CONTAINERS

2,888,162

Filed July 10, 1956

4 Sheets-Sheet 1



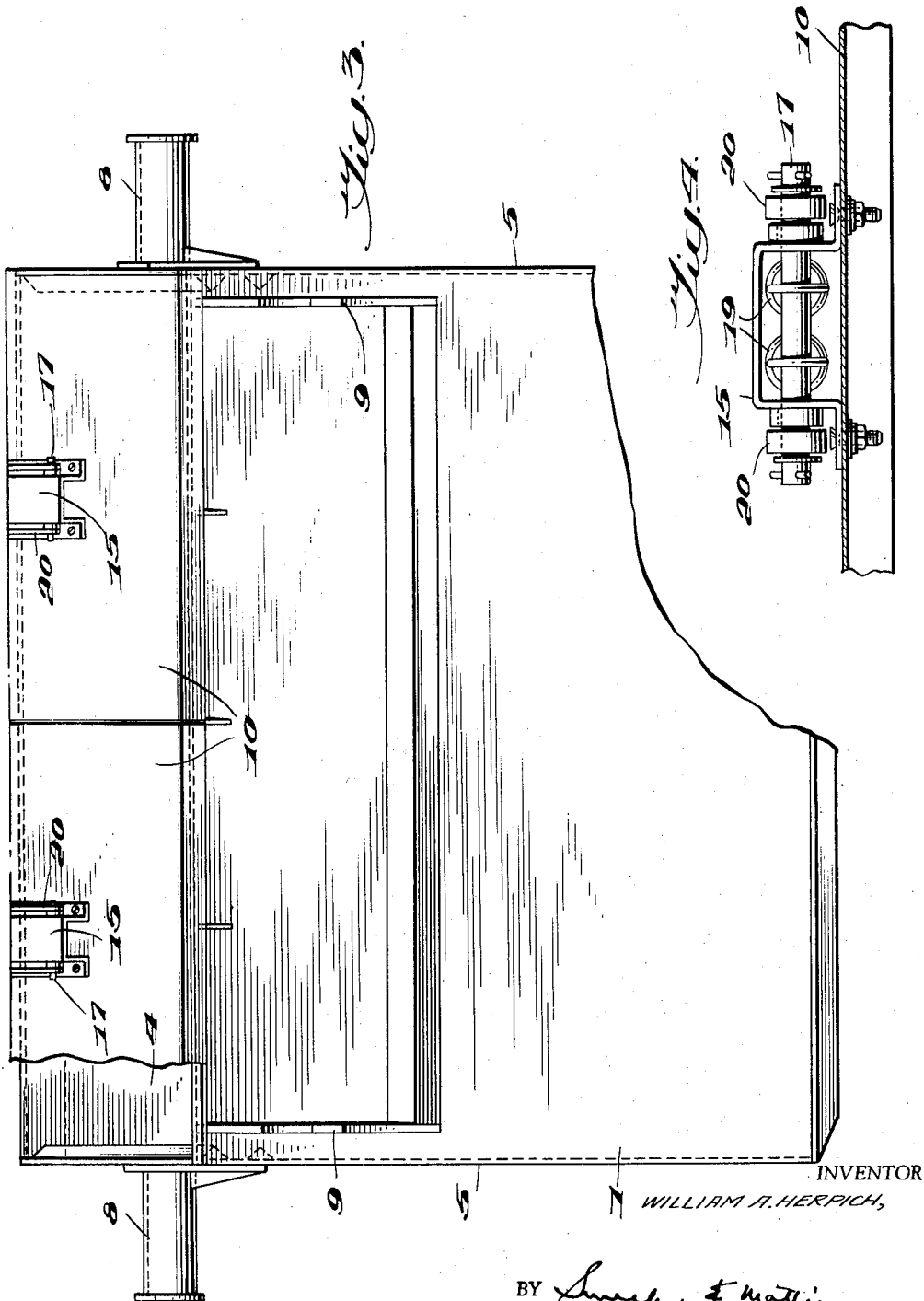
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4 Sheets-Sheet 2



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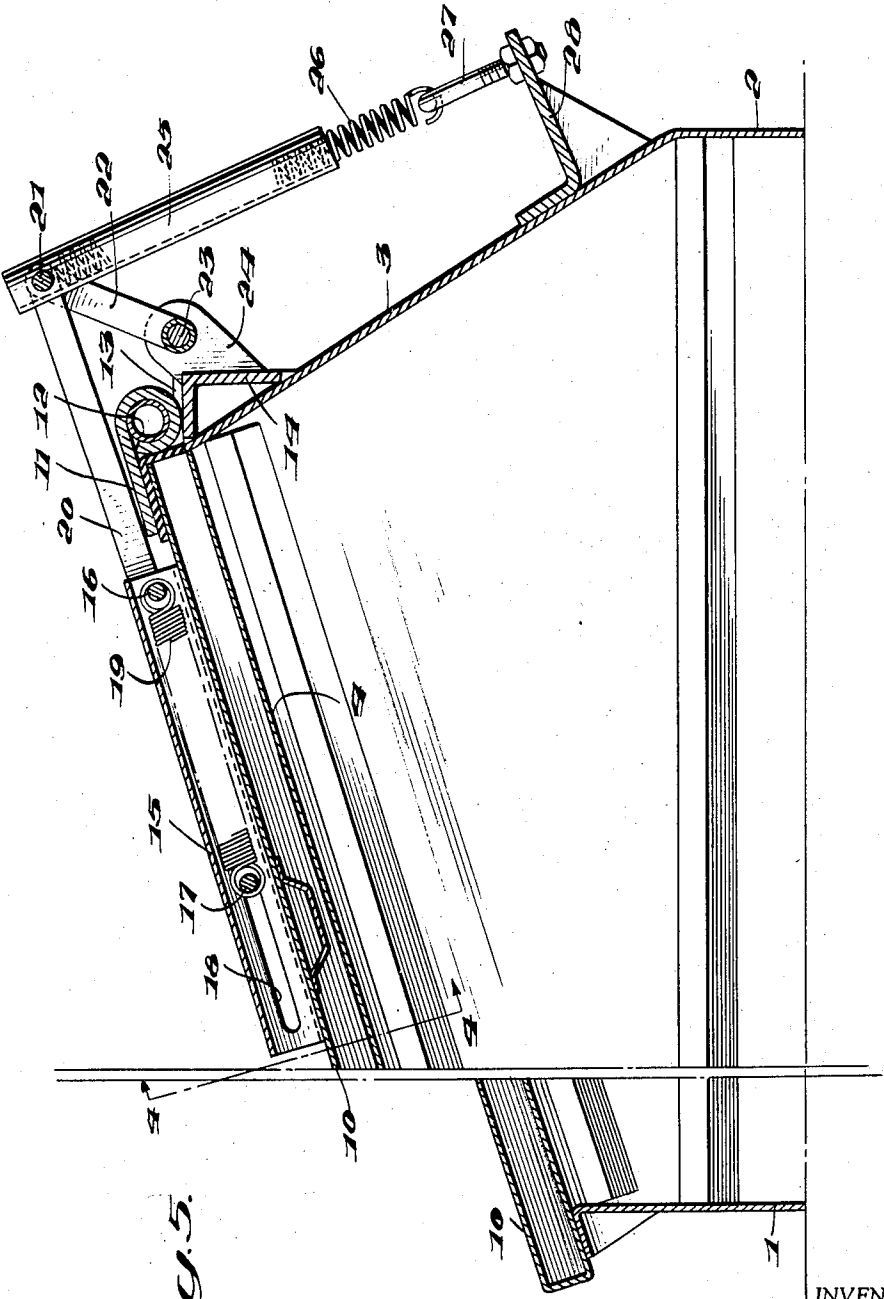


Fig. 5.

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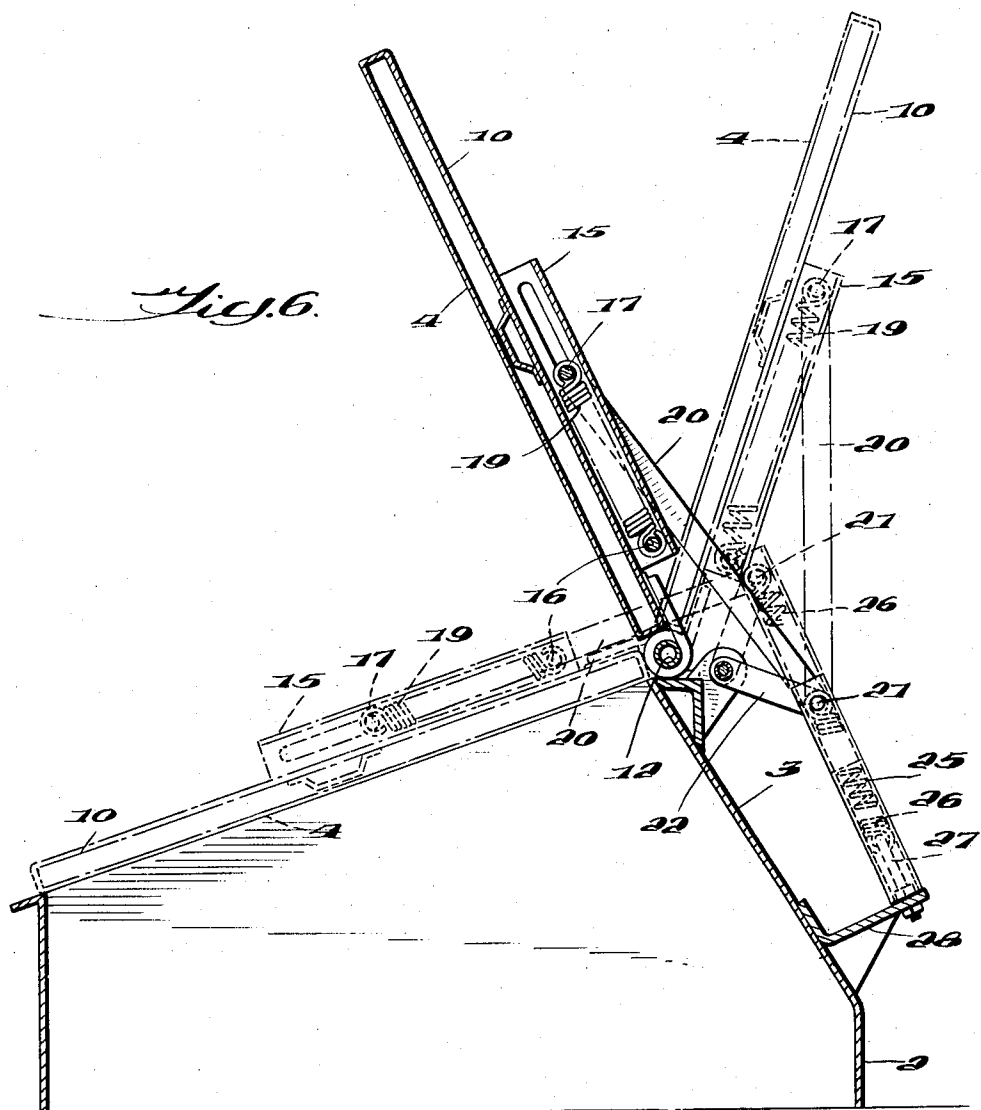
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4 Sheets-Sheet 4



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CONTAINERS

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6 Claims. (Cl. 220—35)

This invention relates to improvements in containers and more particularly to detachable containers adapted for the collection of refuse, such as garbage, trash, and the like, of the character set forth in the prior application of Harry W. Jones, Serial No. 522,043, filed July 14, 1955.

Such containers are adapted to be filled while sitting on the floor, street or other surface, through an opening in the top thereof, and to be picked up by a vehicle of the character set forth in the aforesaid Jones application, for dumping the contents into the vehicle. The container is separate from the vehicle, but provision is made for ready connection and disconnection, as desired.

A container of the type described is usually provided with one or more lids thereon for closing the open top of the container. Usually, the lids are hinged to the body of the container for swinging movement to open and closed positions. The construction of such containers from sheet metal, steel plate and the like often results in rather loud noises due to the closing of the lids. If a single lid is made large enough to cover the entire area of the top of the container, or the size is appreciable, it is heavy and difficult to open, especially by a small child.

One object of this invention is to overcome these objections and to facilitate the opening or closing of the lid or lids of the container.

Another object of the invention is to provide for the yieldable opening and closing movements of the lid or lids of the container and counterbalancing or cushioning the closing action thereof, tending to prevent loud noises as a result of the closing and banging of the lids in closed positions.

Still another object of the invention is to provide spring means connected with the lid or lids of the container to facilitate the opening thereof and to counterbalance or cushion the closing movements, and thereby prevent damaging of the lids in the opening or closing actions, as well as to reduce the noises incident thereto.

These objects may be accomplished, according to one embodiment of the invention, by providing spring means connected with the lid or lids at the hinged mounting thereof in such positions as to facilitate the opening action and to assist the opening of the lid or lids, as well as to prevent damage thereto when they are opened very rapidly. Counterbalancing or shock absorber springs are also connected with the lids, so as to cushion the closing movements thereof and thereby tend to reduce the noises incident thereto.

These objects of the invention are illustrated in the accompanying drawings, in which:

Fig. 1 is a partial top plan view of a container, showing the invention applied thereto;

Fig. 2 is an end elevation thereof;

Fig. 3 is a side elevation of the container;

Fig. 4 is a detail cross-section through the container on the line 4—4 in Fig. 5;

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Fig. 5 is a cross-section through the spring means and adjacent portion of the container on the line 5—5 in Fig. 1; and

Fig. 6 is a similar view, with the lid shown open and, by dotted lines, in other different positions with respect to the container.

The invention is described in connection with a container of the type set forth in the aforesaid application of Harry W. Jones, Serial No. 522,043, filed July 14, 1955, as illustrative of one embodiment of the container, and wherein said container is adapted to be picked up and dumped by the type of dumping vehicle also described in said application.

The container, as thus illustrated, comprises front and rear walls 1 and 2, the upper portion of the rear wall 2 being sloped, as indicated at 3, to an open top 4. End walls are shown at 5 and a bottom at 6. The bottom 6 is provided with reinforcing members 7, and the sides and ends may also be reinforced, as desired. The details of such reinforcing means, forming no part of the present invention and being well understood in the trade, need not be described in detail.

Lifting pins are shown at 8 on the end walls 5 of the container for engagement by the arms of the dumping vehicle to lift the vehicle for dumping. Dumping brackets are also provided at 9 on the front wall 1 for engagement by means on the dumping vehicle, as described more in detail in the aforesaid Jones application.

The above described body portion of the container may be varied in shape and size as desired. Substantially the entire top thereof is open or provided with openings therein to receive the refuse to be placed in the container, and one or more lids, indicated generally at 10, are provided for closing the opening or openings at the top of the container. Two such lids are illustrated in Figs. 1 and 3 for example, for closing the open top 4, according to this illustrated embodiment.

Each lid 10 is provided with a pair of strap hinges 11 journaled on a hinge rod 12 that extends along the length of the top portion of the container and is held in place by offset hinges 13. The offset hinges 13 are in turn mounted on an angle bar 14 secured to the container at the upper edge of the inclined portion 3 of the rear wall. This hinge mounting permits the opening and closing movements of each lid 10 about the axis of the hinge rod 12.

Mounted on each lid 10 and extending transversely thereof, as shown in Figs. 1 and 5, is a shock absorber housing 15. This housing is in the form of a channel bar having flanges at opposite edges thereof, welded, bolted or otherwise secured to the upper face of the lid. The housing 15 is open at opposite ends, although one end may be closed if desired.

Extending transversely between opposite sides of the housing 15 and mounted therein is a pin 16. This pin 16 is located adjacent the rear end of the housing. A second pin 17 extends transversely between opposite sides of the housing 15 adjacent the forward end thereof. The pin 17 is mounted in a pair of slots 18 in the opposite sides of the housing for bodily sliding movement lengthwise of the housing in the slots. A pair of coiled springs 19 are anchored at their opposite ends to the pins 16 and 17 and extend transversely therebetween.

The pin 17 projects outwardly at its opposite ends an appreciable distance from the opposite sides of the housing 15, as shown in Fig. 4. Links 20 are anchored at one end on the projecting outer ends of the pin 17 and straddle the housing 15, extending lengthwise thereof above the hinge mounting of the lid, as shown in Figs.

2 and 5. The opposite ends of the links 20 are anchored to a connector pin 21 which extends transversely there-through and through adjacent ends of short links 22 beside the links 20, and extending downwardly from the pin 21. The lower ends of the short links 22 are pivotally mounted on a hinge pin 23 that extends between ears 24 projecting outwardly from the mounting bar 14.

The connector pin 21 also extends through the upper ends of a pair of sleeves 25 that are swivelled on said pin 21 at their upper ends intermediate the pairs of links 20 and 22. The sleeves 25 extend downwardly from the connector pin 21 and have telescoped therein coiled springs 26 that extend through the sleeves 25, being anchored at their upper ends to the connector pin 21 and at their lower ends to eye-bolts 27 or other suitable connecting means for the respective springs 26. In the embodiment illustrated, the eye-bolts 27 are mounted in brackets 28 connected with and extending laterally from the sloping wall 3 of the container.

In the use of the container, the lid 10 is normally closed over the open top 4 thereof, as illustrated in the drawings. When it is desired to place the refuse in the container, the lid 10 is raised about the hinge rod 12, and if the contents of another container, such as a can, are to be dumped into the container, the lid 10 may be raised to a fully open position, upstanding therefrom, as shown in full lines in Fig. 6. The open swinging movement of the lid 10 will cause it to be turned back, beyond the full line position, as shown in the right-hand dotted line position in Fig. 6. The sleeves 25 are yieldably supported upon the springs 26 and thus yieldably return the lid to its open position, as well as preventing damage to the lid when it is opened very rapidly.

The springs 26 are under tension when the lid is in its closed position and therefore assist in the opening movement of the lid when it is raised slightly above a horizontal position.

The lid 4 is shown in its normally closed position in Fig. 5, with the counterbalance spring 26 under tension and with the eye-bolts 27 properly adjusted to provide a balanced force between the pull of the springs 26 and the weight of the lid.

When the lid is opened to its normal position, as shown in full lines in Fig. 6, the shock absorber springs 19 and the counterbalance springs 26 are both in closed position, collapsed, as illustrated in the drawings, and these parts hold the lid normally in its raised position, as shown, ready to be closed again.

Also shown in Fig. 6 is an exaggerated open position, illustrated in the right-hand dotted line position shown, in which the counterbalance springs 26 are closed, but the shock absorber springs 19 are stretched and under tension. The shock absorber springs 19 will prevent the lid from coming to an abrupt stop when opened to this extreme position, such, for example, as when the container is in inverted position during dumping. The shock absorber springs 19 attached to the long lever arms 20 are stretched during this action, so as to absorb the shock of severe opening conditions. Only under severe shock would the lid open to the right-hand dotted line position shown in Fig. 6. During the normal open position, the lid would be substantially in the position shown in full lines in Fig. 6.

These forces are especially significant in the lifting of the container to a dumping position on the vehicle in the manner set forth in the aforesaid Jones application, Serial No. 522,043, filed July 14, 1955, where the container is turned upside-down for dumping the contents in the body of the vehicle. The spring means provided according to this invention cushions the opening and closing movements of the lid, eliminating loud noises incident thereto, and results in less damaging action to the container.

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 having a body portion provided with a filling opening, a lid, means mounting the lid on the container for swinging movement to open and closed positions, a sleeve extending upright adjacent the lid mounting means, a pin extending transversely through the sleeve adjacent the upper end thereof, links pivotally mounted on the container and connected with said pin, a coiled spring telescoped through the sleeve and connected at one end with the pin, means anchoring the opposite end of the coiled spring to the container, and links connecting the pin with the lid.

2. A container having a body portion provided with a filling opening, a lid, means mounting the lid on the container for swinging movement to open and closed positions, a sleeve extending upright adjacent the lid mounting means, a pin extending transversely through the sleeve adjacent the upper end thereof, links pivotally mounted on the container and connected with said pin, a coiled spring telescoped through the sleeve and connected at one end with the pin, means anchoring the opposite end of the coiled spring to the container, links connecting the pin with the lid, and shock absorbing means connected with the last-mentioned links for cushioning the opening movement of the lid.

3. A container having a body portion provided with a filling opening, a lid, means mounting the lid on the container for swinging movement to open and closed positions, a sleeve extending upright adjacent the lid mounting means, a pin extending transversely through the sleeve adjacent the upper end thereof, links pivotally mounted on the container and connected with said pin, a coiled spring telescoped through the sleeve and connected at one end with the pin, means anchoring the opposite end of the coiled spring to the container, links connecting the pin with the lid, a pin connected with the last-mentioned links and slidably connected with the lid, and spring means connected with the last-mentioned pin tending to cushion the opening movement of the lid.

4. A container including a body portion provided with a filling opening, a lid for substantially closing said filling opening, means mounting the lid on the body portion for swinging movement to open and closed positions relative to the filling opening, link means connected with the spring means and extending therefrom to the lid, a member connected with the link means and movably mounted on the lid, and a second spring connected with said member in position to cushion the opening movement of the lid.

5. A container comprising a body portion provided with a filling opening, a lid for substantially closing said filling opening, hinge means on the body portion mounting the lid for swinging movement to open and closed positions relative to the filling opening, a coiled spring mounted on the body portion on one side of the hinge means, link means connected with the coiled spring and extending therefrom substantially to the lid, a member movably mounted on the lid and connecting the link means thereto, and a second spring connected with said member in position to cushion the opening movement of the lid.

6. A container comprising a body portion provided with a filling opening, a lid for substantially closing said filling opening, hinge means on the body portion mounting the lid for swinging movement to open and closed positions relative to the filling opening, a coiled spring mounted on the body portion on one side of the hinge means, a sleeve supported on the coiled spring and upstanding beside the hinge means in position to form a seat for the lid in open position, link means connected with the coiled spring and extending therefrom substantially to the lid, a member movably mounted on the lid and connecting the link means thereto, and a second

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spring connected with said member in position to cushion the opening movement of the lid.

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