March 31, 1964 B. JOHANNESEN 3,126,576

SHRIMP HEAD AND VEIN REMOVING TOOL

Filed March 8, 1963

FIG. 2.

FIG. 1.

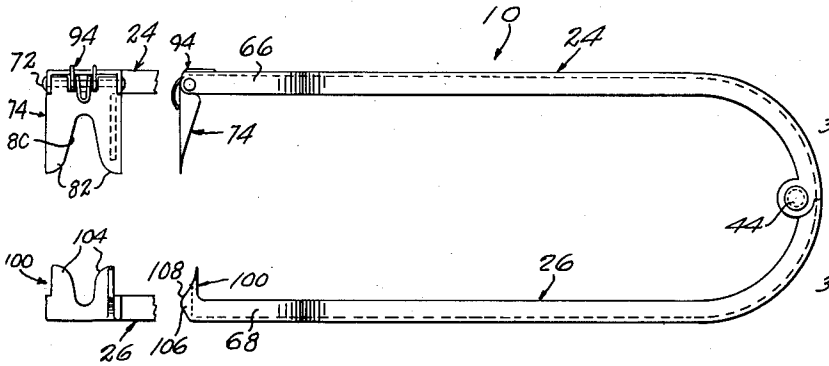


FIG. 3.

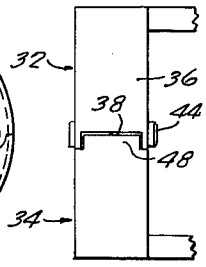


FIG. 4.

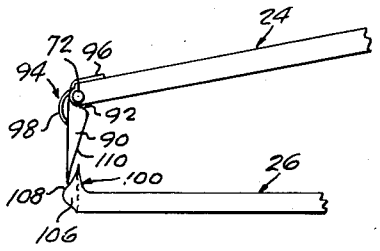


FIG. 5.

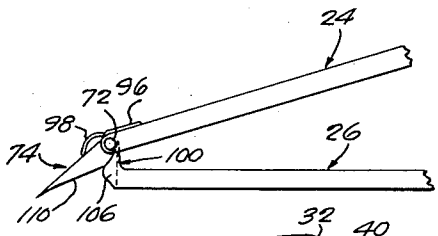
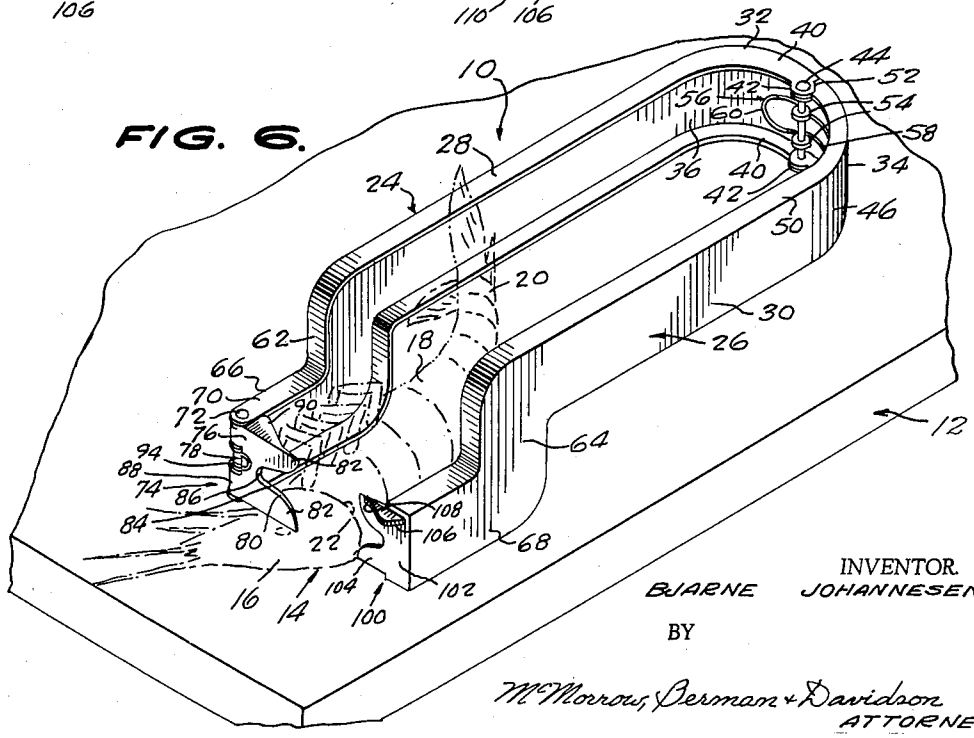


FIG. 6.



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United States Patent Office 3,126,576 Patented Mar. 31, 1964

3,126,576
SHRIMP HEAD AND VEIN REMOVING TOOL

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Filed Mar. 8, 1963, Ser. No. 263,953
8 Claims. (Cl. 17—7)

This invention relates to a novel shrimp head and vein removing tool.

The primary object of the invention is the provision of a highly efficient, easily used tool of the kind indicated, which enables the removal of the head and the sand vein of a shrimp, in a single continuous operation, thereby eliminating the difficult, time and labor-consuming manual operations otherwise necessary.

Another object of the invention is the provision of a tool of the character indicated above, which comprises a pair of hinged, spring-separated handles, one of which has a fixed blade or jaw having a cam thereon, and the other handle a pivoted spring-retracted blade or jaw, which is moved forwardly, for severing the head of the shrimp and at the same time pulling out its sand vein, by engagement with the cam of the fixed blade or jaw.

A further object of the invention is the provision of a simple tool of the character indicated above, which is composed of a small number of uncomplex and easily assembled parts.

Other important objects and advantageous features of the invention will be apparent from the following description and the accompanying drawings, wherein, for purposes of illustration only, a specific form of the invention is set forth in detail.

In the drawings:

FIGURE 1 is a a top plan view of a tool of the present invention showing the same in unoperated condition;

FIGURE 2 is a fragmentary end elevation taken from the left of FIGURE 1;

FIGURE 3 is a fragmentary end elevation taken from the right of FIGURE 1;

FIGURE 4 is a fragmentary top plan view of said tool, showing the handles thereof in an intermediate compressed condition;

FIGURE 5 is a view like FIGURE 4, showing the handles in a final or fully compressed condition and the pivoted jaw moved forwardly by contact with the cam of the fixed jaw; and

FIGURE 6 is an enlarged perspective view, showing the tool in uncompressed or unoperated condition and resting on a table top for beheading and deveining a shrimp, shown in phantom lines.

Referring in detail to the drawings, wherein like numerals designate like parts throughout the several views, the illustrated tool, generally designated 10, is shown, FIGURE 6, resting upon a table top 12, or other horizontal support, in working relation to a shrimp 14 having a head 16 and a body 18, including a tail 20. The head 16 has a maximum diameter rear end 22 which provides an abutment for the blades or jaws of the tool 10.

The tool 10 comprises a pair of similar, coextensive, but reversed handles 24 and 26 which are connected together at their rear ends for movement of the handles toward and away from each other, the handles being provided with facing channel forms, having elongated straight portions 28 and 30, and quarter circular rear end portions 32 and 34, respectively. The free end of the web 36 of the rear end portion 32 is formed with a notch 38, and the flanges 40 thereof are extended to provide hinge ears 42, which project forwardly and are traversed by a headed pivot pin 44. The free end of the web 46 of the rear end portion 34 is formed with a reduced width tongue 48 which is received freely in the notch 38, and the flanges 50 of the rear end portion 34 are formed

with arcuate stop recesses 52, which receive the ears 42 and prevent the handles 24 and 26 from being spread away from each other beyond a parallel relationship of the straight portions 28 and 30 of the handles, as shown in FIGURES 1 and 6. The web 46 of the rear end portion of the handle 30 is formed, on its inward side, with spaced ears 54 which are traversed by the pivot pin 44.

A second spring means or spring 56 is provided to yieldably spread the handles 24 and 26 away from each other, which comprises a loop of spring wire having legs 58 which are suitably secured, at their free ends, to the inner side of the web 46 of the handle 28, and a bight portion 60 which bears against the inner surface of the web 36 of the other handle 30.

As shown in FIGURE 6, the straight portions 28 and 30 of the handles terminate, at their forward ends, in downward extensions 62 and 64, respectively, disposed at right angles thereto, which merge into horizontal forward end terminals 66 and 68, respectively, which are parallel to the straight portions 28 and 30. The channel form of the terminals 66 and 68 serve to grip the body 18 of the shrimp 14, as the handles 24 and 26 are compressed toward each other, and hold the shrimp immobile as the cutting blades of the tool engage the shrimp. The downward offsetting of the terminals 66 and 68, relative to the remainder of the straight handle portions 28 and 30 provides for clearance beneath the latter when the terminals 66 and 68 are rested upon a support, such as the table top 12, for the hands of the operator to fully grasp and compress the handles.

The flanges 70 of the terminal 66 of the handle 24 are traversed, at their free ends, by a headed pivot pin 72 on which is pivoted a blade 74. The blade 74 comprises a flat, relatively thin plate 76, formed with a recess 78, in its outer end, and with a notch 80 which opens to its inner or cutting edge. The notch 80 defines a pair of similar but reversed horizontal knives 82, which have facing curvedly divergent edges 84. The notch 80 has an arcuate concave end having a cutting edge 86 continuous with the cutting edges 84.

Spaced hinge eyes 88 are formed on the outer end of the plate 76 of the blade 74, which are traversed by the pivot pin 72. Right-triangular stop and cam follower flanges 90 extend rearwardly from the plate 76, along the upper and lower edges thereof, and have base edges 92 which are adapted to bear against the inner edges of the flanges 70 of the terminal 66, as shown in FIGURES 1 and 6, to prevent the blade 74 from being retracted rearwardly, beyond right-angular relationship to the terminal 66, in a starting or normal position of the blade 74.

A first spring means or spring 94 is provided for yieldably retracting the pivoted blade 74 from a forwardly pivoted position. The spring 94 comprises a spring wire form, wound around the pivot pin 72, in the recess 78 of the blade 74, and having a first arm 96 bearing against the outer surface of the web of the terminal 66, and a second arm 98 bearing against the forward surface of the plate 76.

A fixed blade 100, shorter than the pivoted blade 74, is formed on and extends laterally inwardly at the forward end of the terminal 68 of the handle 26, which is positioned slightly behind the pivoted blade 74 in the normal or starting position of the latter. The fixed blade 100 comprises a flat relatively thin plate 102, similar to the plate 76 of the blade 74, and formed with similar knives 104.

A triangular horizontal cam 106 is formed on and extends forwardly from the plate 102 of the fixed blade 100, in line with the upper knife 82 of the pivoted blade 74. The cam 106 has a forward cam edge 108 which is angled laterally inwardly and rearwardly, so that, when, as shown in FIGURE 4, the handles 24 and 26 are partially

compressed toward each other, against the resistance of the spring 56, the inner end of the upper knife of the pivoted blade 74 engages the cam edge 108 and the blade 74 is angled forwardly, against the resistance of the spring 94. As the handles are further compressed, the hypotenuse edge 110 of the upper knife of the pivoted blade 74 engages the cam edge 108, whereby the blade 74 is angled farther forwardly, as shown in FIGURE 5.

In use and operation, and because of the above described action of the pivoted blade 74, as the handles 24 and 26 are compressed, a shrimp 14 having been laid upon the table top 12, between the terminals 66 and 68, with the rear end 22 of its head 16 in line with the fixed blade 100, and with its body 18 behind the fixed blade 100, the manual compression of the handles by the operator, results in the severance of the shell of the head with the sand vein intact by the blades 74 and 100, followed by pushing forward of the severed shell of the head carrying the sand vein, the forward movement of the severed shell of the head pulling the sand vein out of the body and its tail 20. Relaxation of the operator's grip on the handles 24 and 26 frees them to be spread by the spring 56, leaving the beheaded and deveined body of the shrimp free to be removed to a waiting receptacle.

Although there has been shown and described a preferred form of the invention, it is to be understood that the invention is not necessarily confined thereto, and that any change or changes in the structure of and in the relative arrangements of components thereof are contemplated as being within the scope of the invention as defined by the claims appended hereto.

What is claimed is:

1. A shrimp head and vein removing tool comprising a pair of elongated handles pivoted together at their rear ends, a vertically pivoted blade on and extending laterally inwardly from one handle at its forward end, first spring means yieldably retracting the pivoted blade from a forwardly angled position to a normal position at right angles to said one handle, a fixed blade on and extending laterally inwardly from the other handle at the forward end thereof, said fixed blade being positioned behind the pivoted blade in the normal position of the pivoted blade, and a cam on the forward side of the fixed blade adapted to be engaged by the pivoted blade as the blades approach each other when the handles are compressed together.

2. A shrimp head and vein removing tool according to claim 1, which includes in addition a second spring means acting between the handles for spreading the handles away from each other.

3. A shrimp head and vein removing tool according to claim 1, wherein said pivoted blade has rearwardly extending stop and cam follower means adapted to engage

said one handle in the normal position of the pivoted blade, said follower means having a cam edge adapted to operatively engage said cam as the handles are compressed.

4. A shrimp head and vein removing tool according to claim 1, wherein said pivoted blade and said fixed blade comprise flat relatively thin vertical plates formed with centered horizontal notches opening to their inward edges and defining upper and lower knives having inwardly divergent cutting edges extending along the sides of the notches.

5. A shrimp head and vein removing tool according to claim 1, wherein said pivoted blade and said fixed blade comprise flat relatively thin vertical plates formed with centered horizontal notches opening to their inward edges and defining upper and lower knives having inwardly divergent cutting edges extending along the sides of the notches, said pivoted blade being longer than the fixed blade.

6. A shrimp head and vein removing tool according to claim 1, wherein said handles have straight intermediate portions which terminate at their forward ends in forwardly extending terminals which are downwardly offset from and parallel to the intermediate portions, the blades being mounted on the forward ends of the terminals.

7. A shrimp head and vein removing tool according to claim 1, which includes in addition a second spring means acting between the handles for spreading the handles away from each other, said handles having laterally inwardly extending rear end portions having free ends, said rear end portions being vertically pivoted together at their free ends, said free ends having coacting stop means for limiting spreading of the handles away from each other by said second spring means beyond a parallel relationship of the handles.

8. A shrimp head and vein removing tool comprising a pair of elongated handles connected together at their rear ends for movement of said handles toward and away from each other, a vertically-pivoted blade on and extending laterally inwardly from one handle at its forward end, a fixed blade on and extending laterally inwardly from the other handle at the forward end thereof, and means on the fixed blade adapted to be engaged by the pivoted blade as the blades approach each other when the handles are moved toward each other.

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