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(54) **Title:** PORTABLE SHOOTING STABILIZATION ASSIST CLAMP

(57) **Abstract:** A portable shooting stabilization assist clamp designed for quick and easy, single-handed attachment and detachment on to a shooting rail or similar solid object. Once attached to an object, the clamp supports a firearm fore-stock, forend, frame, stock, or barrel allowing the user a steadier aim for more accurate shot placement. The clamp provides the capacity of a rapid attachment and detachment by using a spring clamp design. In its preferred embodiment, the clamp provides a rest with two angled prongs, in a generally V-shape, above the pivot of the the spring clamp, to help to easily place and retain the gun on the clamp. In alternative embodiments, multiple rests are provided as well as movable, pivoting rests. In addition to assisting shooters and hunters, the clamp could also be used to stabilize a camera, telescope, small video camera, or other device that is enhanced by stabilization.

Portable Shooting Stabilization Assist Clamp

CROSS REFERENCE TO RELATED APPLICATION

This application is a provisional conversion of application US 62/033,957 filed on August 6, 2014. This application is herein incorporated by reference.

5BACKGROUND OF THE INVENTION

A gun rest is a device used to stabilize a firearm when in use. It can be as simple as a sturdy stick that allows a shooter to increase the connection of a firearm to the ground. By placing a firearm on a steady rest, the shooter can better control the gun and thereby improve accuracy in shot placement. In the context of hunting, the portability
10and ease and speed of re-positioning a gun rest is very important. Opportunities to harvest wild-game do not present themselves in reliably predictable directions, so being able to quickly move or place a gun rest is a very desirable characteristic.

BRIEF SUMMARY OF THE INVENTION

The present application discloses a portable shooting stabilization assist clamp
15primarily designed as a gun rest to enhance stability of a firearm. The increased stability results in better aim and shot placement. In a hunting context, the clamp may be secured to almost any fixed firm surface, such as a fence or branch, but it works particularly well when clamped on a deer stand which provides railings.

Previously available gun rests, required the rest to be securely fastened to a railing
20using some sort of screw based method. As a result, the gun rest could not be moved quickly for use in a different position or direction. The presently disclosed portable shooting stabilization assist clamp can be quickly removed and quietly re-positioned on another surface when needed. No tools are required to operate the device. The hunter simply applies pressure by squeezing the clamp into an open position, places it
25in the desired location and releases the pressure on the clamp. This can normally be accomplished with one hand. This one handed operation allows the user to attached the rest with one hand while holding a firearm in the other hand. As a result, the user does not have to put down the firearm or take valuable time to secure the device, as would be required when using a previously available rest design.

30The preferred manufacturing method utilizes primarily injection-molded plastic. As a result, the clamp is quieter than metal in the field and impervious to weather related corrosion. The use of plastics also reduces the weight as compared to metal.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a portable shooting stabilization assist clamp while in use. The clamp is attached to a railing and supports the firearm fore-stock, forend, frame, stock, or barrel.

FIG. 2 shows an exploded view of a portable shooting stabilization assist clamp.

FIG. 3 shows a portable shooting stabilization assist clamp.

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FIG. 4 shows an alternative embodiment of the portable shooting stabilization assist clamp.

FIG. 5 shows another alternative embodiment of the portable shooting stabilization assist clamp. This embodiment allows the rests to pivot in the horizontal plane.

FIG. 6 is an exploded view of the embodiment shown in FIG. 5.

FIG. 7 shows another alternative embodiment of the portable shooting stabilization assist clamp. This embodiment allows the rests to pivot and has the rests capable of moving to different planes relative to one another.

FIG. 8 is an exploded view of the embodiment shown in FIG. 7.

DETAILED DESCRIPTION OF THE INVENTION

25 Referring now to Figure 1, the present disclosure is directed to a portable shooting stabilization clamp (100) comprising a clamping end (110) used to secure the clamp (100) to a fixed surface, and a rest end (120) having preferably v-shaped extensions designed to receive and cradle a firearm fore-stock, forend, frame, stock, or barrel when in use. In response to the approach of a game animal or in anticipation of
30 its predicted approach, the hunter would find a railing or other appropriate stable object, squeeze the rest end to open the jaws of the portable shooting stabilization assist clamp and release them over the stabilizing object to secure the clamp (100). This can normally be accomplished with one hand, which allows a gun held in the

other hand to be quickly placed on the rest after the clamp (100) is secured to a fixed surface. In addition, the hunter can easily remove the gun from the clamp by simply lifting the gun upward. Nothing aside from the gun's mass holds it in the rest (120), so the gun may be lifted off the rest of clamp (100) without hesitation if a opportunity presents itself in a different location and time does not allow for the re-positioning of the clamp (100). Once the hunter is finished using the clamp (100), it can be easily removed by squeezing the V-shaped rest(s) (120) towards each other to open the jaws (110) and moving the clamp (100) away from the stabilizing object.

10 Referring now to Figure 2, which provides an exploded view of the portable shooting stabilization assist clamp (200), the clamp (200) comprises a first member (205) and a second member (210). Each member includes a jaw end (215), a rest end (220) and a pivot aperture (225). When assembled, the first member (205) and the second member (210) are aligned and joined at a center fulcrum or pivot point (230) with a nut (235) and bolt (240) through the pivot apertures (225), as shown in Figure 2. An equivalent securing means such as a rivet or similar mechanisms may also be used. A spring (245) is preferably secured between the pivot points (230) of the first and second members (205, 210). Although a coil spring (245) is shown in Figure 2, other kinds of springs or spring equivalent, may be used. However, springs are preferred for their ease of use, quiet operation and simplicity. When assembled, the rest ends of the first and second members serve as handles of the portable shooting stabilization assist clamp (200). The user opens the jaws (250) of the clamp (200) by squeezing the rest ends (220) toward each other, thereby overcoming the resistance of the spring (245). Each rest end (220) has a rest extension (255) that serves to cradle the firearm fore-stock, forend, frame, stock, or barrel. Although they are preferably V-shaped as shown in Figure 1, the rest extensions may also be U-shaped or have a flat horizontal rest with two vertical members to cradle a firearm fore-stock, forend, frame, stock, or barrel within the rest extensions. The V-shape of the rest extension allows the hunter some freedom to swing the aim of the gun within a limited left-right arc while still providing stability.

Figure 3 provides a view of the preferred embodiment of the portable shooting stabilization assist clamp (300) as it would appear when fully assembled. Serrations or teeth (310) on the jaws (320) of the clamp (300) serve to increase the gripping

ability of the jaws (320) on uneven surfaces and prevent movement when the clamp is in place. Other gripping methods may also be used instead of serrations. For example, rubberized coatings, rubberized tips or other slip resistant materials may be applied to or secured on the jaws to enhance the gripping ability of the jaws (320).

5 Furthermore, pivoting surfaces can also be used to grip on uneven surfaces. In one alternative embodiment (not shown), a rubber tip is provided to cover the end of each jaw. The rubber tip may either be a solid piece of rubber or rubber-like material that is integral to the jaw or a removable piece or cover. However, for simplicity and ease of manufacturing, the serrations are preferred.

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In an alternative embodiment as shown in Figure 4, the portable shooting stabilization assist clamp (400) provides a rest extension (410) from the first member (420) but not from the second member (430) as in the embodiment previously described in Figures 1-3. In this embodiment, the second member (430) includes a rest end (440) that forms a short handle (450) rather than a rest extension. This single rest extension version allows a user increased range of motion from left to right because of a single contact point with the firearm fore-stock, forend, frame, stock, or barrel.

20 In another alternative embodiment as shown in Figures 5 and 6, the portable shooting stabilization assist clamp (500) further includes rotating rest extensions that are able to pivot when in use. As shown in Figure 5, the clamp comprises a first member (510) and second member (520). Each member includes a jaw end (530), rest end (540) and a rest extension portion (550) that is detachably secured to the rest end (540).

25 As shown in Figure 6, the rest end (600) of this embodiment extends into a short handle (605) as shown in the embodiment disclosed in Figure 4. The rest extension portion (610) includes a flat base end (615) having an aperture (620) and a V or U shaped rest extension projections (625) extending away from the base end (615). The rest extension portion (610) is detachably secured to a flat end of the handle (615) of the rest end by aligning an aperture (620) formed in the flat end of the handle with the aperture (630) formed in the flat base of the rest extension portion (610). This embodiment allows the rest extension portion (610) to swivel while the jaw portion (635) of the member remains in a fixed position. By allowing each rest extension

portion to rotate and pivot, a greater range of movement from left to right is allowed while still providing the stability of two contact points on the firearm fore-stock, forend, frame, stock, or barrel. Although the rotating rests are preferably secured with nuts (640) and bolts (645) as shown in Figure 6, similar securing methods that allow the rests to rotate, may also be used.

In another alternative embodiment as shown in Figures 7 and 8, the rest extensions (700) of the portable shooting stabilization assist clamp (710) are able to rotate, pivot and also move into a different plane of function. As in the embodiment shown in Figure 5, this embodiment discloses members having detachably secured rest extensions, but provides a slide channel rather than a single fixed aperture in the base of the handle portion at the point in which the rest extension is secured to the member. The slide channel formed within the base of each handle of the rest end extends beyond one plane, thereby allowing the rest extension portion to slide into a different viewing plane when in use. More specifically, as shown in Figure 8, each member of this embodiment is assembled by aligning the aperture (800) formed within the base of the rest extension portion (810) with the slide channel (820) formed within the handle portion (830) of the rest end (840) of the member and securing them together with a nut (850), bolt (860), washer (870), and spring (880) as shown in Figure 8. This alignment within the slide channel (820) allows the rest extension portion to rotate and slide into different planes of operation as permitted by the slide channel (820). As a result, a shooter has the option to use one or two rest extensions. It enables the use of single rest, by placing one of the rests into a different plane of operation from that of the other rest. It also allows use of the clamp on a vertical pole, tree or similar object.

CLAIMS

What is claimed is:

1. A portable shooting stabilization assist clamp comprising:
 - a first member including a jaw end, a rest end having a rest extension and a pivot aperture; and,
 - a second member including a jaw end, a rest end having a rest extension and a pivot aperture;wherein the pivot apertures of the first and second members are aligned and secured.
- 10
2. The clamp of claim 1, wherein the first member includes a jaw end, a rest end having a rest extension and pivot a aperture, and the second member includes a jaw end, a rest end having a handle, and pivot a aperture.
- 153.
3. The clamp of claim 1, wherein the rest end of the first member includes a handle having an aperture, and a rest extension portion having an aperture for detachably securing the rest extension portion to the handle, and wherein the rest end of the second member includes a handle having an aperture, and a rest extension portion having an aperture for detachably securing the rest extension portion to the
- 20handle.
4. The clamp of claim 3, wherein the aperture in the handle of the first member is a sliding channel, and the aperture in the handle of the second member is a a sliding channel.
- 25
5. The clamp of claim 1 wherein the jaw end of the first member and the jaw end of the second member are coated treated with a slip resistant coating.
- 30
6. The clamp of claim 5, wherein the coating is a rubberized cap.
 7. The clamp of claim 1, wherein the rest extension portion of the first and second member is V-shaped.

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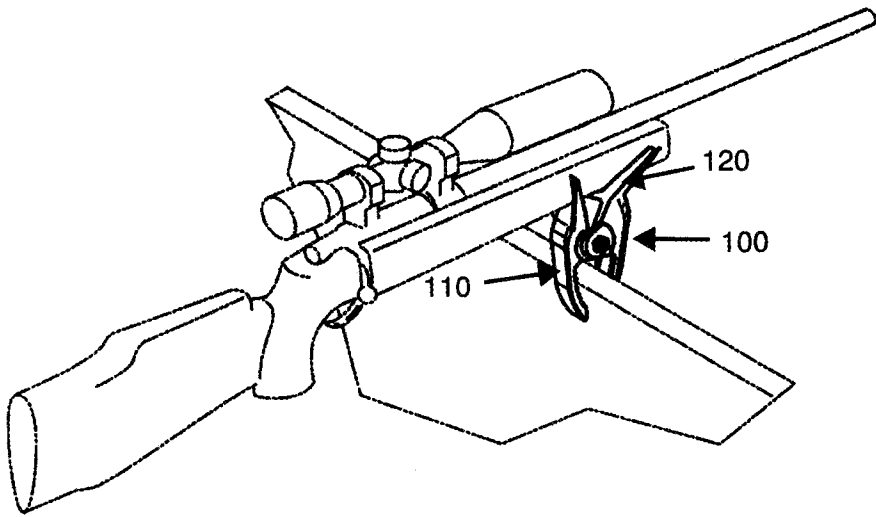


Fig. 1

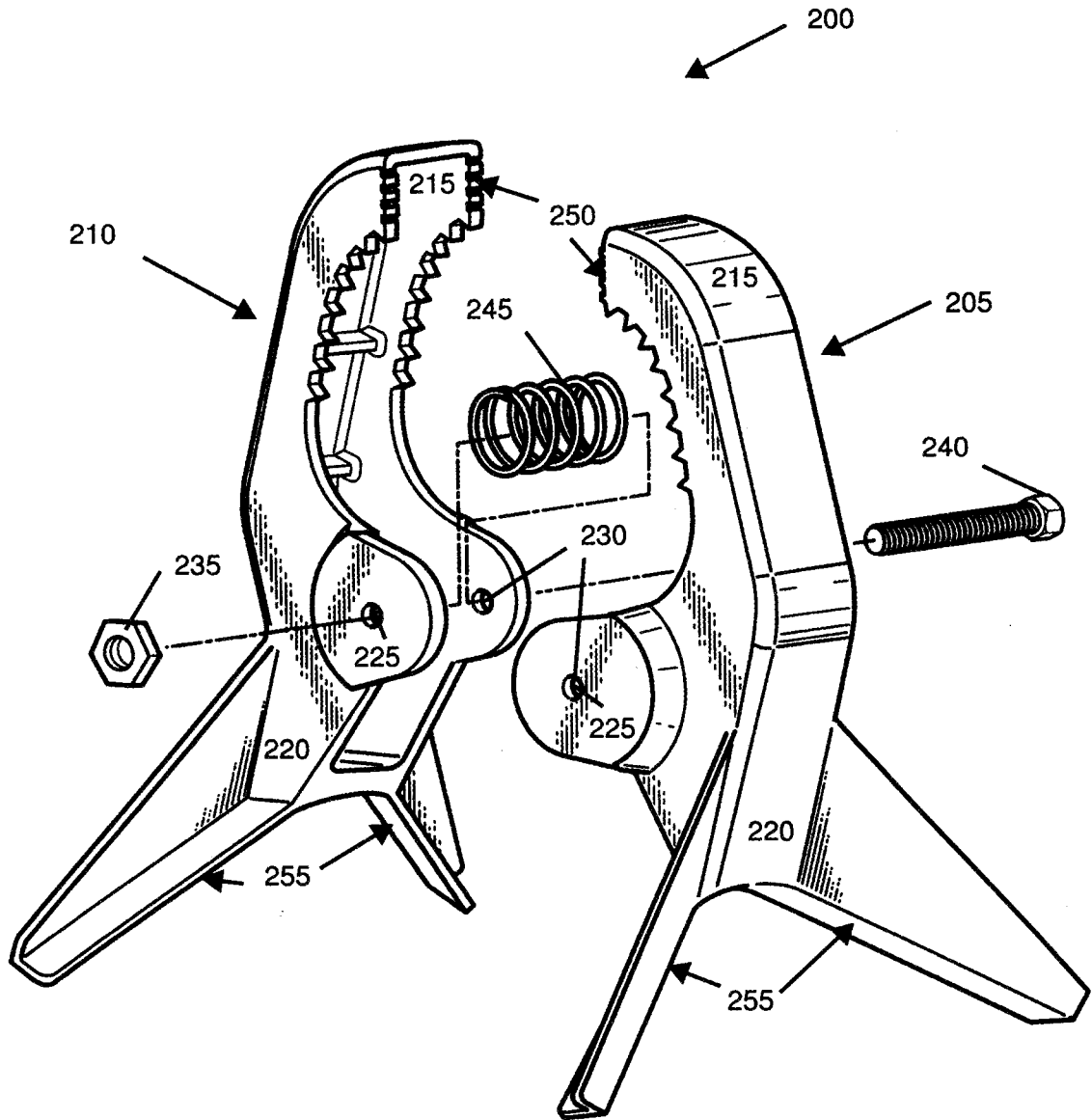


Fig. 2

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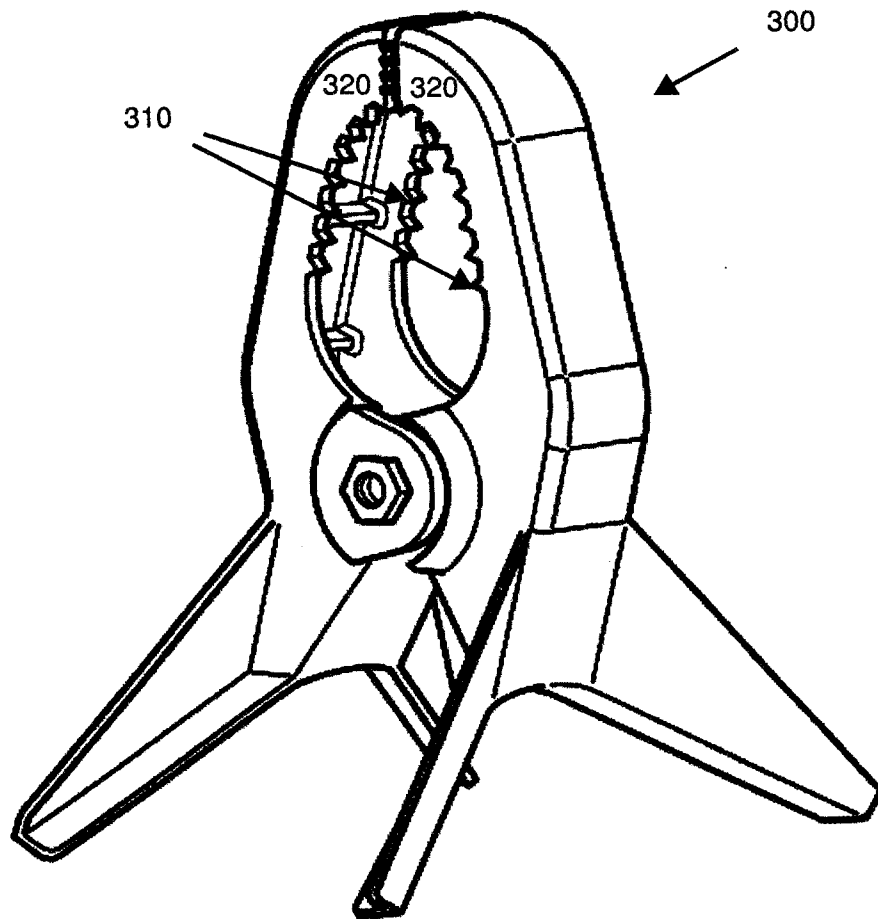


Fig. 3

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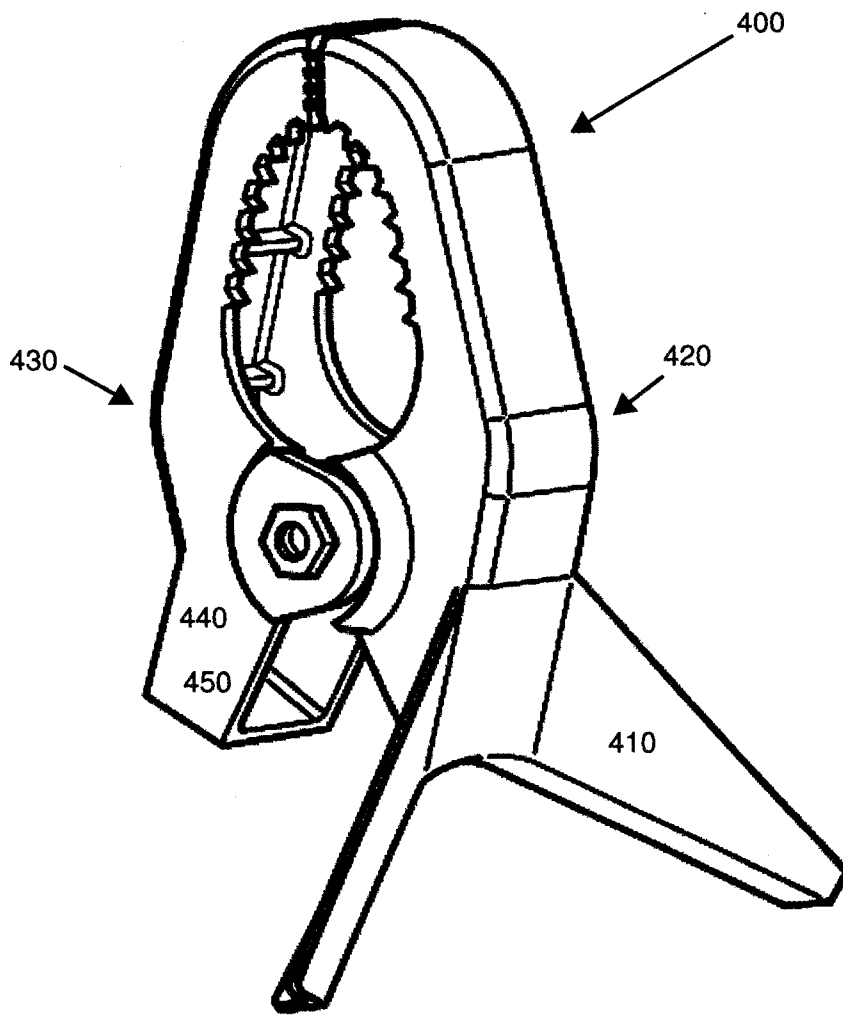


Fig. 4

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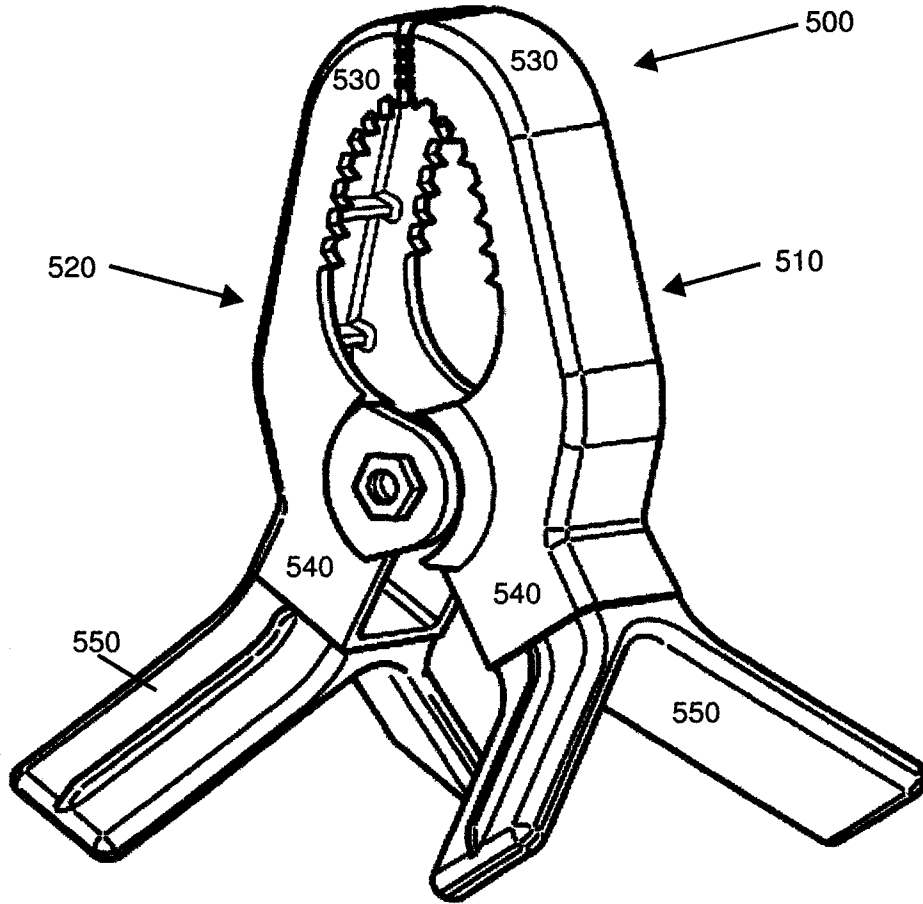


Fig. 5

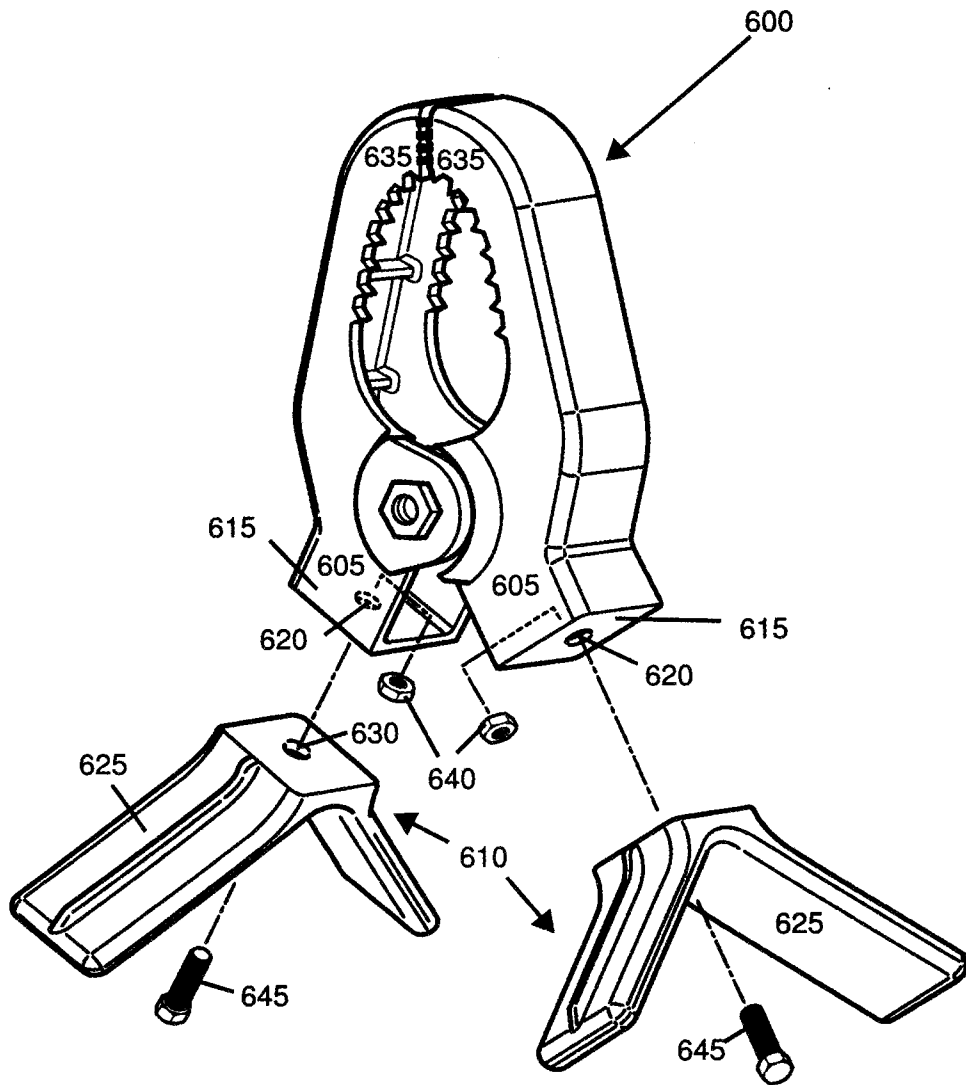


Fig. 6

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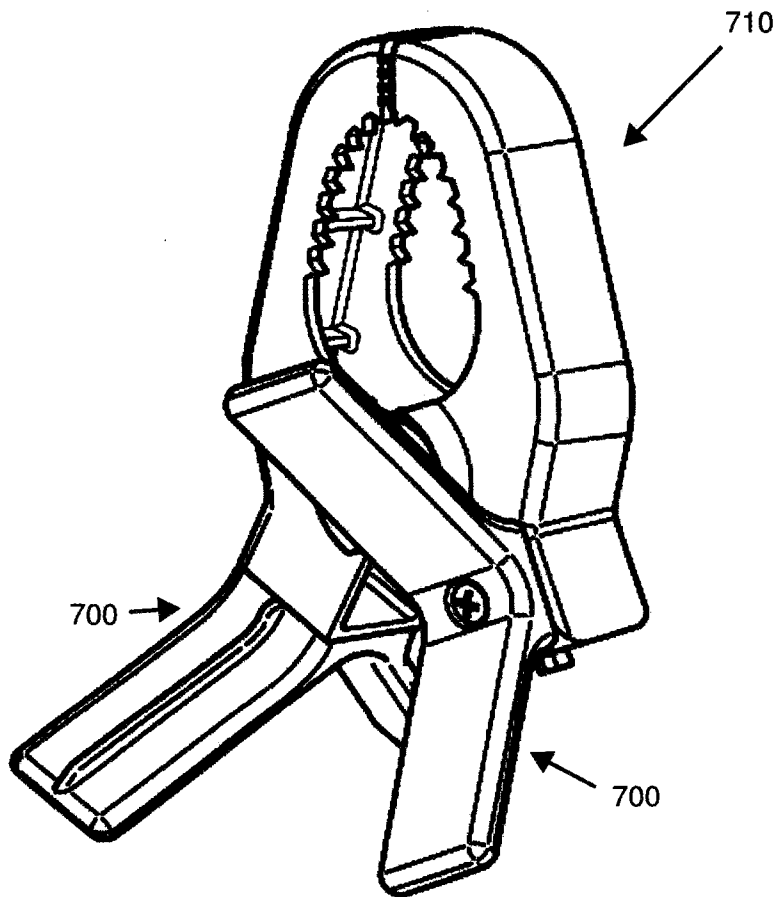


Fig. 7

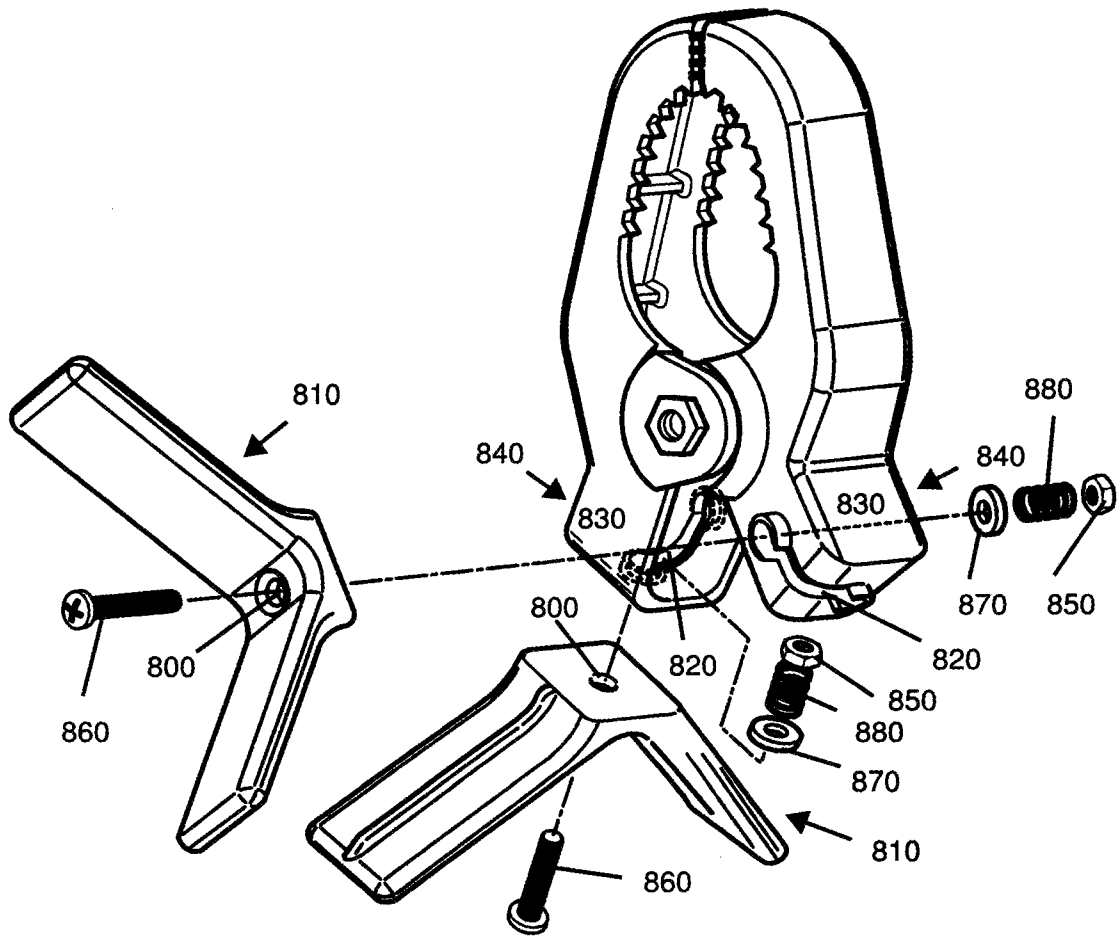


Fig. 8