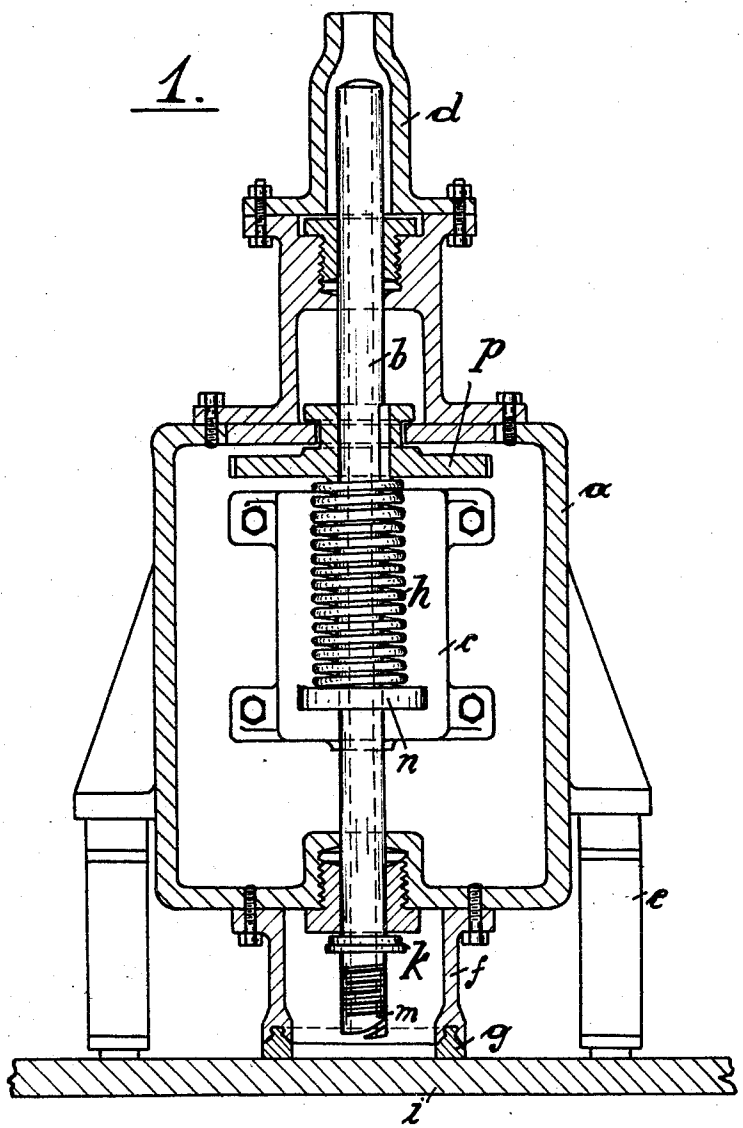
Sept. 9, 1930. B. LIESKE 1,775,595

AIR PIPING DEVICE IN CONNECTION WITH SUNKEN SUBMARINE BOATS

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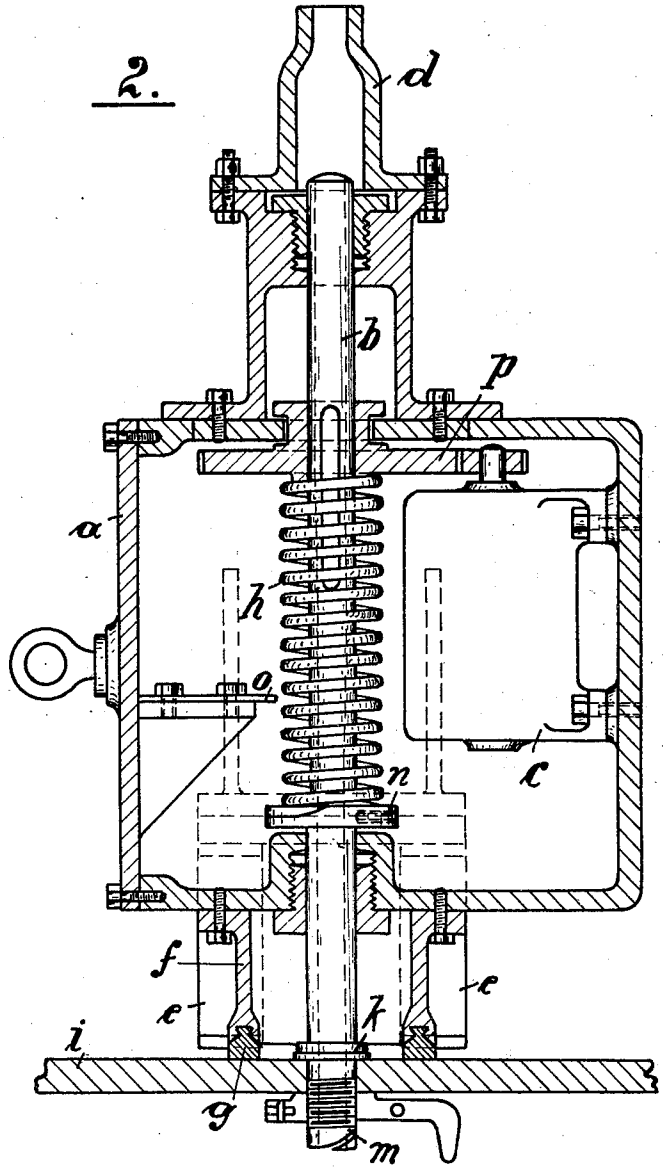


Bernhard Lieske

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AIR PIPING DEVICE IN CONNECTION WITH SUNKEN SUBMARINE BOATS

Filed July 6, 1929 2 Sheets-Sheet 2



Bernhard Lieske

Patented Sept. 9, 1930 1,775,595

UNITED STATES PATENT OFFICE

BERNHARD LIESKE, OF PLAUEN, GERMANY

AIR-PIPING DEVICE IN CONNECTION WITH SUNKEN SUBMARINE BOATS

Application filed July 6, 1929, Serial No. 376,440, and in Germany June 27, 1928.

My invention relates to improvements in air piping devices for sunken ships, and more particularly for sunken submarine boats and it consists in certain novel features of construction and adaptability, all as more fully hereinafter set forth and claimed.

The primary object sought to be attained by the invention forming the subject of the present application for patent, is to contemplate means for connecting easily and quickly to the sunken boat a pipe whereby it may be possible to force fresh air into the interior of the boat.

In the accompanying drawings:

Figure 1 is a longitudinal section through the device applied to the boat wall, and

Figure 2 is a corresponding section thereof, taken at a right angle to Figure 1.

Referring to the drawings, the device consists of a casing *a* in the shape shown, in the interior of which is arranged in suitable bearings and in axial direction, a boring-bar *b*, made hollow and which may be driven by any appropriate means, for instance by an electromotor *c* and by means of a toothed gearing. The latter is composed of a toothed wheel *p* keyed to the shaft of the motor, and of a driven toothed wheel which is slidably mounted on the shaft of the boring-bar *b*.

The casing *a* is provided at its top with a flanged socket *d* adapted to receive an air inlet pipe, not shown in the drawing, and at the outer wall of the sunken boat, there are arranged electro-magnets designated by *e*. Formed in the base of the casing *a* is an opening through which passes the spindle *b*, the latter entering a short cylinder *f* fixed to the said casing by screw-bolts and carrying on its periphery a rubber ring *g* for tightening purposes when the device is being applied to the wall *i* of the sunk boat. The projecting end of the spindle is provided, on the one hand, with a collar or flange *k* and on the other hand and beneath the said flange with a thread *m*. The said boring-bar is under the action of a spiral spring *h* which bears with its upper extremity against the toothed wheel *p* and with its lower extremity against the adjusting ring *n*, the axial displacement of the latter being limited by a stop *o* and the said spring serving the purpose of pressing the spindle against the wall *i* of the boat.

It will be of advantage to have the device mounted on a float so as to enable the diver to handle the device easily and quickly.

The operation is as follows: After having the device applied to the outer surface of the boat wall, the diver switches on the electric current and immediately the electro-magnets are holding the device pressed against the boat wall; then the motor is started. As soon as the revolving spindle has perforated the boat wall; the collar or flange *k*, under the action of the spring *h*, is pressed against the outer surface of the said wall and the current becomes interrupted automatically, this interruption being effected by any known means. The crew by screwing up a split nut on the thread *m* and providing the said nut with packing material, prevents thereby the spindle from being withdrawn. The communication with the outer air is thus established, and fresh air will enter the interior of the boat.

What I claim as new, is:—

1. An air piping device in connection with sunken submarine boats, comprising a casing, a boring-bar arranged axially therein and made hollow, a toothed gearing driven by an electro-motor, an adjusting ring mounted on the boring-bar, a spiral spring round the shaft and arranged between the said adjusting ring and the said gearing, a stop limiting the displacement of the said adjusting ring, an opening in the base of the casing for the passage of the spindle, a flange on the upper part of the free spindle end and a thread cut in the shaft, the said thread being arranged between the flange and the extremity of the spindle.

2. An air piping device in connection with sunken submarine boats, comprising a casing, a flanged socket at the top of the said casing and adapted to receive an air inlet pipe, a boring-bar arranged axially in the said casing and made hollow, an electro-motor, a toothed gearing driven by the said motor and composed of a toothed wheel keyed to the shaft of the said motor and of a toothed wheel slidably mounted on the said boring-

bar, an adjusting ring mounted on the boring-bar, a stop limiting the displacement of the said adjusting ring, a spiral spring round the shaft and arranged between the said adjusting ring and the slidably mounted toothed wheel, an opening in the base of the casing for the passage of the spindle, a flange on the upper part of the free spindle end, a thread cut in the shaft and arranged between the said flange and the extremity of the spindle, the said thread being intended to receive a split nut, a cylindrically shaped socket, screw-bolts fixing the said socket to the base of the casing, a rubber ring on the periphery of the said socket and serving for tightening purposes when the device is applied to the outer surface of the boat wall, electro-magnets mounted on the said boat wall and pressing the device against the latter, the electrically driven boring-bar being, under the action of its spiral spring, constantly pressed against the said wall, the said boring-bar perforating the wall of the boat and thus establishing a communication between the outer air and the interior of the boat the fresh air to be introduced passing through the hollow shaft of the said boring-bar.

In testimony whereof I have affixed my signature.

BERNHARD LIESKE.