May 4, 1943. E. BURDICK 2,318,462

APPARATUS FOR FILLING OIL DRUMS OR THE LIKE

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Fig.1.

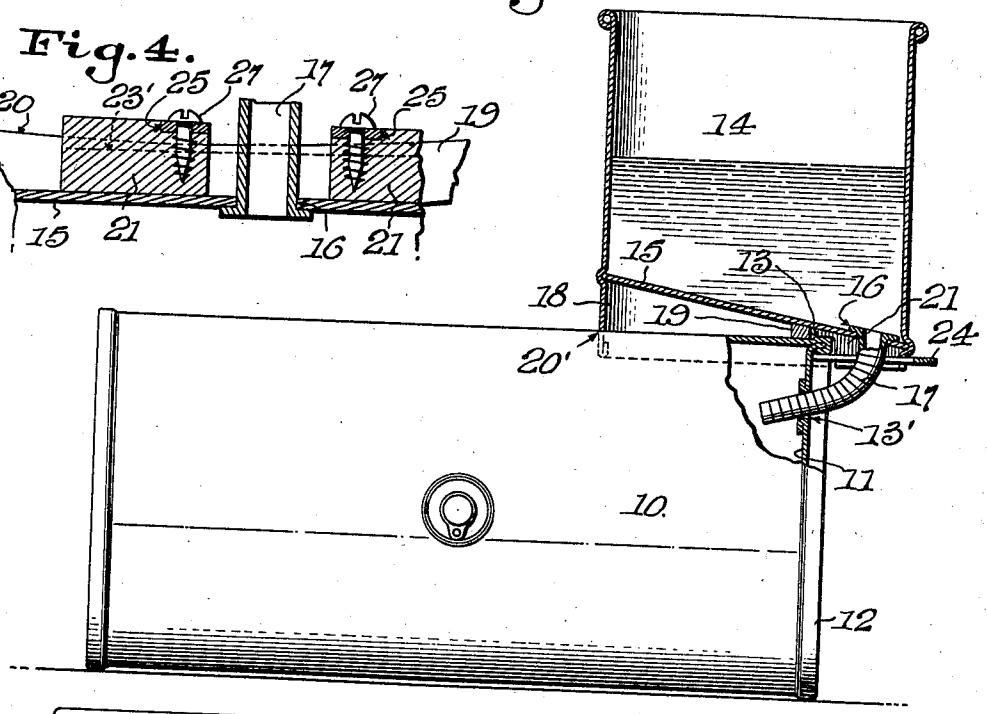


Fig.4.

Fig.2.

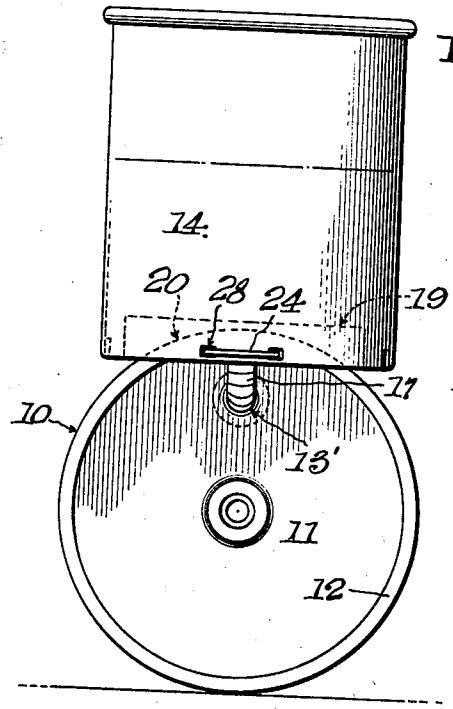
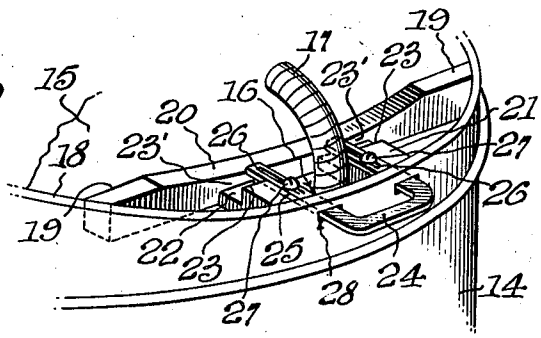


Fig.3.



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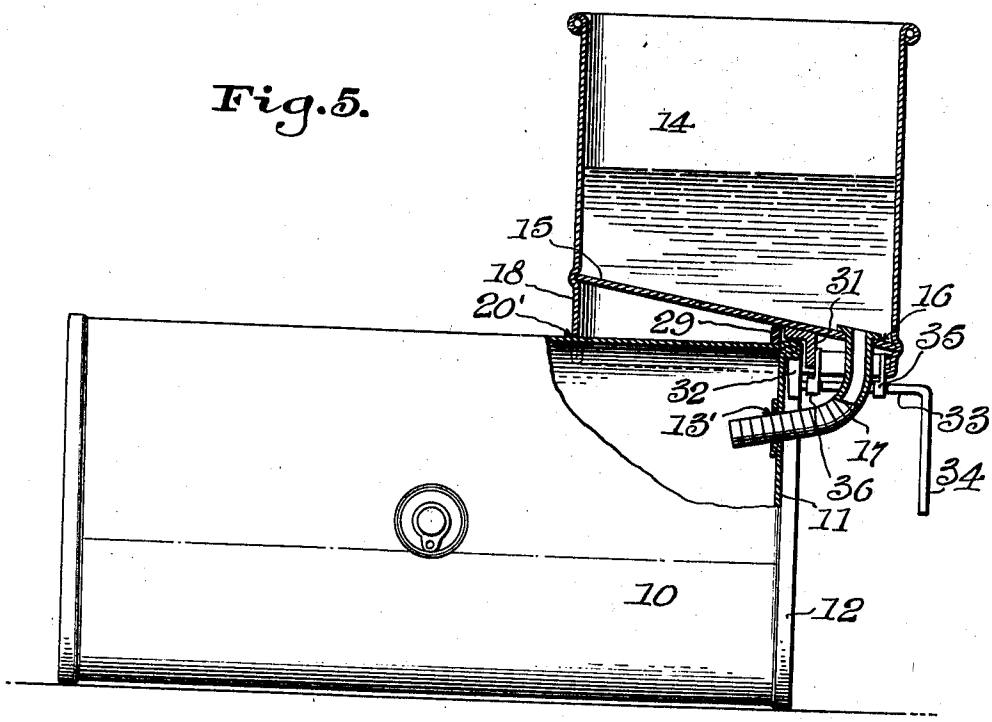
Attorney

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APPARATUS FOR FILLING OIL DRUMS OR THE LIKE

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Fig.5.



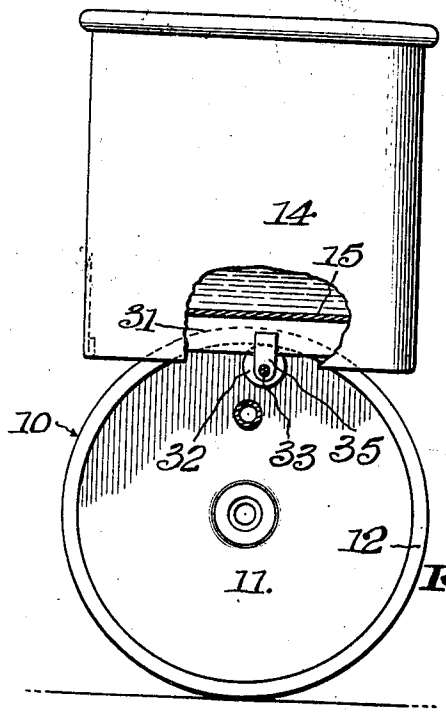
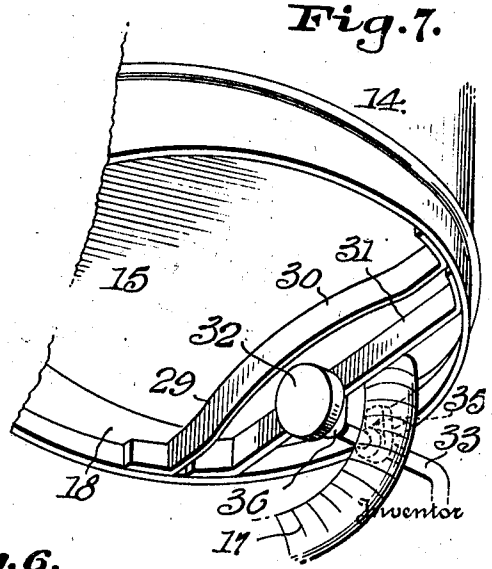


Fig.6.

Fig.7.



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2,318,462

UNITED STATES PATENT OFFICE

2,318,462

APPARATUS FOR FILLING OIL DRUMS OR THE LIKE

Ephraim Burdick, Madison, Ohio, assignor of one-half to Richard H. Bachmann, Madison, Ohio

Application December 27, 1940, Serial No. 371,965

11 Claims. (Cl. 226—31)

My invention relates to apparatus for filling oil drums or the like.

An important object of the invention is to provide releasable means for securely mounting a tank or receptacle upon the periphery of the drum, so that the drum may be filled through the end thereof, which means will securely hold the tank upon the drum against improper displacement and will permit of the ready removal of the tank, when desired.

A further object of the invention is to provide means of the above-mentioned character which is simple in construction and inexpensive to manufacture.

Other objects and advantages of the invention will be apparent during the course of the following description.

This application is a continuation in part of my application for Apparatus for filling oil drum or the like, filed May 10, 1940, Serial No. 334,431.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a central vertical section through filling apparatus embodying my invention, showing the same applied to a drum,

Figure 2 is an end elevation of the drum with the tank thereon,

Figure 3 is a perspective view of the bottom of the tank, parts broken away,

Figure 4 is a central transverse section through the hose, blocks, and associated elements, as shown in Figure 3,

Figure 5 is a central vertical section through filling apparatus embodying a second form of my invention, showing the same applied to a drum,

Figure 6 is an end elevation of the drum with the tank thereon, parts in section and parts broken away, and,

Figure 7 is a perspective view of the lower end of the tank and associated elements.

Attention being called first to Figures 1 to 4 inclusive, wherein the numeral 10 designates a drum such as an oil drum, which is ordinarily cylindrical and is provided at its ends with heads 11. The heads and periphery of the drum form annular flanges 12, as shown. The flange 12 extends longitudinally of the drum and also slightly radially of the same, providing a shoulder 13. One head is provided with an opening 13' for filling and this opening is adapted to be closed by the usual plug, not shown.

My filling apparatus comprises a tank or receptacle 14, having an inclined bottom 15, provided in its lower portion with an opening 16, draining into a flexible spout or hose 17, which is inserted into the opening 13'.

The tank 14 has its periphery projecting downwardly below the bottom 15 providing an annular flange 18, and this flange affords a space for the attaching elements.

Arranged within the flange 18 is a saddle or bar 19, rigidly attached to the flange 18. This saddle or bar has a circularly curved face 20, to contact with the upper portion of the periphery of the drum 10. The flange 18 also has a curved face 20', as shown. Arranged upon the outer side of the saddle or bar 19 are blocks 21, rigidly secured to the saddle or bar 19 and to the flange 18. These blocks are spaced from each other and are provided with recesses 22, receiving the flange 12 and having stop shoulders 23. The saddle 19 extends below the top walls of the recesses 22, to afford a shoulder 23' to engage inwardly of the shoulder 13.

The numeral 24 designates a U-shaped latch, mounted within grooves 25, formed in the blocks 21. The arms of this U-shaped latch have elongated slots 26, receiving screws 27 or the like, secured to the blocks 21, and serving to retain the arms of the U-shaped latch within the grooves 25 and to limit the longitudinal movement of the latch in opposite directions. The arms of the U-shaped latch 24 extend through openings 28.

The operation of the apparatus is as follows:

When the tank 14 is brought into proximity to the upper portion of the periphery of the drum, the flexible hose or spout 17 is inserted through the opening 13', and the tank is placed upon the drum. The outer portion of the tank projects outwardly beyond the end of the drum, while the saddle or bar 19 engages the periphery of the drum and that portion of the flange 18 remote from the saddle 19 also engages the periphery of the drum. The latch 24 is now moved longitudinally in an inward direction and engages beneath and with the flange 12, the shoulder 23 engages behind the outer end of the flange, while the shoulder 23' of the saddle engages behind the shoulder 13. When the latch is in the inner position the tank 14 is securely held upon the drum so that it cannot be removed therefrom without moving the latch 24 to the outer position.

In Figures 5 to 7 inclusive, I have shown a modification of the invention. The same drum 10 with the flanges 12 and shoulders 13 is provided. The same tank 14 is used with the bot-

tom 15 having the opening 16 and flexible hose 17 passing through the opening 13'. The tank 14 has the flange 18 provided with the curved edge or recess 20'.

Beneath the bottom 15 the tank has a bar or saddle 29, rigidly attached to the flange 18. This saddle has a lower curved edge or recess 30 to engage with and conform to the curvature of the periphery of the drum 10. Disposed near and outwardly of the saddle 29 is a stop element or stop bar 31, having a lower straight edge which projects downwardly below the curved edge 30.

The numeral 32 designates a rotary clamping element or cam, arranged between the saddle 29 and the stop bar 31 and positioned to engage with and inwardly of the flange 12. The rotary clamping element 32 is rigidly mounted upon a horizontal shaft 33 provided with a radial handle 34. The shaft 33 is journaled in a bearing 35 attached to the flange 18 and in a bearing 36 attached to the stop bar 31.

The operation of the apparatus is as follows:

The tank 14 is applied to the end of the drum 10 and projects beyond the end of the drum, as shown. The curved edge 20' of the flange 18 engages the periphery of the drum and the edge 30 of the saddle engages the periphery of the drum forwardly of and adjacent to or in contact with the shoulder 13 of the flange 12. The stop element or stop bar 31 is disposed outwardly of the flange 12 adjacent to or in contact with the end of the flange. The rotary clamping element or cam 32 is now turned so that its high portion engages with and beneath the flange 12. When the rotary clamping element or cam 32 is in the active position in engagement with the inner surface of the flange 12, the tank 14 cannot be lifted from the drum, while the saddle 29 and stop element or stop bar 31 engaging with the flange 12 hold the tank 14 against being shifted longitudinally of the drum in either direction. The flexible hose 17, of course, is passed into the opening 13'. To remove the tank 14, the rotary clamping element or cam 32 is turned so that its low portion is uppermost at which time the drum 14 may be raised sufficiently with respect to the drum so that the saddle 29 will clear the flange 12 whereby the tank can be separated from the drum.

It is to be understood that the forms of my invention herewith shown and described are to be taken as preferred examples of the same and that various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of my invention or the scope of the subjoined claims.

Having thus described my invention, what I claim is:

1. Apparatus for filling a drum while arranged upon its periphery, said drum being provided with a circumferentially extending flange which projects radially beyond the periphery and has an inlet opening, such apparatus comprising a tank having its lower portion overlapping the periphery of the drum, a saddle secured to the tank beneath its bottom to engage with the periphery of the drum and arranged upon one side of the radially extending flange, a stop element secured to the tank beneath its bottom and spaced from the saddle and arranged upon the opposite side of the radially extending flange, a movable element secured to the tank and adapted for movement into engagement with the inner periphery of the flange, and an outlet conduit carried by the tank for insertion within the inlet opening of the drum.

2. Apparatus for filling a drum while arranged upon its periphery, said drum having a circumferentially extending flange projecting radially outwardly beyond the periphery and also having an inlet opening, said apparatus comprising a tank having its lower portion arranged in overlapping relation with the periphery of the drum and engaging such periphery to be supported thereby, a saddle secured to the tank beneath its bottom and engaging with the periphery of the drum upon one side of the flange, a stop element carried by the tank beneath its bottom and arranged upon the other side of the flange, a turning element mounted upon the tank and arranged to engage with the inner periphery of the flange, means to turn the turning element, and a conduit connected with the drum for insertion within the inlet opening.

3. Apparatus for filling a drum having a periphery, said drum having a flange extending radially outwardly beyond its periphery and having an inlet opening, such apparatus comprising a tank provided near its bottom with means to engage with and be supported by the periphery of the drum, a saddle mounted upon the tank and engaging with the periphery upon one side of the flange, a stop element mounted upon the tank and arranged to engage with the flange upon its opposite side, releasable means to engage the inner periphery of the flange, and a conduit connected with the tank for insertion within the inlet opening.

4. Apparatus for filling a drum having a periphery and a flange at one end which extends longitudinally beyond such end, the end having an opening, such apparatus comprising a tank arranged upon the periphery of the drum adjacent to the end, an outlet tube secured to the tank for insertion within the opening, spaced blocks secured to the lower portion of the tank upon opposite sides of the tube and having recesses to receive the flange, said recesses forming shoulders disposed upon one side of the flange, a saddle secured to the lower portion of the tank and disposed upon the opposite side of said flange, and a latch having spaced arms mounted upon the blocks and movable inwardly to engage with the inner periphery of the flange.

5. Apparatus for filling a drum having a periphery and a flange at one end and an opening in such end, said flange extending longitudinally and radially beyond the drum, such apparatus comprising a tank, a tube secured to the tank to enter the opening in the end, a block secured to the lower portion of the tank and having a recess to receive the flange, said recess having a shoulder disposed upon one side of the flange, a saddle secured to the lower portion of the tank and arranged upon the opposite side of the flange, and a movable latch carried by the tank to be shifted inwardly to engage the inner periphery of the flange.

6. Apparatus for filling a drum having a flange at one end which extends longitudinally and radially beyond the drum, said end having an opening, such apparatus comprising a tank to be arranged upon the periphery of the drum adjacent to the end, a saddle secured to the lower end of the tank and having a recess to receive the upper portion of the periphery, an outlet tube secured to the tank and adapted to enter the opening, a block secured to the lower portion of the tank adjacent to the saddle, said block

having a recess to receive one portion of the flange, the recess having a shoulder disposed upon one side of the flange, the saddle extending downwardly below the top wall of the recess to form a shoulder disposed upon the opposite side of said flange, and a bolt secured to the block and movable across the recess of the block.

7. The combination with a horizontally arranged drum provided at one end with a flange extending longitudinally outwardly beyond the drum, said drum having an opening, of a tank arranged above the periphery of the drum and supported thereby, said tank overlapping a portion of the drum and a portion of the tank extending outwardly beyond the end of the drum, a conduit connected with the tank and adapted for insertion within said opening, and holding means mounted upon that portion of the tank which extends outwardly beyond the end of the drum for engaging said flange for holding the tank against upward movement with respect to the drum, the holding means being movable with relation to the tank without moving the tank upwardly with relation to the drum.

8. Apparatus for filling a drum while arranged upon its periphery, said drum having a circumferentially extending flange arranged near the end of the drum and projecting radially outwardly beyond the periphery, said drum also having an inlet opening, such apparatus comprising a tank to be arranged upon the periphery of the drum with a portion of the tank extending outwardly beyond the end of the drum, a saddle secured to the tank and arranged upon the inner side of the flange, a turnable cam mounted upon the tank and disposed upon the outer side of the end of the drum and arranged to engage the flange, means to turn the cam, and a conduit connected with the tank and adapted for insertion within said opening.

9. Apparatus for filling a drum while arranged upon its periphery, said drum having an end and an opening and a flange extending radially outwardly beyond the periphery, such apparatus comprising a tank to be mounted upon said periphery, a member secured to the lower portion of the tank and arranged inwardly of the flange, a rectilinearly reciprocatory U-shaped latch mounted upon the lower portion of the tank and disposed upon the outer side of said end, said latch being movable into engagement with the inner periphery of the flange, and a conduit connected with the tank for insertion within the inlet opening.

10. Apparatus for filling a drum while arranged upon its periphery, said drum having an end and an opening and provided with a flange projecting longitudinally beyond the end, said apparatus comprising a tank mounted upon the periphery of the drum, a turnable cam mounted upon the lower portion of the tank and disposed outwardly of said end and arranged inwardly of the flange to engage the inner periphery of the flange, the cam serving to draw the tank downwardly in clamping engagement with the drum, means to turn the cam, and a conduit connected with the tank for insertion within said opening.

11. The combination with a generally horizontal drum having a periphery and end and opening and provided with a flange near the end which extends beyond the periphery, a tank mounted upon the periphery and extending outwardly beyond the same, and a movable element mounted upon the tank for clamping engagement with the flange and adapted to be shifted with relation to the tank without substantially disturbing the assembled relative position of the tank and drum, and a conduit secured to the tank for insertion within the opening.

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