W. J. JONES.

CUTTING HOLES IN SHIPS' WALLS.

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1,351,518. Patented Aug. 31, 1920.

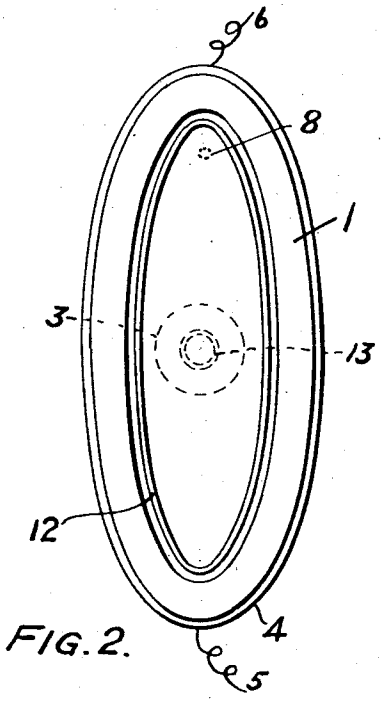


FIG. 2.

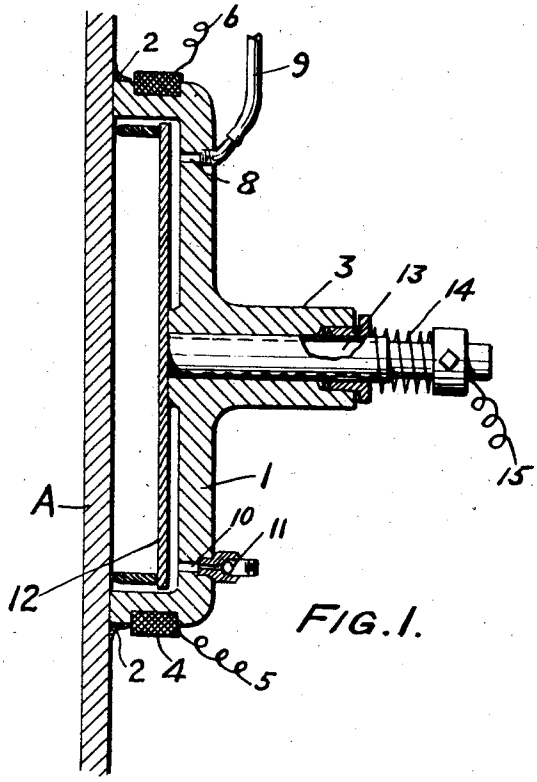


FIG. 1.

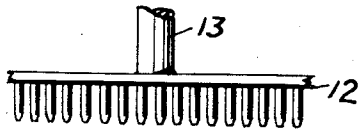


FIG. 3.

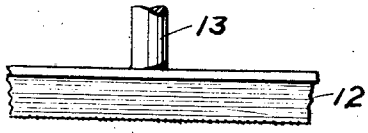


FIG. 4.

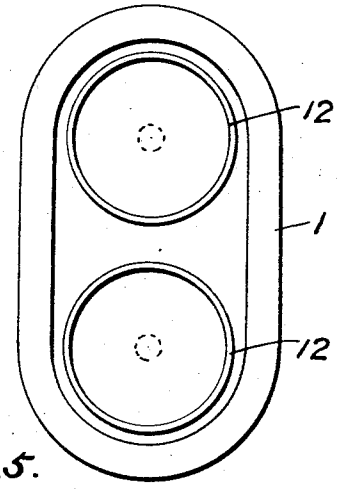


FIG. 5.

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CUTTING HOLES IN SHIPS' WALLS.

1,351,518. Specification of Letters Patent. Patented Aug. 31, 1920.

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To all whom it may concern:

Be it known that I, WALTER J. JONES, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Cutting Holes in Ships' Walls, of which the following is a specification.

The principal object of the present invention is to provide for rapidly cutting holes or openings of various sizes under water in the wall, side or other part of a ship in order to provide for drainage or for the attachment of lifting cables or their attaching means.

The invention will be claimed at the end hereof, but will be first described in connection with the accompanying drawings forming part hereof and in which—

Figure 1, is a side view, partly in section, of electrical hole cutting apparatus embodying features of the invention.

Fig. 2, is a perspective view of the front of the same.

Fig. 3, is a side view illustrating a detail of construction.

Fig. 4 is a similar view illustrating a modification, and

Fig. 5, is a front view illustrating a modification.

In the drawings 1, is a chamber open on one face and hence called cup-shaped. This cup-shaped chamber 1, is adjusted to a portion of the outer face of a ship's wall or side A, which may have been previously sand blasted or otherwise cleaned, if necessary. For this purpose use may be made of a packing 2, and of a handle 3, and of an electro-magnet 4, energized from above the water level or otherwise by suitable leads 5 and 6, and adapted to hold the chamber onto the wall A. 8, is an intake to the interior of the chamber from an air or like line 9, which may extend to above the water level. 10, is an outlet from the interior of the chamber 1, and it is shown as equipped with an outwardly opening check-valve 11. The purpose is to keep the atmosphere in the interior of the chamber 1, appropriate for the work to be done and free from steam. 12, is an electrode of generally ring form as shown in Figs. 1 and 2, and of double ring form as shown in Fig. 5, although the form is not essential. The working rim of this electrode 12, is provided with points or projections as shown in Figs. 3 and 4, and the electrode 12, is provided with a hand piece 13, working through a packed opening in the handle 3, and solicited or biased outwardly by a spring 14. 15, is a supply cable for the electrode 12.

In use an arc travels from point to point of the electrodes and in that way a hole corresponding in shape to the rim of the electrode is rapidly cut in the wall. The hand piece 13, serves for manipulating the electrode to strike and maintain the arc and the connections 9 and 10, provide an appropriate atmosphere and expel water and steam from the interior of the chamber 1, which is held onto the wall A, by the electromagnet 4.

I claim:

1. Apparatus for cutting holes in submerged ships' walls comprising the combination of a cup-shaped chamber, holding-on electro-magnets for the chamber, inlet and outlet connections for the interior of the chamber, and an electrode mounted in the chamber, substantially as described.

2. Apparatus for cutting holes in submerged ships' walls comprising the combination of a cup-shaped chamber, holding-on electro-magnets for the chamber, inlet and outlet connections for the interior of the chamber, and an electrode provided with high and low parts and mounted in the chamber, substantially as described.

3. Apparatus for cutting holes in submerged ships' walls comprising the combination of a cup-shaped chamber, holding-on electro-magnets for the chamber, inlet and outlet connections for the interior of the chamber, and an electrode provided with a rim having points and mounted in the chamber, substantially as described.

WALTER J. JONES.