

June 9, 1931.

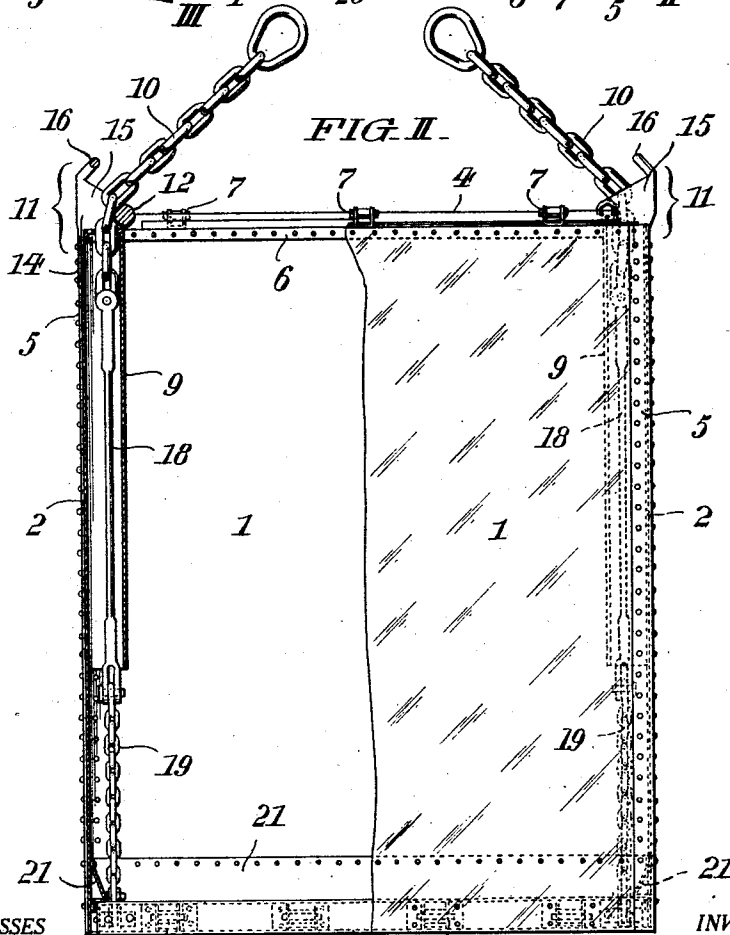
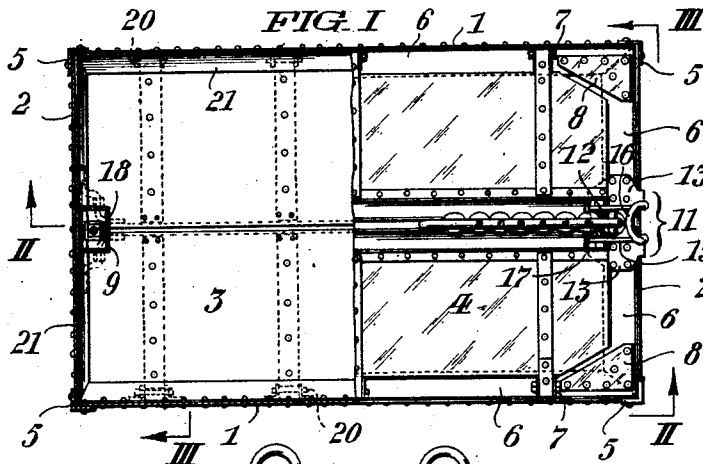
L. M. SHOWERS, JR

1,809,640

DROP BOTTOM CONTAINER

Filed June 24, 1930

2 Sheets-Sheet 1



WITNESSES

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INVENTOR:

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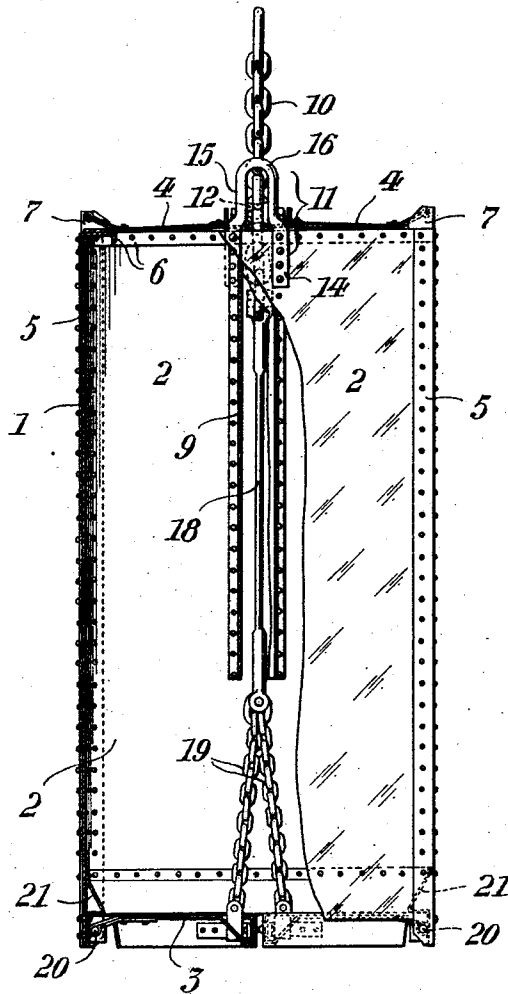
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FIG. III



WITNESSES

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DROP-BOTTOM CONTAINER

Application filed June 24, 1930. Serial No. 463,414.

My invention, while relating generally to drop-bottom containers, has particular relation to shipping containers adapted for use on freight cars, motor trucks or other vehicles for the transportation of bulk freight, such as coal, bricks, grain, ore, or the like. Such containers are customarily made of a size so that a number of them, situated side by side in either double or single rows, are conveniently accommodated on the floor of a railroad freight car, and they are usually handled by means of cranes or like hoisting appliances which shift them from one platform to another, or position them for dumping.

Heretofore it has been proposed to employ cables for the suspension of such containers from a crane or some form of hoisting apparatus, the cables engaging hooks or rings at the top of the containers at the corners and converging upward towards the grab hook of hoisting apparatus. It has also been proposed to employ additional cables for operating the bottom doors of the container, these cables passing upward along the sides of the container and being adapted to carry the load on the bottom doors while the container is moved from place to place. The object of the present invention is to provide a novel and improved arrangement for two sets of cables of this character, one set being used for the suspension of the container body, and the other set being used for carrying the load on the bottom doors, the arrangement being particularly characterized by a combined ring and guide, thus simplifying the construction of the container and facilitating the proper balancing of the loads so that the swinging of the container while suspended will not disturb the position of the bottom doors.

Other objects and advantages of the invention will be apparent from the description which follows hereinafter and which has reference to the accompanying drawings, in which there is illustrated one form or embodiment which the invention may take. Of the drawings:

Fig. I represents a plan view of a drop-bottom shipping container, showing one half of the container in section;

Fig. II represents a side elevation of the

same, showing a part of the container in section taken as indicated by the lines II—II of Fig. I; and

Fig. III represents an end elevation of the same, showing a part of the container in section taken as indicated by the lines III—III of Fig. I.

The container shown in the drawings comprises generally a body consisting of side walls 1 and end walls 2, a pair of bottom doors 3 and a pair of top doors 4. The walls 1, 2 are joined together and reinforced at the corners by angle irons 5 riveted thereto. At the top of the container, channel irons 6 attached to the walls 1, 2 form a support for the top door hinges 7, the channel irons 6 being braced at the corners by gussets 8.

On the inside of each end wall 2 there is a channel 9 forming a shield for the door operating cables 10, each channel extending upward from a point below the middle of the container to the top and there terminating in a channel guide 11 for the door operating cable. The guides 11 are provided with horizontal flanges 13 riveted to the channel irons 6 and vertical flanges 14 riveted to the end walls 2. Between the two side pieces 15 of each channel guide 11, there is a roller 12 which serves as a bearing for the cable 10 passing through the guide 11 as it leaves the top of the container and is deflected toward the hook from which the container is suspended. Formed integral with the side pieces of each guide 11 there is a loop which may take the form of a closed ring 16 inclined toward the center of the container and forming a point of attachment for the additional cables (which are not shown in the drawings) used for the suspension of the container body from the overhead crane.

The top doors 4 are cut away at their corners 17 to permit the opening and closing of the doors without interference with the guides 11 or cables 10. In using the term "cables" herein, I mean to include any suitable form of connection such as a wire, rope or chain. In this instance there has been selected for the bottom door operating means a chain attached to a rigid rod 18 having at

its lower end a pair of chains 19 secured to the bottom doors of the container.

The bottom doors 3 are hinged to the side walls by hinges 20, and immediately above the hinges 20 there are provided shields 21 inclined toward the center of the container and serving to facilitate the discharge of its contents as well as to protect the hinges 20.

When the container is filled and ready to be shifted from one point to another the door operating cables are pulled taut by the hook of the hoisting apparatus, and the suspension cables for the container body, which cables are made to the desired length, are attached to the rings 16 and engaged by the hook of the hoisting apparatus. The container is then bodily lifted and transferred to its destination. If it is desired to discharge the contents of the container, the container is lowered to the platform on which the load is to be deposited, relieving the tension on the door operating cables. These cables are then removed from the hoisting hook. Subsequently the container body with its bottom doors free to swing downward is elevated above the platform, and the contents are discharged.

Having thus described my invention, I claim:

1. In a drop-bottom shipping container, a container body, a bottom door, cables for holding said door closed, and guides for said cables disposed at opposite sides of the container, said guides having loops formed integrally therewith to afford points of attachment for the suspension of the container body.

2. In a drop-bottom shipping container, a container body, a bottom door, a cable attached to said bottom door and having a portion thereof accommodated in a wall of the container body, a channel guide for said cable at the top of the container, and a loop formed integrally with said channel guides to afford a point of attachment for the suspension of the container body.

3. In a drop-bottom shipping container, a container body, a bottom door, a housing at the side of the container body, a cable attached to said bottom door and having a portion thereof accommodated within said housing, and a guide for the cable at the top of said housing, said guide being formed to provide a ring by means of which the container body may be suspended.

4. In a drop-bottom shipping container, a container body, a bottom door, a cable for holding said door closed, a channel guide for said cable having a loop formed integrally therewith to provide a point of attachment for the suspension of the container body, and a roller bearing in said channel guide.

5. In a drop-bottom shipping container, a container body, a bottom door, a housing in a wall of the container body, a cable attached to said bottom door and having a portion

thereof accommodated within said housing, and a guide for the cable at the top of said housing, said guide having a roller bearing for said cable, and ring formed integral with the guide by means of which the container body may be suspended.

6. In a drop-bottom shipping container, a container body, a pair of bottom doors, cables for holding said doors closed, housing in the walls of the container body accommodating said cables, a pair of top doors, guides between said top doors serving as bearings for said cables as they converge at the top of the container, and means associated with said guides forming points of attachment for the suspension of the container body.

7. In a shipping container, an attachment for the top thereof comprising in an integral piece, a channel guide for one cable, and a loop formed thereon, said loop bridging the channel and affording a point of attachment for another cable.

In testimony whereof, I have hereunto signed my name at Altoona, Pennsylvania, this 17th day of June, 1930.

LEWIS M. SHOWERS, Jr.