

- [54] CLAMPING DEVICE
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- [21] Appl. No.: 287,496

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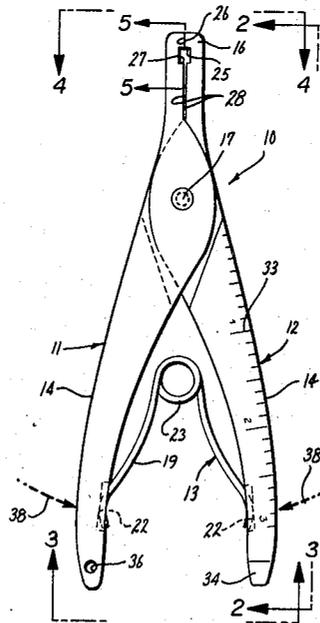
Primary Examiner—James L. Jones, Jr.  
 Attorney, Agent, or Firm—Flehr, Hohbach, Test, Albritton & Herbert

- [52] U.S. Cl..... 81/5.1 R, 7/4, 81/425 R
- [51] Int. Cl..... B25b 7/00, B25b 7/02
- [58] Field of Search..... 7/1 H, 1 M, 4; 81/5.1, 81/425 R, 425 A, 427

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[57] **ABSTRACT**  
 A spring clamp hand tool is formed from a pair of pivotal members each having a handle end and a clamping end. When together the clamping ends form an elongate narrow, rectangular body having a recess disposed transversely therethrough to receive a protruding portion of a workpiece. Planar clamping faces forward of the recess are equipped with channels extending obliquely and longitudinally of the tool. A spring biases the clamping faces into clamping contact.

3 Claims, 6 Drawing Figures



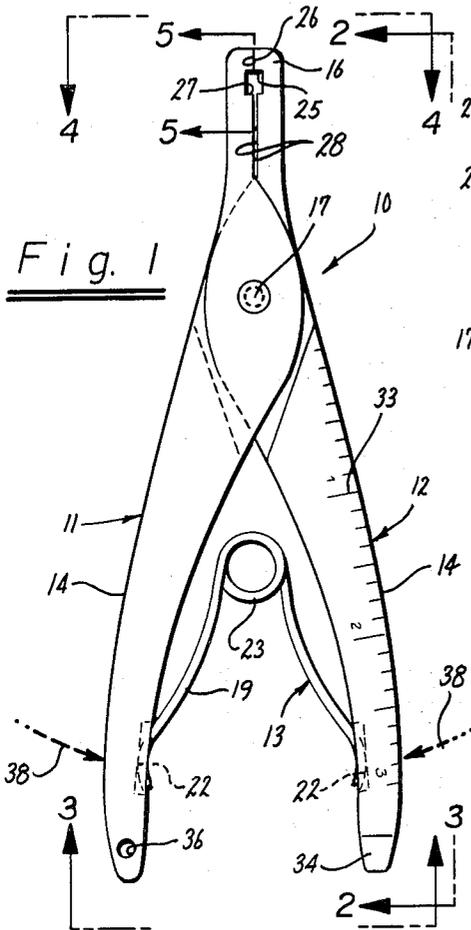


Fig. 1

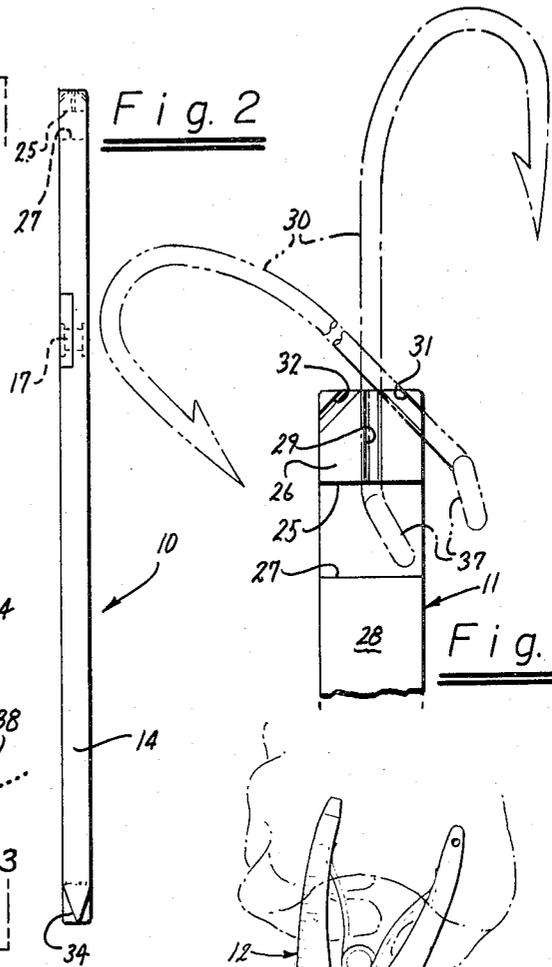


Fig. 2

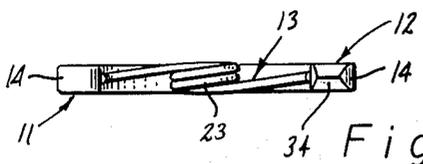


Fig. 3

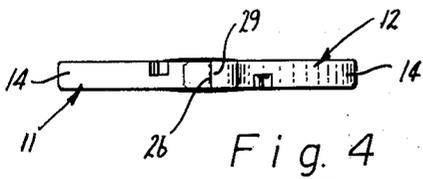


Fig. 4

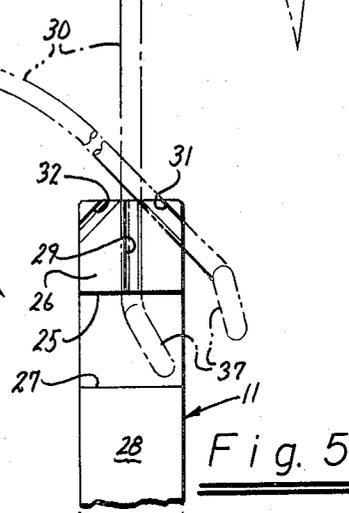


Fig. 5

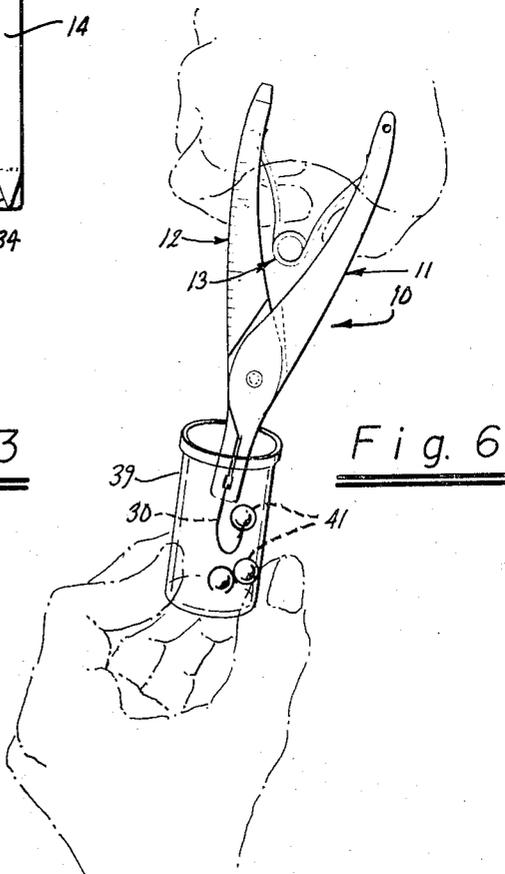


Fig. 6

# 1

## CLAMPING DEVICE

### BACKGROUND OF THE INVENTION

The present invention relates to tools and is particularly directed to a spring-clamp hand tool useful for fishermen.

The handling of fishhooks, particularly those in the smaller sizes, requires a fairly high level of manual dexterity. A person with thick fingers can be expected to have difficulty manipulating a small hook as would a person with chilled hands from fishing in cold waters or during the cold season of the year. Similarly, a person who fishes infrequently could not be expected to have the same dexterity in handling fishhooks as would a person who fishes regularly several times a week.

Two other aspects of handling fishhooks deserve attention. The first is the difficulty encountered when baiting a hook with salmon eggs or similar bait. The bait, which is slippery and of small size, frequently squirts out of the hands during the hook baiting operation. Secondly, the removal of a hook from the fish's mouth can in many instances be dangerous to the fisherman and often times is quite destructive to the fish should the fisherman be required by size limits to throw the fish back into the water. Seemingly, a prevalent practice has been for the fisherman to manipulate or yank the hook from the fish's spiny jaws so as to avoid any contact with the fish's teeth. Many times portions of the fish's mouth or other portions of the head are damaged destroying what later could be a valuable game fish for another fisherman.

### OBJECTS AND SUMMARY OF THE INVENTION

It is an object of this invention to provide a hand tool for fishermen to facilitate grasping fishhooks in a manner such that the tool and hook will move as a unit thereby permitting ready manipulation of the hook, such as for baiting, line tying and hook removal operations.

Another object of the invention is to provide a tool of the type described which is adapted both for mounting the hook in a position for baiting and for receiving the hook in a position for its removal from the mouth of the fish or for tying the line.

Another object of the present invention is to provide a hand tool for fishermen which may be easily and readily manipulated when the hands are cold or otherwise difficult to manipulate.

Further objects of the present invention will appear from the drawings and full description below.

In summary the invention comprises a clamping tool having two arms, each arm having a clamping end and a handle end. The arms are pivotally interconnected proximate the clamping end and spring means are provided between the arms to bias the clamping ends into clamping engagement. The clamping ends of the two arms form an elongate rectangular body extending from the pivot means, the body having a recess extending laterally therethrough. The clamping ends forward of the recess have generally planar, contacting clamping faces, and a gripping channel is formed on said faces longitudinally on said tool opening into said recess. Second gripping channels are provided on said clamping faces extending obliquely therealong.

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### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a full scale, plan view of the clamping tool of the present invention;

FIG. 2 is a side view of the tool of FIG. 1 taken in the direction of the arrows 2—2;

FIGS. 3 and 4 are end views of the tool of FIG. 1 taken respectively in the direction of the arrows 3—3 and 4—4;

FIG. 5 is an enlarged, fragmentary view of the front of the tool taken in the direction of the arrows 5—5 of FIG. 1; and

FIG. 6 is a perspective view showing the tool of the present invention in one manner of its optimum use.

### DESCRIPTION OF THE PREFERRED EMBODIMENT

A preferred form of clamping tool 10 constructed in accordance with the present invention is shown in FIG. 1. Generally, the clamping tool 10 comprises two lever arms 11 and 12, pivotally joined proximate the forward ends, and a spring 13 for urging the arms into the closed position, as shown in FIG. 1. The arms may be constructed of mild steel with a protective coating, stainless steel, or of a suitable synthetic material such as fiber glass reinforced phenolic resin.

More specifically, each lever arm 11 and 12 is preferably of generally rectangular, solid cross section (FIG. 2) and includes a handle end 14 and a clamping or jaw end 16. The clamping end 16 is generally elongate and rectangular in form, of solid construction, and extends forwardly from a pivot pin 17. This pin passes through the two arms which are recessed to half their thickness in a zone 18, and the ends of the pin are overturned to permanently hold the arms in their assembled position. The spring 13 includes two extensions 19 and 21 which engage the inner surfaces of lever arm handle ends 14 to be received in a recess 22 therein. The spring also includes one or more coil segments 23 and the coil segments acting with the extensions 19 and 21 are effective to transmit the forces of the spring outwardly to the handles causing the clamping portions 16 to converge and apply pressure between their respective working faces 26.

The jaw end 16 of each of the arms is provided with a clamping face 26 (FIG. 5) which is substantially planar so that when the jaws are in the closed position the faces 26 engage. The clamping faces 26 extend forwardly on the arms from a recess 27 which extends laterally through the arms defining a generally rectilinear opening, one half of the opening being in each of the two arms. The forward wall 25 of the recess is perpendicular to the clamping faces thus providing a shoulder for securely retaining the eye 31 of the hook within the recess. The clamping portion of the tool intermediate the pivot pin and recess 27 is constructed so that the confronting faces 28 (FIG. 1) do not contact so that all of the clamping force is applied forwardly of the recess upon the clamping faces 26.

Preferably, one of the two clamping faces 26 is provided with a channel 29 of semicircular or Vee-shaped cross section (FIG. 5) to accommodate the shank of a fishhook 30 or the like, as illustrated in phantom lines of FIG. 5, so as to afford positive position of the hook and tool. The channel 29 extends between the front of the clamping end to the recess 27 so that the eye por-

tion 37 of the hook may be accommodated within the recess as shown.

Obliquely arranged channels 31 and 32 of semicircular or Vee-shaped cross section are arranged extending from the front of the clamping portion to the side thereof. This arrangement is especially useful for grasping fishhooks and the like in a positively defined position such as when working from the side of the tool as in threading line into the hook eye 37 or when the tool is used in removing the hook from the mouth of the fish. The channels 29, 31 and 32 alternatively may be arranged in each face 26 in registered, confronting relation, the channels being sized to permit firm holding of the wire fishhook.

Referring to FIG. 1, one of the two arms along its handle end is provided with a measuring scale such as the one to three inch scale shown at 33 to enable the fisherman to estimate the size of the fish at hand. Further, the end portion of the arm is provided with a wedge-shaped tip 34 so that the tool may also function efficiently in prying and twisting operations such as inserting screws or prying lids from cans, or the like.

One of the arms 14 is equipped with a hole 36 for holding or mounting the tool when not in use such as mounting it upon a nail or to receive a looped lanyard therethrough for carrying the tool upon the fisherman's wrist.

When using a clamping tool of the present invention the operator presses the two handle ends 14 together, as indicated by the arrows 38 (FIG. 1), separating the clamping faces 26. The clamping tool is then advanced to grasp a fishhook which may be taken from a box. The hook is grasped along the shank so that the eye seats within the recess 27 (see FIG. 5). The clamp handles are then released and the spring 13 forces the clamping faces firmly against or towards one another so that the shank of the hook is received within the channel 29 and held therein by the opposing clamping forces. In this condition the hook and the tool function as a unit and may be handled as such, such as when inserting the hook and protruding nose portion thereof into a narrow-mouthed jar 39 full of fish eggs 41, as illustrated in FIG. 6. It will be understood that the eggs are slippery and small in diameter but because the hook may be manipulated with the tool it is not difficult to impale the eggs upon the tined end of the hook while holding the jar in the hands. It will be appreciated that the size of the recess 27 is such that to accommodate the eye of the hook having a line entwined thereabouts without interfering with the clamping action. The

shoulder provided by the recess wall 25 negates the camming tendency of the circular hook eye to urge the jaws apart when strong tugging forces are applied to the hook.

From the above description of the general principles of the present invention, and the foregoing detailed description of the drawings, those skilled in the art will readily comprehend the various modifications to which the invention is susceptible. For example, while there is shown a spring having elongated extensions for applying pressure to converge the jaw, the spring could be replaced by a coil spring compressed between handle end portions 14 of the lever arm.

It will also be understood that while the clamping tool has been described in conjunction with the use by fishermen, it has great utility for clamping small work pieces together such as when gluing or welding.

I claim:

1. A clamping tool sized to fit the hand for working within narrow spaces and for holding a slender object having an enlargement at one end, the clamping tool comprising two arms, each of said arms having a clamping end and a handle end, means pivotally connecting said arms proximate said clamping end, the clamping ends of said arms forming an elongate, rectangular body extending forwardly from said pivot means, said body having a recess extending laterally therethrough serving to contain the enlarged end of such object, said clamping ends forward of said recess having generally planar contacting, clamping faces, a wall of said recess intersecting said faces being arranged generally perpendicular therewith and serving as a shoulder deterring withdrawal of the enlarged end from said recess, a gripping channel serving to gripably engage such slender object being arranged centrally in said faces and extending longitudinally of said tool and opening into said recess wall, at least one second gripping channel on said clamping faces and arranged to open at one end of the front of said body and at the other end at the side thereof, and spring means reacting between the handle ends of said arms biasing said clamping faces normally into a clamping condition.

2. The clamping tool of claim 1 wherein said gripping channels are arranged exclusively in one of said two clamping faces.

3. The clamping tool of claim 1 wherein said rectangular body is so constructed such that only portions of said clamping ends forward of said recess are biased into clamping engagement by said spring means.

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