Aug. 18, 1931. J. C. CLASON 1,819,074

ARRANGEMENT FOR FREEING BOATS FROM WATER

Filed Sept. 17, 1930

Fig. 1.

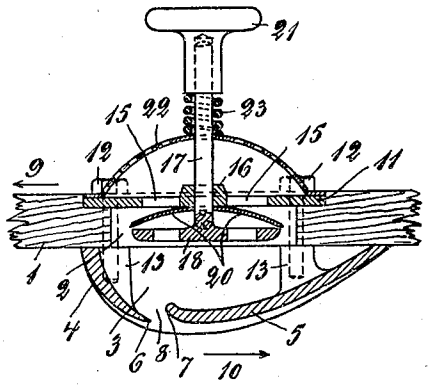


Fig. 2.

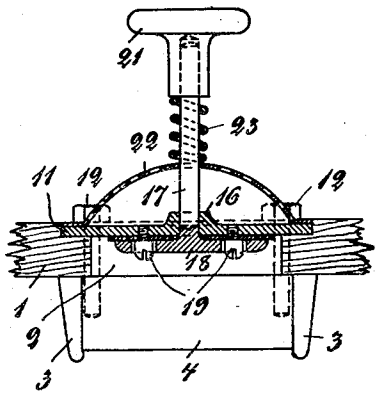


Fig. 3.

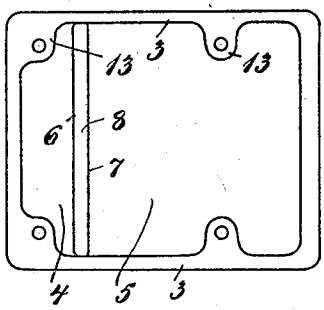


Fig. 4.

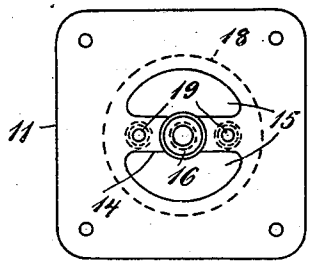


Fig. 5.

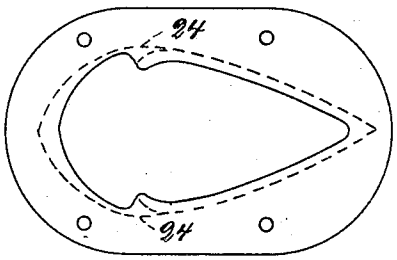
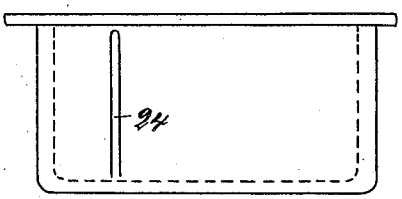


Fig. 6.



J. C. Clason INVENTOR

By: Marks & Clark Attys.

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UNITED STATES PATENT OFFICE

JAN CARL CLASON, OF STOCKHOLM, SWEDEN

ARRANGEMENT FOR FREEING BOATS FROM WATER

Application filed September 17, 1930, Serial No. 482,628, and in Sweden September 19, 1929.

The present invention relates to an arrangement for freeing boats from water and primarily consists in arranging a suction device about an aperture in the bottom of the boat and a valve arranged in or adjacent to the aperture, said valve being opened in consequence of the suction caused by the suction device and the water in the boat then drawn out through the valve.

An embodiment of the invention is by way of example illustrated on the accompanying drawings where Fig. 1 is a vertical section of the arrangement taken in the longitudinal direction of the boat. Fig. 2 is a front view of the same arrangement partly in section. Figs. 3 and 4 are plan views of details of the same arrangement. Figs. 5 and 6 are modifications of the detail shown in Fig. 3, seen from underneath (in Fig. 5) and from the side (in Fig. 6).

Referring now more particularly to the drawings in which similar reference characters designate corresponding parts throughout the several views there is provided a boat the bottom 1 of which is provided with an aperture 2 in or adjacent to which is inserted a valve, which when closed does not allow water to enter into the boat and when open allows water in the boat to be drawn out from the same. Underneath said aperture, that is to say on the outside of the bottom of the boat, is secured a box which is shaped to form the suction device.

The box shown in Figs. 1 to 3 is of such a size that it completely covers the aperture 2 and is provided with two side walls 3 which are united by means of two plates 4 and 5 the upper edges of which form together with the upper edges of the side walls a surface adapted to fit to the bottom of the boat. The front plate 4 is arched downwards and rearwards and the lower edge 6 of the same constitutes the lowermost part of the space in the box. The rear plate 5 is arched downwards and forwards and the lower edge 7 of the same extends almost to the edge 6 but is positioned somewhat above the edge 6 so that there will be between the edges 6 and 7 a slit 8 by means of which the space in the box will communicate with the water surrounding the box and which is so positioned that there will be a suction in the slit when the boat is moving forward. The plates 4 and 5 are in form of arches of such a shape that the bottom of the box will be stream line shaped in order that, when the boat is moving forward (in the direction of the arrow 9) and the water thus in relation to the box is moving in the direction of the arrow 10, on the one hand the box may exert the least possible resistance to the water and on the other hand in the slit 8 will be produced the above mentioned suction with the aid of which water in the boat is to be removed.

The valve placed in or adjacent to the aperture 2 consists of a frame in the shape of a plate 11 the edges of which are fitted water-tight to the bottom of the boat and which in the embodiment shown on the drawing is secured by means of bolts 12 which pass through the bottom of the boat and enter into projections 13 or the like on the inside of the side walls 3 of the box. The plate 11 is provided with a bridge 14 and on each side of the same with an opening 15. The bridge is provided with a guide 16 for a valve spindle 17 the lower end of which carries a valve-disc 18 between which and the plate 11 is placed a disc of leather, rubber or the like fixed to the bridge 14 by means of two screws 19 and forming two valve flaps 20 corresponding to the openings 15. The upper end of the valve spindle 17 is provided with a button 21 between which and a strainer 22 placed over the plate 11 is mounted a spring 23 surrounding the valve spindle and acting to pull the valve-disc upwardly toward the plate 11. When the valve-disc is in raised position the same will keep the two valve flaps 20 pressed against the plate 11 with the aid of the spring 23, in which case the heads of the screws 19 will be lodged in openings arranged for the same in the valve-disc 18 and then water cannot pass through the valve in any direction.

When the valve is to be opened the valve spindle is pushed down and turned slightly in the one or other direction, so that the heads of the screws 19 will prevent the springs 23 from pulling the valve-disc upwardly to

closed position. When the boat is not moving the pressure of the water outside the same keeps the valve flaps 20 closed but in case the boat is moving ahead and has sufficient speed there will be a suction inside the box, as described above, and water in the boat will then be drawn out through the valve.

Figs. 5 and 6 show the modified form of the box which may be used instead of the box above described but in connection with the same valve arrangement. According to this modification the sides of the box are stream line shaped and the bottom of the box is plane while the box according to Figs. 1–3 has plane sides and the bottom stream line shaped. Each side of the box shown in Figs. 5 and 6 is of about the same shape as the bottom of the box shown in Fig. 1 and has thus two slits 24, corresponding to the slit 8, in each of which there will be a suction like the suction in the slit 8 when the boat is moving ahead.

The above described valve arrangement is to be considered only as a suitable construction of such a one. It will be easily seen that the same may be modified in different ways.

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

1. A suction device for boats, comprising a hollow casting, a check valve mounted partially within the casting, a bottom on the casting having an elongated aperture therein, formed perpendicular to the longitudinal axis of the boat to which the device is applied, for the purpose of creating a strong suction within the hollow casting and operating the check valve when the boat is in motion.

2. A suction device for boats, comprising a hollow casting, an exterior wall of stream-line shape formed on the casting, a check valve mounted partially within the casting, a pair of transverse lips formed in the wall of the casting, perpendicular to the longitudinal axis of the boat to which the device is applied, the front one of which projects outwardly further than the rear one, for the purpose of forming an aperture therebetween, creating a strong suction within the casting, and operating the check valve when the boat is in motion.

3. In a suction device for boats, a hollow casting having a stream-line body formed thereon, mounted on the bottom of the boat, a bridge plate mounted on the casting, having openings therein, and forming a valve seat, a check-valve mounted in the bridge plate, means for holding the valve in open and closed positions, a pair of opposed lips on the casting, the front one of which projects outwardly further than the rear one, to form a narrow elongated aperture in the casting, which is perpendicular to the longitudinal axis of the boat to which the device is applied, for the purpose of creating a strong suction, and operating the valve when the boat is in motion.

4. In a suction device for boats a valve supporting frame in the bottom of the boat, a bridge plate formed therein, a valve spindle guide on the bridge plate, a valve spindle having a valve-disc thereon, mounted in the guide, a leather disc on the bridge plate, means for normally holding the leather disc in closed position against the bridge plate, a casting on the bottom of the boat having a chamber enclosing the valve parts, and a stream-line body formed thereon, a pair of lips on the casting, the front one of which projects further than the rear one, forming an elongated aperture therebetween, which is perpendicular to the longitudinal axis of the boat, for the purpose of creating a strong suction within the casting, and operating the valve by suction when the boat is in motion.

In witness whereof I have hereunto set my hand.

JAN CARL CLASON.