Nov. 8, 1955 F. W. SCHEIFELE 2,722,727

CLAMP

Filed Jan. 12, 1951 3 Sheets-Sheet 1

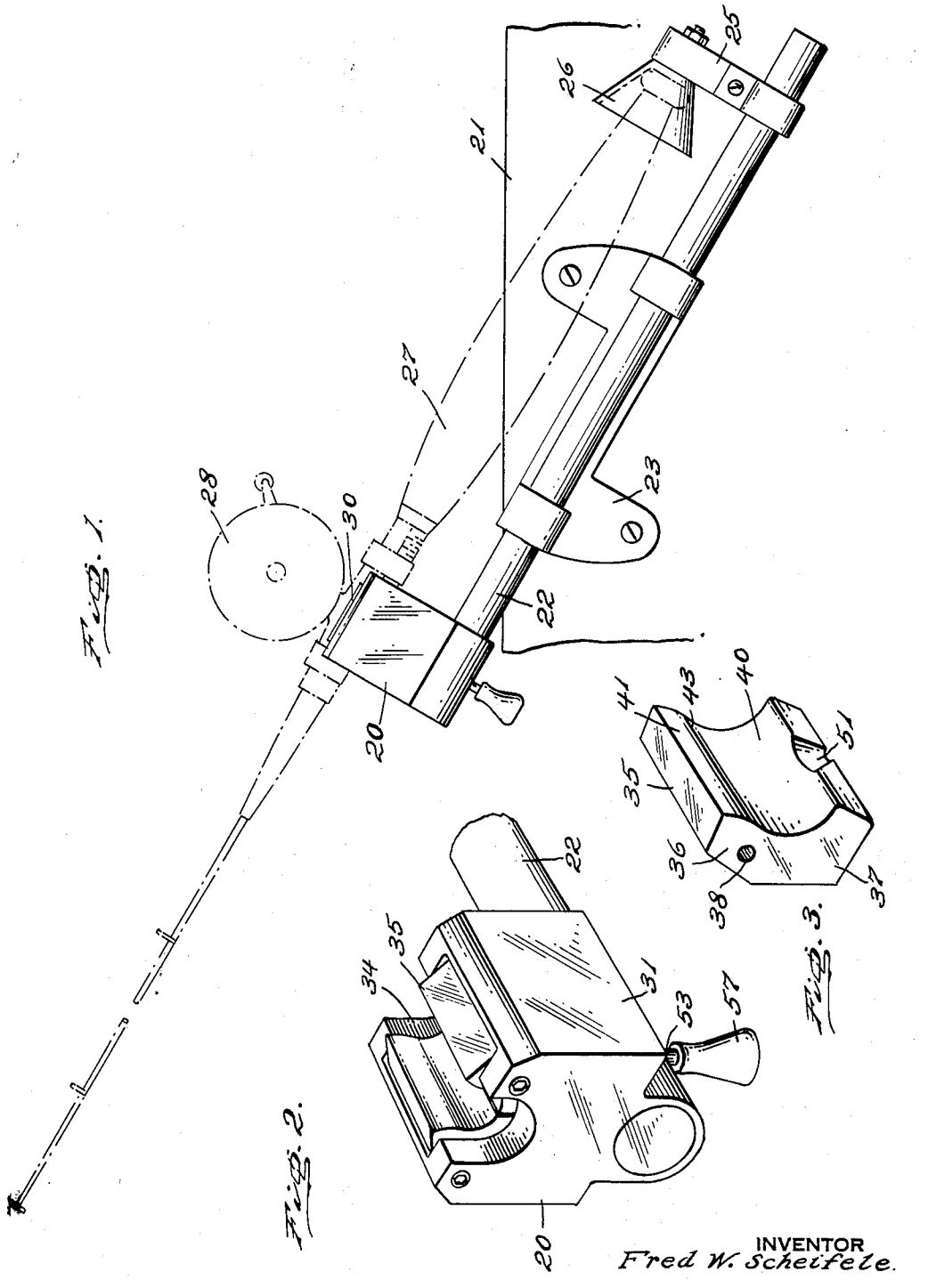


Fig. 1.

Fig. 2.

Fig. 3.

INVENTOR
Fred W. Scheifele.

BY

ATTORNEYS.

Nov. 8, 1955 F. W. SCHEIFELE 2,722,727

CLAMP

Filed Jan. 12, 1951 3 Sheets-Sheet 2

Fig. 4.

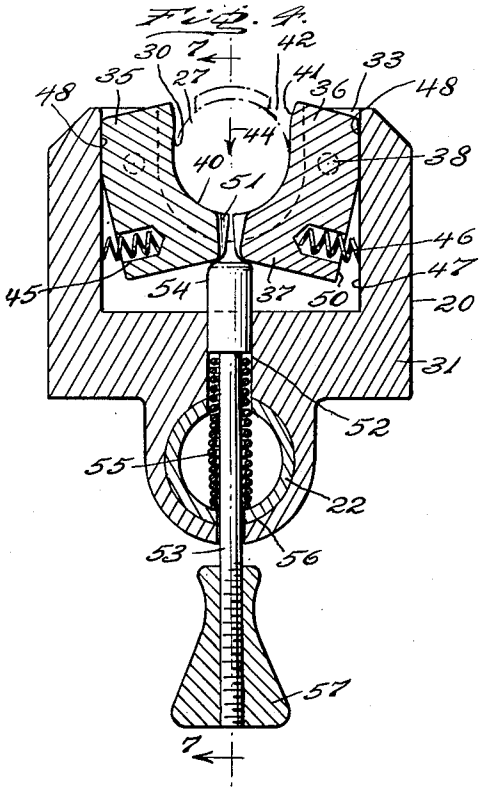


Fig. 5.

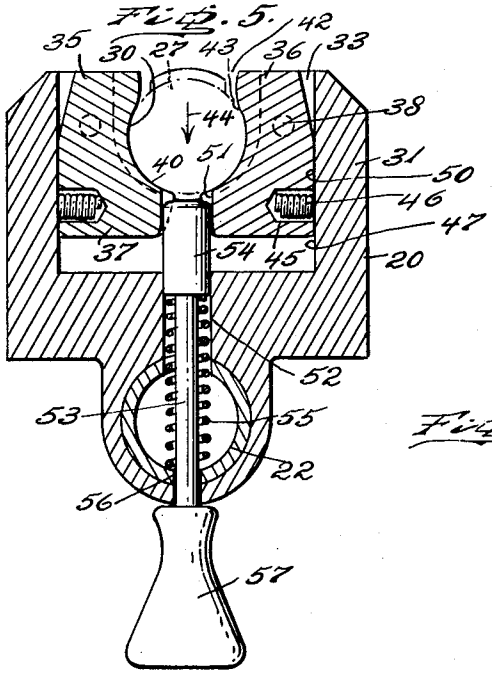


Fig. 7.

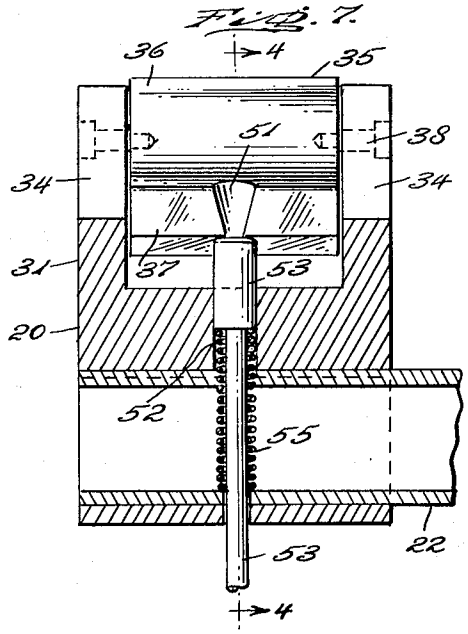


Fig. 8.

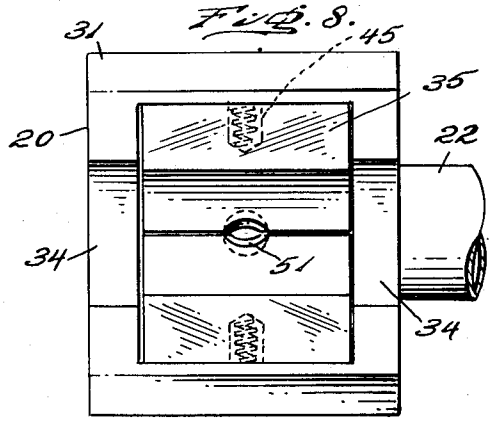
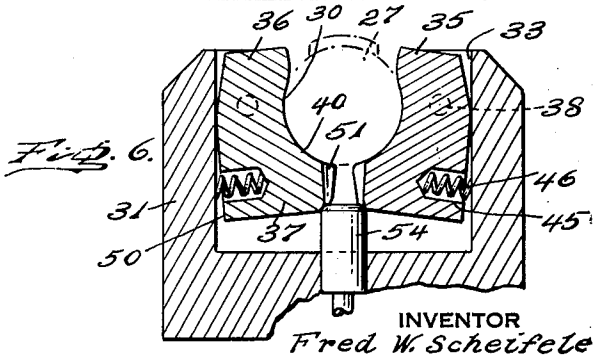


Fig. 6.



INVENTOR
Fred W. Scheifele
BY
ATTORNEYS.

Nov. 8, 1955 F. W. SCHEIFELE 2,722,727

CLAMP

Filed Jan. 12, 1951 3 Sheets-Sheet 3

Fig. 9.

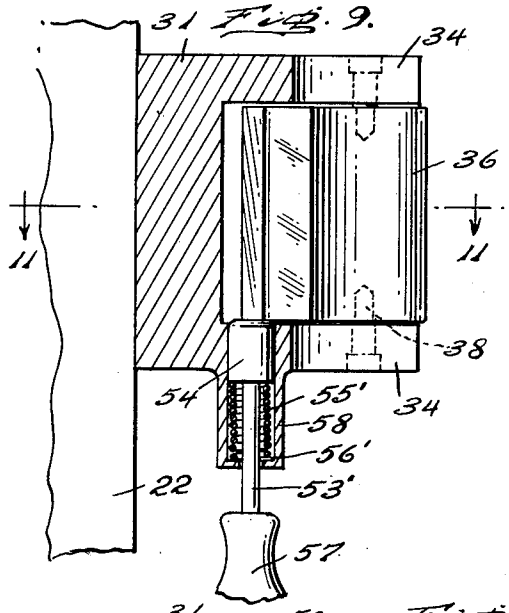


Fig. 10.

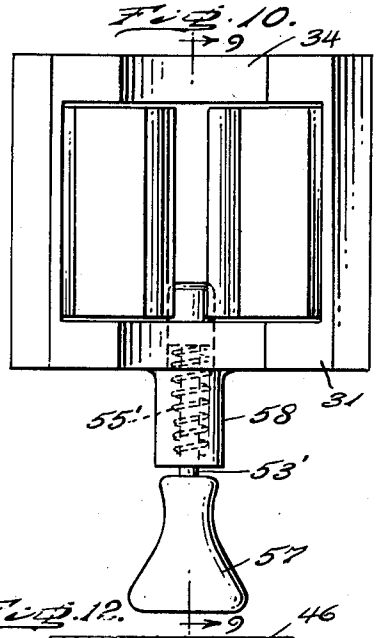


Fig. 11.

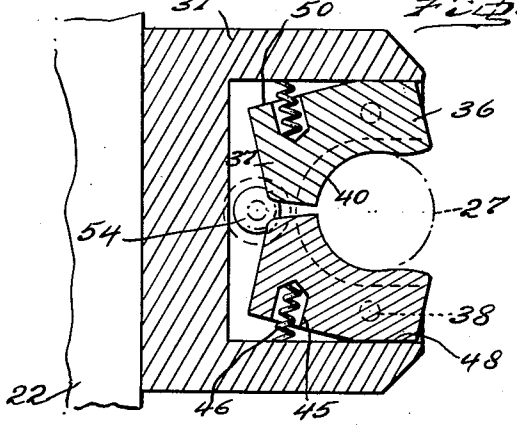


Fig. 12.

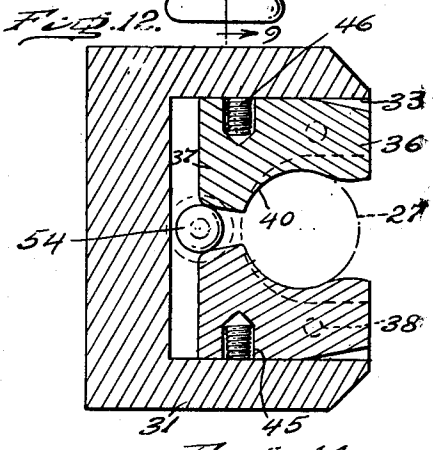


Fig. 13.

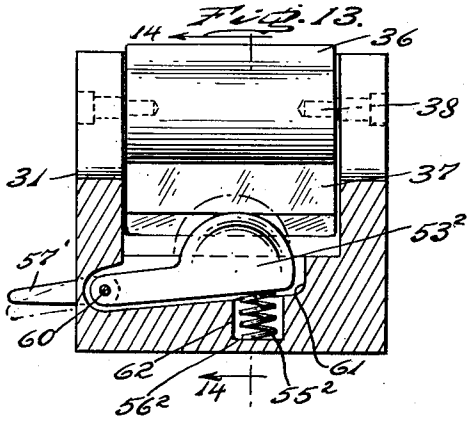
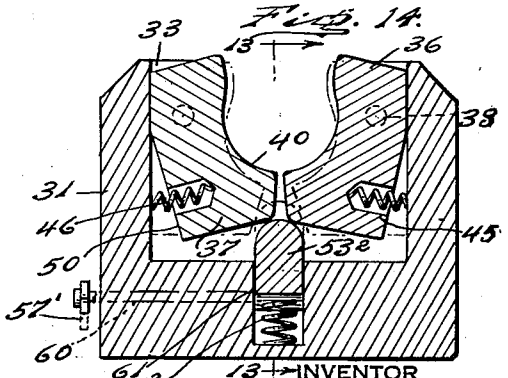


Fig. 14.



INVENTOR
Fred W. Scheifele.

BY

ATTORNEYS.

United States Patent Office

2,722,727

Patented Nov. 8, 1955

2,722,727

CLAMP

Frederick W. Scheifele, Audubon, N. J.

Application January 12, 1951, Serial No. 205,732

3 Claims. (Cl. 24—249)

The present invention relates to clamps, particularly of the character adapted to engage generally round objects.

A purpose of the invention is to cause clamps to position an object without gripping until lateral pressure is applied on the object, and then to grip the object when lateral pressure occurs.

A further purpose is to move an object farther back between gripping jaws when lateral pressure is applied and thus cause the gripping jaws to shift so as to grip the object.

A further purpose is to position opposite counterpart jaws, which form a gripping socket, each of the jaws having a side and back jaw portion and the jaws being open at the mouth, to pivot the jaws through the opposite side portions, the jaws having an open position in which the back jaw portions are close together and the side jaw portions diverge from a plane connecting the pivotal axes outwardly toward the mouth, and the jaws having a closed position in which the back jaw portions are more widely spaced, and the side jaw portions converge from the plane connecting the pivotal axes outwardly toward the mouth, and to urge jaws from open to closed position by pressure on the back jaw portions transverse to the plane connecting the pivotal axes, the jaws being urged resiliently into open position.

A further purpose is to provide a movable latch, suitably a plunger but permissibly of pivoted or other character, which extends into the space between the back jaw portions in closed position and holds the jaws in closed position.

A futher purpose is to limit the movement in open position by stops engaging the outsides of the side jaw portions toward the mouth with respect to the plane connecting the pivotal axes.

A further purpose is to limit the movement of the jaws in closed position by stops engaging the outsides of the back jaw portions.

Further purposes appear in the specification and in the claims.

In the drawing I have chosen to illustrate a few only of the numerous embodiments in which my invention may appear, selecting the forms shown from the standpoints of convenience in illustration, satisfactory operation and clear demonstration of the principles involved.

Figure 1 is a side elevation of the clamp of the invention and its support, applied to hold a fishing pole, which is shown in phantom.

Figure 2 is a perspective of the clamp and a fragment of the support.

Figure 3 is a detail perspective of one of the clamping jaws.

Figure 4 is a section of the clamp of the invention on the line 4—4 of Figure 7, the clamp being in open position with the article clamped being shown in phantom.

Figure 5 is a view similar to Figure 4 in closed position.

Figure 6 is a fragmentary view similar to Figure 4, showing the clamp released.

Figure 7 is a fragmentary section on the line 7—7 of Figure 4.

Figure 8 is a top plan view of the clamp of the invention with the mounting tube broken away.

Figures 9 to 12 show a variation.

Figure 9 is a fragmentary section on the line 9—9 of Figure 10, in open position.

Figure 10 is a top plan view of Figure 9, in closed position.

Figure 11 is a section on the line 11—11 of Figure 9, showing the clamp in open position.

Figure 12 is a section corresponding to Figure 11 showing the clamp in closed position.

Figures 13 and 14 illustrate a further variation.

Figure 13 is a section on the line 13—13 of Figure 14, showing the clamp in open position.

Figure 14 is a section on the line 14—14 of Figure 13, showing the clamp in open position.

Describing in illustration but not in limitation and referring to the drawings:

Jaw clamps are widely used to grip various objects. One wide use is in the holding of fishing poles, especially for deep sea fishing. Many of the present clamps used in holding fishing poles are cumbersome and inconvenient, often making the fisherman go through special procedure to release the clamp in order to remove the pole from the clamp, for example to play a fish or to inspect or change the bait or rig.

In accordance with the present invention, the clamp can function merely to position the object until a lateral pull is applied, at which time the pull itself causes the clamp to grip. Thus in this way special procedure to release the clamp is only necessary in those cases in which the clamp has assumed a closed or gripping position and not merely where the clamp has been retaining the object without gripping.

Figure 1 illustrates the clamp 20 of the invention mounted as on the stern of a boat 21 by a mounting tube or similar support 22 held by a bracket 23. At a position farther removed from the edge of the boat, with respect to the clamp 20, a support 25 on the mounting tube holds a socket 26 which suitably receives a butt end of a fishing pole 27. The pole carries a reel 28 and at some position along the handle extends through the gripping socket 30 of the clamp 20.

The clamp 20 consists of a housing 31 mounted on the mounting tube 22 and having a hollow interior 33 suitably of rectangular shape, and aligned front and back notches or recesses 34 in the ends open at the top.

Opposite counterpart clamping jaws 35 are mounted in the hollow interior 33 of the housing. Each of the jaws has a side portion 36 toward the open mouth and a back portion 37 remote therefrom. The side portion has a longitudinally extending pivot 38 which suitably extends in from each end of the housing without extending all the way through in the preferred embodiment. The pivot is near the middle of the side portion. The axes of pivoting are parallel to one another and parallel to the axis of the object clamped. The back portion curves at 40 toward the opposite jaw.

The jaws have sufficient freedom so that they can move between an open position as in Figure 4 and a closed position as in Figure 5. In the open position as in Figure 4, the jaws are placed with the back portions relatively close together, and the jaws diverge at 41 toward the mouth 42 with respect to the plane connecting the axes of the pivots 38.

On the other hand, the jaws have a closed position as shown in Figure 5, in which the back jaw portions are more widely spaced than in the open position, and

the side jaw portions at **43** located slightly toward the mouth with respect to the plane connecting the axes of the pivots **38**, converge so as to cause gripping of an object like a pole in the jaws.

It will be evident that the movement from the open position to the closed position is produced by a force on the fishing rod laterally of its axis and transverse to the plane connecting the axes of the pivots **38**, such as the pull of a fish when a bite is obtained on the fishing line having suitable drag.

On the opposite sides of the back jaw portions spring sockets **45** are provided extending outwardly away from the opposite jaw, and these receive spiral compression springs **46** which act between the bottom of the socket **45** and in inside of the side wall **47** of the housing to urge the jaws toward open position.

The movement toward open position is limited by stops **48** on the outsides of the side portions which engage the side walls **47** of the housing at a position toward the mouth with respect to the plane connecting the axes of the pivots **38**. This stop engagement is shown in Figure 4.

The limitation on opening movement of the jaws in closed position is provided by stop surfaces **50** on the outside of the back jaw portions which engage the insides of the side walls **47** of the housing and are shown in limiting position in Figure 5.

It will be evident that the back jaw portions are farther apart in closed position than in open position. Advantage is taken of this to lock the jaws in closed position. To assure adequate space between the back jaw portions in closed position, recesses **51** are provided, suitably near the middle of the back jaw portions.

In line with the recesses **51** an opening **52** is provided through the housing and the mount, and this opening carries a latching plunger **53** having a head **54** which in closed position engages between the back jaw portions. Spiral compression spring **55** urges the plunger toward locking position, acting against the head from a spring abutment **56** in the inside of the mount. A handle **57** on the outside end of the plunger can be grasped to withdraw it and release the clamp.

In the form of Figures 1 to 8, the latch extends transverse to the axis of the article gripped by the jaws. In the form of Figures 9 to 12 the latching plunger is parallel to the axis of the article gripped. In this form a plunger **53'** having a head **54** moves in a plunger well **58** extending out from the housing in line with the back jaw portion. A spiral compression spring **55'** acts from an abutment **56'** near the outer end of the housing.

The forms of Figures 13 and 14 show a pivoted latch **53²** which is pivoted on a shaft **60** journalled in one end of the housing, the shaft carrying outside the housing an operating handle **57'** transverse to the shaft. A suitable recess **61** in the bottom of the housing permits the latch to swing, being urged toward latching position by compression spring **55²** in spring well **62** acting from spring abutment **56²**.

In operation, the jaws will normally be in open position as shown in Figure 4, with the latch out of engagement. The object to be clamped, such as a fishing pole, is placed in the jaws and unless it is desired to clamp the object it is left loose, held by the socket at the rear end and the side retention of the clamp. If immediate clamping is desired the user presses down in the direction of the arrow **44**, forcing the jaws to shift from the open stop position of Figure 4 to the closed stop position of Figure 5, and causing the shape of the mouth outwardly of the plane connecting the axes of the pivots to change from diverging in Figure 4 to converging in Figure 5. The clamp automatically remains in clamping position because the latch in any one of the forms under the action of its spring grasps between the back jaw portions and holds the clamp in engagement with the fishing pole or other object.

If the fishing pole is initially left loose it will clamp automatically whenever the fisherman gets a bite, due to the downward pull on the front end of the pole which exerts a force in the direction of the arrow **44**.

In case the clamp is not engaged, the fisherman can remove the pole or other object from the clamp freely at any time to inspect or change the rig or bait.

After the clamp is clamped, it can, at any time, be readily released by withdrawing the latch (moving the latch downward). It is then only necessary for the fisherman to overcome the pull of the fish plus the weight of the rod, in order to remove the object from the clamp.

It will be evident that the clamp of the invention is specially suited for fishing, but can be employed in other applications if it is desired. For example, it can be used to clamp brooms, golf clubs, rods, pipes or other objects.

In view of my invention and disclosure variations and modifications to meet individual whim or particular need will doubtless become evident to others skilled in the art, to obtain all or part of the benefits of my invention without copying the structure shown, and I, therefore, claim all such insofar as they fall within the reasonable spirit and scope of my claims.

I claim:

1. A clamp for an object having a pair of opposite counterpart jaws which form a clamping socket, each of the jaws having side and back jaw portions and the jaws being open at a mouth opposite to the back jaw portions, each of the jaws being pivoted through its side portion opposite the middle of the clamping socket, the respective jaw pivots being on opposite sides of the clamping socket forward of the back jaw portions and the respective pivots being parallel to one another, the jaws having an open position in which the back jaw portions are close together and the side jaw portions diverging from a plane connecting the axes of the pivots outwardly toward the mouth, and having a closed position in which the back jaw portions are more widely spaced than in the open position and the side jaw portions converge from the plane connecting the pivotal axes outwardly toward the mouth, resilient means acting on the jaws for urging the jaws from closed to open position, stops limiting the movement of the jaws in open position, stops limiting the movement of the jaws in closed position, there being latch restraining abutments toward the rear of the jaws in open position, a movable latch engaging the abutments on the jaws in open position and restrained against latching by the abutments in open position and movable into the space between the jaws rearward of the pivot in closed position due to movement of the abutments out of the way of the latch in closed position, and spring means urging the latch toward latch restraining engagement with the abutments, whereby an object can rest unclamped in the open jaws, substantially filling the space of the jaw socket, and on applying pressure by the object toward the back jaw portions, the object will swing the jaws into position and trigger the latch.

2. A clamp according to claim 1, in which the latch is a plunger latch.

3. A latch according to claim 1, in which the latch is a pivoting latch.

References Cited in the file of this patent

UNITED STATES PATENTS

607,545	Martin	July 19, 1898
730,038	Murlless	June 2, 1903
1,006,109	Malmstrom	Oct. 17, 1911
1,030,386	Comeau	June 25, 1912
1,033,531	Brown	July 23, 1912
1,246,492	Thiele	Nov. 13, 1917
1,968,462	Merhell	July 31, 1934
2,242,573	Edwards	May 20, 1941
2,297,919	Scott	Oct. 6, 1942
2,379,060	Bacheldor	June 26, 1945