May 1, 1934. E. YEO 1,956,783

TROLLING SPOON

Filed Dec. 12, 1932 2 Sheets-Sheet 1

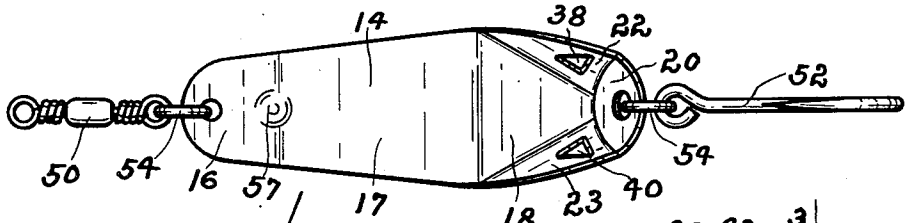


Fig-1

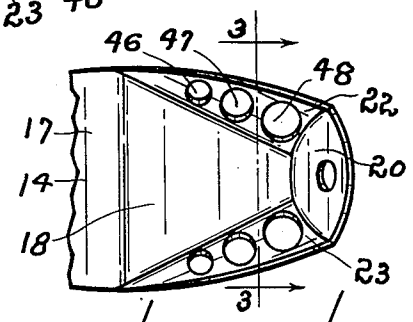


Fig-2

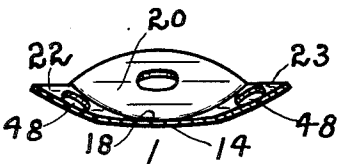


Fig-3

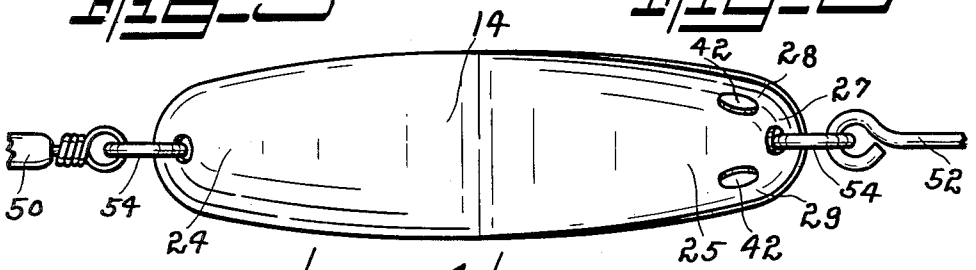


Fig-4

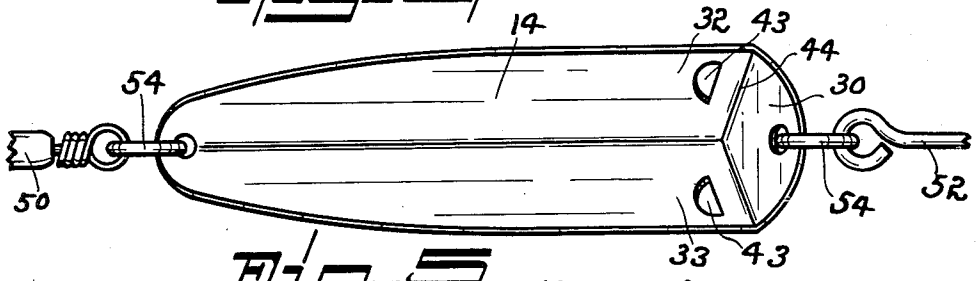


Fig-5

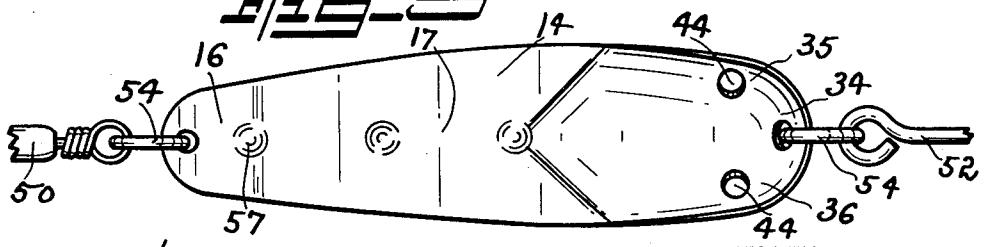


Fig-6

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TROLLING SPOON

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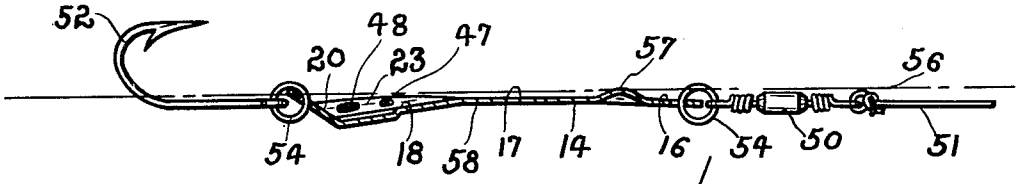


Fig-7

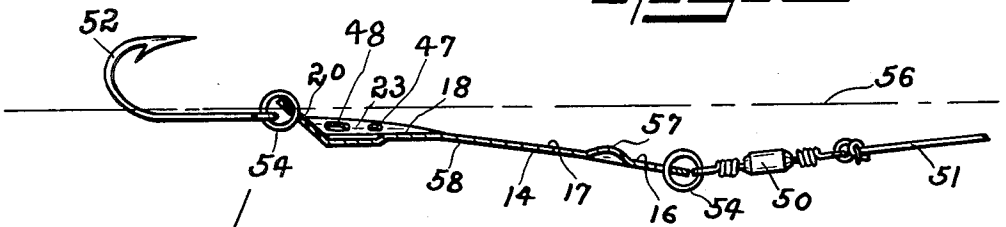


Fig-8

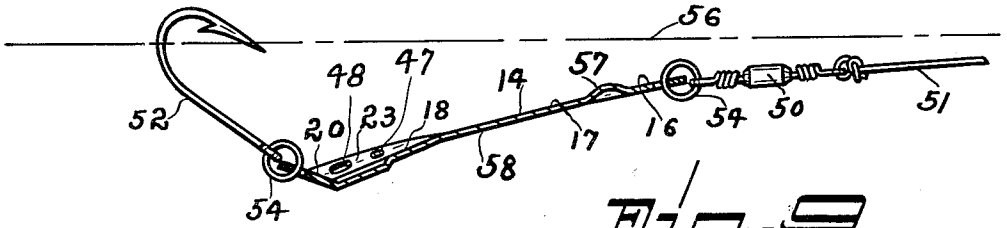


Fig-9

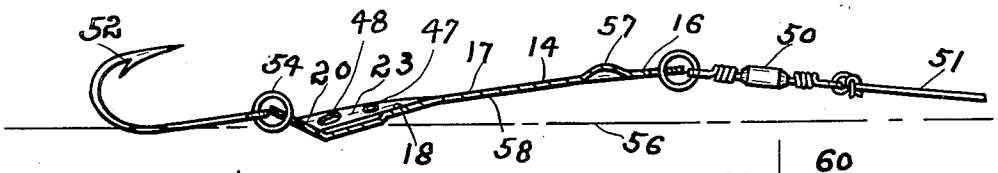


Fig-10

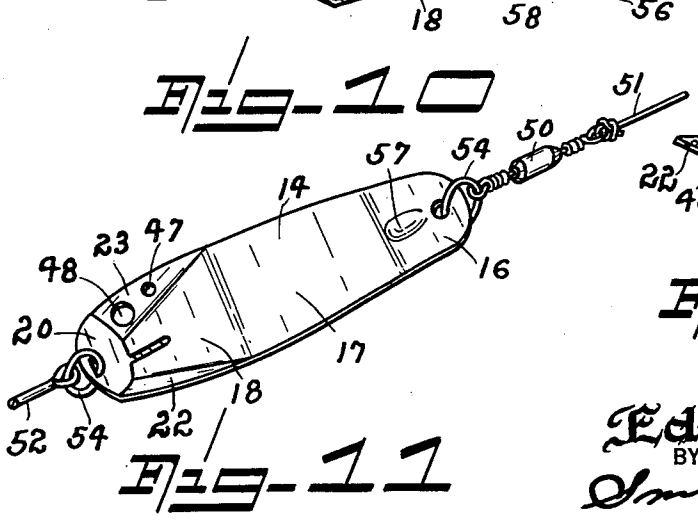


Fig-11

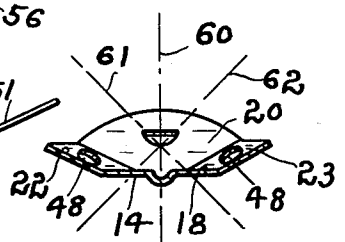


Fig-12

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Patented May 1, 1934 1,956,783

UNITED STATES PATENT OFFICE

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TROLLING SPOON

Edward Yeo, Rolling Bay, Wash.

Application December 12, 1932, Serial No. 646,842

3 Claims. (Cl. 43—45)

My present invention relates to the art of fishing lures and particularly to the type that are intended to imitate the natural food of the fish sought and which are constructed of a single piece of metal and further inasmuch as they are of the type normally towed behind a boat they are most properly termed trolling spoons.

Trolling spoons of the one piece type may be divided into two general classes, one the wobbler and the other the swimming type of spoon. My invention relates to the latter class and following out the principles of the swimming spoon it is desirable to provide a spoon which will normally swim in a vertical position, i. e. on edge, as it is towed behind a boat. Now formerly trolling of this type was always done with hand propelled boats which limited the speed at which these boats could travel consequently the spoons were designed to operate at a speed of around 2 miles per hour. With the present general use of internal combustion engines it has been desirable to increase the speed at which trolling spoons will properly swim. There are two reasons for this, one due to the more prevalent use of the Diesel engine it is found difficult indeed to slow these motors down to the slow speed formerly obtainable with the gasoline engine and secondly and possibly more important is the fact that if the speed can be increased the fisherman can cover a greater area in the same length of time and thereby greatly increase his likelihood of making successful catches of fish. My present invention is drawn to means which enable the construction of a trolling spoon of the swimming type which can be towed at higher speed, speeds up to double that normally used and which will operate in the manner of the older types of spoons which have proven so successful.

The principal object of my present invention is therefore to provide a trolling spoon which will produce the lifelike illusion of the former spoon but which can be used at higher trolling speed.

A further object of my invention is to provide means whereby the excessive rocking of the spoon along its longitudinal axis can be prevented even tho the spoon is trolled at higher speed.

A further object of my invention is to provide means for reducing the area of the surfaces which normally cause this rocking of the spoon about its longitudinal axis without breaking the outer margin of the spoon.

Other and more specific objects will be apparent from the following description taken in connection with the accompanying drawings, wherein

Figure 1 is a top plan view of a spoon after my principles.

Figure 2 is a fragmentary plan view showing the rear portion of a spoon with a modified form of surface relief.

Figure 3 is a cross-sectional view taken along the line 3—3 of Figure 2.

Figures 4, 5 and 6 are top plan views of different types of swimming spoon showing the preferred type of relief of the rocking creating surfaces.

Figures 7, 8, 9 and 10 are top plan views in section showing the action of a typical swimming spoon.

Figure 11 is a perspective view showing releaving holes of a type suitable for the spoons indicated.

Figure 12 is a typical cross sectional view similar to Figure 3 with dash lines to show the desirable limits of the rocking along the longitudinal axis.

Referring to the drawings, throughout which like reference characters indicate like parts, 14 designates the body portion of a one piece metal swimming spoon. This is divided into a forward water impinging surface 16, the central body portion 17, a rear water impinging surface 18, a further water impinging surface which creates the swimming action of the spoon as 20 and two side water impinging surfaces 22 and 23 which create the rocking of the spoon along its longitudinal axis. This same general scheme is followed in all the various types of swimming spoons. In Figure 4 for instance the front water impinging surface is indicated at 24, the rear surface at 25, the swimming action by the sharply curved lip at 27 and the wobbling action by the sharply turned lip at 28 and 29. In Figure 5, the swimming action is accomplished by surface 30 and the wobbling action by producing a rather deep V in the body of the spoon which in effect provides the two rocking surfaces 32 and 33. In Figure 6, the forward surface 16 is similar to that shown in Figure 1. Then the swimming action is created by the lip at 34 and the wobbling action by the lip at 35 and 36. In all these types of spoons it is found necessary to provide the rear surface which creates the swimming as 20, 27, 30 and 34 of considerable area if the swimming action is to be accomplished. It is then desirable to provide the rocking action of the spoon for without the rocking action the spoon would only attract fish on the level of the spoon whereas if the spoon rocks around its longitudinal axis it will flash light above and below its normal level and attract fish from the resultant greater area.

It has been found however, if the usual spoon is

to be towed faster than normal the swimming action is more difficult to create, consequently it would be desirable to increase surfaces 20, 27, 30, and 34. At the same time however, if this is enlarged it will necessarily follow that the rocking producing surfaces as 22 and 23 or 28, 29, 35 and 36 are proportionately increased yet the effort required to rock the spoon at the higher speed is no greater than at the lower speed. This results in a complete revolving of the spoon, an action that entirely destroys its swimming action and destroys its effectiveness as an imitator of the natural food of the fish which is usually herring, candle fish or other small fish. It would then follow that the areas of the rocking surfaces of the spoon should be reduced, however, it is not desirable to cut the profile or margin of the spoon, to do so would create notches therein and the spoon would be very apt to become entangled with seaweed and the like which at present slides off the spoon.

It has been found that the solution for this problem lies in reducing the area of the surfaces of the area which produce the rocking action and this may be most effectively accomplished by piercing the same with holes and thus actually reducing the area of these surfaces. This reduction in area reduces the tendency of the spoon to rock along its longitudinal axis and the life-like appearance of the spoon is maintained.

The exact shape of the cut out material or opening will vary considerably with the type of spoon and the speed desired in the spoon, that is the trolling speed which it is desired to attain without the spoon revolving. Following these principles it has been found that in the McMahon spoon for instance, in which the rocking surfaces 22 and 23 are triangular in outline that a triangular opening as shown in Figure 1 will serve quite effectively and will in most cases in the proportions shown in Figure 1 increase the possible trolling speed by about 50%. These triangular openings are shown at 38 and 40 respectively. In Figures 4, 5 and 6 have been shown the type of openings that have been found quite effective in the other types of spoons. In Figure 4, the openings 42 are shown as ovals. In Figure 5, because of the sharp valley at 44 it has been found most desirable to form the openings as D-shaped or semi-circular openings 43. In the type of spoon shown in Figure 6 it has been found that due to the fact that the lips of the spoon which produces the rocking action as 35 and 36 are not as pronounced as in some of the other spoons and usually a single hole of most any shape can be used, the round holes being normally preferable in that it is most easily formed and finished, this is indicated at 44.

Referring again to the McMahon spoon, which the applicant is most familiar with, it has been found that the effective trolling speed can be doubled over the ordinary construction by piercing surfaces 22 and 23 with a plurality of holes which are equal in area to about one half of the surfaces, this is shown in Figures 2 and 11. In this connection it is desired to bring out that all of the rocking producing surfaces cannot be cut out, it is still necessary to retain some of the metal. Therefore a plurality of holes for structural reasons is more desirable than an increase in the size of the triangle shown in Figure 1. A plurality of holes leaves a certain stiffness in the form of pillars between the holes which properly support the outer margin of surfaces 22 and 23 and forms a secure connection and support for the rear impinging surface 20. The most extreme case of the cutting away of the surfaces indicated is in Figure 2 in which the plurality of holes 46, 47 and 48 have been found to double the effective trolling speed which at present seems to be as far as this principle need be carried. So as to more completely illustrate the spoons they have been shown with the towing swivels 50 to which the tow line as 51 is attached and the fish engaging hook 52 which are suitably connected to the spoon proper by means of the usual either slit or welded rings 54.

Method of operation

It is very essential that the swimming action of the spoon, by that is meant the movement about a longitudinal axis as tho a fish were swimming, must be accurately timed to approximate that of a swimming fish. The number of oscillations found most desirable are approximately about sixty throws to the minute. This would be towed at the usual trolling speed of about 2 miles per hour. Now if the spoon oscillates or swims faster than this it becomes erratic in its movement and no longer successfully imitates the swimming fish. It will have greater amplitude of its vibration, the whole back end of the spoon going out at approximately 45 degrees to the line of draft. This is a most unnatural way for a fish to swim and of course the spoon representing a fish, fails in its primary mission.

The swimming action of the spoon is illustrated in Figures 7, 8, 9 and 10 if it be assumed that Figure 7 is the normal position in which the spoon starts its travel. It is being towed in a forward position by line 51 and normally would rest on the line of draft which is represented by the dashed line 56. It will be noted that the forward water impinging surface 16 assisted by the protuberant 57 tends to act as a forward rudder and the water impinging thereon deflects the spoon to the general position shown in Figure 8. When this condition is reached the rear impinging surfaces are then presented to the water, which the spoon is passing thru, and the body portion 17, the rear impinging surface 18 and the swimming producing surface 20 are of such greater extent than the forward surface 16 that a rather violent movement of the spoon is experienced moving it to the position shown in Figure 9 in which the rear part of the spoon has passed considerably beyond the line of draft 56. The tow line itself which is still exerting the effort necessary for the forward movement of the spoon assisted again by the water impinging on the back of the spoon as at 58 causes the whole spoon to move sideways somewhat after the showing in Figure 10. A continued movement of the spoon brings the front end of the spoon back to the line of draft 56 and the cycle is then ready for repetition. It has been felt necessary to explain the swimming action of the spoon so that another force acting upon the surfaces which produce the rocking action of the spoon will be explained. It will be evident it is believed that this type movement of the spoon without regard to the forward movement of the spoon will cause considerable rocking as the water impinges in its sideways movement upon the rocking surfaces 22 and 23. It will naturally follow that if a certain amount of water is passed freely thru the pierced holes in the surfaces 22 and 23 that less rocking action will be accomplished.

The principal rocking action, however, is no doubt due to the water impinging upon the angularly disposed surfaces 22 and 23 as the spoon is drawn thru the water and it would then follow that if part of the water can freely pass thru the pierced opening as 47 and 48 that less rocking of the spoon will occur. In Figure 12 the spoon has been illustrated with the normally horizontally line 60 and two lines 61 and 62 disposed normally at about 45 degrees to the horizontal. The lines represent the maximum rocking that is desirable as at present understood at least in a trolling spoon of this order.

It has been found that in certain instances it may be desirable to have merely one of the lateral surfaces as 22 or 23 perforated. When so arranged, particularly if a D-shaped hook engaging opening is provided in the rear of the spoon, tends to cause the spoon to ride in the water with one edge definitely down. When the spoon is properly balanced as normally used it will ride either one side or the other down. However, if a single perforation is made or a plurality of them in one of the side surfaces the spoon will be unbalanced sufficiently to always cause the unperforated side of the spoon to go down and leave the perforated edge of the spoon uppermost as it is towed in its normal swimming position.

The foregoing description and the accompanying drawings are believed to clearly disclose a preferred embodiment of my invention but it will be understood that this disclosure is merely illustrative and that such changes in the invention may be made as are fairly within the scope and spirit of the following claims:

What I claim is:

1. A fishing lure, consisting of a body portion of elongated ovular shape; a front portion having the plane of its surface dipped downwardly slightly from the main body portion; a main body portion formed as a single plane surface, a transverse downwardly extending bend terminating the rear margin of said body portion; a downwardly sloping plane surface of trapezoidal form having its base joining the body portion and having two equal sides which converge toward the rear of the spoon; plane side surfaces of approximately triangular shape, having a curved outer side joining the trapezoidal shaped plane on its opposite and equal sides and having their upper edges extended upwardly approximately to the plane of the body portion and having relief openings therein and an end plane surface joining the side surface and the trapezoidal plane surface and angularly disposed with respect to the same.

2. A fishing lure, consisting of a body portion of elongated shape; a front portion having the plane of its surface dipped downwardly slightly from the main portion; a main body portion formed as a single plane surface, a transverse, downwardly extending bend, forming a relatively small angle with said body portion and terminating the rear margin of said body portion; a downwardly sloping plane surface of trapezoidal form, having its base joining the body portion, and having two equal sides which converge toward the rear of the spoon; plane surfaces of approximately triangular shape joining the trapezoidal shaped plane on its opposite and equal sides and having relief openings therein and an end plane surface joining the side surface and the trapezoidal plane surface, and angularly disposed with respect to the same.

3. A fishing lure consisting of a body portion of elongated ovular shape; a front portion having the plane of its surface dipped downwardly slightly from the main body portion; a main body portion formed as a single plane surface, a downwardly extending bend terminating the rear margin of said body portion; a plane surface of trapezoidal form having its base joining the body portion and having two equal sides which converge toward the rear of the spoon; plane side surfaces of approximately triangular shape joining the trapezoidal shaped plane on its opposite and equal sides; and an end plane surface joining the side surface and the trapezoidal plane surface and angularly disposed with respect to the same.

EDWARD YEO.