

NO. 845,623.  
 Submarine vessels,  
 Life saving devices,  
 Escapes.

Draftsman

No. 845,623.

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E. A. EDNEY.

MEANS OF ESCAPE FROM SUNKEN SUBMARINES.

APPLICATION FILED SEPT. 13, 1905.

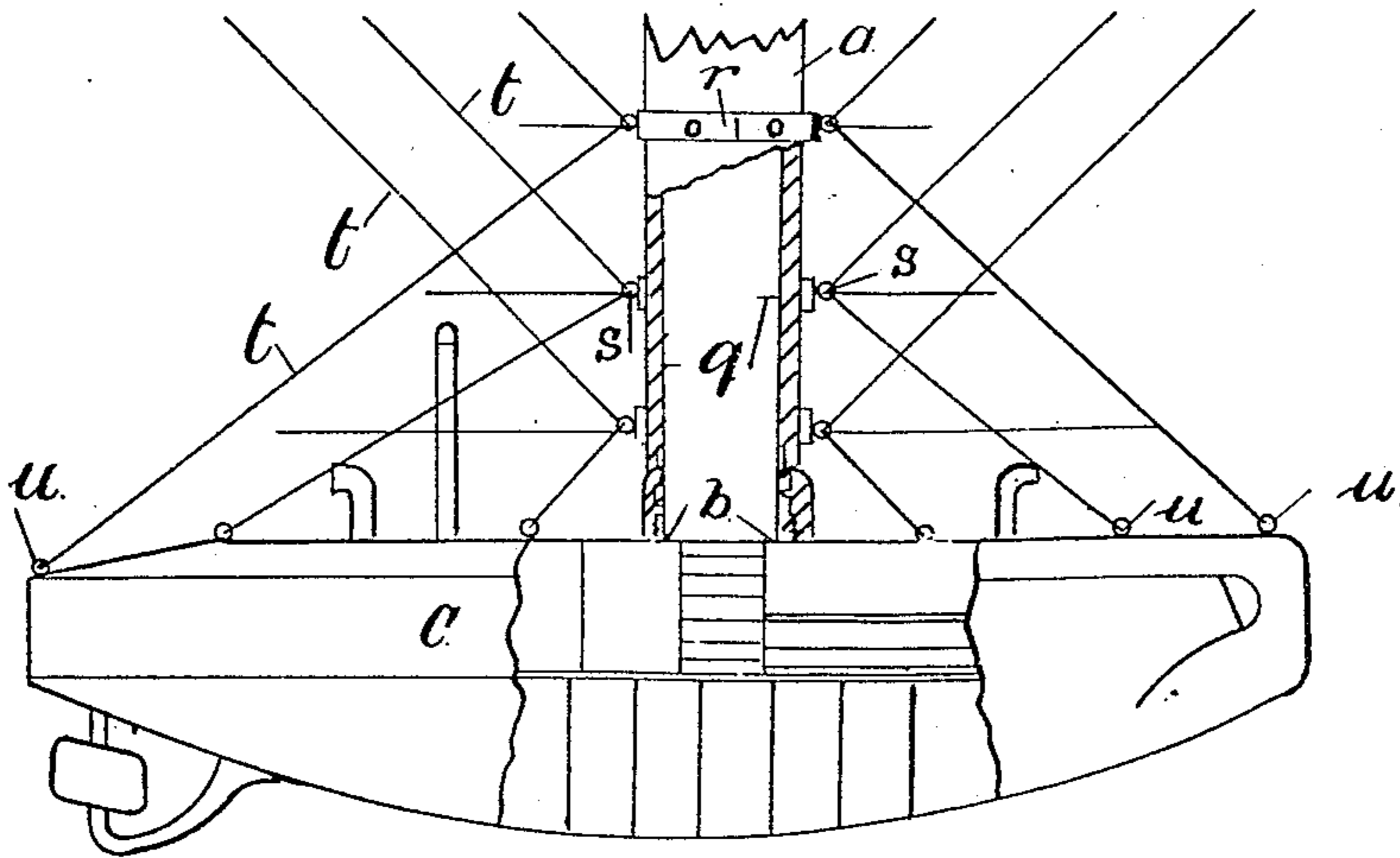
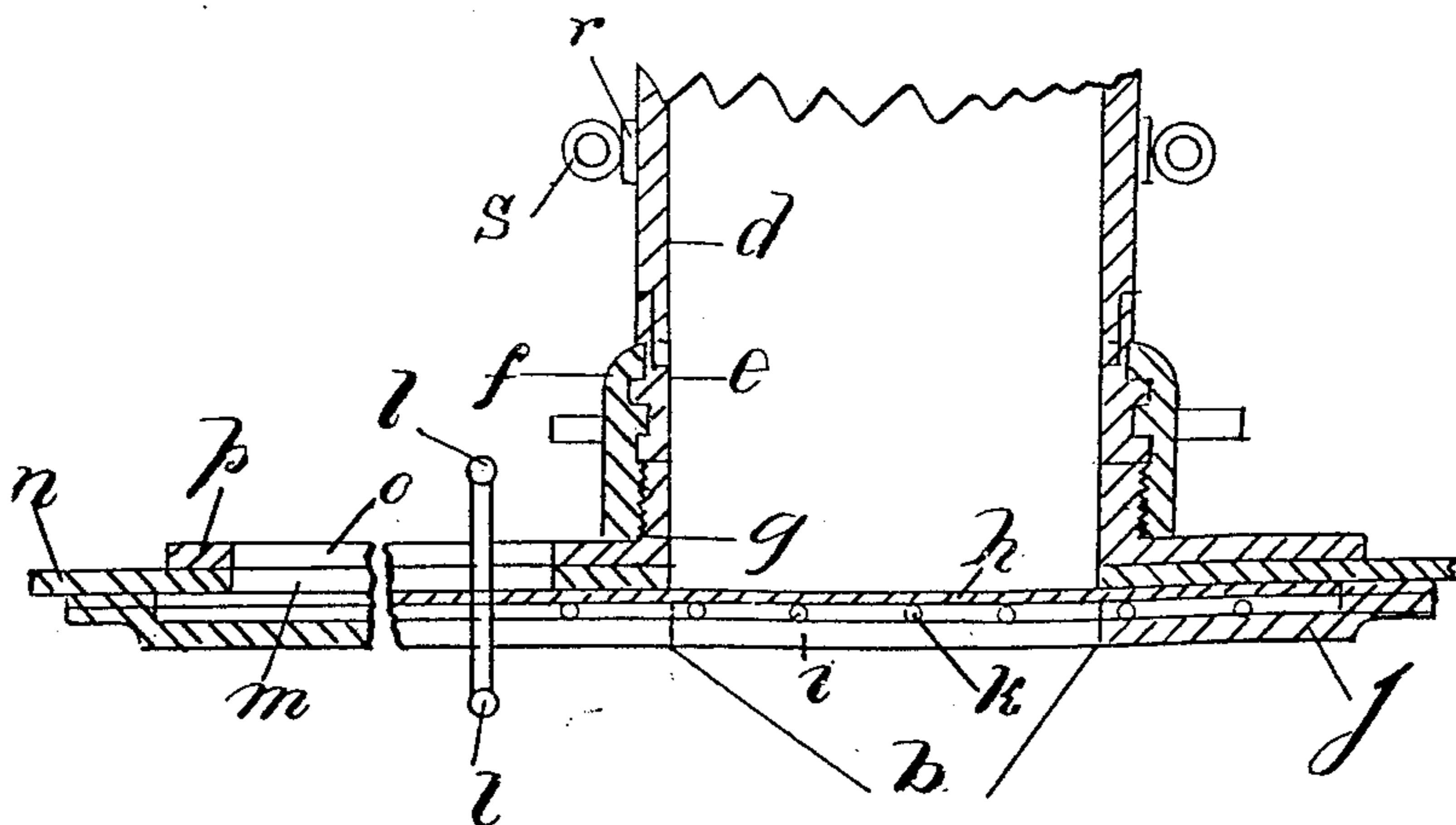


Fig. 1.



Witnesses.  
 G. M. Spring  
 Jesse Miller.

Fig. 2. Inventor.  
 Ernest Albert Edney.  
 per. Max Munch  
 his Attorneys

# UNITED STATES PATENT OFFICE.

ERNEST ALBERT EDNEY, OF HORNDEAN, ENGLAND.

## MEANS OF ESCAPE FROM SUNKEN SUBMARINES.

No. 845,623.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed September 13, 1905. Serial No. 278,303.

*To all whom it may concern:*

Be it known that I, ERNEST ALBERT EDNEY, a subject of the King of the United Kingdom of Great Britain and Ireland, residing at Five Heads Farm, Horndean, in Hampshire, in that part of the United Kingdom called England, have invented new and useful Improvements in Means of Escape from Sunken Submarines, of which the following is a specification.

This invention relates to improvements in means of escape from sunken submarines, the object being to enable the occupants of such vessels when submerged by accident or otherwise to escape by personal effort or to facilitate their withdrawal when such personal effort is no longer available.

In carrying my invention into effect I proceed in or in about the following manner, making reference to the accompanying drawing, wherein—

Figure 1 is a sectional side view of a submarine with my invention applied for use; and Fig. 2 is a section, on a large scale, of the sliding closure to be hereinafter referred to.

I provide a hose-like or tubular structure *a* of sufficient internal diameter or dimensions as will enable a person to pass through it from end to end. This structure *a* may be in a continuous length or in sections to joint together, as may be required by the position of the submarine or by the circumstances of the case. One end of this structure is made with means by which it can be attached to a specially-provided or existing manhole *b* in the submarine *c*, the manhole being normally closed by a cover which can be opened both from inside or outside the submarine. Such a mode of attachment may consist in providing the lower end of *a* with a ring *d*, having an outstanding annular flange *e*, round which is free to move an internally-screw-threaded ring *f*, which screws onto the flange *g*, surrounding the manhole *b*.

Parts of the threads on *e* and *g* may be removed, so that they may be engaged by making less than a complete revolution of *e*.

The closure for the manhole *b* is designed to be operated from both without and within the vessel and consists of a sliding plate *h* free to run in the groove *i*, preferably provided with rollers *k*.

The plate can be moved from inside or outside the vessel by bolts *l*, constituting handles which are free to run in a slot *m* in the skin *n* of the submarine and in another slot *o* in a

rim *p*, surrounding *m*, and the bolts *l* may be made to fold so as not to project until raised for use.

The structure *a* may be made without internal projections or with such projections or provisions *q* as will enable a person to more readily pass from one end to the other, and it is kept distended by bands *r* or other suitable means, rings or the like *s* being also furnished, by which it can be attached by ropes or other means *t* to anchors or otherwise as will prevent tides or the lurching of the submarine displacing the hose-like structure.

In use when a submarine sinks and cannot be raised the hose-like structure *a* would be let down from a ship or elsewhere and the lower end attached to the manhole by a diver. The water would then be pumped out from the hose-like structure and the manhole opened from outside or inside, as the case may be, and air-pipe let down, and the inmates could leave or be drawn out.

I claim—

1. The combination of a marine vessel provided with a manhole, a pipe having a water-tight connection with the manhole and adapted to establish communication between the manhole and the surface of the water, a closure for the manhole controlling communication between the vessel and the pipe, and means whereby the closure can be operated either from within or without the vessel.

2. The combination with a marine vessel provided with a manhole in its upper side, of a cover for the manhole arranged to be opened from both without and within the passage, a pipe proportioned to be let down from a float, and means rigid with the vessel whereby a water-tight union is provided between the pipe and the manhole.

3. The combination of a marine vessel provided with a manhole, a sliding closure for the manhole, means whereby the sliding closure can be operated either from within or without the vessel, and a pipe having a water-tight connection with the manhole and adapted to establish communication between the manhole and the surface of the water.

4. The combination of a marine vessel provided with a manhole, a closure for the manhole, means whereby the closure can be operated either from within or without the vessel, a pipe having a water-tight connection with the manhole and adapted to establish communication between the manhole and the

surface of the water, and means within the pipe to facilitate the passage of a person therethrough.

5 The combination with a marine vessel provided with a manhole in its upper side, of a closure for the manhole arranged to be opened from both without and within the vessel, a pipe proportioned to be let down from a float, means within the pipe to facilitate the passage of a person therethrough, and means rigid with the vessel whereby a water-tight union is provided between the pipe and the manhole.

15 6. The combination with a marine vessel provided with a manhole in its upper side, of a closure for the manhole arranged to be opened from both without and within the vessel, a flexible pipe proportioned to be let down from a float, means within the pipe to facilitate the passage of a person therethrough, of means rigid with the vessel whereby a water-tight union is provided between the pipe and the manhole, means carried by the pipe to prevent the collapse thereof, and means con-

necting the pipe and vessel arranged to maintain the pipe in an upright position. 25

7. The combination of a marine vessel provided with a manhole, a ring surrounding the manhole and provided with an outwardly-extending annular flange, a flexible pipe adapted to establish communication between the vessel and the surface of the water, a band loosely connected to one end of the flexible pipe and having an interlocking connection with the before-mentioned flange around the ring upon the manhole, means for holding the pipe in operative position, and a closure for the manhole which operates to control the communication between the pipe and the vessel. 30 35 40

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ERNEST ALBERT EDNEY.

Witnesses:

J. MAIN,  
W. J. WHETTEM.