July 14, 1953 A. J. L. MORITZ 2,645,053

TROLLING LINE SINKER

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Fig. 1.

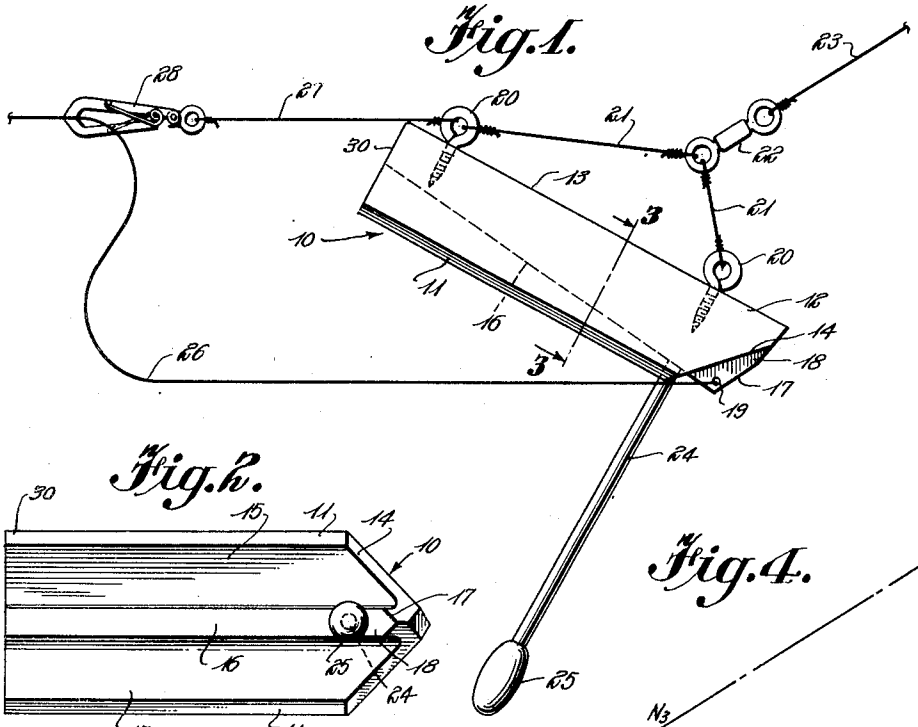


Fig. 2.

Fig. 4.

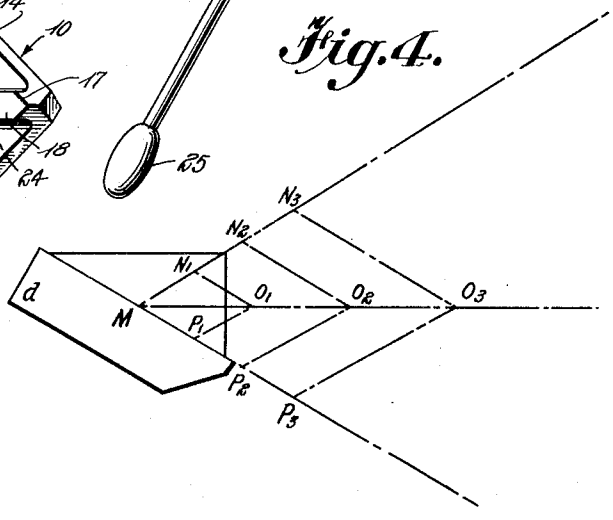


Fig. 3.

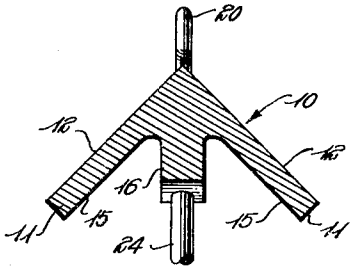
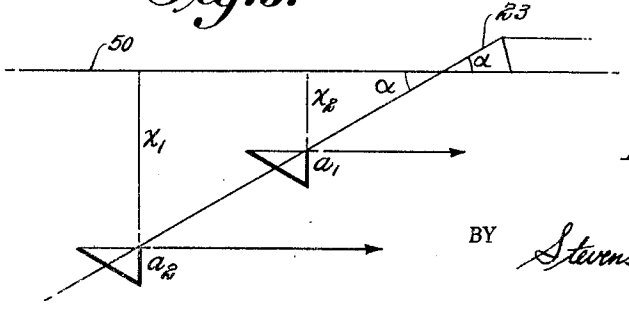


Fig. 5.



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TROLLING LINE SINKER

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3 Claims. (Cl. 43—43.13)

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This invention relates to a sinker for use in trolling fish lines and which automatically maintains the lure and hook submerged at a predetermined depth irrespective of the speed of the boat from which the trolling line is extended.

It is well known that fish swim at various depths in water depending upon the temperature of the water, the amount of disturbance caused by wave motion, the direction and speed of the current, the intensity of the light in the water and numerous other factors. In addition, it is known that the optimum trolling speeds vary as to species of fish, season of the year, weather conditions and other influencing circumstances. Consequently, it is of the utmost importance when troll-fishing to be able to vary the depth of the lure independently of the trolling speed and vice versa.

It is an object of this invention to provide a device which will enable a line fisher to troll at any predetermined desired depth and at any predetermined desired speed.

It is another object of this invention to provide a trolling line sinker which is so designed that when tension is applied to the fishline, such as by hooking a fish, the sinker will rise to the surface. The sinker will under the above conditions perform this function without alteration of the positions of its several parts. Additionally, by rising to the surface, the sinker furnishes a visual signal so that the fisherman may be appraised of his catch and haul it aboard.

It is another object of this invention to provide a trolling line sinker of this nature which will be more adaptable to manufacture than any heretofore advanced. This is possible inasmuch as there are no moving parts in the sinker in the mechanical sense.

Other objects and advantages of the present invention not specifically mentioned will be apparent from the following specification when considered in conjunction with the appended drawings in which:

Figure 1 is a view in side elevation of the trolling line sinker while in use;

Figure 2 is a view in bottom plan of the sinker;

Figure 3 is a view in oblique section of Figure 1 along line 3—3.

Figure 4 is a schematic representation showing what occurs when the trolling speed is changed; and

Figure 5 is a schematic representation showing what occurs when the trolling depth is changed.

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Referring now more particularly to the drawings, the trolling line sinker shown in Figures 1, 2 and 3 comprises a float 10 made of wood or other suitable material having two wings 11. The float is squared at its rear end as generally designated by 30. However, at its forward end, the wings 11 are swept back along their leading edges 14. The wings 11 are normal to each other and their top surfaces 12 intersect along a line or ridge 13 which in effect is the apex of the internal angle formed by the wings 11. Between the under surfaces 15 of the wings 11 is a projection 16 which is tapered from front to back. The forward faces 17 of the projection 16 are swept back similarly to wings 11 but not to the same degree. Consequently, a small portion 18 of the projection can be seen when the device is looked at in the position shown in Figure 1. This small portion 18 is provided with a hole 19.

The float 10 has mounted at each of its ends along ridge 13 an eye screw 20. A wire 21 is attached at one end to each eye screw 20. The other ends of the wires 21 are attached to a swivel 22. The arrangement described thus far forms a span having as its principal parts eye screws 20, wires 21, and swivel 22. The sinker is drawn through the water by a towing line 23 attached to the span at swivel 22.

A weighted bar having a straight shaft 24 and a weight 25 is attached to the float 10 at the forward end of projection 16. The weighted bar is approximately the same length as ridge 13.

A fishing line 26 is secured to projection 16 by threading through hole 19 and knotting. This line 26 carries the lure and the hook (not shown). A line 27 secures a clamp 28 to the eye screw 20 at the rear end 13 of the float 10. The fishing line 26 is normally placed and held in clamp 28.

In operation the trolling line sinker is prepared in the manner shown in Figure 1 and lowered into the water from a moving boat. The weighted bar, which supplies weight on the forward end of the float 10, will cause the front end of the float 10 to dip into the water whereby the water will exert a downward force on the top surfaces 12. Consequently, the sinker will descend in the water. During its descent the weighted bar acts to stabilize the sinker during its passage through the water. As soon as the extension of the towing line 23 intersects the ridge 13 in the center of gravity of the float the sinker will no longer descend, but will assume a condition of equilibrium and will from then on move horizontally.

In its horizontal movement, the sinker designated as *d* in Figure 4 may be represented by a force assumed to be MO_1. This force is the result of the component MN_1 and component MP_1. If the speed is increased the force MO_1 may increase to MO_2 and in so doing the two force components MN_1 and MP_1 will change to MN_2 and MP_2 respectively. The same is true if the force MO_2 increases to MO_3. Consequently, even though the speed can be changed materially, the sinker will remain at approximately the same depth.

When a fish strikes, the fishing line **26** will be jerked from clamp **28** and the fish will, by tugging at line **26**, pull the forward end of the sinker and turn it around. In this position the water places an upward force on the under surfaces **15** of float **10** thereby forcing it to ascend to the surface. Therefore, the fisherman will be immediately warned of the strike and the pulling in of the towing line **23** will be much facilitated.

As long as the span relation is constant, that is the ratio between the distances from swivel **22** to the eye screws **20** is constant, the position of the singer relative to the towing line **23** will be constant. Therefore, the angle α as shown in Figure 5 will also be constant. Angle α represents the angle between the towing line **23** and the horizontal. Consequently, it is possible to change the length of the towing line **23** and raise or lower the sinker irrespective of the speed at which the sinker or boat is moving. In Figure 5 this is demonstrated by a sinker having a constant span relation. It can assume two positions A_1 and A_2 at depths X_2 and X_1, respectively, without change in the angle between the towing line **23** and the horizontal **50**. This angle is shown as α.

In the manner just described the towing line **23** may be calibrated to show depth of the sinker directly for any constant span relation. This may be done according to the equation that the depth of the sinker is equal to the length of the towing line **23** multiplied by the sin of angle α. The optimum value for angle α will depend upon the character and resistance of the towing line, the propeller wash, and various other circumstances. However, a value of approximately 15 degrees will generally prove suitable.

While this invention has been shown and described in only one embodiment, it is nevertheless understood that various changes and modifications can be made which are obvious to one skilled in the art without departing from the spirit and scope of the invention.

I claim:

1. A trolling line sinker that comprises an elongated float having two wings arranged to form a symmetrical angle section body having its external angle greater than its internal angle, a projection on said float extending longitudinally thereof and lying between said wings in the internal angle, a stem having one end fixed to one end of said projection, a weight fixed to the other end of said stem, and means defining a triangular connection being articulated with the ridge on the body which constitutes the apex of said internal angle.

2. A trolling line sinker as defined in claim 3 wherein the means defining a triangular connection includes a swivel, two eye screws mounted on the ridge, and a pair of wire elements each having one end attached to an eye screw and the other end attached to said swivel.

3. A trolling line sinker that comprises an elongated float having two wings arranged to form a symmetrical angle section body having its external angle greater than its internal angle, the wings at the forward end of said body being swept back, a projection on said float extending longitudinally thereof and lying between said wings in the internal angle, said projection being tapered longitudinally from front to back, a stem having one end fixed to the forward end of said projection, a weight fixed to the other end of said stem, a fish line secured to the forward end of said projection, a clamp attached to the rear end of said float detachably holding the fish line and means defining a triangular connection being articulated with the ridge on the body which constitutes the apex of said internal angle.

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