Sept. 4, 1928. 1,683,571

P. MUELLER

GASOLINE BUCKET

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Fig. 15.

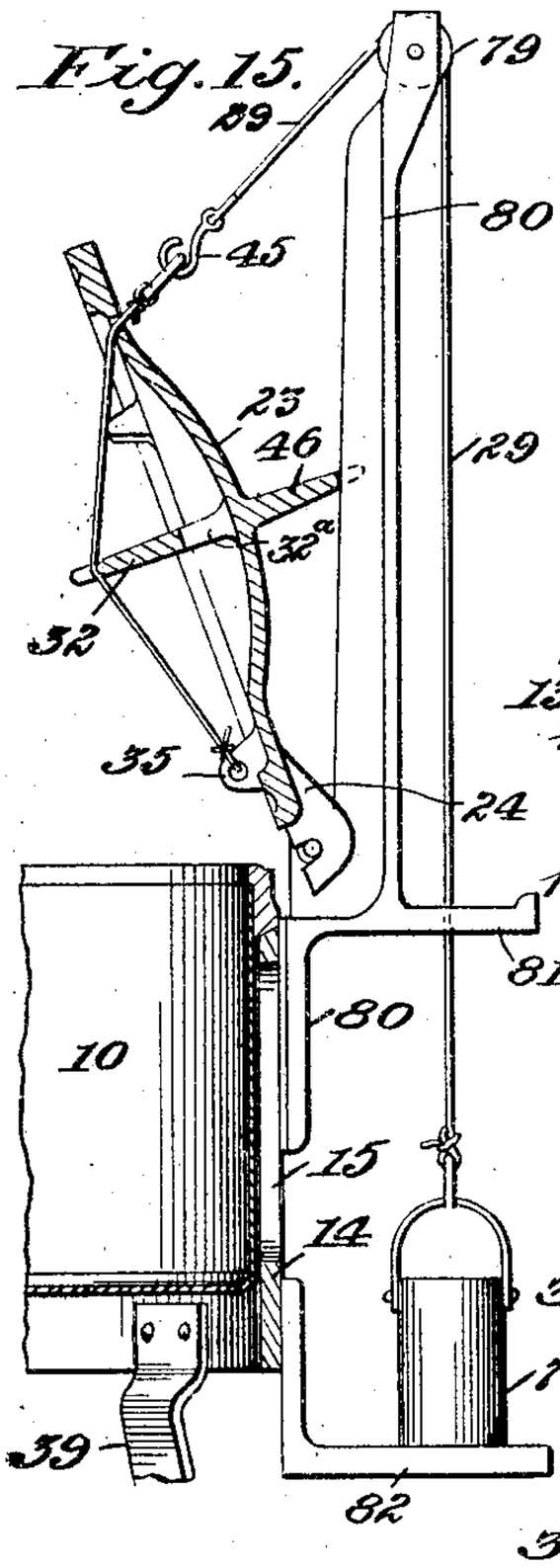
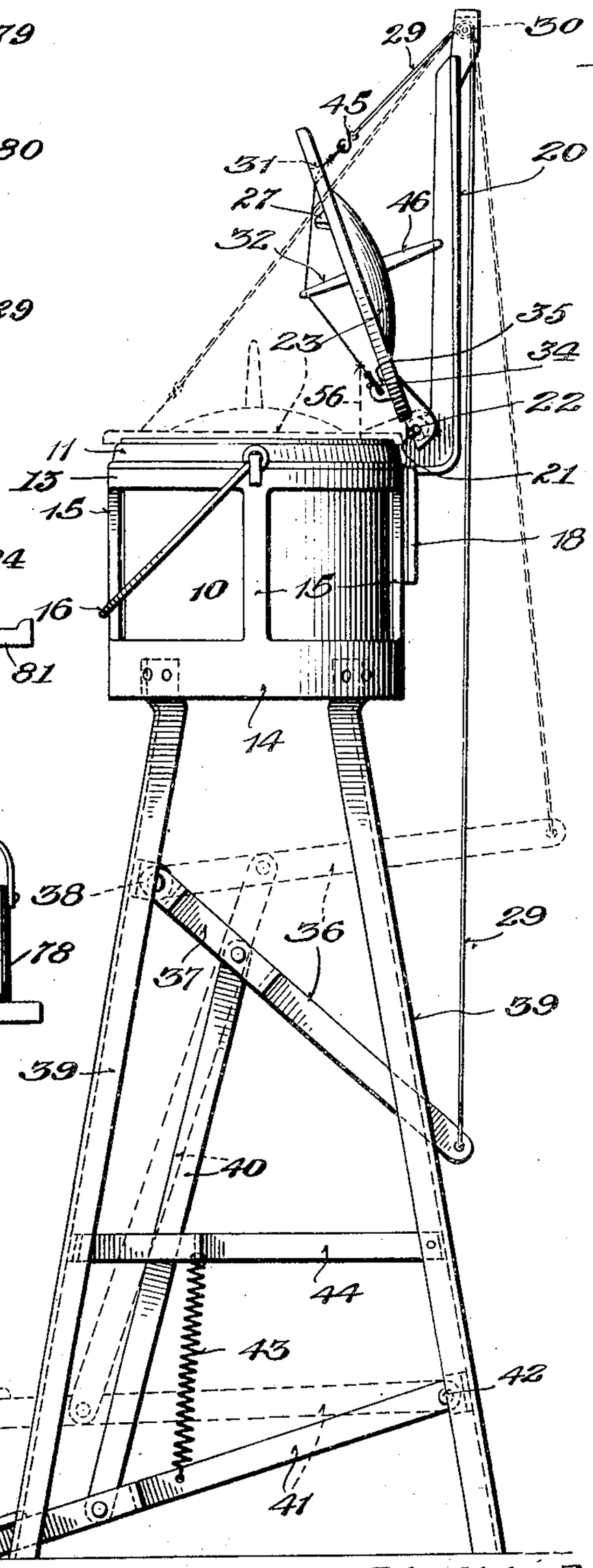


Fig. 1.



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GASOLINE BUCKET

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Fig. 8.

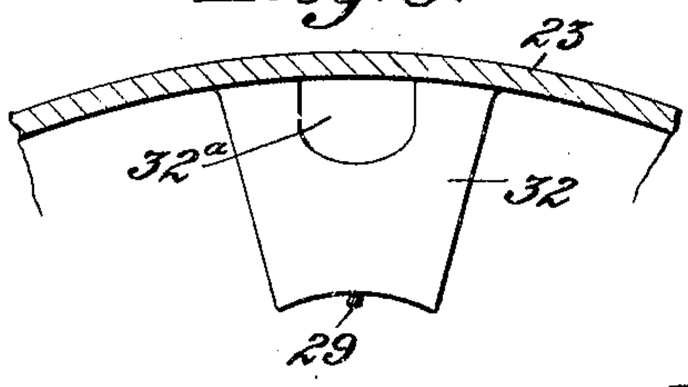


Fig. 9.

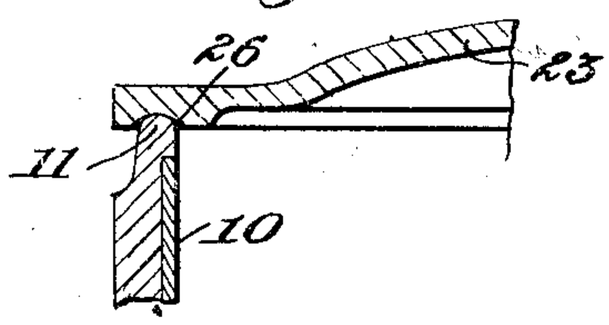
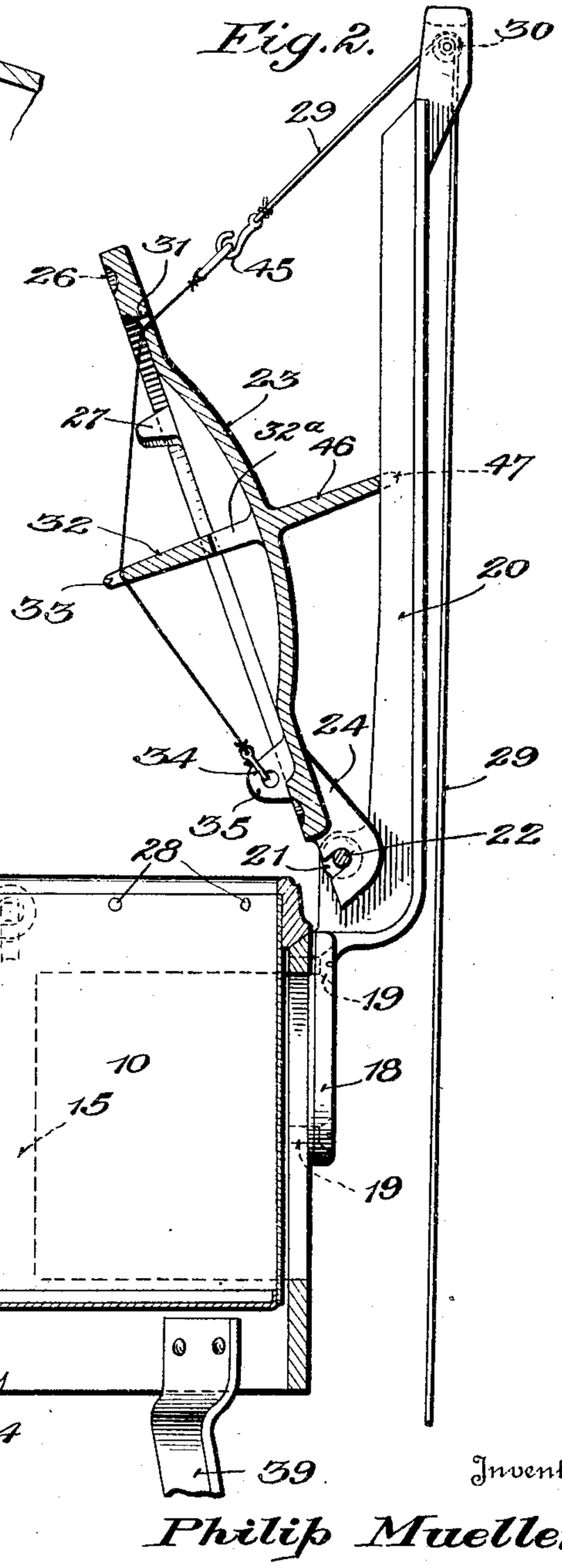


Fig. 2.



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GASOLINE BUCKET

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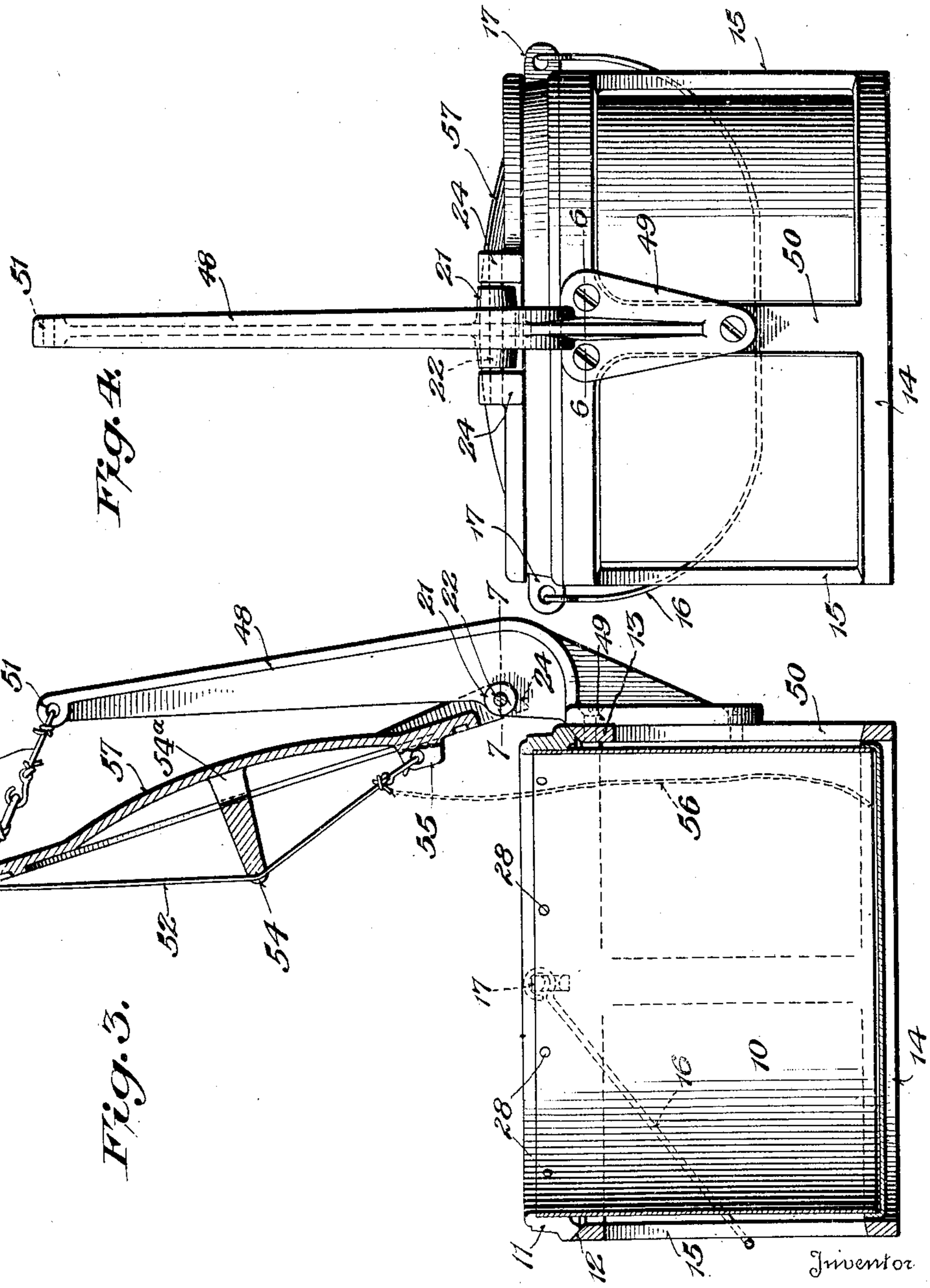

Fig. 4.

Fig. 3.

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Fig. 6.

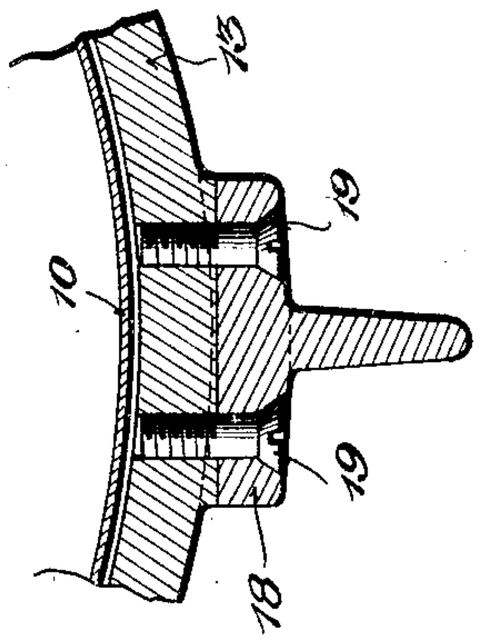

Fig. 7.

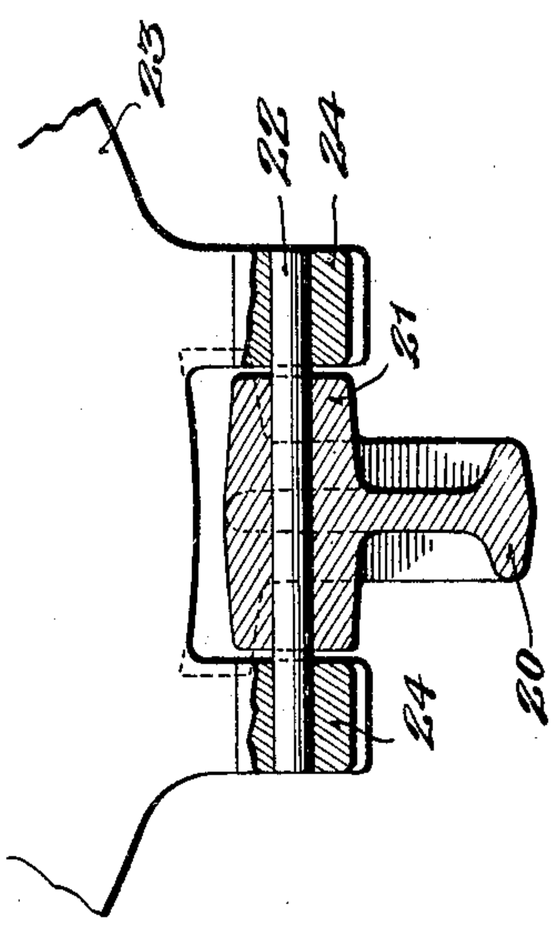

Fig. 5.

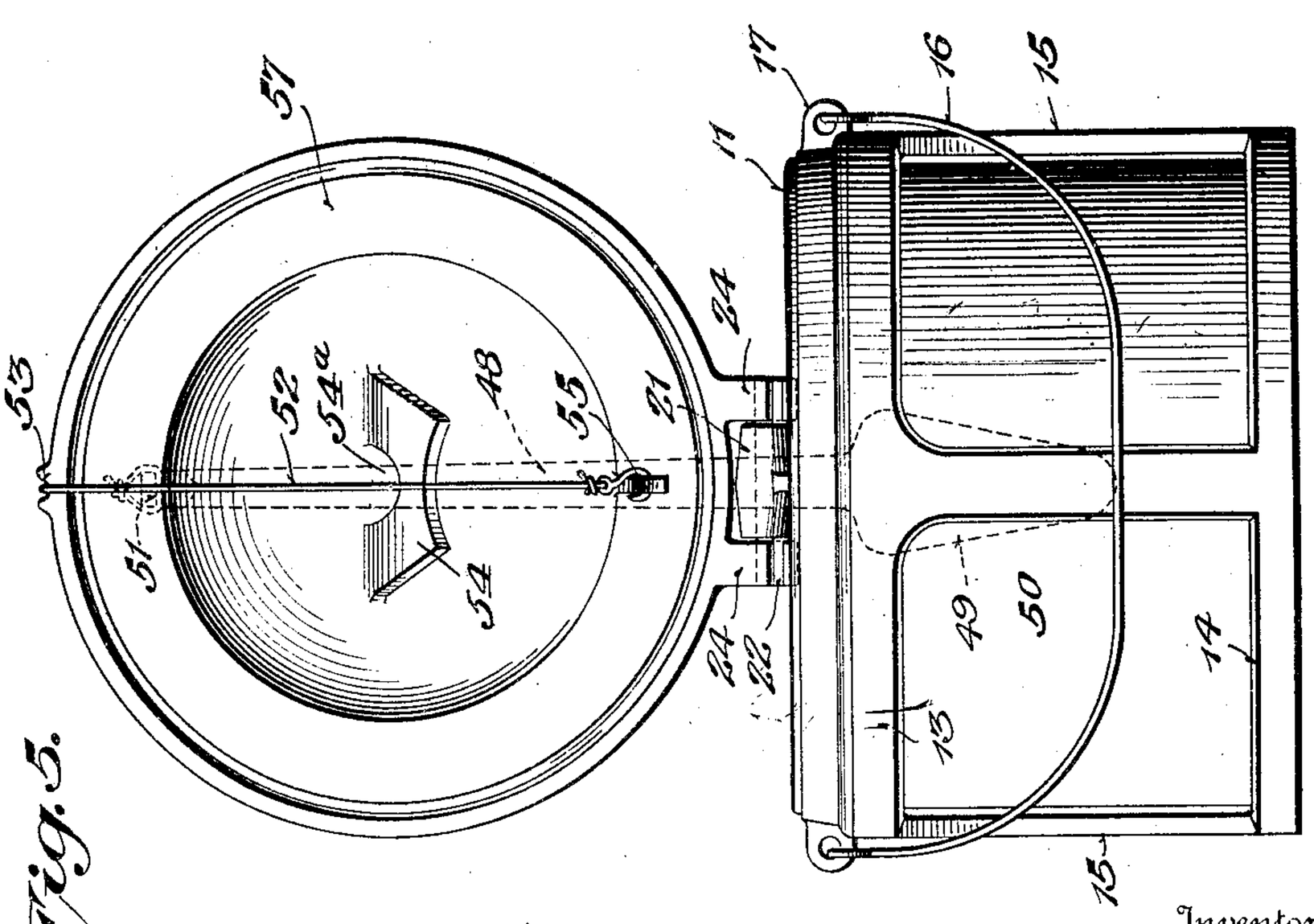

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Fig. 12.

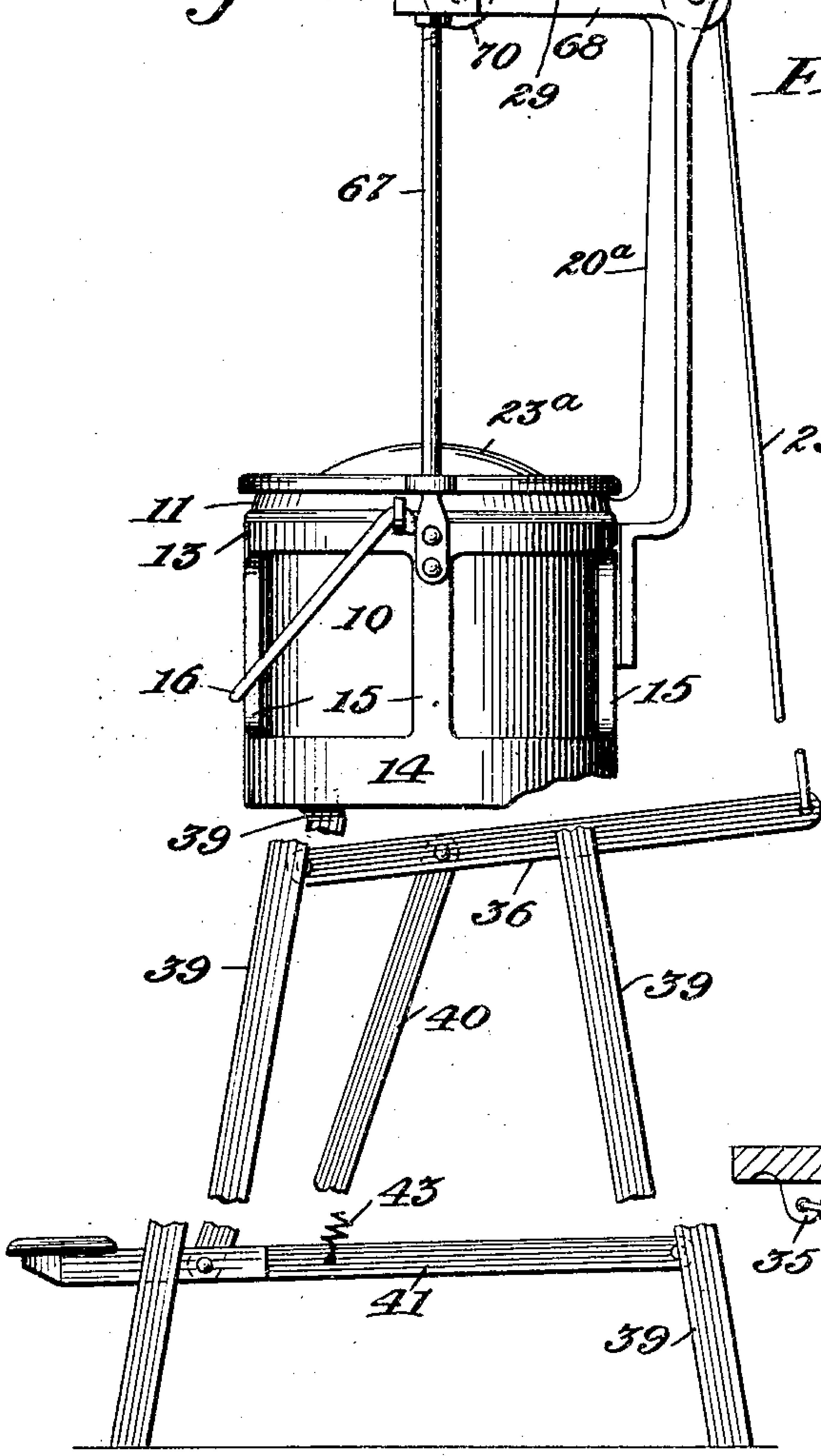


Fig. 11.

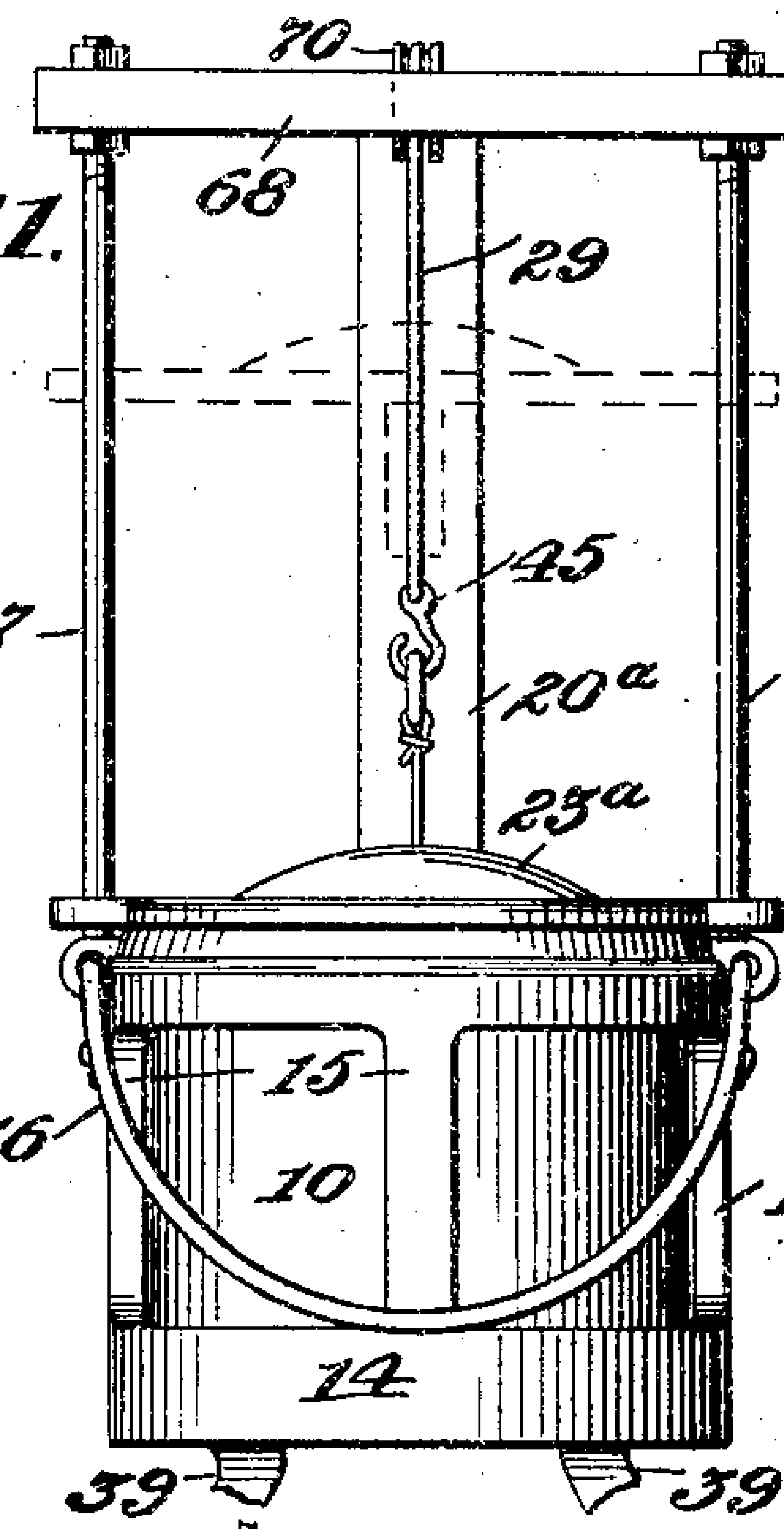


Fig. 14.

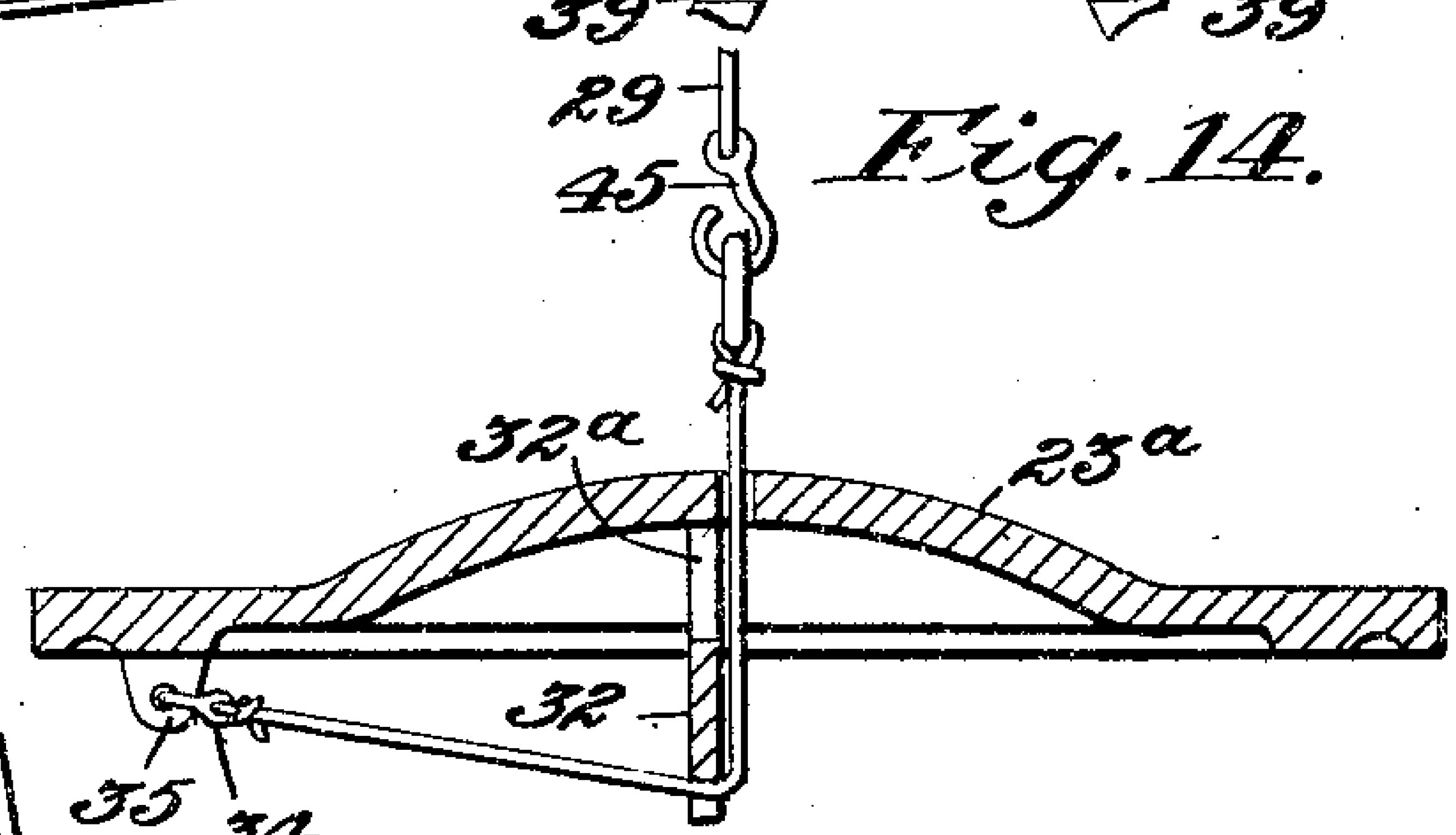


Fig. 10.

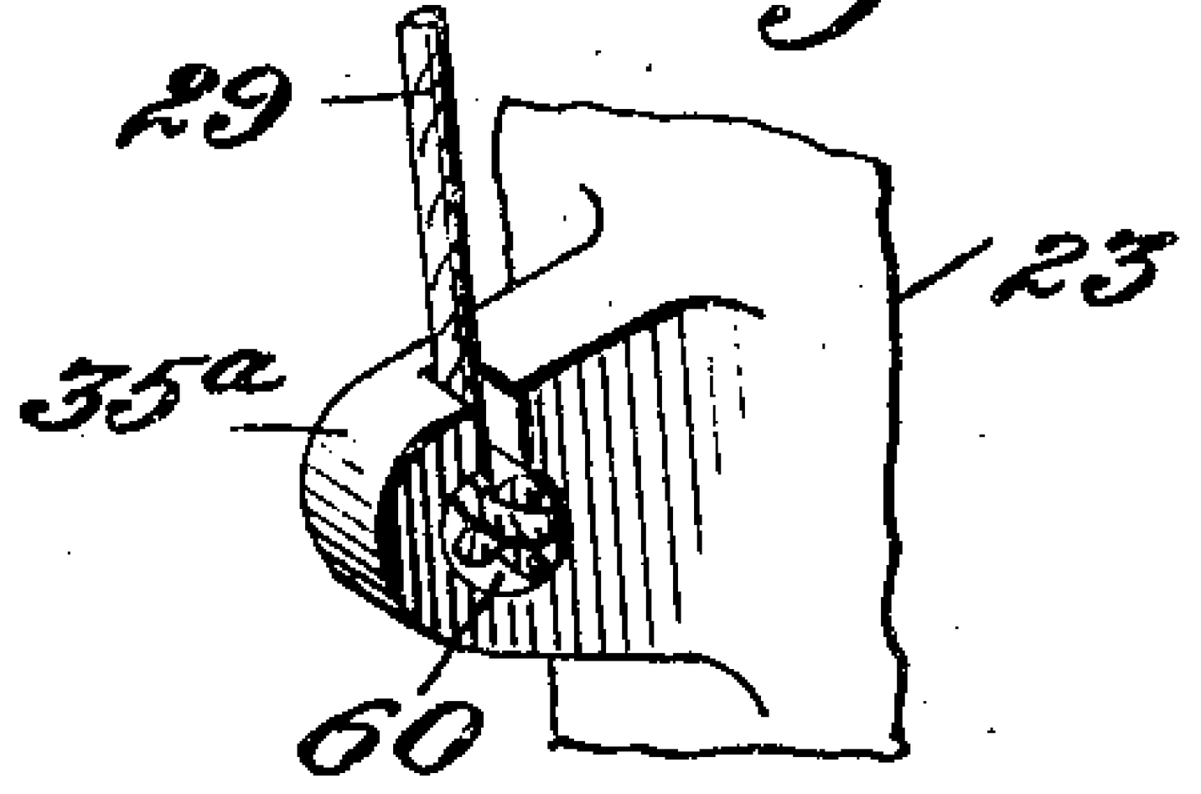
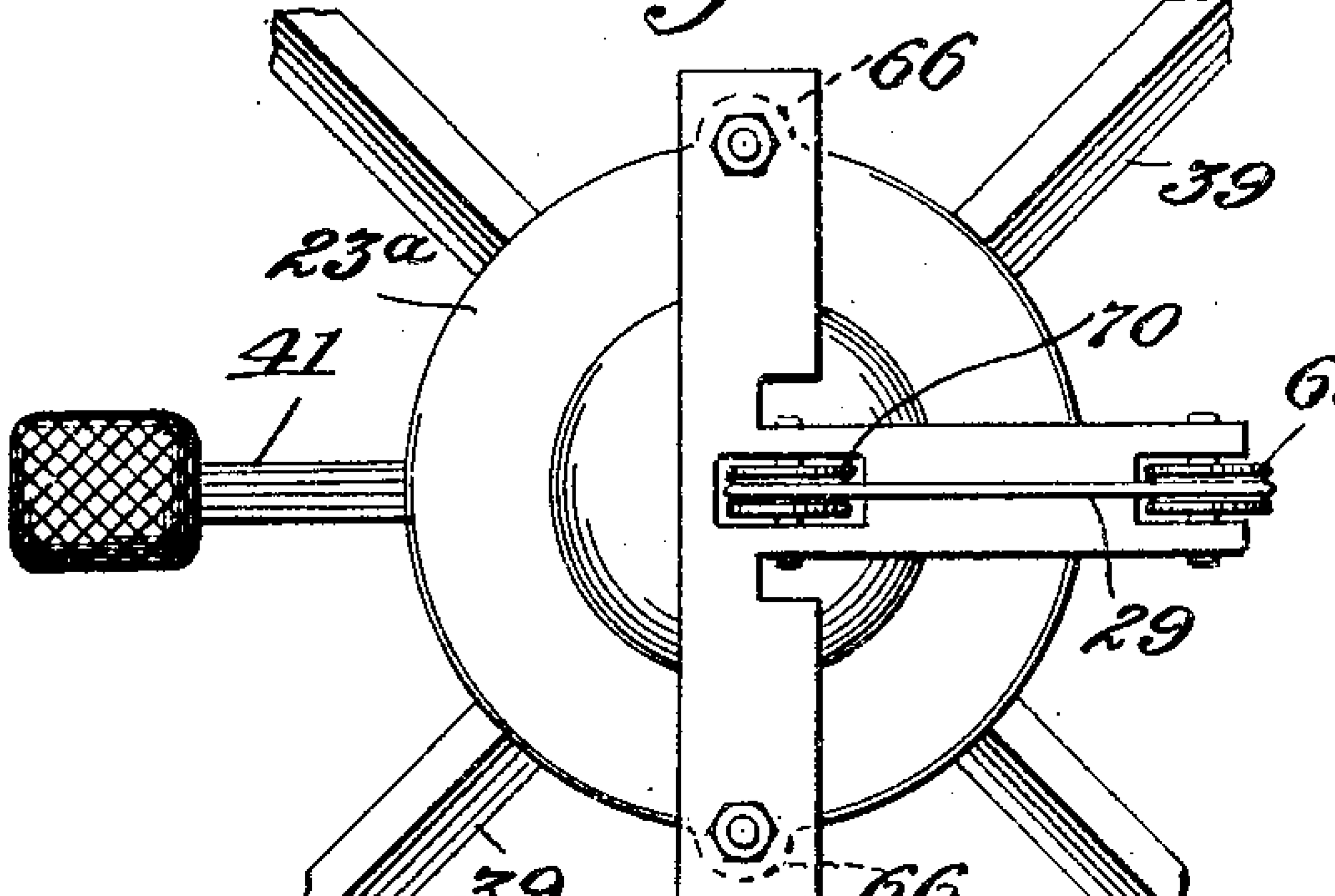


Fig. 13.



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Patented Sept. 4, 1928. 1,683,571

UNITED STATES PATENT OFFICE.

PHILIP MUELLER, OF DECATUR, ILLINOIS, ASSIGNOR TO ADOLPH MUELLER, TRUSTEE, OF DECATUR, ILLINOIS.

GASOLINE BUCKET.

Application filed October 18, 1924. Serial No. 744,514.

The present invention relates to containers and is intended more particularly for use in connection with containers for inflammable liquids as for example, gasoline.

In machine-shop work, it is customary, during certain operations, to cleanse the work being machined or operated on from time to time and when the operation is completed by dipping it in a liquid which will cut and dissolve the accumulations of oil and dirt incident to the machining or other operations, gasoline being commonly used. For convenience, it is not uncommon to provide, at different points in the shop, buckets or containers of gasoline in which the workmen can dip the articles in process of manufacture.

It is desirable, in fact compulsory in most municipalities, that inflammable liquids of this character be properly safeguarded so as to avoid the danger of fire, and various expedients have been adopted to eliminate the danger of the contents of such containers becoming ignited.

The present invention has for its object to provide a container or bucket which is not only of simple and economical construction, but is also so designed that it will be automatically closed in the event of fire in or adjacent the bucket, so that the bucket, during working hours, may safely remain open and to avoid the necessity of the workmen lifting or removing the cover each time it is desired to dip and clean work. The constant opening and closing of such containers slows down production and hampers the workman to such an extent that where lids or covers have been designed which the workman would be compelled to open and hold open each time he dipped, and which would automatically close when released, the device has been rendered ineffective by the workmen blocking the lids open so that their automatic closing action was entirely suspended.

With the construction which I have invented provision is made for not only maintaining the lid in a constant open position, except when it is manually released, and the lid is closed during the non-working hours, but an automatic release and sudden closing of the bucket or container takes place immediately fire occurs in or adjacent the bucket, and the flame is effectually smothered.

In order that the invention may be clear to those skilled in the art, I have illustrated in the accompanying drawings, several physical embodiments thereof but these embodiments are, it will be understood, merely illustrative and in no sense restrictive of the invention as it may be worked out in various mechanical ways other than those here depicted without departing from my invention.

In said drawings:

Fig. 1 is a view in side elevation of a container equipped with my improvement.

Fig. 2 is a vertical sectional view of the container proper and its cover, the supporting stand being omitted.

Fig. 3 is a vertical sectional view of a container without a supporting stand and differing in some of its details from the construction shown in Figs. 1 and 2.

Fig. 4 is a view in elevation looking from the right in Fig. 1.

Fig. 5 is a view in elevation looking from the left in Fig. 3.

Fig. 6 is a view substantially on the line 6—6 of Fig. 4,

Fig. 7 is a view substantially on the line 7—7 of Fig. 3.

Fig. 8 is a detail view in front elevation of the string supporting strut carried by the bucket lid.

Fig. 9 is an enlarged fragmentary view in section of the bucket and the lid.

Fig. 10 is a perspective view of a modified form of anchor carried by the lid for the lid supporting string.

Fig. 11 is a front elevation of another modified form of bucket.

Fig. 12 is a side elevation of the parts shown in Fig. 11.

Fig. 13 is a top plan view of the parts shown in Figs. 11 and 12.

Fig. 14 is a detail, sectional, view of the lid or cover shown in Figures 11 to 13, and

Fig. 15 illustrates another modification.

Referring to the drawings by numbers, like numbers indicating like parts in the several views, 10 denotes a bucket or container of any suitable construction but preferably of the construction herein shown comprising a body portion formed in any suitable way as of sheet metal and having, at its upper end, a reinforcing ring 11, which reinforcing ring is preferably formed as shown with a bevel or other suitable configuration 12 which will seat upon a complementary ring or seat 13 which, as shown and preferably, is part of a

receiving frame or cage made up of the said ring 13, a bottom ring or foot 14 and the vertical standards 15, which in the preferred form, are integral with the said top and bottom rings. The bucket 10 is preferably provided with a handle or bail 16 of any usual or preferred type, the one herein shown being of the common swing type engaging outstanding ears 17 on the ring 11 so as to give sufficient offset or clearance of the bail 16 to permit it, when the bucket 10 is inserted in the cage, to fall outside the cage into the position best shown in dotted lines in Figs. 1 and 3.

By forming the lower face of the bucket ring 11 and the upper face of the cage ring 13 as shown, the bucket when dropped into the cage will center itself and come always to the same relative position in the said cage, the bucket proper being of such diameter that it may be readily dropped into or withdrawn from the cage by the handle or bail.

Rising from the cage is a lid supporting bracket preferably formed as shown of the foot-piece 18 secured by suitable screws 19 to a vertical leg 15 and the top ring 13 of the cage, and the upwardly extending arm 20 of any suitable configuration in cross section to give the requisite strength and rigidity. The said bracket arm is provided with a pintle boss 21 preferably formed integral therewith, through which passes a pintle 22, the ends of which project outwardly on either side of the boss, as shown in Fig. 7.

A lid 23 of any suitable design and of a diameter to correspond with that of the bucket 10, is pivotally mounted upon the pintle 22 by means of pintle lugs 24 which have preferably open pintle slots for ease in mounting or dismounting the lid, the pintle 22 being so disposed as that the lid in its down position will fit snugly the top of the bucket ring and effectually close the bucket or container. In order that the sealing of the bucket may be complete, I preferably provide the lid with a groove 26, which will bear directly upon the top of the ring 11, preferably around it to form an effectual seating surface and tightly close the bucket. The said lid 23 is preferably provided at appropriate intervals around its periphery with lugs 27 inset from the groove 26 so as to engage the inner surface of the ring 11 and bucket 10, and center the lid when it is dropped to its down position, the ring 11 and bucket 10 being joined preferably in the manner shown, by insetting the upper edge of the bucket 10 and securing the parts together by rivets 28 or in any other suitable manner.

In order that the lid 23 may be held in open position, I preferably provide a lid supporting string 29, one end of which passes over a pulley 30 in the upper end of the member 20 of the bracket. The said string 29 at its other end passes through a hole 31 in the lid 23 or through some other equivalent string engaging device and then extends downwardly over a centrally disposed strut 32 extending from the inner surface of the lid 23 and grooved at 33 to form a seat for the string. The end of the string 29 is provided with a hook 34 and engages an eye 35 on the under side of the lid, the said string 29 being of such length as that when the lid is brought to the position shown in full lines in Fig. 1, the hook 34 may be readily engaged or disengaged from the eye 35.

The end of the string passing over the pulley 30 extends downwardly, as shown in Figs. 1 and 2, and connects at its lower end with a lever arm 36, which arm is pivoted, preferably by forked limbs 37, to the frame or supporting legs 39 upon which the bucket or supporting frame 10 is mounted. The said lever 36 is coupled by the link 40 with a foot-treadle 41 or equivalent manually operable devices, said lever 41 being pivoted at 42 to the frame or support 39, and coupled by a spring 43 tending always to raise it to the dotted line position shown in Fig. 1 to a cross strut or bar 44 arranged transversely of the frame or support. With this arrangement it will be seen that the parts will normally stand in the position shown in dotted lines in Fig. 1 with the lid closed. When it is desired to dip articles into or have access to the contents of the bucket the manually operated device or treadle 41 will be depressed and through the link, lever and string connection described the lid 23 will be lifted to the full line position shown in Figs. 1 and 2, and there held until the dipping operation is completed.

In event of a flash due to ignition of the inflammable contents of the bucket the string 29 will ignite and burn quickly, and the lid will close, effectively smothering the burning contents of the container. The strut 32 has a through opening 32^a, centrally located with respect to the lid 23, and directly in line with the inflammable part of the string 29. This opening 32^a acts as a flue to draw the flame upwardly over the string and thus ensure its ignition.

Preferably, the string 29 will be provided with a coupling 45 which is here shown as in the form of a hook and ring coupling, although any suitable type may be employed so that the flash and burning of the string 29 will take place between the hook 45 and the eye 35 on the lid 23 and, as shown, that section of the string may be of lighter weight or of more inflammable material than the pull portion of the string which passes over the pulley 30. This has an element of convenience in that it would be necessary to renew only a relatively short portion of the string in event of its ignition.

The lid 23 will be provided with means for preventing its being thrown so far back that

it would be tilted past its pivotal point and would not fall automatically on burning of the string. This means may take various forms and in the present disclosure two examples are shown. In Figs. 1 and 2 there is provided a stop finger 46 projecting from the top of the lid 23 and engaging, preferably by a notched end 47, the standard 20 so that the lid 23 is stopped at an angle of inclination, which insures its quick closure when the supporting string 29 is burned through.

With the arrangement shown, it will be seen that when it is desired to remove the bucket from the holding ring 13, it is necessary only to disengage the string 29, close the lid 23, grasp the bail 16 and lift the bucket, thus drawing the slotted pintle lugs away from the pintles 22.

In the form of the invention shown in Figs. 3, 4 and 5 the construction is similar to that shown in Figs. 1 and 2, just described, except that the supporting stand and the foot-treadle for opening the lid are dispensed with and it is designed to maintain the lid always in open position with the same provision for insuring instantaneous closing in event of fire that is made in connection with the construction shown in Figs. 1 and 2.

In Figs. 3, 4 and 5 the standard 48 rises from a base 49 secured in any suitable manner to the bucket frame 50, and it is provided at its upper end with an eye 51 in which is secured one end of the string 52, which string passes either through a hole in the lid, as described, or through a notch 53 in the edge of the lid passing from the notch over the end of a strut 54 and thence to the eye 55 at the lower side of the lid. This forms a permanent combustible support to maintain the lid always in open position ready to be released when that combustible support 52 is burned off. The strut 54 has a through opening 54^a which acts as a flue in the same manner as the opening 32^a.

While ignition of the support 29 or 52 would unquestionably occur in event of the contents of the container catching on fire, I may provide a fuse string 56, shown in dotted lines in Figs. 1 and 3, depending from or being a part of the flexible support, which string 56 may fall into the container, as shown, and up which flame would quickly run to the string to ignite it and release the cover.

The cover 57 will be pivotally mounted on the standard 48 exactly as in the construction hereinbefore described, that standard 48 being so inclined as that the lid 57 cannot be thrown beyond center, but must remain always in a position inclined from the vertical, as shown in Fig. 3, so that it will fall to closed position when the string is burned off.

With an arrangement such as described it will be seen that an automatic smothering of flame and complete closure of the vessel will occur in event of fire, whether the device be of the treadle operated type, shown in Figs. 1 and 2, or the permanently open type, shown in Figs. 3, 4 and 5. It will be apparent, furthermore, that with the form shown in Figs. 1 and 2 a very convenient arrangement is provided, in which workmen can readily dip articles which they will carry from the machine or bench to the dipping tank without the necessity of laying those articles down to open the lid, as the treadle operated mechanism enables them, by stepping upon the foot lever, to open the lid, dip the articles and then the dipping bucket will be automatically closed when the treadle is released. During dipping and maintenance of the lid in open position by the foot-treadle and connections described a complete safeguard against fire is, nevertheless, continued, for even if the workman should not release his treadle any flame at the bucket will cause the automatic and instantaneous release of the lid.

Instead of connecting the inner end of the combustible support with an eye formed on a lug extending downward from the inner face of the bucket cover as before described, this connection may be such as shown in detail in Fig. 10. That is, the lug 35^a may have a socket 60 formed in one face thereof and provided with a relatively narrow throat through which the supporting string passes, the string being provided at its inner end with a knot or enlarged portion that lies within the socket.

In Figs. 11 to 14 there is illustrated another slightly different form of the invention. In this embodiment the cover 23^a is not pivotally mounted, but is so supported that it can be moved vertically to and from its closed position. The support for the bucket is shown the same as in Figs. 1 to 3, the flexible support 29 extending from the lever 36 over guide pulleys 69, 70, mounted on an upright 20^a that rises from the bucket support and is provided at its upper end with a T-shaped head 68. Guide rods 67 connect the laterally extending arms of this T-shaped head with the bucket support and the cover is provided with ears 66 which engage said rods. It will be seen that downward movement of the lever 36 will cause the cover to move vertically from its closed position represented in full lines in Figure 11 to the open position shown in dotted lines.

Another slightly modified form of the invention is illustrated in Fig. 15. In this embodiment the flexible cover sustaining means 29 has connected to its end remote from the cover a weight 78 which is adapted to be supported on either of two arms 81, 82, that extend laterally from the bucket support. The elevation of the arm 81, which is shown as being formed integral with the upright 80 on which the pulley 79, for guiding the string 29, is mounted is such that when the weight 78 rests thereon the cover will be in its closed

position. By lifting the weight from the support 81 and placing it on the lower support 82 the cover will be swung into the open position shown in the drawing. Of course, with this form whenever the combustible section of the supporting means beneath the cover is ignited the cover will automatically fall to its closed position as previously described.

Such variations from the constructions here shown as involve simply mechanical skill may, of course, be made without departing from the range of my invention.

For example, a wire containing a readily fusible section or link might be substituted for the string as the combustible means for maintaining the bucket closure in open position.

I claim:

1. The combination of a container, a closure therefor, means to maintain the closure in open position including a member extending through an opening in the closure whereby it will not be positioned between the closure and the edge of the opening controlled thereby when the closure is operative, said member including a combustible section extending over a portion of the inner face of the closure, for the purpose described.

2. The combination of a container for inflammable material, a closure therefore, and manually operable means permitting movement of said closure to and from the mouth of the container, said means including a combustible section extending transversely of the lower face of the body of the closure, and entirely within the marginal edge of the closure whereby it will not be engaged between the container and closure when the latter is closed.

3. The combination of a container for inflammable material, a pivotally mounted closure for the mouth of the container, having an inwardly projecting lug on its under face, means for maintaining the closure in open position comprising a member attached at one end to said lug and extending outward through the body of the closure, said means including a combustible section which is beneath the closure when the latter is closed, and means for holding said combustible section out of contact with the adjacent face of the closure.

4. The combination of a container, a closure therefor, means to maintain the closure in open position including a combustible member extending across at least a portion of the under side of said closure, and a strut projecting from the under side of said closure across which the combustible member passes, and by which said member is held away from the closure.

5. The combination of a container, a closure therefor, means to maintain the closure in open position including a combustible member extending across at least a portion of the under side of the closure, and a strut projecting from the underside of the closure across which the combustible member passes, and by which said member is held away from the closure, said strut having an opening or passage extending through it in the direction of the length of the combustible member.

6. The combination of a suitable support having a standard projecting therefrom, a container mounted on said support, a closure for said container, a strut projecting from said closure and engaging said standard to limit the opening movement of said closure to less than a vertical position, means to maintain the closure in open position including a combustible member traversing the under side of said closure, and a strut projecting from the under side of said closure to position said combustible member away from the surface of said closure.

7. The combination of a support having a vertical standard rising therefrom, an open container mounted in said support, a closure for said container pivoted on said support, means for limiting the opening movement of said closure to less than a vertical position, and means including a combustible section arranged between the closure and body of the container for maintaining said closure in open position.

8. The combination of a support having a vertical standard rising therefrom, an open container mounted in said support, a closure removably and pivotally mounted on said support, means for limiting the opening movement of said closure to less than a vertical position, and means including a combustible section arranged between the closure and body of the container for maintaining said closure in open position.

9. The combination of a support having a beveled seat at its upper edge, a container having a beveled section adapted to engage the beveled seat on said support, a closure for said container, and combustible means positioned above said open container and between it and the closure to maintain said closure in open position.

10. The combination of a container, a closure therefor, means to maintain the closure in open position including a combustible member positioned over the under side of said closure, and a fuse member depending from said combustible means into the container.

In testimony whereof I have hereunto set my hand.

PHILIP MUELLER.