Aug. 12, 1930. W. S. JONES 1,773,042

MOLD OR PLATE HANGER

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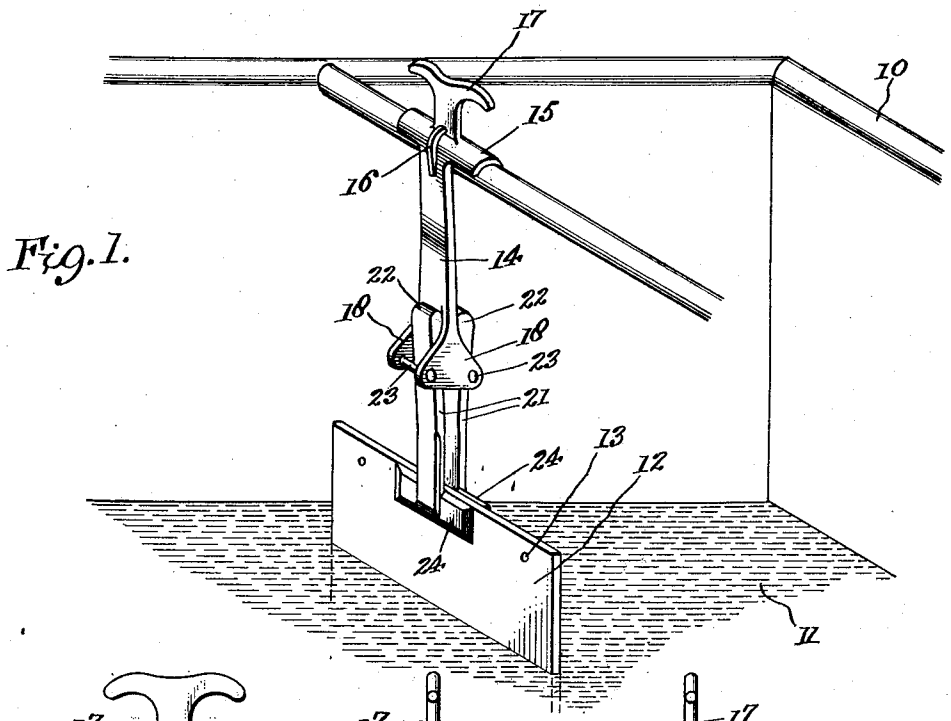


Fig. 1.

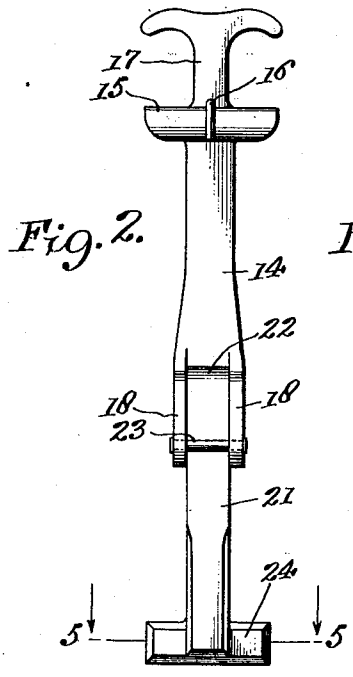


Fig. 2.

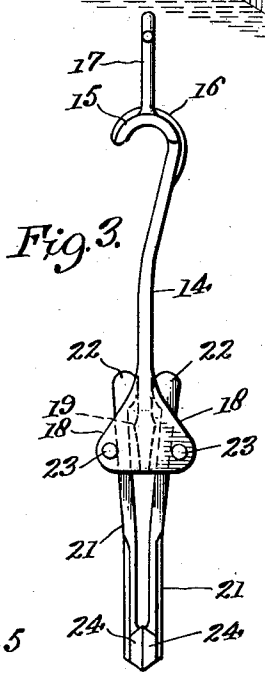


Fig. 3.

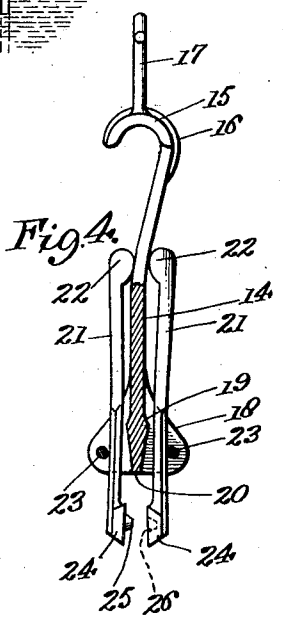


Fig. 4.

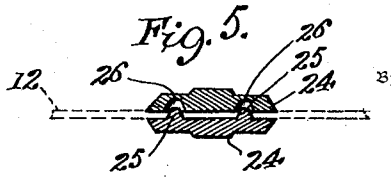


Fig. 5.

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UNITED STATES PATENT OFFICE

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MOLD OR PLATE HANGER

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The present invention relates to tools or article handling devices, and has more particular reference to an improved hanger adapted for use in the handling of lead molds or plates, and particularly where the molds or plates are suspended in a tank of acid or the like.

Another object of the present invention is to provide a hanger of this character which may be quickly and easily engaged with a mold or plate in such manner that the mold or plate may be suspended from the hanger without liability of the plate slipping from the hanger, and wherein the hanger when in position may engage the rod placed across the tank.

A further object of this invention is to provide a hanger of this type with a pair of jaws which are so mounted and arranged relatively to one another and to the body portion of the hanger that the jaws are caused to grip and interlock with the plate with a pressure which is proportionate to the weight of the mold or plate, whereby the jaws are interlocked with the plate or mold.

The invention also aims at the provision of a hanger of this character which may be quickly and easily released from the mold or plate without requiring the actual handling of the plate by contact of the fingers therewith, and a hanger which is provided with a finger engaging portion facilitating the introduction of the hanger and plate into a tank and the withdrawal of same from the tank.

The above and various other objects and advantages of this invention will in part be described in, and in part be understood from, the following detailed description of the present preferred embodiment, the same being illustrated in the accompanying drawing, wherein:

Figure 1 is a perspective view showing a portion of the interior of a tank with a plate or mold suspended therein by a hanger, constructed according to the present invention.

Figure 2 is an enlarged side elevation of the hanger, the same being disposed in clamping position.

Figure 3 is an edge elevation of the same.

Figure 4 is a similar view partly in section and showing the hanger in releasing position, and

Figure 5 is a transverse section taken through the lower end of the hanger substantially on the line 5—5 of Figure 2.

Referring now to the drawing, 10 designates a tank or container adapted to contain a body of fluid, such as an electrolyte indicated as 11 and in which is adapted to be suspended a mold or plate 12, usually of lead.

The mold or plate 12 is provided along its upper edge with a number of apertures or depressions 13 for facilitating the handling of the mold or plate. The shank 14 of the hanger is relatively flat and long, and at its upper end portion is offset laterally and provided at its upper extremity with a T-head which extends at right angles to the axis of the shank 14 and is curved transversely to form a saddle or hook 15 which faces downwardly in line with the shank 14 and is adapted to seat upon the rod placed across the tank.

The saddle or hook 15 is preferably re-inforced by a raised web or bead 16 which extends into the upper end of the shank 14 and preferably is co-extensive throughout the width of the hook 15 and upon the upper surface thereof. The saddle or hook 15 thus provides a relatively long curved surface for engaging the rod and for preventing the rocking or swaying of the shank 14 in an edgewise direction.

For the purpose of facilitating the lifting and carrying of the shank 14 into and out of the tank 10, the saddle 15 is provided with a T-shaped finger grip 17 which extends above the hook or saddle 15 and beneath which the fingers of the hand may be engaged for suspending the hanger from the hand while the operator may keep the hand clear of the tank 10 and the acid or other liquid body 11 within the tank. Of course the hand grip 17 may be of any suitable configuration best suited to the work.

The shank 14 is provided at its lower end with a pair of spaced transversely extending guide flanges 18 which may be of any suit-

able configuration and which extend from the opposite sides of the shank 14, preferably at the opposite edge portions thereof, and the shank 14 may be increased in width at its lower end to accommodate these flanges 18, as shown in Figure 2. The lower portion of the shank 14, between the flanges 18, is provided with a double cam 19 which is preferably formed by thickening the shank 14 at such point to provide ribs or protruding portions extending across the opposite sides of the shank between the guide flanges 18, and the shank 14 is preferably tapered from the cam 19 downwardly to the extremity of the shank as shown at 20 in Figure 4.

The hanger is provided with a pair of jaws 21 which are relatively flat and of suitable length, and provided upon their upper ends with cams or beads 22 which project inwardly from the jaws 21 and are adapted to engage the opposite side faces of the shank 14. The jaws 21 are of a width adapted to slidably fit between the guide flanges 18 and are held between the flanges by retaining pins or rods 23 which are secured through the outer end portions of the flanges 18 in spaced relation to the opposite sides of the shank 14 and below the cam portions 19. The jaws 21 are bent outwardly intermediate their ends so that the opposite ends of the jaws 21, when in position, diverge to a slight degree, as is clearly shown in Figures 3 and 4. The pins or rods 23 are so spaced from the opposite sides of the shank 14 that when the jaws 21 are slid downwardly between the pins 23, as shown in Figure 3, the cams 22 of the jaws 21 bind against the opposite sides of the shank 14 and force the lower extremities of the jaws 21 inwardly toward each other so as to clamp the same together. The cams 19 at the lower end of the shank 14 serve to arrest the downward movement of the jaws 21 when sufficient weight is imposed on the jaws to force the same downwardly between the rods 23 so that the cam 19 engages the cam 22 and forces the same abruptly outward against the rods or pins 23 and thus locks the jaws 21 from further downward movement and at the same time proportionately binds the lower extremities of the jaws 21 toward each other and upon the plate or other object which is clamped between the jaws.

The lower ends of the jaws 21 are provided with gripping faces 24 which preferably extend crosswise of the lower end of the jaws and are relatively flat at their inner opposite sides adapted to engage the opposite faces of the plate or mold 12, or the like. Preferably, one of the gripping faces 24 is provided with projections or studs 25 which extend inwardly toward the opposite gripping face 24 and the other or opposite gripping face 24 is provided with recesses or sockets 26 adapted to receive the stud 25 for the purpose of maintaining the jaws 21 in true alignment, particularly when the hanger is supported in an edgewise angular position during the handling of the plate 12.

In the use of the hanger, it is only necessary to press the lower ends of the jaws 21 upwardly, and this may be done by resting the hanger with its lower end upon a support so as to slide the jaws 21 into the raised position as shown in Figure 4. The upper ends of the jaws 21 may now be held raised by the fingers while the plate 21 is inserted between the faces 24 and the studs 25 engaged in the adjacent openings 13 of the plate. The shank 14 may now be slid upwardly on the jaws 21, and such action causes the jaws 21 to approach the position shown in Figure 3, wherein the lower ends of the jaws are forced inwardly against the opposite sides of the plate 12 so as to bind the jaws on the plate. The weight of the plate or mold 12 is sufficient to draw the jaws 21 downwardly and to hold them with their cams 22 against the opposite sides of the shank 14 to securely lock or clamp the plate 12 between the jaws. Naturally, the heavier the plate 12, the greater will be the force exerted downwardly on the jaws 21 and consequently the greater the gripping action. The hanger may thus be grasped by the finger hold 17 and the plate and hanger inserted downwardly in the tank 10 with the saddle or hook 15 toward the edge of the tank, and in a position of rest the saddle 12 is engaged over the rod placed across the tank with the plate or mold 12 suspended in the fluid 11.

When it is desired to remove the plate or mold 12 from the tank 10, it is only necessary to grasp the hanger by the finger hold 17 and lift it upwardly so as to raise the plate 12 out of the fluid 11 and deposit the plate on a drying rack or other suitable support. The hanger is released from the plate by merely pressing downwardly on the shank 14 to release the jaws 21 when the hanger may be easily disengaged from the plate or mold.

It is of course understood that the improved hanger may be used in any suitable manner which will be found expedient, particularly after the workman has become accustomed to handling the device, and it will also be understood that various changes and modifications may be made in the details of design, proportion and construction of the hanger without departing from the spirit of this invention, such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:

1. A mold or plate hanger for use in a tank having a rod across the tank, comprising a shank having a suspension hook upon its upper end adapted to engage over the rod, said shank having a cam portion near its lower end, a pair of elongated jaws arranged at opposite sides of the shank and having inwardly

projecting cams upon their upper ends adapted to engage against the opposite faces of the shank, said jaws being bent outwardly at a slight angle intermediate their ends and retaining pins carried by the shank and extending across the outer sides of said jaws for limiting the outward movement thereof, said cams of the jaws adapted to swing the outer ends thereof outwardy as the jaws are moved downwardly on the shank and bind the jaws against said retaining pins, whereby the lower ends of said jaws are adapted to be advanced toward each other and bind the plate or mold between them.

2. A mold or plate hanger for use in a tank having a rod across the tank, comprising a flat shank having a laterally enlarged overturned hook upon its upper end adapted to seat upon the rod, said shank having a pair of transverse guide flanges upon its lower end extending from the opposite sides of the shank, a pair of elongated jaws disposed against the opposite sides of the shank and between said flanges, retaining pins secured through said flanges adapted to engage against the outer sides of said jaws, said jaws having inwardly extending cams upon their upper ends adapted to engage against the opposite sides of the shank and said jaws being bent outwardly at a slight angle at their upper ends whereby downward movement of the jaws is adapted to engage the intermediate portion of the same against said pins and said cams adapted to swing the lower ends of the jaws toward each other for binding the mold or plate therebetween.

3. A mold or plate hanger for use in a tank having a rod across the tank, comprising a flat shank having a laterally turned hook at its upper end adapted to engage over the rod and provided with a finger hold extending upwardly from said hook, said shank having upon its lower end a pair of edgewise spaced apart flanges extending from the opposite sides of the shank, said shank also having a cam portion arranged between said flanges and extending between the flanges, a pair of jaws of flat bar construction arranged against the opposite sides of the shank and slidably disposed between the flanges, pins secured across said flanges outwardly of the jaws for limiting the spreading apart of the jaws, said jaws being bent outwardly intermediate their ends for relatively flaring the ends of the jaws, said jaws provided upon their upper ends with inwardly extending cams adapted to engage the opposite sides of the shank for spreading the upper ends of the jaws and binding the lower ends thereof inwardly toward each other, said jaws having transversely extending gripping faces upon their lower ends to engage the opposite sides of the plate or mold, one of said faces having projections adapted to engage through the plate or mold, and the other gripping face having sockets therein adapted to receive said projections for aligning the lower ends of the jaws at the opposite sides of the plate.

In testimony whereof I affix my signature.

WILLIAM S. JONES.