L. RISSO.

APPARATUS FOR WALKING ON THE WATER.

APPLICATION FILED MAR. 1, 1916.

1,248,013.

Patented Nov. 27, 1917.

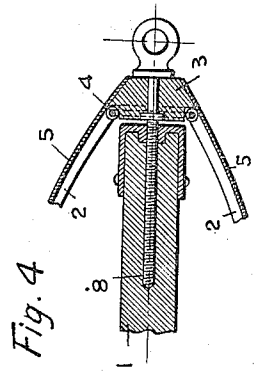


Fig. 4

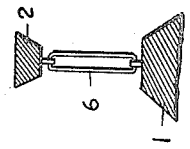


Fig. 7

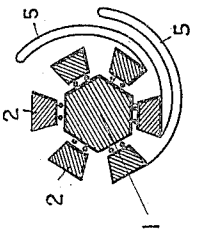


Fig. 5

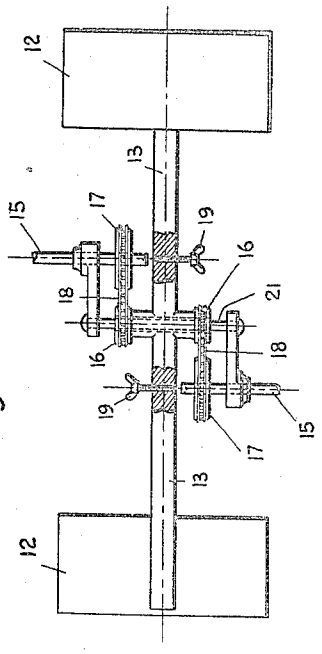


Fig. 6

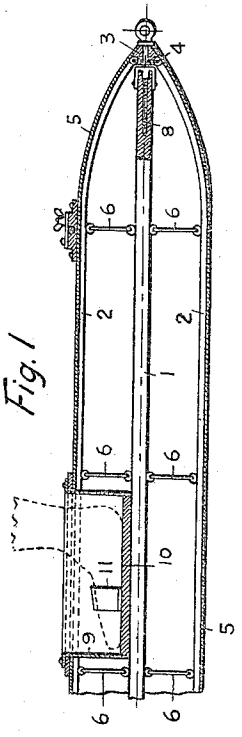


Fig. 1

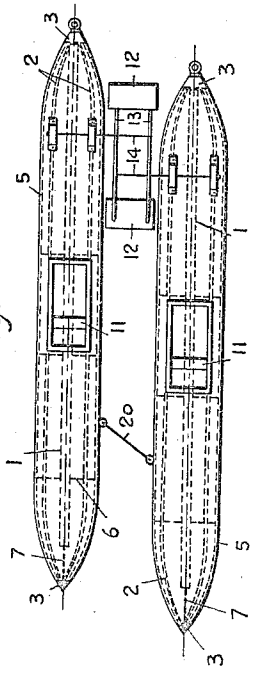


Fig. 2

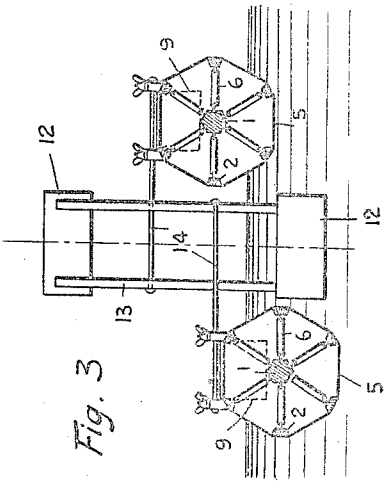


Fig. 3

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LUIGI RISSO, OF GENOA, ITALY.

APPARATUS FOR WALKING ON THE WATER.

1,248,013. Specification of Letters Patent. Patented Nov. 27, 1917.

Application filed March 1, 1916. Serial No. 81,354.

To all whom it may concern:

Be it known that I, LUIGI RISSO, a subject of the King of Italy, residing at Via Lazzaro Gagliardo 3, Genoa, Italy, have invented certain new and useful Improvements in Apparatus for Walking on the Water, of which the following is a specification.

The present invention refers to a portable non-submergible apparatus for walking on the water, essentially consisting of two floats of prismatic shape arranged parallel to each other, in combination with a propeller which can be put in motion by the action of the feet of the person. The floats are formed by an impermeable cloth sustained by an inside frame.

The apparatus differs from the known types by the special construction of the frame sustaining the cloth covering, by which construction the apparatus may be reduced to a very small volume for transportation.

The invention is illustrated in the drawings.

Figure 1 is a partial longitudinal sectional view through one of the floats;

Fig. 2 a plan view of the whole apparatus;

Fig. 3 a vertical cross-section of the apparatus with propeller;

Fig. 4 a vertical longitudinal section through an end of the float with the means by which the float can be enlarged and reduced in size;

Fig. 5 a cross-sectional view of the float in reduced condition;

Fig. 6 shows a modified form of the propeller;

Fig. 7 is a detail of the connection of the center rod with the rods at the periphery of the float.

The structure or framework supporting the cloth covering of the float consists of a center rod 1 and rods 2 of wood arranged at the periphery of the float and parallel to the center rod and converging toward the center rod at the two ends of the float, where they are joined by eyes with the hinges or rings 4 of the cones 3. On the outside of the rods 2 is fastened the impermeable cloth covering 5. The center rod 1 is connected with the rods 2 by means of four or more series of spokes 6 which connect with said rods by joints or eyes on either end, as in Figs. 1 and 7. By moving the center rod in a longitudinal direction the frame will be enlarged or contracted and this according as the spokes may assume vertical or parallel positions with respect to the center rod. One of the end cones 3 is provided with a pin 7 which penetrates into the adjacent end of the center rod for supporting and guiding the same during its movement.

The other end cone rotatably carries a screw 8 which is threaded into the adjacent end of the center rod. By turning the screw the center rod will be drawn forward or pushed back and in this manner the prismatic body of the float will be contracted or distended.

The displacement of water by each float must be such that one float will be sufficient to support the weight of the person and further that in employing two floats these will be submerged in the water for about the half of their height. In the upper part of the float there is provided an opening for the introduction of the foot. This opening has an appendix or pocket 9 of impermeable cloth suitably secured to the exterior of the float and extending inwardly to the center rod. This appendix or pocket is watertight and carries a wooden board 10 which rests on the center rod and serves as a support for the foot of the person. When contracting the apparatus this board will be drawn outwardly from the float and the leather strip 11 fastened on it for the reception of the foot will now serve to connect the two floats together and to facilitate their transportation. It is understood that the support for the foot could just as well be arranged on the top of the float. The rudder or propeller consists of a simple rudder wheel with two blades 12 connected together by two longitudinal rods 13 to form a rectangular frame. If four blades are employed instead of two, a second frame will be connected to the first one at right angles thereto. Into the rudder frame 13 penetrate at two symmetrical points two shafts 14 which rigidly connect on the upper part and behind the person on the floats. The connection of these shafts with the floats is effected by bolts and winged nuts as in Figs. 1 and 3, whereby the rudder may be very easily removed by hand. By pressing with the feet first on the one and then on the other float the rudder will

be put in rotation and a speed obtained which is proportional to the rotation of the rudder. In order to obtain a greater number of rotations the modified rudder device as shown in Fig. 6, may be used. In this figure the two shafts 15 fastened upon the floats are combined with a double crank shaft 21 on which are rotatably arranged the two toothed wheels 16 which form one piece with the rudder wheel 13. The cranks of shaft 21 rotatably engage the shafts 15. Opposite the wheels 16 other wheels 17 of a larger diameter are keyed on the shafts 15. These toothed wheels could be substituted by pulleys. The two wheels on the same side of the rudder are connected by a chain 18. In conformity with the ratio of the diameters of a pair of wheels will be the ratio between the number of footsteps or pedalsteps and the rotations of the rudder. If the wheels of one pair are of the same diameter as the corresponding wheels of the other pair the effect of the transmission will be the same. By removing the chain or belt 18 and connecting the shafts 15 to the rod 13 of the rudder, for instance by means of the bolts 19 having conical ends adapted when the bolts are screwed into the rod 13 to engage conical depressions in the ends of the shafts, a second speed may be obtained, and in this latter condition a rotation of the rudder will correspond with one complete footstep or pedal step, as in the rudder shown in Fig. 3. It results that by the employment of this simple rudder device two different speeds may be obtained. It is evident that instead of employing the toothed wheels 16, 17 connected by chains, the toothed wheels might be such as to directly mesh with each other, the wheels 16 being driven in the same direction as the wheels 17 are moved, by the direct action of such wheels.

In the rudder device shown in Fig. 3 the shafts 14 are rigidly connected with the floats and rotatably connected with the rudder. There is nothing to prevent connecting these shafts rigidly with the rudder and supporting them rotatably on the floats. The hexagonal shape of the float may also be substituted by any kind of polygonal shape. The mentioned materials as wood, metal and impermeable cloth may be replaced by other materials as practical experience may indicate to be most suitable. 20 is a connecting rod hinged to the floats and serving to keep the floats in a parallel position during working.

The present apparatus does not have any steering rudder as after a short practical experience a person will be able by simply distorting the body to guide the apparatus and to regulate the amount of submersion. In order to make the apparatus more accessible for beginners a handrudder may be employed and will certainly be useful in certain circumstances.

I claim:—

1. A portable and nonsubmergible apparatus for walking on the water, comprising two floats, each consisting of a covering of impermeable cloth supported by a framework of prismatic shape with pointed ends, said framework comprising a center rod connected by hinged spokes to longitudinal parallel rods, cones at the ends of said floats, and a hinged connection between said parallel rods and said cones.

2. A portable and nonsubmergible apparatus for walking on the water, comprising two floats, each consisting of a covering of impermeable cloth supported by a framework of prismatic shape with pointed ends, said framework comprising a center rod connected by hinged spokes to longitudinal parallel rods, cones at the ends of said floats, a hinged connection between said parallel rods and said cones, a supporting and guiding pin carried by one of said end cones and penetrating into the adjacent end of the center rod, and a screw rotatably carried by the other end cone and threaded into the adjacent end of the center rod.

3. A portable and nonsubmergible apparatus for walking on the water, comprising a pair of floats, a shaft rigidly fastened on each float and combined with a double crank shaft, the cranks of which are rotatably supported on the ends of these shafts and the crank shaft traversing and rotatably arranged in a rudder wheel, two toothed wheels rotatably arranged on the crank shaft and forming one piece with the rudder wheel, and two other toothed wheels keyed on the ends of the float shafts opposite the first mentioned wheels, the wheels of each pair being conected by a chain.

4. A portable and nonsubmergible apparatus for walking on the water, comprising a pair of floats, a shaft rigidly fastened on each float and combined with a double crank shaft, the cranks of which are rotatably supported on the ends of these shafts and the crank shaft traversing and rotatably arranged in a rudder wheel, two toothed wheels rotatably arranged on the crank shaft and forming one piece with the rudder wheel, two other toothed wheels keyed on the ends of the float shafts and screws provided on the rudder wheel for securing the float shafts thereto.

5. A portable and nonsubmergible apparatus for walking on the water, comprising a pair of floats, a shaft rigidly fastened on each float and combined with a double crank shaft, the cranks of which are rotatably

supported on the ends of these shafts, and the crank shaft traversing and rotatably arranged in a rudder wheel, two toothed wheels rotatably arranged on the crank shaft and forming one piece with the rudder wheel, and two other toothed wheels keyed on the ends of the float shafts.

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

LUIGI RISSO.

Witnesses:
ADOLFO WEBER,
MOZGARELEA DOMNEE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."