PATENT SPECIFICATION

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COMPLETE SPECIFICATION.

Improvements in and relating to Rudders for Toy Submarines.

We, BING WERKE, vorm. Gebrüder Bing A.G., of Regensburgerstrasse 215, Nürnberg, Germany, a German company, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

In known toy submarines the rudder provided for lateral steering is securely connected to the rudder provided for vertical steering. Laterally adjustable steering flaps are provided on the body of the boat, by the adjustment of which the boat may be prevented from diving if this is not desired.

The invention consists in this, that on the lateral rudder a rotatable and adjustable height rudder (horizontal steering) is arranged. By uniting the two rudders the advantage of easier adjustment and greater cheapness is attained, since the lateral steering flaps with their rods are eliminated.

In the accompanying drawing a constructional example of the invention is illustrated, in Figure 1 in side elevation and in Figure 2 in plan.

The lateral rudder 2 is attached rotatably by means of a wire stirrup 1 to the body of the boat (not shown) and the friction between the vertical part of the wire stirrup and the sleeve 3 rolled round it is so great that the rudder remains in the position in which it was set. A small tube 4 is pushed through a hole in the lateral rudder 1 and soldered in, and carries a pin 5, on the ends of which the rolled sleeves 6 and 7 of a height rudder 8 are rotatably mounted. The middle part of this rudder 8 has a longitudinal slit 9 through which the upper part of the lateral rudder passes, so that the height rudder 8 may be turned about the pin 5. The adjustment of the horizontal rudder 8 is effected by means of a small angle piece 10 soldered to it, which has a projection 11 which can engage in different holes 11a, 11b, 11c in the lateral rudder.

With the height rudder in the position shown in full lines in Figure 1, the boat dives. The very small force tending to tilt the boat is found to be insufficient to raise it. The eddies produced by the screws are so great that practically no force is exerted on the rudder 8.

In the intermediate position when the rudder 8 is held by the opening 11b the boat is in an unstable state. It dives and rises alternately. Only in the steep position 11c is the force on the rudder so great that the bow of the boat is raised.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A rudder for toy submarines, characterised by this that on the usual lateral rudder a rotatable and adjustable height rudder is arranged.

2. A rudder for toy submarines, as claimed in claim 1, characterised by this, that the height rudder has a slot for the lateral rudder to pass through, and a projection which engages in holes or notches in the lateral rudder, for fixing the height rudder in position.

3. The improved rudder for toy submarines, substantially as described with reference to the accompanying drawings.

Dated this 14th day of March, 1930,
MARKS & CLERK.

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Fig. 1

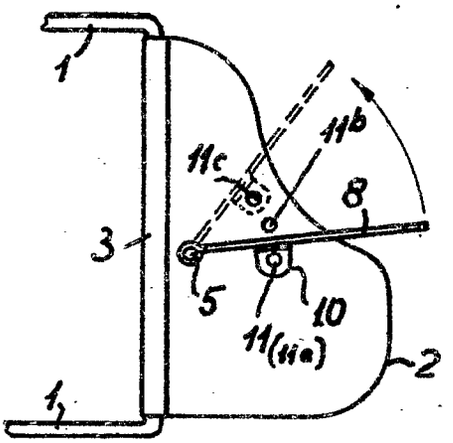
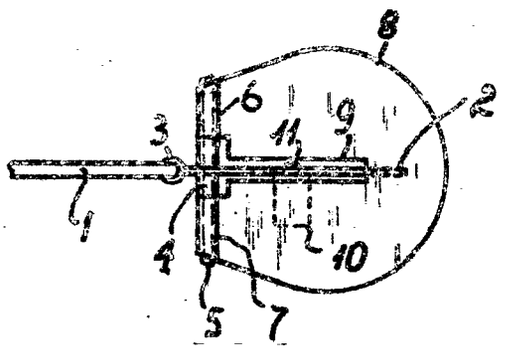


Fig. 2



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