May 12, 1953 H. J. LARSON ET AL 2,638,354

SUPPORT FOR CONTAINERS

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Fig. 1.

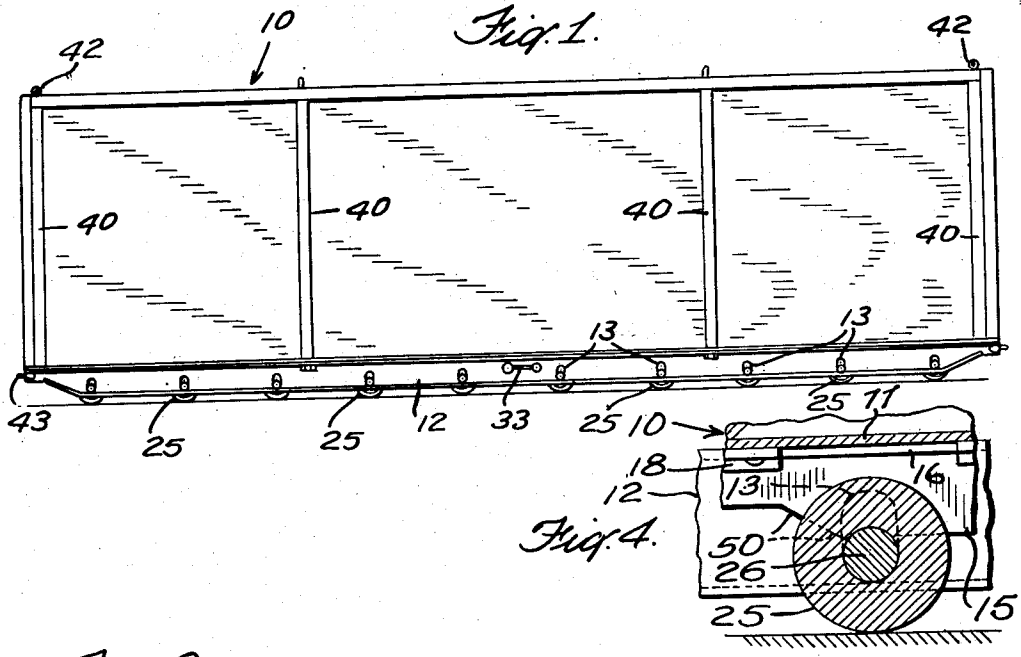
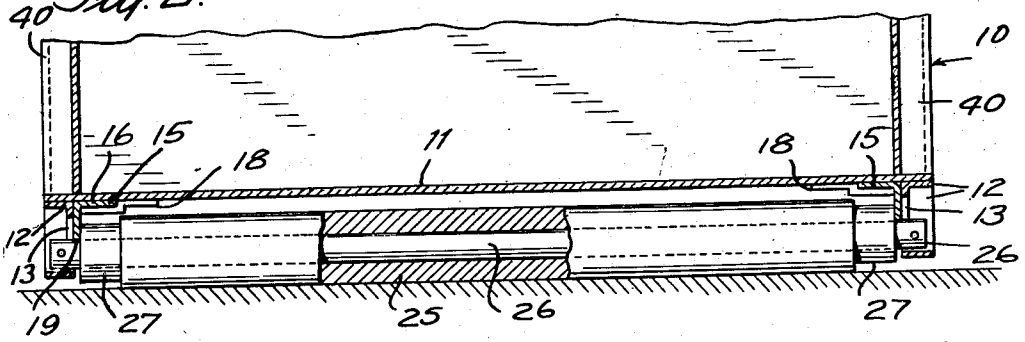


Fig. 4.

Fig. 2.



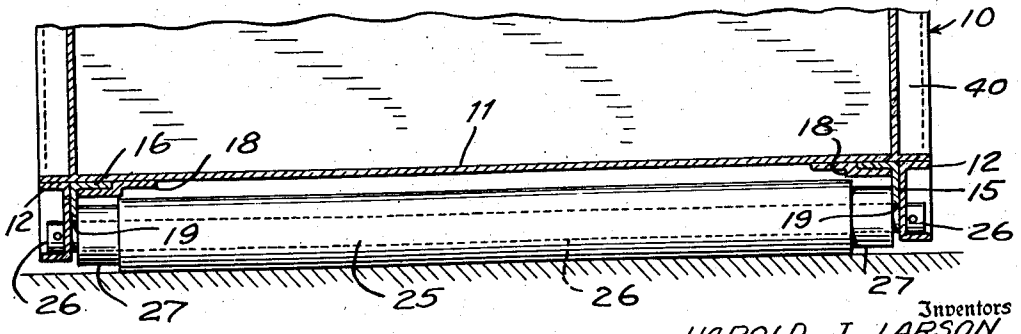


Fig. 3.

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Fig. 5.

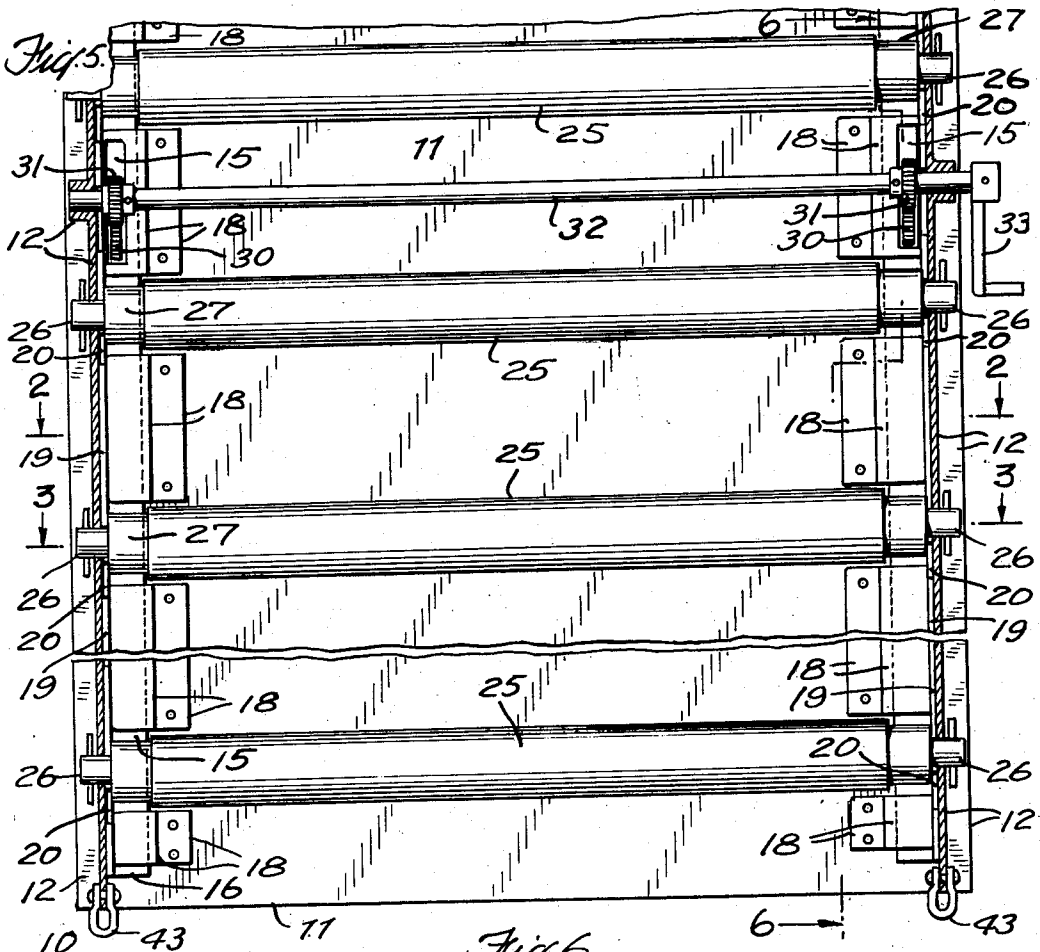


Fig. 6.

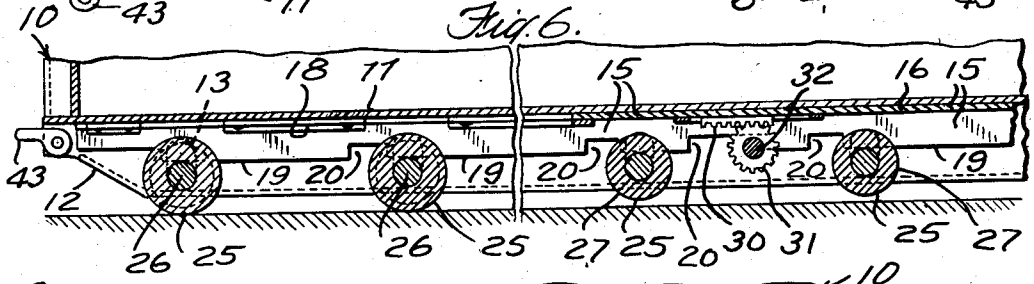
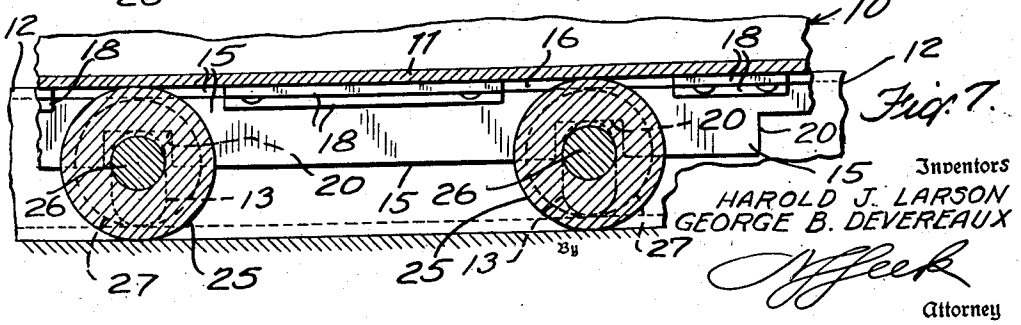


Fig. 7.



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SUPPORT FOR CONTAINERS

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5 Claims. (Cl. 280—44)

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This invention relates to supporting means for heavy containers which may vary in size from containers to be rolled over a floor to containers which constitute truck or freight car bodies.

An object of the invention is to provide simple and efficient means for handling containers of the above type.

Another object is to provide a container which normally is held in place by its own weight, but which may be readily converted to a rolling container when desired.

Another object is to provide a roller mounting for containers in which the rollers are readily retracted to provide a stationary support.

Another object is to provide a container support of the above type in which the weight of the container is distributed over a comparatively large area of the supporting surface.

Various other objects and advantages will be apparent as the nature of the invention is more fully disclosed.

The novel features which are characteristic of the invention will be better understood by referring to the following description taken in connection with the accompanying drawings in which a specific embodiment thereof has been set forth for purposes of illustration.

In the drawings:

Fig. 1 is a side elevation of a container embodying the present invention;

Figs. 2 and 3 are partial transverse sections of the container taken on the lines 2—2 and 3—3 respectively of Fig. 5;

Fig. 4 is a detail view illustrating one form of roller support;

Fig. 5 is a bottom plan view of the container;

Fig. 6 is a longitudinal section taken on the line 6—6 of Fig. 5 showing the rollers in rolling position; and

Fig. 7 is a similar section on a larger scale showing the rollers in non-rolling position.

Referring to the drawings more in detail the invention is shown as applied to a container 10 which may constitute a box to be rolled on a factory floor or may constitute a portion of a freight car body. The contanier 10 is shown as provided with a bottom wall 11 carrying on each side a longitudinal rail 12 having a plurality of vertically elongated slots 13 formed therein for the purpose to be described. A slide 15 is positioned against each rail 12 and is provided with a horizontal flange 16 which is adapted to slide in the channel formed between the bottom wall 11 and a guide plate 18. The slides 15 are provided with a lower surface 19 in which recesses are formed

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in positions to register with the vertically elongated slots 13 of the rails 12.

A plurality of rollers 25 are mounted in suitable bearings not shown on axles 26 which extend through the vertically elongated slots 13 of the rails 12 and are held beneath the under surfaces 19 of the slides 15. The surfaces 19 are adapted to hold the rollers spaced from the bottom wall 11 in position to roll on a supporting surface. The rollers 25 extend preferably across substantially the entire width of the container 10 so as to distribute the weight over a substantial area and are provided with reduced end portions 27 to provide clearance for the flanges 16 when the rollers are in rolling position.

When the slides 15 are shifted to bring the notches 20 into registration with the axles 26 clearance is provided which allows the rollers to be retracted so that the bottom wall 11 of the container rests on the top surfaces of the rollers. In this position the weight of the container and contents is transferred through the rollers to the supporting surface. Since the axles 26 are confined against longitudinal displacement by the slots 13 of the rails 12 the rollers are prevented from rotation and the container is fixed against movement.

In order to shift the slides 15 from rolling to non-rolling positions or vice versa, racks 30 are attached to each slide 15 and are engaged by pinions 31 which are attached to a shaft 32, extending across the bottom of the container and journalled in the rails 12. The shaft 32 may be rotated by suitable means as by a handle 33 located at one end of the shaft and on the outside of the container 10.

The container is preferably provided with a strengthening frame 40 extending upwardly from the rails 12, which it may carry at its top with eyes 42 adapted to receive lifting hooks. The rails 12 may also carry shackles 43 to receive hooks for securing the container in place when necessary.

In the operation of this device the slides 15 may be assumed to be shifted to the position shown in Fig. 7 wherein the container rests on the top surfaces of the rollers 25 and the weight of the container and contents is transmitted by the rollers to the floor. The rollers are now in non-rolling position and the container is fixed on the floor. When the container is to be shifted to a different location it may be raised as by inserting lifting hooks through the eyes 42 and lifting the container sufficiently to lift the rollers from the floor. This allows the axles 26 to drop to

the lower end of the vertically elongated slot 13 in the side rails 12 as indicated in Fig. 1. The slides 15 are then shifted by a suitable actuation of the handle 33 to bring the lower surfaces 19 of the slides over the axles 26. The rollers are then retained in rolling position as indicated in Figs. 2 and 3 and the container may be rolled over the supporting surface or may be placed on a flat car and rolled into place. When it is so positioned the slides are again actuated, either with or without lifting the weight from the rollers, to bring the notches 20 into registration with the axles 26 and thereby permit the container to again rest on the surface of the rollers.

In the case of comparatively light containers the slides 16 may be provided with a cam surface 50 to permit the same to be shifted from non-rolling to rolling position without first removing the weight of the container therefrom.

It is to be noted that when in non-rolling position the flanges 19 rest upon the reduced end portions 27 of the rollers so that the weight of the container and contents may be distributed along the entire length of the roller. This distributes the weight uniformly over the supporting surface so as to reduce the load concentration thereon.

It is to be understood of course that in the above device the specific construction will vary according to the dimensions of the container and the load to be carried. Also power means may be provided for shifting the slides from rolling to non-rolling positions so as to eliminate the necessity for removing the weight of the container therefrom prior to such shifting.

Various changes and modifications may be made as will be readily apparent to a person skilled in the art.

What is claimed is:

1. A container having a flat bottom wall, a plurality of rollers extending substantially across said container beneath said wall, bearing means at the ends of said rollers, side rails disposed below and along the sides of said bottom wall, said side rails having a depth less than the diameter of said rollers, whereby they are free from the supporting surface at all times, said end roller bearing means being mounted in said side rails, and means shifting said bearing means vertically in said side rails between an upper position wherein said flat bottom wall rests on the surfaces of said rollers and said rollers rest on said supporting surface to carry the entire weight of said container, and a lower position wherein said rollers are spaced below the bottom wall of said container whereby the rollers are free to roll on said supporting surface.

2. A container, as set forth in claim 1, in which said bearing means comprises axles extending through said rails and supporting said rollers.

3. In a container, as set forth in claim 1, slides extending along said rails having lower surfaces engaging said bearing means to hold the same in said lower position, said slides having recesses therein to register with said bearing means to provide clearance to permit said rollers to assume said upper position, and means shifting said slides to bring said recesses into or out of registration with said bearing means.

4. A container, as set forth in claim 3, in which said last means comprises racks carried by said slides and pinions engaging said racks to actuate the same.

5. A container, as set forth in claim 3, in which said slides are provided with cam surfaces to facilitate the shifting of said bearing means between said upper and lower positions.

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