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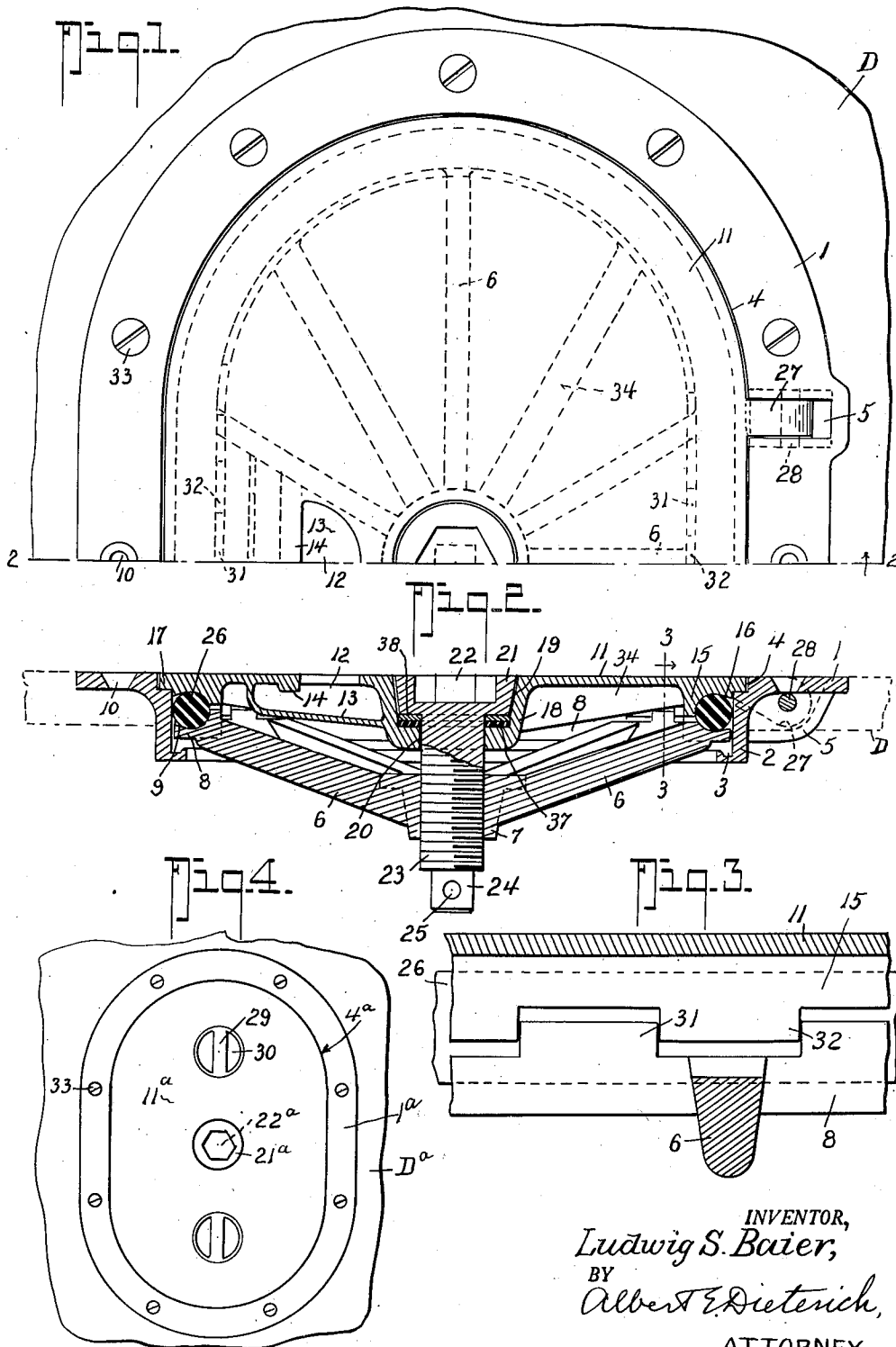
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SCUTTLE FRAME AND CLOSURE UNIT

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2 Sheets-Sheet 1



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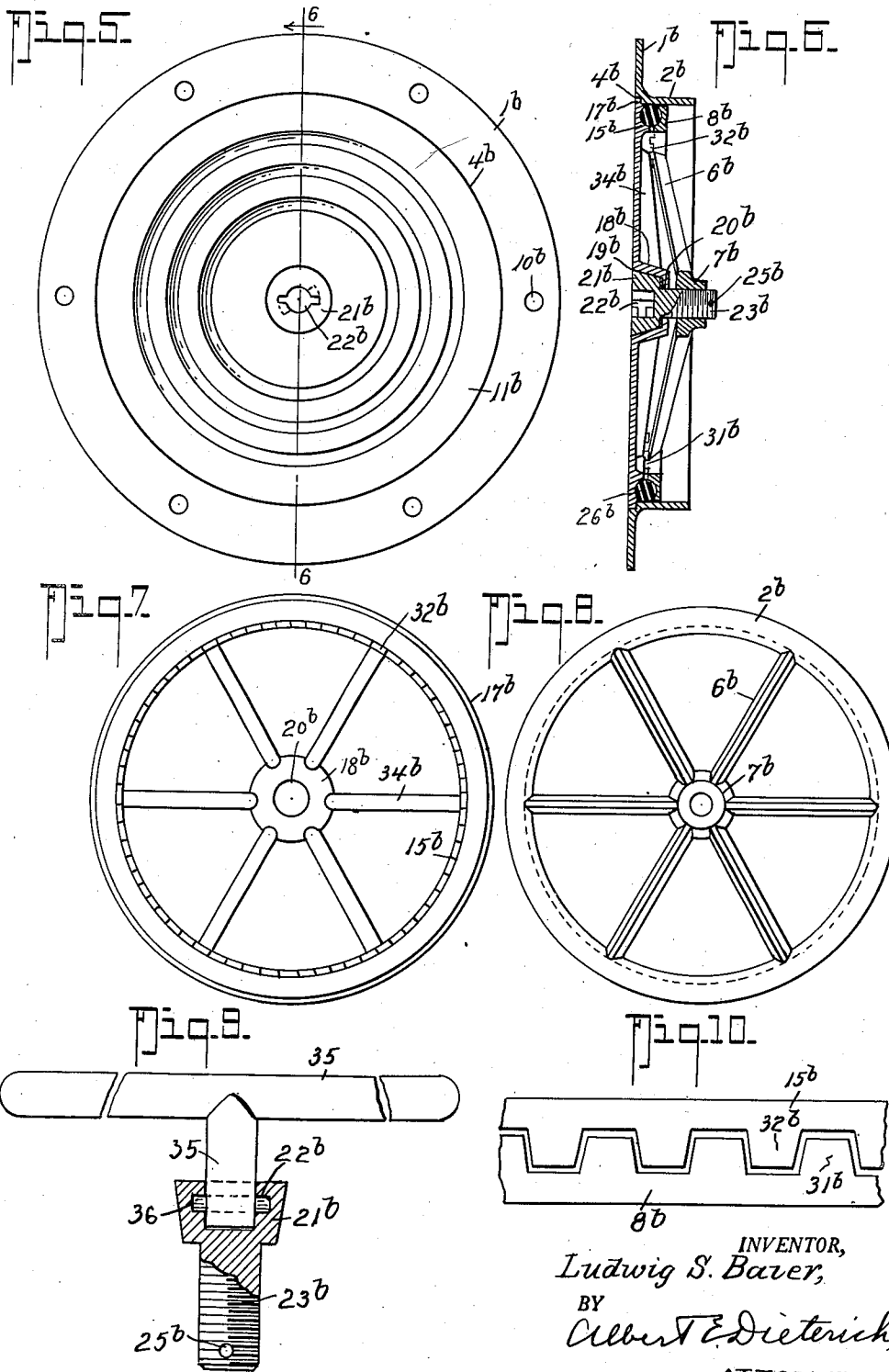
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UNITED STATES PATENT OFFICE

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SCUTTLE FRAME AND CLOSURE UNIT

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7 Claims. (Cl. 114—201)

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My invention which, in general relates to closures has been particularly devised as a deck scuttle for the compartments of fishing vessels, and other types of vessels.

Primarily the invention seeks to provide an improved scuttle that is absolutely water-tight and can be quickly removed and replaced.

Further it is an object to provide an improved scuttle whose closure member can be secured or released from inside the compartment as well as from the deck.

Again it is an object to provide an improved scuttle-cover which is self-contained and includes mechanism for effecting a seal when the cover is in place in the scuttle frame and will retain or "lock" the cover to the frame.

Further it is an object to provide a cover of two segments which when pressed together, by a clamping bolt, will compress a ring gasket against the scuttle frame and provide means to effect a perfect seal around the clamping bolt.

Further it is an object to provide a scuttle whose cover, whether loose or tight will always lie flush with the deck.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends the invention further resides in those novel details of construction, combination and arrangement of parts all of which will first be fully described hereinafter and then be specifically pointed out in the appended claims, reference being had to the accompanying drawing, in which:

Fig. 1 is a top plan view of one half an oval type scuttle embodying my invention.

Fig. 2 is a vertical section on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged detail section on the line 3—3 of Fig. 2.

Fig. 4 is a plan view of a modification.

Fig. 5 is a top plan view of a smaller sized circular scuttle.

Fig. 6 is a section on the line 6—6 of Fig. 5.

Fig. 7 is a bottom plan view of the lid or cover element.

Fig. 8 is a bottom plan view of the clamping ring unit.

Fig. 9 is an enlarged detail view of the lever securing, releasing and lifting key and showing its cooperation with the screw head.

Fig. 10 is an enlarged detail view of a modified set of serrations.

In the drawings in which like numerals and letters of reference indicate like parts in all the

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figures, D indicates the deck into which the scuttle frame 1 is set flush with the deck and secured to the deck by suitable bolts 33. The scuttle frame includes a vertical wall or ring 2 having (if desired) a gutter 3. It will be observed by reference to Fig. 2 that the portion 3 of the ring 2 also serves to prevent the spider 6 falling down out of the ring when bolt 23 is withdrawn without a turn bar being located in the hole 25. A seat 4 is provided in the frame 1 on which the cover unit rests.

In the embodiment shown in Figs. 1 and 2 the frame also includes hinge pockets 5 in which the hinge elements 27 lie and to which they are pivoted on pins 28. The frame also has a seat 4 for the lid or cover plate 11.

The cover plate 11 has a grooved flange 15 in whose circular-segment-in cross-section groove merges with a downwardly-outwardly inclined surface 16 and receives a neoprene or resilient rubber ring 26. The plate 11 also has a central boss 18 recessed as at 19 to receive the head 21 of a clamping screw 23 that passes through a hole 20 in the boss 18. The recess also receives an elastic gasket 37 and a metal washer 38 (see Fig. 2) for sealing purposes between the screw and cover boss. The cover also has a flange 17 to fit the seat 4. Webbs 34 extending radially from boss 18 to flange 15 strengthen the cover plate.

The screw head 21 is provided with a wrench-receiving socket 22 while the end of the screw has a squared wrench-receiving portion 24 and a turn-bar-receiving hole 25.

The cover or lid 11 is provided with an opening 12 to a pocket 13 and is formed with a thickened bar-like edge 14 to be gripped by one's fingers in lifting the cover.

The cover unit also includes a threaded boss 7 through which the screw 23 passes and which is connected by a number of radial spiders 6 with a grooved flange or ring 8, the groove of which merges with an outwardly-upwardly inclined surface 9. The ring 26 lies between the flanges 15 and 9 and is adapted to be squeezed into sealing contact with the ring 2 when screw 23 is turned in one direction and to shrink loose from said ring 2 when the screw is rotated in the opposite direction.

In order to prevent the ring 26 from being squeezed inwardly to an excessive degree, the flanges 15 and 8 have annular rows of inter-engaging serrations 32 and 31 respectively as best shown in Fig. 3.

The serrations 31 and 32 serve a two-fold pur-

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pose, i. e., they perform a dual function, namely, not only do they serve as a back stop to restrain the ring 26 from deforming radially inward where it would be pinched between the two members, but they also serve to prevent one member 6 from swiveling with respect to the other member 11 when used on circular scuttles such as shown in Figs. 5 to 8, and 10.

The frame 1 has bolt bolts 10 for the bolts 33 which secure it to the deck.

For large scuttles the constructions shown in Figs. 1 and 4 are preferred. The construction shown in Fig. 4 differs from that of Fig. 1 only in having no hinge connection to the frame and being provided with two hand-holds 29 and recesses 30 in lieu of the single one 14 shown in Figs. 1 and 3. Those parts in Fig. 4 which correspond to like or similar parts in the preceding figures bear the same letter and numerals of reference plus the index letter *a*.

For the smaller scuttles the construction shown in Figs. 5 to 10 inclusive is preferred. This is a circular type and those parts in Figs. 5 et seq., which correspond to similar parts in the preceding figures, bear the same reference numerals plus the index letter *b*, and a repetition of the description of those parts appears to be unnecessary here. This embodiment differs from those of Figs. 1 and 4 principally in that the frame and lid are circular instead of elliptical; the screw head 21^b has a double keyhole slot opening 22^b; no hand-holds or hinges are needed, and a key 35 having a cross pin 36 is used in the opening 22^b for rotating the screw 23^b and for lifting the lid 11^b from its seat 4^b.

From the foregoing it will be seen that in all forms of the scuttle, the lid or cover is always flush with the deck when in place. When tightening the gasket ring 26, 26^b, the lower or spider portion of the assembly is pulled up toward the top section and when the gasket is loosened it automatically shrinks in circumference to the extent that the entire cover unit can be readily and quickly removed as a unit.

The provision of the serrations prevent the gasket squeezing between the opposed edges of the flanges 8 and 15 and thus becoming damaged.

This application is a continuation in part of my application Serial No. 600,336, filed June 19, 1945, now abandoned.

From the foregoing description taken in connection with the accompanying drawings it is thought that the construction, operation and advantages of my invention will be clear to those skilled in the art.

What I claim is:

1. In a scuttle of the class described, a scuttle frame having an upper face and having a seat, a closure unit insertable in said frame, said unit including a surface plate having an upper face flush with that of said scuttle frame and having a grooved flange and having a peripheral flange to rest in said seat, said unit also including a clamp member having a grooved flange, a deformable resilient gasket ring held between said grooved flanges in the grooves thereof and means for drawing said flanges toward each other to squeeze said gasket ring radially outward into sealing contact with said frame, said means including a screw having a head countersunk into said surface plate with the upper end of the head flush with the face of said scuttle frame and said surface plate and being threaded through said clamp member and having provisions for its operation at both its ends.

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2. A scuttle according to claim 1 wherein said flanges are provided with inter-engaged serrations positioned to back up said gasket and confine it against being squeezed inwardly between said flanges.

3. A scuttle according to claim 1 wherein means are provided to perform the dual functions of holding said surface plate and said clamp member against swiveling on their common axis, one with respect to the other, and for forming a back stop to restrain said gasket ring against deforming radially inward toward said common axis.

4. In a scuttle, a scuttle frame having a seat and including a downwardly extending ring, a closure unit insertable in said frame, said unit including a surface plate fitting said seat, a grooved sealing-ring-receiving annular flange, a clamp member also having a grooved sealing-ring-receiving annular flange, a deformable resilient gasket held in said annular flange grooves, said annular flanges having interfitting parts serving to limit the degree said gasket can be deformed when said surface plate and said clamp member are drawn toward each other, and means operable from either below or above the scuttle for drawing said surface plate and said clamp member together to cause said gasket to expand into sealing contact with said ring.

5. In a scuttle, a scuttle frame having a seat and including a downwardly extending ring, a closure unit insertable in said frame, said unit including a surface plate fitting said seat, a grooved sealing-ring-receiving annular flange, a clamp member also having a grooved sealing-ring-receiving annular flange, a deformable resilient gasket held in said annular flange grooves, said annular flanges having interfitting parts serving to limit the degree said gasket can be deformed when said surface plate and said clamp member are drawn toward each other, and means operable from either below or above the scuttle for drawing said surface plate and said clamp member together to cause said gasket to expand into sealing contact with said ring, said last named means comprising a bolt swivelly held in said surface plate and having threaded engagement with said clamp member.

6. In a scuttle, a scuttle frame having a seat and including a downwardly extending ring, a closure unit insertable in said frame, said unit including a surface plate fitting said seat, a grooved sealing-ring-receiving annular flange, a clamp member also having a grooved sealing-ring-receiving annular flange, a deformable resilient gasket held in said annular flange grooves, said annular flanges having interfitting parts serving to limit the degree said gasket can be deformed when said surface plate and said clamp member are drawn toward each other, and means operable from either below or above the scuttle for drawing said surface plate and said clamp member together to cause said gasket to expand into sealing contact with said ring, said last named means comprising a bolt swivelly held in said surface plate and having threaded engagement with said clamp member, said bolt having a turn-bar-receiving hole below said clamp member, the positioning of which bar also fixes the amount of travel of the center bolt when same is loosened.

7. In a scuttle wherein is provided a scuttle frame, a closure insertable in said frame and including a surface plate and a clamp plate, said plates having peripheral outwardly inclined

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flanges forming a gasket-receiving groove, a resilient deformable gasket located in said groove; means for drawing said plates together from either the surface plate side or the clamp plate side of the closure, said means comprising a boss on the surface plate, said boss having a through bore and a countersunk circular-outline recess, and a threaded boss on the clamp plate, a clamp screw having a circular-outline head fitted in said recess and having a threaded shank passing through said bore and said threaded boss and having a wrench-receiving terminal accessible from the clamp plate side of the closure, the rotatable head having a rectangular countersunk wrench-receiving recess, a deformable washer in the bottom of said countersunk circular-outline recess and a metal washer in the same recess located between said deformable washer and said circular-outline head.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
692,231	Bingham	Feb. 4, 1902
858,781	Benedict	July 2, 1907
2,279,005	McMahon	Apr. 17, 1942

FOREIGN PATENTS

Number	Country	Date
10,614	Great Britain	May 22, 1901
14,094	Great Britain	June 18, 1907
16,591	Great Britain	Aug. 31, 1894
436,471	Great Britain	Oct. 11, 1935
305,528	Italy	Feb. 8, 1933