May 11, 1943. E. A. CHRISTOPH 2,319,112

HOLDING DEVICE

Filed April 3, 1942

Fig. 1.

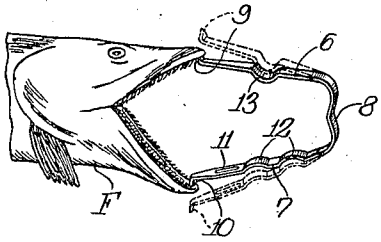


Fig. 2.

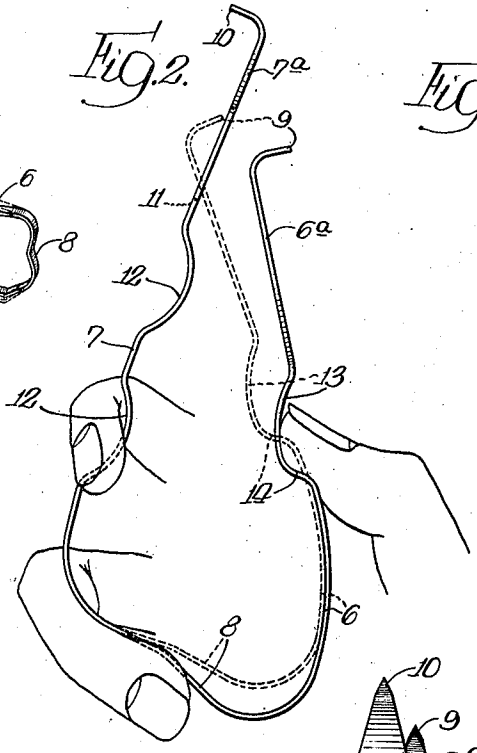


Fig. 3.

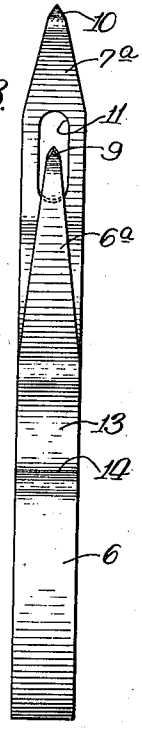


Fig. 4.

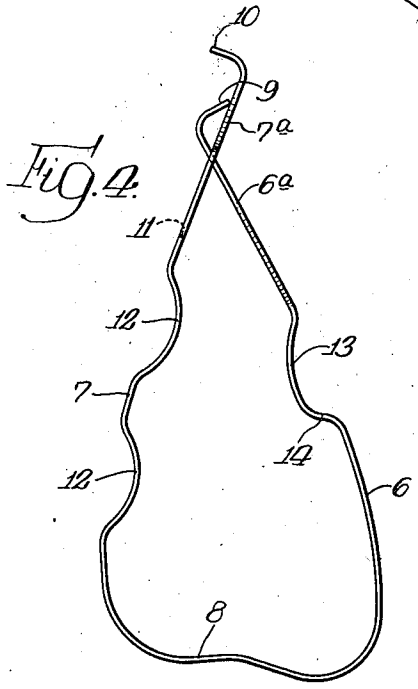
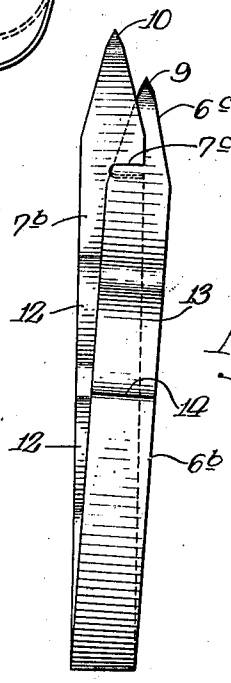


Fig. 5.



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UNITED STATES PATENT OFFICE

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HOLDING DEVICE

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Application April 3, 1942, Serial No. 437,489

3 Claims. (Cl. 43—29)

This invention relates to holding devices intended for use in handling fish and for analogous purposes.

It is known to provide devices for holding open the mouth of a fish during removal of the hook therefrom. All of such devices with which I am familiar require the use of both hands when getting them ready for use, and include loose parts which frequently interfere with the use of the device and may become entangled with articles in the fishing tackle box or kit. Also, such devices of this character as I am familiar with have no provision for guarding against slippage of the device when preparing it for use, which is objectionable since the fisherman's hands frequently are wet and more or less slimy, due to handling of the fish, so that it frequently is difficult to handle devices of the character referred to not provided with means for guarding against slippage.

My invention is directed to a holding device of the character referred to which may readily be manipulated with one hand, is free of loose parts and is provided with gripping elements effectively guarding against slippage, while also being provided with means for securing the device in its non-extended or closed position, so as to occupy minimum space in the tackle box or kit and reduce likelihood of the device becoming entangled with other articles in the box. More specifically, the holding device of my invention is formed from a single piece of resilient material of appropriate springiness and rigidity, bent into generally U shape to provide two opposed arms yieldingly urged apart and swingable toward and away from each other, these arms being provided at one end with outwardly directed point elements and having cooperating means for securing them together and thereby restraining them against movement apart. The arms are provided with thumb and finger receiving depressions for guarding against slippage of the device during handling thereof, and the means for securing the arms together is such that they may be secured together or released from each other, as desired, with expedition and facility and by the use of but one hand. Further objects and advantages of my invention will appear from the detail description.

In the drawing:

Figure 1 is a side view of a holding device embodying my invention, shown as used for holding open the mouth of a fish, the positions which the arms of the device would occupy if unrestrained against movement away from each other being indicated in dotted lines.

Figure 2 is a side view of the device, on an enlarged scale, showing the positions which the parts thereof occupy in the first portion of the operation of moving the arms into engagement one with the other for restraining them against movement away from each other;

Figure 3 is a front view of the holding device in its condition shown in Figure 2;

Figure 4 is a side view of the holding device with the arms thereof interlocked and thereby restrained against movement away from each other; and

Figure 5 is a front view of a modified form of holding device having modified means for holding the arms in interlocking relation and thereby restraining them against movement away from each other.

Usually, when handling the device for moving the arms thereof into interlocking relation, or for releasing the arms from each other for use of the device, it is held in more or less vertical position, with one of the arms toward the user and the free ends of the arms uppermost. Accordingly, in the following description, the free ends of the arms, when released from each other, will be referred to as the upper ends thereof, the other ends of the arms being referred to as their lower ends, and the arm toward the observer will be referred to as the front arm, the other arm being referred to as the back arm; these terms being used for convenience in description only and being in nowise limiting, as will be understood.

The holding device of my invention conveniently is formed from a suitable length of spring steel of proper gauge and temper to possess considerable strength and rigidity, appropriate for its intended use, while being capable of being flexed or bent and distorted as required for interlocking the free end portions of the arms and releasing them. The length of strip steel is of considerable width, for reasons which will appear presently, and is bent into generally U shape providing two arms 6 and 7, which for purposes of description may be referred to as the front arm and the back arm, respectively, these arms being free at their upper ends and connected together and spaced apart at their lower ends by a bight element 8. The arms 6 and 7 are swingable toward and away from each other about their lower ends, at the junctures thereof with the bight element 8, and are yieldingly urged away from each other with considerable force

by the inherent resiliency of the spring steel strip. If the upper ends of arms 6 and 7 were unrestrained against movement, they would assume upwardly diverging positions. Arm 6 is provided, at its upper end, with an outwardly directed point 9 of substantially tapered V shape, and arm 7 is provided, at its upper end, with an outwardly directed point 10 similar to point 9.

In the use of the device the arms 6 and 7, having been released from each other, are forced toward each other sufficiently to enable insertion of the free ends thereof into the mouth of a fish, and are then released. The points 9 and 10 engage the jaws of the fish and the arms 6 and 7, upon release thereof, are forced apart, thereby forcing the mouth of the fish open and holding it against closing, as will be clear from Figure 1 in which the device is used for holding open the mouth of a fish F. In Figure 1, arms 6 and 7 are shown in dotted lines in the divergent positions which they would occupy if unrestrained against movement away from each other, previously referred to. It will be apparent that the device, when applied to the mouth of a fish as in Figure 1, exerts considerable spring pressure, effectively eliminating possibility of the fish closing its mouth while also assuring that the points 9 and 10 are firmly embedded in the jaws of the fish. The hook may then safely be removed from the mouth of the fish, and thereafter, if desired, the holding device may be used for suspending or transporting the fish. In order to remove the device from the fish's mouth the arms 6 and 7 are again forced toward each other so as to disengage the points 9 and 10 from the fish's jaws, after which the arms 6 and 7 may be interlocked, as will be explained presently, for restraining them against movement away from each other.

The upper portion of arm 7 tapers upward for a portion of its length, at 7*a*, to the tip of point 10, the latter being provided by bending outward substantially at right angles the free terminal portion of arm 7. This arm 7 is provided with a lengthwise opening or slot 11 extending for a short distance into the tapered portion 7*a* but disposed, for the major portion of its length, in the untapered area of the upper portion of arm 7. Arm 7 is also provided, below the upper portion thereof, with two spaced arcuate depressions 12 formed by bending the strip steel inwardly in the shape shown, these depressions being intended to receive the second and third fingers of the user's hand, providing finger grips effectively guarding against slippage of the device in the use thereof. The upper portion 6*a* of arm 6 tapers upward in width to the tip of point 9, the latter being provided by bending the free terminal portion of arm 6 outward substantially at right angles. This latter arm 6 is provided, adjacent the lower end of upper portion 6*a* thereof, with a depression 13 formed by bending the strip steel to the shape shown, this depression increasing downward in depth to provide a pressure receiving shoulder 14 adjacent the lower end thereof. In using the device when the arms 6 and 7 thereof are released from each other, two of the fingers engage in the depressions 12 of arm 7, and the thumb engages in the depression 13 of arm 6, thus providing positive grips which effectively guard against slippage of the device in the use thereof.

The taper of upper portion 6*a* of arm 6 is such that the width thereof, a short distance below point 9 and extending upward thereto, is somewhat less than the width of the opening 11, whereby the upper end portion of arm 6 may, by proper manipulation of the device, be inserted through opening 11, with point 9 disposed at the outer face of the rearward or back arm 7. In order to accomplish that, the device is held with one finger in the lower finger receiving depression 12, and a second finger at the area of juncture between the lower end of arm 7 and the bight element 8, with the thumb engaging in the thumb receiving depression 13. Arm 6 is then forced toward arm 7 and is also forced downward, by pressure exerted particularly on shoulder 14, thus distorting arm 6 and bight element 8 and bringing the upper end portion of arm 6 into alignment with opening 11 of arm 7; as will be clear from Figures 2 and 3. Arm 6 is then swung toward arm 7 sufficiently to cause insertion of the upper end portion of arm 6, including the point 9, through opening 11, the taper of the upper portion 6*a* of arm 6 limiting the extent of such insertion thereof through opening 11. Point 9 is then positioned at the outer face of arm 7 and immediately below the upper end of opening 11, as will be clear from Figure 2, in which the position of arm 6 after insertion of the upper end portion thereof through opening 11 is indicated in dotted lines. The pressure on shoulder 14 is then relieved, permitting arm 6 to move upwardly, by the inherent resiliency thereof and of bight element 8, into its position shown in Figure 4, with point 9 disposed above opening 11 and in contact with the outer face of arm 7. In that manner the arms 6 and 7 are secured together or interlocked so as to restrain them against movement away from each other. The device thus secured in its closed condition is well suited for keeping in the tackle box or kit and occupies but little space, with slight risk of the device becoming entangled with other articles in the box. When it is desired to use the device in the manner above described, it is held in the same manner as for securing the arms together, and arm 6 is forced downwardly sufficiently to bring the tip of point 8 below the top of opening 11, after which arm 6 is released and permitted to move away from arm 7, thus freeing the upper ends of these arms for movement toward and away from each other. The operation of releasing the upper ends of the arms is the reverse of that for interlocking them, and need not be described in greater detail.

The modified form of device shown in Figure 5 is similar to that of Figures 1 to 4, inclusive, with the exception of the means for interlocking the upper end portions of the arms. Referring to Figure 5, arm 7*b* is provided, a short distance from its upper end, with a transverse slot 7*c* opening through one edge thereof. Arm 6*b* is similar to arm 6 of Figure 3 except that the upper tapered portion 6*c* of arm 6*b* is of less length than the tapered upper portion 6*a* of arm 6 of Figure 3. In order to interlock the arms 6*b* and 7*b*, arm 6*b* is swung laterally and toward arm 7*b* so as to extend rearward beyond the latter at the edge thereof through which slot 7*c* opens, and is then moved transversely of arm 7*b* into slot 7*c*, thus interlocking the two arms as in Figure 5 so as to restrain them against movement away from each other. By moving arm 6*b* outwardly of slot 7*c* it is disengaged from arm 7*b*, and the device may then be used in the same manner as the device of Figures 1 to 4, inclusively, above described.

As has been indicated above, and as will be un-

derstood by those skilled in this art, changes in details of construction and arrangement of my invention may be resorted to without departing from the field and scope thereof, and I intend to include all such variations, as fall within the scope of the appended claims, in this application in which the preferred forms only of my invention have been disclosed.

I claim:

1. A holding device of the character described formed from a single piece of resilient strip metal of considerable width bent into generally U-shape providing two arms connected at their lower ends by a bight element for swinging movement toward and away from each other and yieldingly urged apart, said arms being provided at their upper ends with outwardly directed points, one of said arms being provided with a lengthwise opening in its upper portion, the other arm having its upper portion reduced in width and insertible, by distortion of said other arm, through said opening into position with its point at the outer face of said one arm above said opening effective for restraining the upper ends of said arms against movement away from each other, said other arm being bent inwardly adjacent said reduced upper portion thereof providing a thumb receiving depression having an outwardly extending shoulder at its lower end for exerting downward and inward pressure on said other arm and thereby distorting it for insertion and withdrawal of the upper portion thereof through said opening, said one arm being bent inwardly below said opening providing a finger receiving depression for restraining said one arm against lengthwise movement while distorting said other arm.

2. A holding device for holding open the mouth of a fish during removal of the hook therefrom formed from a piece of resilient strip metal of considerable width bent into generally U-shape providing two arms connected at their lower ends by a bight element for swinging movement toward and away from each other and yieldingly urged apart, each of said arms being provided at its upper end with an outwardly directed point substantially perpendicular to the plane of said arm, one of said arms being provided with an opening in its upper portion and the upper portion of the other arm being insertible through said opening in intersecting relation to said one arm in position cooperating therewith for restraining the upper portions of said arms against movement away from each other, by distortion of said other arm, said strip metal being of slight thickness relative to its width whereby said device is readily distortable by hand, said bight element being of considerable width providing an abutment for holding said device during distortion thereof, said arms being disposed in nonintersecting relation and free for independent movement one toward and away from the other when said other arm is disengaged from the opening of said one arm, said other arm being bent inwardly below its upper portion providing a thumb receiving depression for exerting pressure on said other arm and thereby distorting it for insertion and withdrawal of the upper portion thereof into and from said opening, and said one arm being bent inwardly below said opening providing a finger receiving depression for restraining said one arm against lengthwise movement while distorting said other arm.

3. A holding device for holding open the mouth of a fish during removal of the hook therefrom formed from a piece of resilient strip metal of considerable width bent into generally U-shape providing two arms connected at their lower ends by a bight element for swinging movement toward and away from each other and yieldingly urged apart, each of said arms being provided at its upper end with an outwardly directed point substantially perpendicular to the plane of said arm, one of said arms being provided in its upper portion with a transverse slot opening through one side thereof and the upper portion of the other arm being insertible through said slot in intersecting relation to said one arm in position cooperating therewith for restraining the upper portions of said arms against movement away from each other, by distortion of said other arm, said strip metal being of slight thickness relative to its width whereby said device is readily distortable by hand, said bight element being of considerable width providing an abutment for holding said device during distortion thereof, said arms being disposed in nonintersecting relation and free for independent movement one toward and away from the other when said other arm is disengaged from said slot, said other arm being bent inwardly below its upper portion providing a thumb receiving depression for exerting pressure on said other arm and thereby distorting it for insertion and withdrawal of the upper portion thereof into and from said slot, and said one arm being bent inwardly below said opening providing a finger receiving depression for restraining said one arm against lengthwise movement while distorting said other arm.

EDWARD A. CHRISTOPH.