

[54] **PERSONAL PROTECTIVE DEVICE**
[76] Inventor: **John Eugene Breglia**, 812 E. Copper St., Tucson, Ariz. 85719

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[21] Appl. No.: **298,877**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 214,984, Jan. 3, 1972, abandoned.

[52] U.S. Cl. **30/164.9, 30/363, 294/16**

[51] Int. Cl. **B26f 1/24**

[58] **Field of Search** 30/164.9, 363, 366, 271, 30/6.1, 22, 358; 294/3, 8.5, 11, 16, 118

[56] **References Cited**

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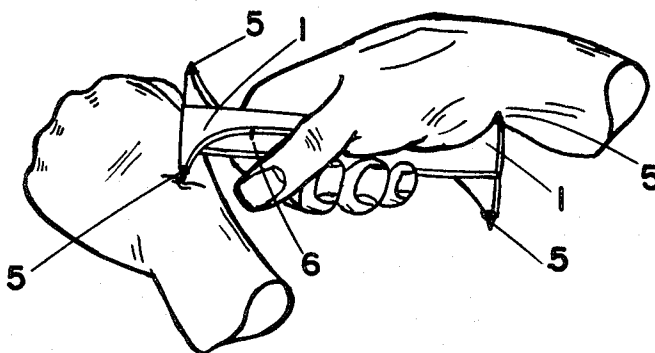
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Primary Examiner—Al Lawrence Smith
Assistant Examiner—J. C. Peters

[57] **ABSTRACT**

A personal protective or defensive device comprising a pair of leg members of substantially equal length and pivotably connected to each other so as to be in close side by side relationship to each other in all positions relative to each other. The point of pivot is substantially equidistant from all ends of the legs. A spring is employed to urge the legs toward open position and suitable means, such as a pin, is used to limit the degree of opening and closing. The ends of the legs carry metal spikes which extend inward and also similar spikes are mounted on the hollowed inner edge of the legs (intermediate the ends thereof and the point of pivot mounting). The inner faces of the legs are preferably flat and may be moved to an overlapping position so that the spikes at the ends thereof face outwardly of the device.

6 Claims, 10 Drawing Figures



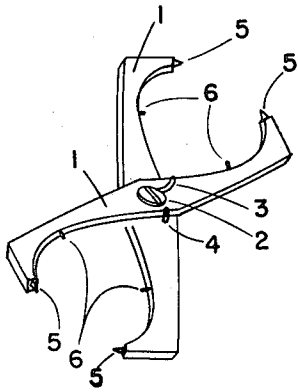


FIG. 1

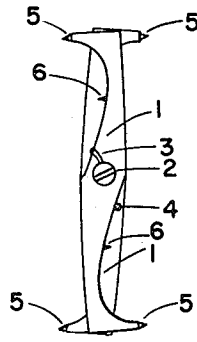


FIG. 2

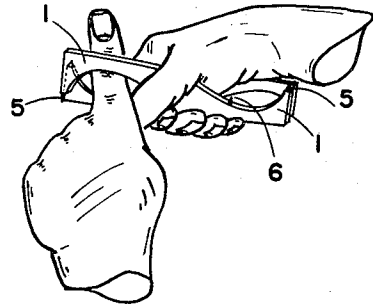


FIG. 3

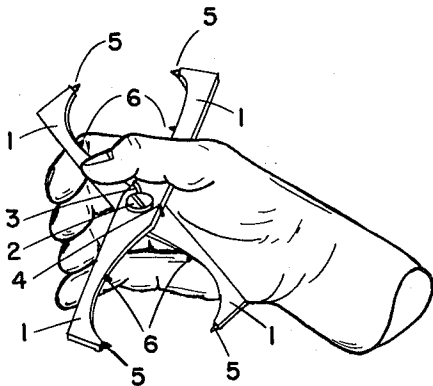


FIG. 4

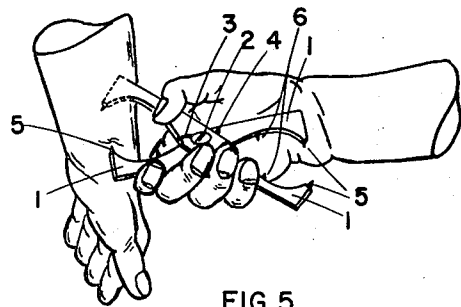


FIG. 5

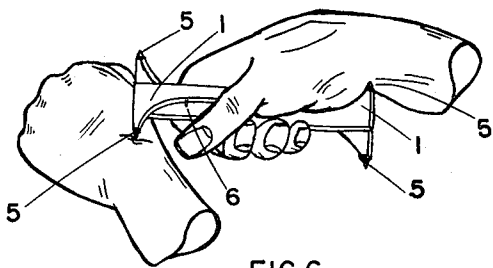


FIG. 6

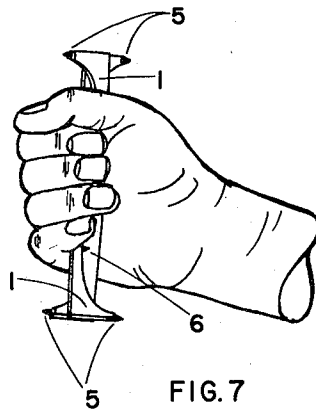


FIG. 7

SHEET 2 OF 2

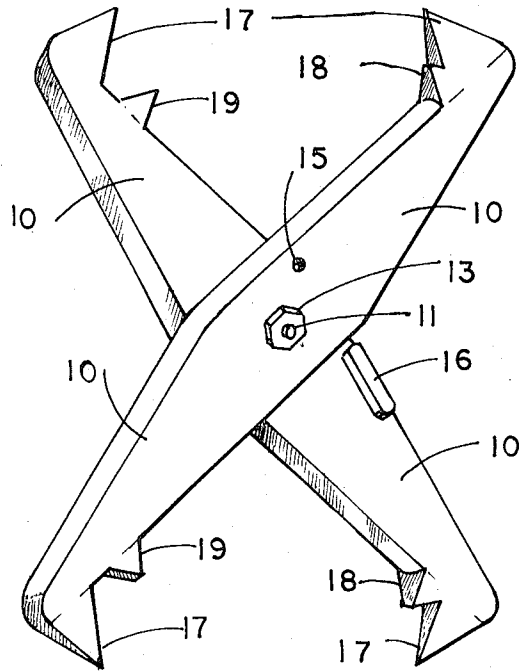


FIG. 8

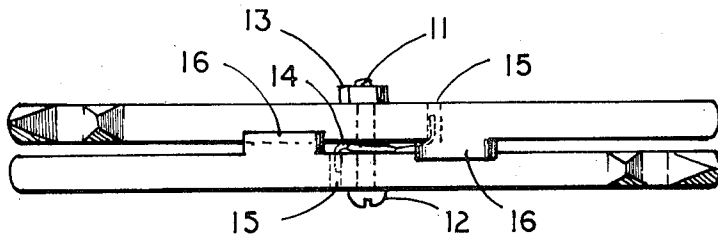


FIG. 10

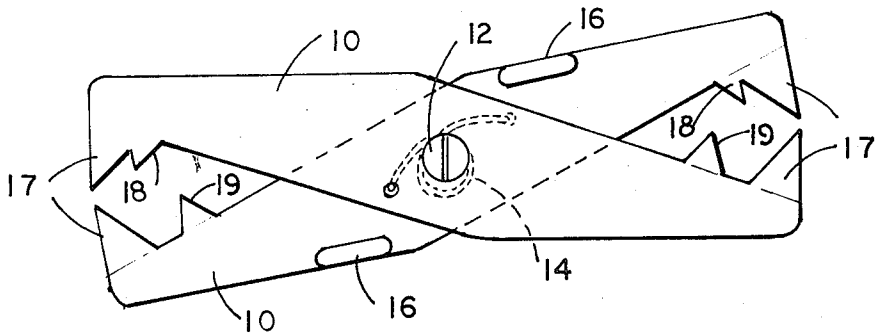


FIG. 9

PERSONAL PROTECTIVE DEVICE

This application is a continuation in part of my co-pending application Ser. No. (1970) 214,984, filed Jan. 3, 1972, now abandoned.

This invention relates to a device particularly adapted to be used for personal protective or defense purposes.

An object of the present invention is to provide such a protective device which can be used for a variety of self defense measures against an assailant, whether human or animal.

Another object is to provide a device that can be used effectively against a physically stronger person or animal.

Another object is to provide a device that can cause intense pain when applied to any part of the assailant's body.

Another object is to provide such a device as will discourage an assailant from attempting to take it away from the user.

Another object is to provide such a device which can be used as a "come along" against an assailant.

Another object is to provide such a device which fits into the user's hand in such a manner that it is difficult to take away from the user.

Another object is to provide such a device which is provided with sharp protrusions adapted to cause pain but with superficial injury to an assailant.

Another object is to provide such a device which is non-lethal in character and which may be easily concealed upon the person of the user.

The above and other objects, features and advantages of this invention will be fully understood from the following description in connection with the accompanying illustrative drawings.

In the drawings:

FIG. 1 is a perspective view of a device embodying the present invention in fully opened position;

FIG. 2 is a similar type view of the device in fully closed positions;

FIG. 3 is a similar type view showing the device in engagement with an assailant's finger;

FIG. 4 is a similar type view of the device in open position and in the hand of the user;

FIG. 5 is a similar type view of the device being applied to the forearm of an assailant;

FIG. 6 is a similar type view showing the device being applied to a fold of skin on the hand of an assailant;

FIG. 7 is a similar type view of the device in fully closed position in the hand of the user;

FIG. 8 is a similar type view of a modified design of the device;

FIG. 9 is a top plan view of the device of FIG. 8 when in almost completely closed position; and,

FIG. 10 is a side or edge view of the modified device as shown in FIG. 9.

Referring more specifically to the drawings and FIGS. 1-7, a pair of legs 1 are pivotably connected to each other by means of a pin 2 provided at both its ends with flanges so as to hold the legs 1 in close fitting and movable relationship each to the other. The legs 1 are mounted on the pin 2 centrally of their length and are constantly urged toward open position (FIGS. 1 and 4) by a suitable metallic spring 3 associated with the pin 2. The inner side or face of the legs 1 is provided with a metallic pin 4 which is mounted so as to engage the

edge of the other leg 1 (as shown in FIGS. 1 and 4) and thereby limit the distance the legs can be opened. This pin 4 is so located that it also will engage the edge of the other leg at another point so as to limit the closed position of the legs 1 in order that they will overlap each other, as shown in FIGS. 2, 6 and 7, when they are squeezed together by the user. The legs may be made of any suitable metal, plastic, or other material. I have obtained excellent results with a fiber glass reinforced polycarbonate polymer.

Intermediate the ends of the legs 1 and their point of pivot, their inner sides (or faces) are cut away in a concave configuration so that, as the legs 1 are moved toward closed position, an elongated curved or oval-shaped opening is formed therebetween. (Note FIG. 3). As shown in the drawings, the inner face or side of each of the ends of the legs 1 is provided with an inwardly extending sharp metal spike 5. These spikes or studs 5 are quite sharp and protrude only so far as to be capable of effecting puncture wounds which while quite painful are superficial in character. Also, the spikes or studs 5 may be stubby or thickset in configuration so as to induce substantial pain with limited penetration. At an intermediate point of each concave portion of the legs 1, there is mounted a similar inwardly extending metallic spike or stud 6.

In FIGS. 8, 9 and 10 a modified type of the device of the present invention is shown. The legs 10 are, like those shown in FIGS. 1-7, of equal length and are pivoted together on pin 11 at a point centrally of the length and width of each leg, the pin 11 being provided with a flanged head 12 and a nut 13 whereby the legs 10 may be held so that their inside faces which are preferably flat, are in close proximity to each other but can still be moved or pivoted freely relative to each other. The legs 10 are constantly urged toward maximum open position by a spring 14 coiled around pin 11, each end of the spring engaging an opening 15 in each leg 10. Each leg 10 on its inner face is provided with an integral lug 16 which is so located as to engage an edge of the other leg 10 so as to limit the closed position of the legs, so that they will overlap each other in the manner shown in FIGS. 2 and 7 and also so as to limit the open position of the legs as shown in FIG. 8.

Each of the legs 10 are of identical configuration, and are mounted on the pivot 11 so as to present mirror images of each other. The same is true, of course, of the legs 1 of the design shown in FIGS. 1-7. Each leg 10 is provided at its end with a sharp spike-like protuberance 17, which extends from the inner edge thereof. Near one end of each arm 10 is a substantially shorter sharp protuberance 18 adjacent protuberance 17 and extending from the inner edge thereof. At the other end of each arm 10 the inner edge thereof is provided with a similar sharp protuberance 19 which is substantially more removed or spaced from the end of the arm and protuberance 17.

In the embodiment shown in FIGS. 8, 9 and 10 each leg 10 is completely integral and is formed by pressure molding of fiber glass reinforced polycarbonate polymer material. The only things to be added to a pair of the legs 10 to complete the device, are the pin and spring items. It will be noted from FIG. 9 that in this embodiment the legs 10 intermediate their ends and center are cut away at their inner edges so as to cause a hollow area, extending from the sharp spike-like protuberances 17 to point beyond the shorter spike-like

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protuberances 18 and 19, to be defined or formed when the points of the spike-like members 17 are brought into close proximity to each other. The spike-like protuberances 18 and 19 will be, of course, in staggered relation to each other when the legs 10 are in this position (FIG. 9).

The various uses or specific applications of my device are believed to be obvious from the foregoing description and drawings. The length of the legs 1 and 10 is such that their ends, when the device is held in the hand of the user, do not extend too far away from the edges of the hand of the user in order that it would be difficult for an assailant to wrest it away from the user's hand, and yet it should extend far enough at both ends so as to form a very effective weapon for inflicting, by means of spikes 5 or sharp protuberances 17, quite painful scratches (i.e. clawing effect) as well as for striking blows (FIG. 7). The pin 4 and lugs 16 are so positioned that when the user squeezes the device in his hand, the ends of leg 1 or 10 are permitted to move to a position wherein the sharp spikes 5 or protuberances 17 face outwardly of the overlapping ends of the legs. (See FIG. 7). In practice, it has been found that both ends of legs 1 and 10 should extend 1 to 1 1/2 inches from the hand of the user, but ordinarily, not more than 2 inches. The limited length of the legs also makes the device easy to carry and conceal.

The force exerted by springs 3 or 14 causes the legs 1 or 10 to press against the inner part of the user's hand so as to minimize the possibility of dropping the device.

It will be appreciated that the device is easy to manipulate for its intended purposes. Each end of the device provides the same functions as the other. These various functions can be brought into play instantly, at the will of the user. Thus, as shown in FIG. 3, it is used as a "come along" by gripping the assailant's finger and subjecting it to the sharp spikes 6. The sharp protuberances 18 and 19 have a similar function as described for spikes 6. It is being used for similar purposes in FIGS. 5 and 6, the spikes 5 coming into play in these instances. Protuberances 17 function similarly. In FIG. 7 the device is ready to be used as a clawing or scratching weapon since the legs now are in fully closed position so that their ends overlap and extend past each other to a degree, whereby the sharp spikes 5 extend outward of the weapon. In this attitude, it can be used as a blunt instrument for striking blows with the overlapped ends of the legs, as well as for clawing or scratching with spikes 5. Protuberances 17, of course,

function similarly.

I claim as my invention:

- 1. A personal defense weapon comprising:
 - a. a pair of substantially identical legs, each having at least one transverse spike-like member extending from each end thereof;
 - b. pivot means for connecting said pair of legs at their respective geometric center for close side by side rotational displacement and with said spike-like members extending toward one another;
 - c. spring means for urging said legs to pivot to an open position relative to each other;
 - d. means for limiting the degree said legs can be moved to open position; and,
 - e. means for limiting the degree said legs can be moved to closed side by side position.

2. The invention of claim 1 wherein the spike-like members of said leg members protrude beyond the opposing leg member when said leg members are moved to their maximum closed side by side position, thereby providing an effective clawing or scratching device.

3. The invention of claim 2 wherein the inner edges of each of said legs intermediate their ends and the point of pivot mounting are cut away so as to provide each leg with a hollowed area which is substantially complementary to that of the other leg, and a spike-like member is carried by the inner edge of each leg and positioned so as to extend into said hollowed area when the legs are substantially in closed position.

4. The invention of claim 3 wherein the inner faces of said legs are flat substantially throughout their length.

5. The invention of claim 1 wherein the means for limiting the extent said legs can be moved to closed and open positions comprises a member carried by the inner face of one of said legs and extending substantially perpendicular thereto and positioned thereon so as to engage an edge of the other leg when the legs are pivoted to opened or closed to a predetermined degree.

6. The invention of claim 4 wherein the means for limiting the extent said legs can be moved to open and closed positions comprises a member carried by the inner face of one of said legs and extending substantially perpendicular thereto and positioned thereon so as to engage an edge of the other leg when the legs are pivoted to opened or closed position to a predetermined desired degree.

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