K. M. DAHL.

CLOSURE FOR HAND HOLES.

APPLICATION FILED AUG. 20, 1912.

1,068,743.

Patented July 29, 1913.

Fig. 1.

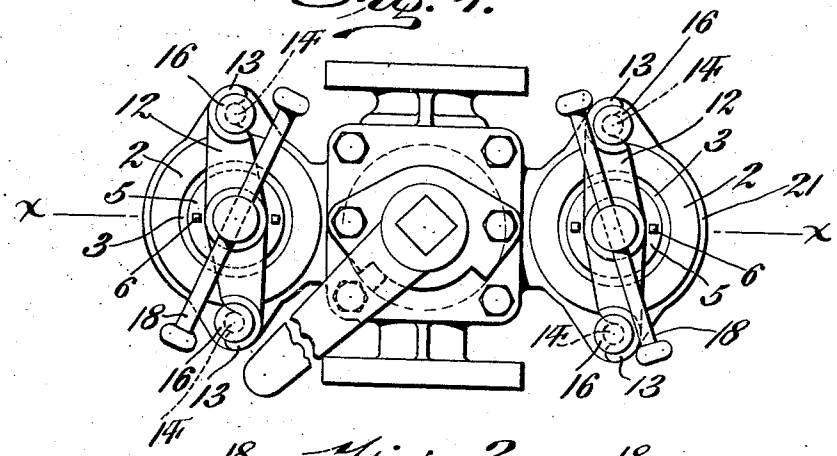


Fig. 2.

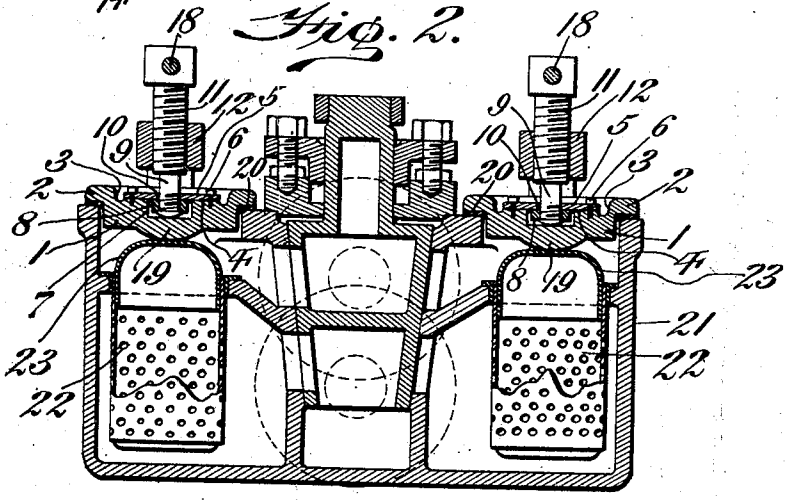
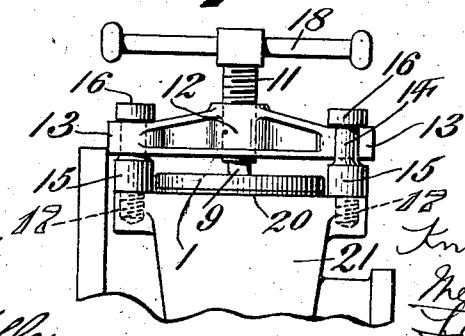


Fig. 3.



WITNESSES

H. G. Dieterich

L. Couville.

INVENTOR

Knut M. Dahl,

by Niedersheim and Fairbanks.

ATTORNEYS

UNITED STATES PATENT OFFICE.

KNUT M. DAHL, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO UNION IRON WORKS CO., OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF NEW JERSEY.

CLOSURE FOR HAND-HOLES.

1,068,743. Specification of Letters Patent. Patented July 29, 1913.

Application filed August 20, 1912. Serial No. 715,984.

To all whom it may concern:

Be it known that I, KNUT M. DAHL, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented a new and useful Closure for Hand-Holes, of which the following is a specification.

This invention relates to closures or covers for hand holes or manholes and has for its object to provide a closure which can be placed in operative position or removed therefrom without the use of independent wrenches or other tools.

It has for a further object to provide a closure which is simple in construction, comprises but few parts and operates in an effective and positive manner.

In closures, as heretofore constructed, it is a requirement that some tool or wrench independent and separable from the closure be utilized in order to secure the closure in operative and leak proof position. Owing to the fact that closures are generally located in obscure and comparatively inaccessible places it is exceedingly difficult to attach or remove a closure with a separate tool and in the operation the said tool or wrench is frequently dropped and lodges behind pipes, boilers, pumps or the like causing great inconvenience and delay. By my present invention such difficulties are overcome and eliminated and each closure is provided with its own operative mechanism which forms substantially an integral part thereof.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

For the purpose of illustrating my invention, I have shown in the accompanying drawings a preferred embodiment which is at present preferred by me, since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described.

Figure 1 represents a plan of a closure device embodying my invention the same being illustrated as applied to a fuel oil strainer. Fig. 2 represents a section on line *x*—*x* Fig. 1. Fig. 3 represents a side elevation of the closure in operative position.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:—1 designates the body portion of my novel closure the same being of any suitable contour, which of course depends on the configuration of the opening to which the closure is applied. As here shown the body portion 1 is provided with an annular circumferential flange 2, the inner wall 3 of which continues as the top of the body portion 1 and forms a seat 4 for a plate 5, this latter being fixed by bolts or screws 6 or like fastening means to the body 1. The body portion 1 is preferably provided with a recess or pocket 7 serving to receive a nut 8 which is secured to a bolt or stem 9 in any desired manner. The bolt or stem 9 passes through an aperture 10 in the plate 5 and has an enlarged portion 11 threaded for engagement with a cross bar 12 which serves as a fulcrum to cause proper actuation of the movable parts. In the present instance the cross bar 12 terminates in oppositely disposed hook members 13, the function of which is to engage or interlock with the neck portion 14 of studs 15, and being prevented from displacement by the stud heads 16. These studs 15 have a threaded end 17 for attaching them to a suitable fixed part, of the body or casing 21.

18 designates an arm for operating the bolt 9 which passes transversely thereof and is headed in a suitable manner to prevent said arm from becoming detached or disengaged from said bolt.

In the embodiment of the invention as here disclosed, the body portion 1 of the closure is provided with a boss or projection 19 which is adapted to engage certain adjacent adjuncts for the purpose of locking the parts in normal position, and thus the clamping mechanism of the closure performs the double function of retaining certain auxiliary elements in assembled condition.

In the operation of the device the body portion 1 of the closure is inserted in the desired opening and the studs 15 screwed into position on either side thereof. It will be understood that the bolt 9 is permanently secured to the closure body 1, as already described and forms a part thereof. The cross bar 12 is now swung about the

bolt as a pivot to bring the hook members 13 into interlocking engagement with the studs 15 whereupon the arm 18 may be turned to force the body portion 1 into the opening. It is preferable to provide a gasket or other suitable packing 20 beneath the flange 2 in order to prevent any leakage at the joint. It will be apparent that as the threaded stem or body 11 is rotated in the act of forcing the closure 1 into position the top surface of the hooks 13 will contact with the undersides of the heads 16 so that a tight and effective joint is maintained under all conditions. When it is desired to obtain access to the interior of the casing or body 21 by rotating the arm 18 in the stem 11 in the desired direction, the closure 1 will be readily unseated, the cross bar 12 can then be rotated so that the hooks 13 move out of engagement with the portions 14 and 15 and the closure can be readily lifted so as to give access to the strainers 22.

It will be apparent that my novel construction of closure and its adjuncts may be capable of general adaptation but in the present instance I have shown the same as especially applicable to an oil straining device comprising a plurality of apertured baskets 22 which are held in a suitable portion of the casing or body 21 and adapted to coast with a novel valve mechanism. The construction of the valve for the straining devices need not here be described in detail since the same *per se* forms the subject matter of a prior pending application filed by me on February 20, 1912, Serial No. 678,861 the present invention relating particularly to the closure device the bottom portion 19 of which is adapted to contact and coact with the bail 23 for the strainer device 22.

The oil strainer device hereinabove referred to is especially adapted in oil burning plants for use upon marine boilers and as the rolling of the ship or vessel is liable to cause the wrench or other manually operated tool to become displaced from proper position, it is exceedingly desirable to employ a self contained device which can be readily and manually operated without the employment of extraneous devices, as will be apparent to those skilled in this art.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a device of the character stated, a closure comprising a recessed body portion, a threaded stem having its lower head swiveled in said recess, a plate covering said recess and confining said head therein, a casing upon which said closure is adapted to seat, oppositely located studs secured to said casing and terminating in heads, a cross bar having hooks on the extremities thereof adapted to interlock with said studs, said cross bar being in threaded engagement with the body of said stem, and a transverse arm mounted on the upper extremity of said stem, for rotating the latter and seating said closure.

2. In a device of the character stated, the combination of a closure having a recess therein, a threaded stem having its lower end suitably retained in said recess, a plurality of studs secured to a casing, a head on each stud, a cross bar in threaded engagement with said stem, a hook on each end of said bar for engagement with one of said studs, a boss 19 projecting from the side of said closure opposite said recess, said boss being adapted to engage a member removably contained within said casing, and an arm secured to said stem to rotate the same, whereby said cross arm is moved to simultaneously lock said closure and said removable member to said casing.

KNUT M. DAHL.

Witnesses:
MAURICE ASHER,
FREDERICK BIRDSALL.