March 26, 1940. L. G. KURTZ ET AL 2,194,475

LOADING BOOT

Filed May 19, 1938 2 Sheets-Sheet 1

Fig. 1.

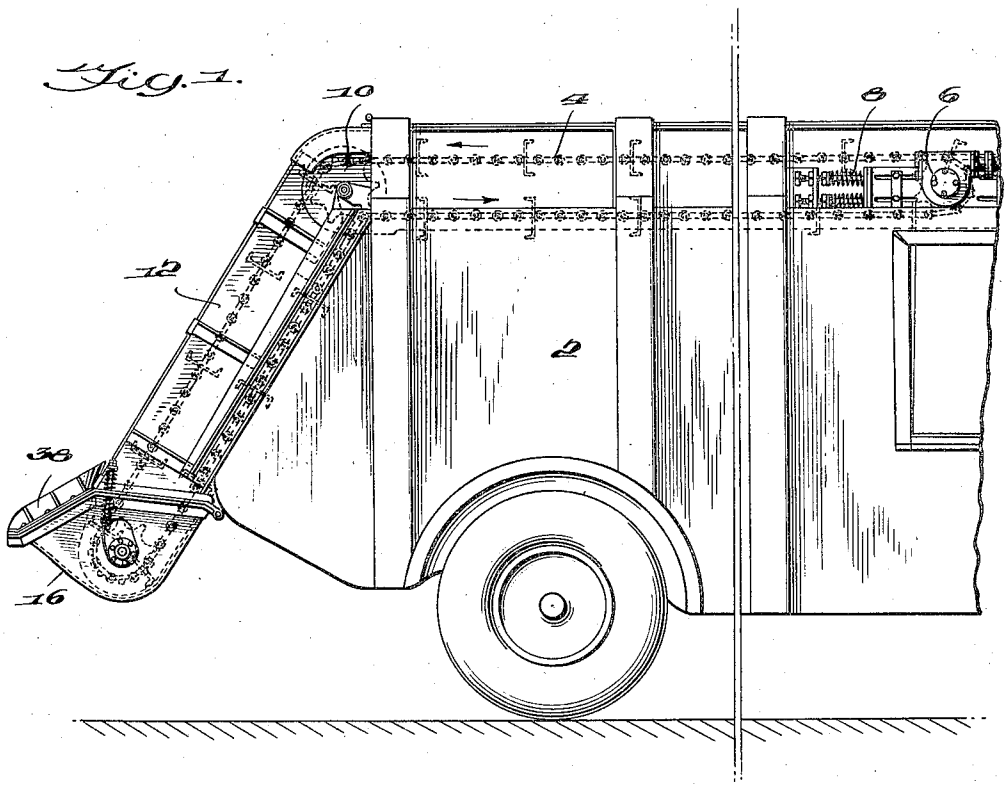
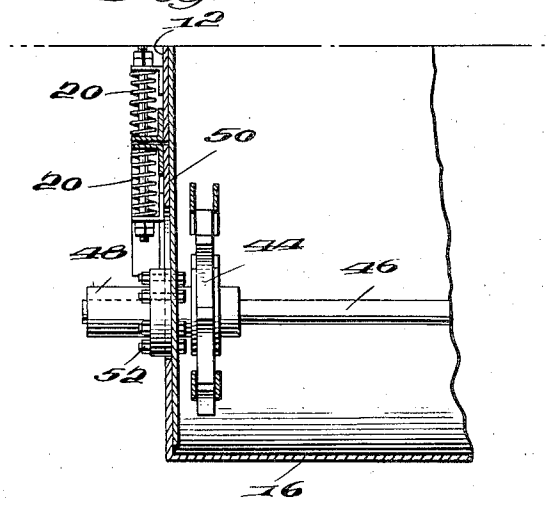


Fig. 4.



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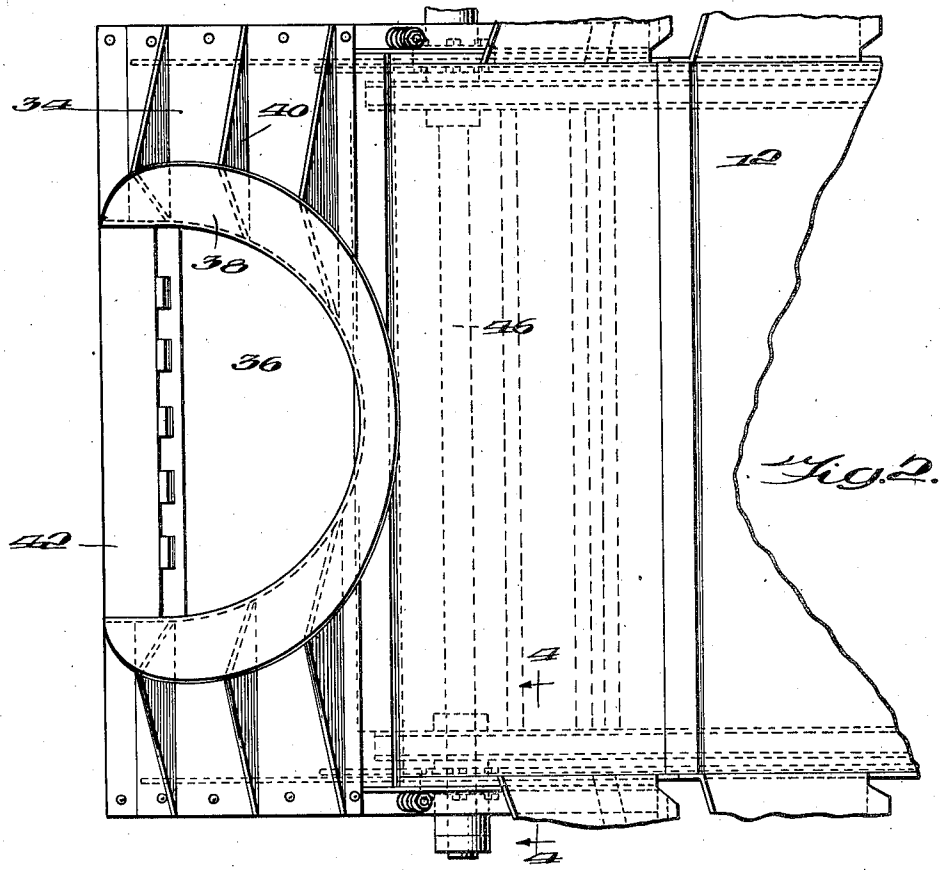


Fig. 2.

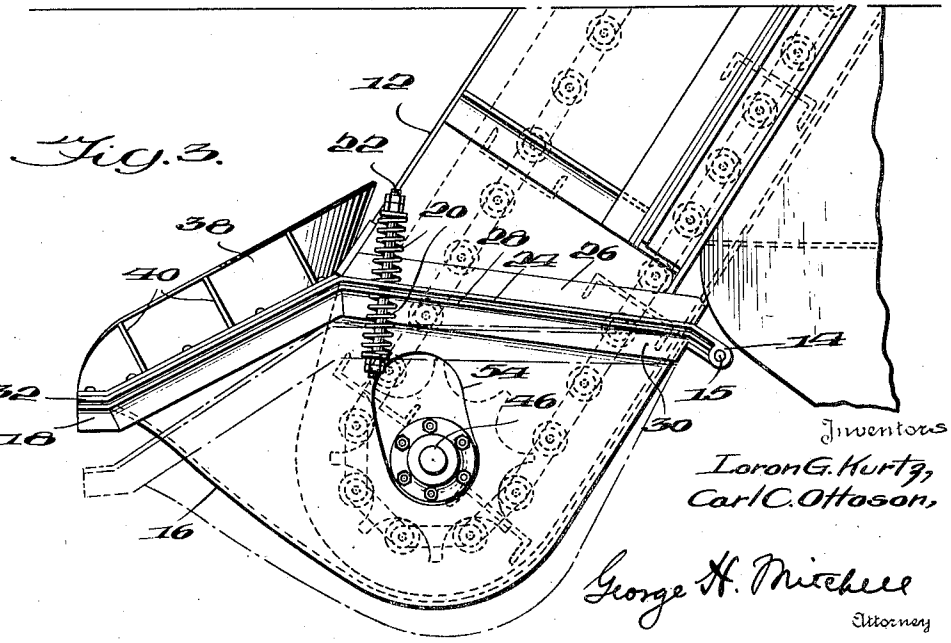


Fig. 3.

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UNITED STATES PATENT OFFICE

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LOADING BOOT

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Application May 19, 1938, Serial No. 208,937

8 Claims. (Cl. 198—207)

This invention is an improved loading boot for use at the loading end of an endless conveyor.

The loading boot of this invention is particularly for use with a downwardly extending conveyor, enclosed in a downwardly extending housing, of the type described in our application Serial No. 156,782. The downwardly extending portion of the conveyor is mounted at the rear end of a refuse collecting truck, the conveyor entering the body of the truck at the upper rear portion thereof and extending well forward into the truck body.

A resiliently mounted boot is provided at the lower end of the downwardly extending housing surrounding the conveyor. The guide wheels for the conveyor are located on suitable bearings in this boot; refuse material, particularly if in large pieces or blocks or bundles, tends to jam in the lower portion of the boot and, in order to compensate for this, the boot is resiliently mounted, to provide additional clearance for such larger bundles and the like.

Much of the refuse collected is in large heavy cans, boxes and the like which must be dumped into the boot of the conveyor. In order to facilitate the dumping of such heavy cans and the like, there is provided a rigidly mounted, laterally extending shelf provided with a loading funnel above the loading boot. This rigid supporting shelf provided with a loading funnel or loading opening is the most important feature of the present invention. In use, the collector rests his heavy can on the ground near the loading shelf and then tips the forward end of the can onto the loading shelf which supports that end, whereupon he then raises the can and dumps it into the loading funnel while the top of the can is supported on the loading shelf.

The described rigid shelf having the loading funnel is preferably supported by attaching it rigidly to the lower end of the conveyor housing, the shelf extending downwardly and outwardly at a convenient angle for facilitating the can-emptying operation.

The wheels or pulleys for the lower end of the conveyor are positioned on a suitable shaft or shafts, in turn supported by suitable extensions extending downwardly into the boot from the lower portion of the conveyor housing. The shaft or shafts for these wheels may project through the side of the boot through suitable slots in the boot for permitting pivotal movement of the boot.

Further improved details of structure and operation will be set forth in connection with the accompanying drawings illustrating the present preferred embodiment of the invention.

In these drawings,

Figure 1 is a side view of the rear part of a truck having an endless conveyor and boot constructed according to the present invention;

Figure 2 is a plan view on an enlarged scale of the rigid shelf and associated parts;

Figure 3 is a side view of Figure 2; and

Figure 4 is a section on the line 4—4 of Figure 2.

Referring now to these drawings, in which similar reference characters indicate similar parts, 2 indicates the body of a refuse collecting truck which is provided with an endless conveyor 4, the front part of the conveyor turning on wheels or sprockets carried by bearing members 6 which are resiliently mounted in cooperation with springs 8. The conveyor passes around guide wheels 10 into a pivotally mounted and downwardly extending conveyor housing 12 at the rear of the truck. At the lower end of the conveyor housing 12 there is pivotally mounted, by means of a bracket 14 and pivot 15, a boot 16, a portion 18 of which extends laterally and outwardly beyond the conveyor housing 12. The boot is resiliently mounted by any suitable means such, for example, as compression springs 20 surrounding a bolt 22, which bolt passes through the horizontal flange 24 of an angle iron, the vertical flange 26 of which is secured to the housing. The bolt 22 passes through the horizontal flange 28 of an angle iron carried by and bordering the upper edge of the boot, the vertical flange of which is shown at 30. The holes in the flanges 24 and 28 are large enough to give some play to the bolt 22. Instead of the type of spring shown, it is readily apparent that pull or tension springs of suitable strength could be substituted, the upper ends of these springs being secured to the housing 12 while the lower ends of the springs would be secured to the boot.

Coming now to the most important feature of the invention, the angle irons 24, on opposite sides of the housing, extend laterally, outwardly and downwardly at an angle, as shown at 32, to provide a rigid support for the shelf member indicated generally at 34, which shelf member is provided with a loading opening 36, bordered in part by the downwardly and inwardly inclined funnel forming member 38, member 38 being supported by a plurality of webs or ribs 40 secured to the shelf 34. The surface of the member 38 may be covered with vulcanized belting material, rubber or the like, if desired.

The shelf member 34 includes as a part thereof a transversely extending bar or shelf 42, which supporting bar is useful in supporting the upper edge of a heavy can as it is being dumped into the funnel opening. Bar 42 may be covered with a heavy, thick strip of rubber or the like for preventing slipping of the can and minimizing noise.

The lower end of the conveyor turns on wheels 44 in the boot, these wheels being mounted on a shaft 46 journaled in bearings 48; the bearings 48 are supported by plates 50 through the medium of bolts 52, the upper portions of plates 50 being welded or otherwise secured to the lower portion of the housing 12. Inasmuch as the shaft 46 and bearings 48 may extend through the side walls of the boot, such side walls are slotted as shown at 54 to allow the boot to move pivotally with respect to the shaft 46 and bearings 48.

The provision of the resiliently mounted boot together with the resilient mounting 8 at the forward part of the conveyor gives a construction in which sudden strains or jamming of the conveyor is compensated for by one or both of such resilient mountings. The provision of the rigid shelf provided with a loading funnel greatly facilitates the ease of loading, particularly where heavy cans are involved, the loading shelf serving to support the top part of the can while the collector raises the rear part of the can for dumping the refuse into the loading funnel.

While the present preferred embodiment of the invention has been described in some detail, it should be understood that the invention is not limited to these details, but may be carried out in other ways.

We claim as our invention:

1. In combination with the downwardly extending housing of an endless conveyor, a resiliently mounted boot cooperating with the lower end of said housing, and a rigid shelf, carried by said housing and having a loading opening, said shelf extending laterally from the lower end of said housing and positioned over a portion of said boot.

2. In combination with the downwardly extending housing of an endless conveyor, a resiliently mounted boot cooperating with the lower end of said housing, and pivoted to said housing at one side thereof, and a rigid shelf having a loading funnel, said shelf extending laterally from the lower end of said housing and supported thereby to extend over a portion of said boot.

3. In combination with the downwardly extending housing of an endless conveyor, a resiliently mounted boot cooperating with the lower end of said housing, a rigid shelf, carried by said housing and having a loading opening, said shelf extending laterally from the lower end of said housing and positioned over a portion of said boot, and means extending downwardly from said housing into the boot for supporting the guide wheels of the conveyor.

4. In combination with the downwardly extending housing of an endless conveyor, a resiliently mounted boot cooperating with the lower end of said housing, a rigid shelf, carried by said housing and having a loading opening, said shelf extending laterally from the lower end of said housing and positioned over a portion of said boot, and shaft means, supported by the housing and positioned in the boot, for the guide wheels of the conveyor, the boot being slotted to allow said boot to swing with respect to said shaft means.

5. In combination with the downwardly extending housing of an endless conveyor, a resiliently mounted boot cooperating with the lower end of said housing, and pivoted to said housing at one side thereof, a rigid shelf having a loading funnel, said shelf extending laterally from the lower end of said housing and supported thereby to extend over a portion of said boot, and shaft means, supported by the casing and positioned in the boot, for the guide wheels of the conveyor, the boot being slotted to allow it to swing with respect to said shaft means.

6. In combination with the housing of an endless conveyor, a resiliently mounted boot cooperating with the housing and conveyor, and shelf forming means having a loading opening and overlying a portion of said boot, said shelf-forming means being carried by said housing for supporting a receptacle while it is being emptied into the boot.

7. In a refuse truck, the combination of a housing for an endless conveyor, a resiliently mounted boot cooperating with the housing and conveyor, and shelf-forming means supported on said truck and overlying a portion of said boot for supporting a receptacle while it is being emptied into the boot.

8. In a refuse truck, an endless conveyor, a resiliently mounted boot for receiving refuse and cooperating with said conveyor, whereby said boot may yield when an obstruction enters between said boot and conveyor, and a shelf above said boot and supported on said truck, for supporting a refuse can independently of said boot while the can is being emptied into the boot.

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