

UNITED STATES PATENT OFFICE

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ESCAPE SCUTTLE

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This invention relates to a quick opening escape scuttle to be used in water-tight doors or similar devices of ships and the like, and more particularly to a scuttle which may be opened from either side of the door, and has for its object to provide a simply operated means through which a person trapped behind a jammed water-tight door or hatch could escape.

It has for its further object to provide an escape means which may be operated from either side of the door, thus providing an escape means for a person trapped on either side of the door, and which, if the trapped person is injured and cannot open the scuttle, would provide means for a rescuer to open the scuttle from the opposite side.

It has an additional object to provide a device of this character of simple construction, thus providing a maximum of utility and reliability.

With the foregoing and other objects in view, I have devised the construction illustrated in the accompanying drawing forming a part of this specification. It is, however, to be understood the invention is not limited to the specific details of construction and arrangement shown, but may embody various changes and modifications within the scope of the invention.

In the drawing:

Fig. 1 is a front elevation of an escape scuttle embodying my invention with a portion of the outer hand wheel thereof removed to show a detail;

Fig. 2 is a section taken substantially on line 2—2 of Fig. 1, showing one clamp only, and

Fig. 3 is a section showing in detail a portion of the device.

The invention as shown comprises a substantially circular shaped cover or lid assembly 10, constructed of any suitable material, preferably steel plate, clamped by a suitable means to a water-tight door 11, or bulkhead, deck, or other wall, so that it covers a substantially circular opening 12 in said door or wall 11.

The cover or lid assembly 10 consists of a substantially circular flat cover or plate 13, provided at its edge with a rim bar or flange 14 fastened by a suitable means, such as welding, at substantially right angles to and circumscribing the plate 13. A second rim or flange 15 similar in construction to the rim 14 is fastened to the plate 13 by a suitable means, such as welding, so that it is within and concentric to the rim 14. The rims 14 and 15 confine a water-tight gasket 16 composed of rubber or other suitable material. The circular opening 12 is completely enclosed

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by a coaming or rim 17, secured in place by welding 18 to the door, the opening being of such size that the edge of the coaming 17 will contact the rubber gasket 16, when the cover assembly 10 is placed to cover the opening 12. Thus, when the cover assembly 10 is clamped or held in this position by some suitable means, the coaming 17 will press into the rubber gasket 16 held in place by the retaining rims 14 and 15, forming a water-tight seal.

A suitable means for clamping the cover assembly 10 in the closed position heretofore described consists of a bushing 19 through the cover 13 at substantially its center, and secured there by a suitable means such as welding 20. A series of ribs 21, preferably three, are also welded to the bushing and to the cover 13 along its radii, terminating at and welded to the rim 15. These ribs 21 provide additional supporting means for the bushing 19 as well as provide stiffening to the cover 13 to prevent buckling and the like.

The bushing 19 supports a spindle or arbor 22, so that this spindle 22 may turn freely in the bushing 19. A flange 23 on the spindle 22 and a wheel 24 with a substantially square hole 25 at its center, which fits on a similarly shaped portion of the spindle 22, and which is held on the spindle 22 by a nut 26 threaded to the spindle 22, prevent the spindle 22 from moving longitudinally of the bushing 19. The wheel 24 and the flange 23 are separated from contact with the bushing 19 by washers 27 and 28. A second wheel 29 is attached to the opposite end of the spindle 22 from the wheel 24 by means of a substantially square hole 30 which fits on a similarly shaped portion of the spindle 22 and is retained on the spindle by means of a nut 31.

It is clear that because both wheels 24 and 29 are attached to the spindle 22 by means of substantially square holes at their centers, and since the spindle 22 is free to turn in the bushing 19, either or both wheels 24 and 29 may be turned by an operator to turn the spindle 22. Bronze bearing bushings 19a for the spindle or arbor 22 may be mounted in the bushing 19 and separated by a suitable packing 19b to provide a water-tight bearing.

The portion of the spindle between the flange 23 and the wheel 29 is threaded to receive a nut or traveler 32. The nut or traveler 32 is shaped to receive a ring member 33 which is held to the traveler by being clamped between a shoulder 34 on the traveler and a lock nut 35 threaded to the traveler and secured thereto by peening over the edge 36 of the traveler 32.

A series of forked members or arms 37, preferably three, is fastened to the ring 33 by a suitable means, such as welding, and extends radially from the ring. The outer end of each of the members 37 is forked, as shown at 37a, to receive the end of a dog 38 in the form of a lever which is pivoted to the forked member 37 by means of a nut and bolt assembly 39 through holes in the fork of member 37, and a longitudinal slot 40 in the dog 38. This dog is also pivoted between a pair of lugs 42, welded to the inner side of the cover 13, by means of a nut and bolt assembly 41 through the lugs or ears 42 and the dog 38.

It is clear that when the wheels 24 and 29 are turned, the nut or traveler 34 and the forked members 37 attached thereto will travel longitudinally of the spindle 22, thus causing each dog 38 to swing about the pivot 41, the inner end of the dog 38 pivoted to the bolt assembly 39 being slotted as shown at 40 to permit this end of the dog 38 to swing in an arc. The other end 43 of the dog 38 also swings in an arc about its pivot 41, the dog 38 being of such length that when it is swung to the locked or closed position, shown by dotted lines, Fig. 2, by means of turning the wheels 24 or 29, the end 43 will press against the coaming 17 at the side opposite the cover 10, thus clamping the coaming 17 securely between the gasket 16 and the dog 38, causing the coaming 17 to press into the gasket forming a water-tight seal between the door 11 and the cover assembly 10. When the wheels 24 or 29 are rotated in the opposite direction, the traveler will move along the slot to the other extreme position, shown by solid lines, Fig. 2, causing the end 43 of the dog 38 to swing in an arc about its pivot 41, thereby leaving the coaming and pulling inwardly toward the center, permitting the end 43 of the dog 38 to clear the inside wall 44 of the coaming 17, allowing an operator to swing the cover 10 open.

The cover 10 is hinged to the door 11 by means of a pair of hinges 45, so that it may be swung to the open or closed position. The hinges comprise a hinge blade 46 fastened to the outer surface of the lid 13 by a suitable means, such as welding, and pivoted, by means of a nut and bolt assembly 48, between two lugs or hinge pads 47 welded to the door 11.

A suitable means for holding the cover assembly 10 in the open position consists of a pair of lugs 49 welded to the door or wall 11 and spaced to receive a lug or blade 50 welded to the cover 13. A hole 51 is so placed in the lug 50 that it will be aligned with holes 52 in the lugs 49. A toggle pin 53 provided with a pivoted toggle 54 at one end to prevent inadvertent removal, may then be inserted through the holes 51 and 52, thus holding the cover assembly 10 in the open position. To prevent the pin 53 from being lost when not in use, it is secured to the cover assembly 10 by means of a chain 55.

Being an escape device, it is normally used in case of emergency only. Thus, it is normally in the closed position; that is, the cover assembly 10 covers the opening 12, as heretofore described. The cover may be opened by an operator turning either wheel 24 or 29, causing the traveler 34 to move longitudinally of the spindle 22. In this manner the dog 38 is caused to swing on its pivot 41, thus causing the end 43 of the dog 38 to swing away from the coaming 17 in an arc, toward the center, thus permitting the cover to be swung open. The cover is held in the open position

by inserting the toggle pin 53 through the lugs 50 and 49, permitting the toggle 54 to assume a position substantially perpendicular to the pin 53, thus preventing inadvertent removal. The scuttle may be closed by simply reversing the above outlined procedure.

It can be seen that I have constructed an escape scuttle which, through its simplicity, offers a maximum of reliability, and by being operable from either side of a door or wall to which it is attached provides a maximum of utility.

Having thus set forth the nature of my invention, I claim:

1. An escape scuttle for a wall provided with an escape opening, including a coaming comprising a tubular member mounted in said opening intermediate its ends so that it extends on opposite sides of the wall, a cover hinged to the wall on one side outwardly of the coaming and provided with a peripheral groove holding a gasket to seat on one edge of said coaming, a spindle mounted in a bearing extending through the cover, a traveler threaded on said spindle, a series of radial arms extending outwardly from the traveler, a clamping dog pivotally connected to each arm and pivotally mounted on the cover, the outer end of each dog being adapted to engage the edge of the coaming on the opposite side from the cover in one position to secure the cover closed and to be swung clear of the coaming to permit opening of the cover, and manual operating means on the spindle on at least one side of the cover to turn the spindle to shift the carrier and thus operate the dogs to clamp and release the cover.

2. An escape scuttle for a wall provided with an escape opening, including a coaming comprising a tubular member extending through and welded to the edges of said opening intermediate its ends so as to extend on opposite sides of the wall, a cover adapted to be clamped against one end of said coaming on one side of the wall, a series of clamping dogs pivotally mounted on the inner side of the cover and adapted at their outer ends to clamp the other end of the coaming on the opposite side from the cover, a spindle mounted in a bearing in the cover, a carrier including a traveler threaded on the spindle and radially extended arms operated by said traveler and pivotally connected to the inner ends of the dogs, and manual operating means for the spindle on at least one side of the cover to turn the spindle to shift the carrier to clamp and release the dogs to thus clamp and release the cover from one side thereof.

3. An escape scuttle for a wall provided with an escape opening including a coaming comprising a tubular member mounted in and extending through the opening so as to extend on opposite sides of the wall, a cover comprising a substantially flat plate, a peripheral flange welded to said plate adjacent its periphery and extending laterally therefrom, a second flange welded at one edge to the surface of the plate and spaced inwardly from the first flange to form a channel, a yieldable gasket in said channel adapted to be clamped against the edge of the coaming on one side of the wall, a bearing bushing mounted at the center of the cover and projecting inwardly from the inner surface of the cover, a plurality of clamping dogs each pivoted intermediate its length on the inner side of the cover and adapted at its outer end to clamp the edge of the coaming on the opposite side from the cover, said dogs also adapted to swing on their pivots to shift

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their outer ends inwardly away from the coaming so as to be free to pass through the opening, a spindle mounted in the bearing sleeve, a carrier including a traveler threaded on the spindle and also connected to the inner ends of the dogs 5 swing them on their pivots to and from the clamping position, and a manually operable means on the spindle to turn it to shift the carrier to operate the dogs.

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