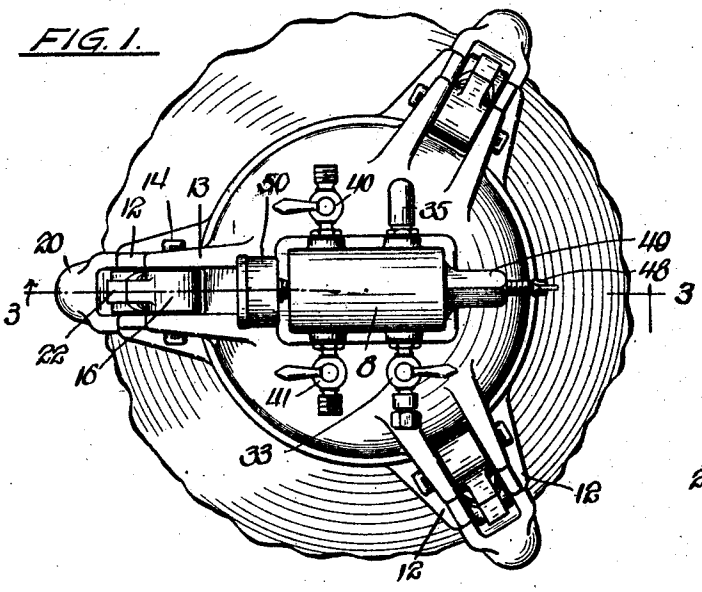
Aug. 17, 1926. 1,596,710

H. D. BINKS

PRESSURE TANK

Original Filed June 26, 1922 2 Sheets-Sheet 1

FIG. 1.



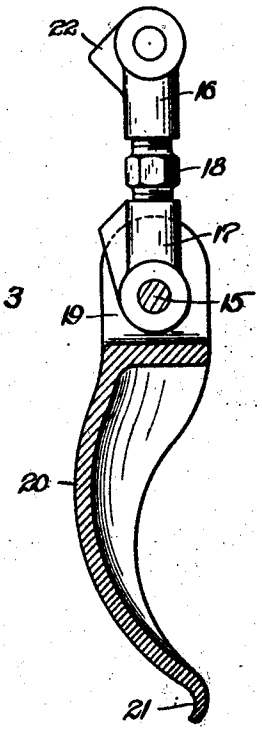
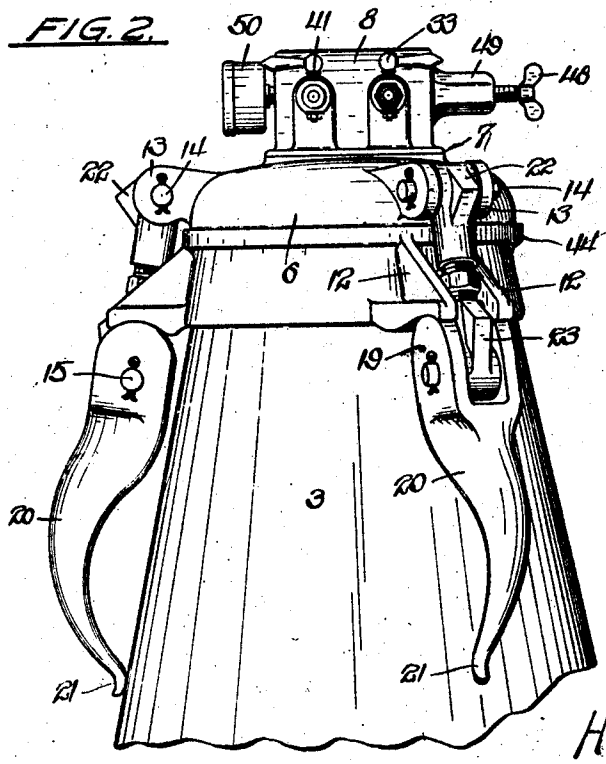


FIG. 4.

FIG. 2.



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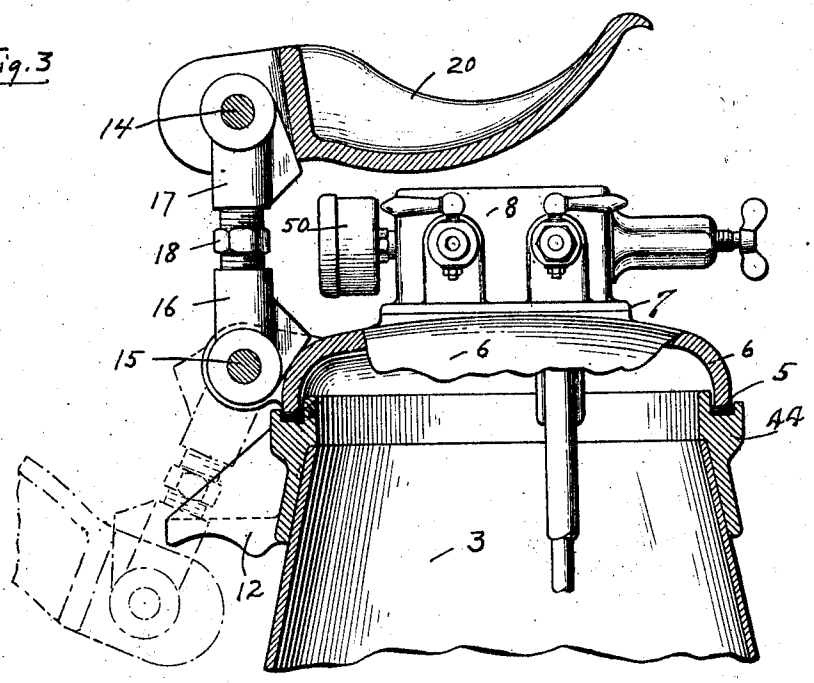
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H. D. BINKS

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Original Filed June 26, 1922 2 Sheets-Sheet 2

Fig. 3



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Atty.

Patented Aug. 17, 1926. 1,596,710

UNITED STATES PATENT OFFICE.

HARRY D. BINKS, OF OAK PARK, ILLINOIS.

PRESSURE TANK.

Original application filed June 26, 1922, Serial No. 571,051. Divided and this application filed May 19, 1924. Serial No. 714,524.

My invention relates to pressure tanks of the general class employing movable heads, and more particularly to tanks designed for having their heads bodily removed. Generally speaking, my invention aims to provide simple, easily manipulated and effective means for affording a firm closure at the joint between the tank and the head while permitting a speedy attaching or detaching of the head. It also aims to provide simple means for adjusting the closure tightening members according to variations in the finished sizes of the parts or in the thickness of the interposed packing.

Furthermore, my invention aims to provide closure tightening means for the head of a container in the form of arms carried by the head and swung down alongside the container when in operative position, provides such arms in jointed constructions which will permit gravity to hold them disposed above the head when inoperative, and provides suitable stops for limiting the movement of the various arm portions so as to prevent the arms from contacting with gauges, valves or other delicate pieces of apparatus mounted on the head.

So also, my invention aims to provide cover or head locking means of this general class in which each of the locking arms has a portion thereof adjustable in length. Still further and also more detailed objects will appear from the following specification and from the accompanying drawings, in which drawings

Fig. 1 is a plan view of the upper portion of a container (in the form of a socalled spray tank) embodying my invention.

Fig. 2 is an elevation of the corresponding portion of the same container.

Fig. 3 is a central and vertical section through the same, taken along the line 3—3 of Fig. 1.

Fig. 4 is a detail, partly in section of one element of the locking device.

In one of its immediate commercial applications, my invention is particularly adapted for use in connection with paint spray-tanks of the kind disclosed in my copending application #571,051 as filed June 26, 1922 on a spray tank, of which the present application is a division. Hence I am illustrating and describing it in such an embodiment, although I do not wish to be limited to any particular employment of the same. In the pictured embodiment, the casing or body 3 of the container has a ring casting 44 tightly secured to its top. This ring 44 desirably extends upwardly beyond the casing 3 to afford protection for the mouth of the container, and this mouth portion of the casting has an upwardly open groove for receiving a packing ring 5. Seated on this packing ring with its outer edge is a head casting 6, which casting desirably is of an inverted cup shape and desirably has an upwardly directed ring 7 on it to afford a flat seat for a valve body 8 which is suitably clamped to the head 6.

To clamp the head tightly to the container proper, I provide the head with cam means which are adapted to interlock with suitable formations on the mouth ring 4 and which are adjustable so as to compensate both for any irregularities in the shape of the parts and for effective differences in the thickness of the packing ring 5. For this purpose, I desirably provide the mouth ring 4 with projecting brackets 12 extending radially of the casing and arranged in pairs after the manner shown in Figs. 1 and 2, these pairs being preferably symmetrically disposed about the axis of the container. I likewise provide the head 6 with correspondingly arranged pairs of lugs 13 which afford bearings for pivot pins 14 upon which I pivot cam members adapted to connect the said lugs with the brackets 12 and to exert a pressure tending to force the head downwardly towards the mouth of the container. Each of the said cam members desirably consists of a link pivoted at its upper end upon one of the pins 14 and pivoted at its lower end by a pin 15 to a lever which has a cam portion adapted to engage the downwardly concaved lower faces of the two brackets 12 comprising one of the said pairs. The link itself desirably comprises two substantially counterpart end portions 16 and 17 connected by a stud 18 which is threaded in opposite directions into the parts 16 and 17 so that the effective length of the link can readily be varied by rotating this threaded stud. The lever part of each cam member desirably comprises a fork having a pair of arms 19 convexed at their free ends to afford cam surfaces, together with an outer portion 20 in the form of a handle which desirably is curved to permit the hand of the user to be inserted between it and the

casing of the container and to present a tip 21 adapted to contact with the container 3.

Thus arranged, it will readily be seen from Figs. 2 and 4 that when the cam member is in its normal position, the link portion of each cam member extends downwardly between a pair of the brackets 12, so that when the handle portion 20 is moved from a raised position to the intermediate position shown in dotted lines in Fig. 3, the forked ends 19 exert a cam action tending to force the adjacent brackets 12 towards the pivot pins 15, thereby drawing the cover downward towards the mouth of the container and compressing the packing ring 5 while doing so. By suitably rotating the stud 18, I can readily adjust the effective length of each of the links so as to secure the desired amount of tightening while permitting the tips 21 of the cam members to be swung into engagement with the container after the manner shown in Fig. 2, thereby compensating for variations in the thickness or compressibility of the packing ring.

When the container is to be opened, each of the members is first swung upwards after the manner shown in dotted lines in Fig. 3, thereby releasing the several forks 19 from the adjacent brackets 12, after which the links can readily be swung to a substantially raised position with the handles swung over the links and over the head of the container after the manner shown in Fig. 3. To prevent any parts of the cam members from striking against the devices mounted on the head of the appliance (such as the pressure gage 5 or the valve body 8), I desirably provide the normally upper link member 16 with a finger 22 adapted to engage the cover 6 when the link is swung to its raised position and likewise provide the normally lower link portion 17 with a projection 23 adapted to engage the bight of the forked handle portion. This limits the swinging of the latter when the cam member is swung to the position in which the center of gravity of the cam member is nearer the axis of the tank than the pivot pin 15, so that gravity will then hold the entire cam member in its raised position, thereby facilitating the handling and detaching of the head whenever the container is to be cleaned or refilled.

However, while I have illustrated and described the appliance of my invention as including highly desirable shapes and types of various parts, I do not wish to be limited to the details of the construction and arrangement thus disclosed, it being obvious that the same might be modified in many ways without departing either from the spirit of my invention or from the appended claims.

I claim as my invention:—

1. A pressure tank comprising an upwardly open container equipped near its mouth with brackets projecting radially outward of the mouth and each having a concave lower face, a cover for the container, links respectively adjacent to the brackets and each pivoted at one end to the cover, and cam members respectively pivoted to the other ends of the links, each cam member having a convexed portion adapted to engage the concave lower face of an adjacent bracket; each link comprising an upper link portion pivoted to the cover, a lower link portion pivoted to one of the cam members, and an adjusting member interposed between the two link portions and threadedly connected to both of the link portions to permit adjustment of the distance between the pivotal connections of the link to the cover and to the cam member.

2. A pressure tank comprising an upwardly open container equipped near its mouth with brackets projecting radially outward of the mouth and each having a concave lower face, a cover for the container, links respectively adjacent to the brackets and each pivoted at one end to the cover, and cam members respectively pivoted to the other ends of the links, each cam member having a convexed cam portion adapted to engage the concave lower face of an adjacent bracket and having a handle portion adapted to engage the side of the container with its free end, and having its cam portion disposed for presenting its maximum diameter to the said concave bracket face when the tip of the handle engages the side of the container; each link being provided with means for adjusting its length to insure a firm interlocking of the bracket with cam adjacent thereto when the tip of the handle portion associated with the said adjacent cam engages the side of the container.

3. A pressure tank comprising an upwardly open container equipped near its mouth with outwardly projecting brackets, a cover having links pivoted thereon and respectively adjacent to the brackets, and cam members pivoted respectively to the links and each adapted to engage the lower face of one of the brackets, each link comprising a pair of counterpart end portions adjustably connected by a threaded element, each of the said counterpart end portions having a shoulder; the shoulder on one end portion being disposed for engaging the cover to limit the upward swinging of the link and the shoulder on the other end portion being disposed for engaging the cam member pivoted to that link so as to limit the extent to which the cam member can be swung over the link.

Signed at Chicago, Illinois, April 14, 1924.

HARRY D. BINKS.