

[54] QUICK RELEASE ARM STRAIGHTENER DEVICE

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[52] U.S. Cl.273/189 A

[51] Int. Cl.A63b 69/36

[58] Field of Search.....273/188, 189, 190, 54, 183; 128/77; 273/26 C

[56] References Cited

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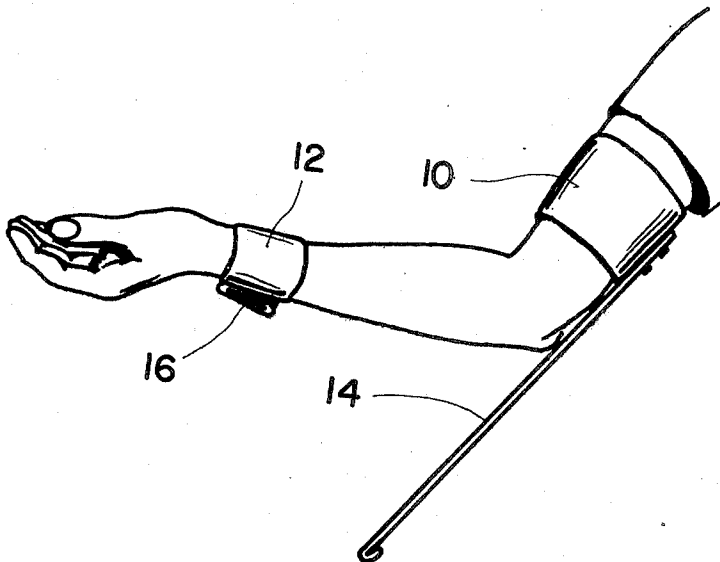
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[57] ABSTRACT

A device for preventing or restraining the bending of an elbow. It is designed to be used by a golfer as an aid in improving his swing. A first elastic band encircles the arm immediately above the elbow and a second elastic band encircles the arm at the wrist. A resilient plate is attached to the first band and extends in the direction of the wrist. In one embodiment the plate has a hooklike end which engages a complimentary hook attached to the wrist band. Rotation of the wrist releases the end of the plate to permit free movement of the elbow. In another embodiment the wrist band is provided with a steel plate which overlaps and retains the end of the resilient plate until the elbow is bent a predetermined amount.

8 Claims, 9 Drawing Figures



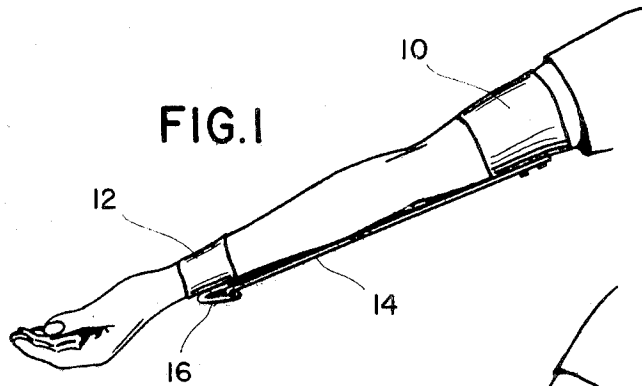


FIG. 1

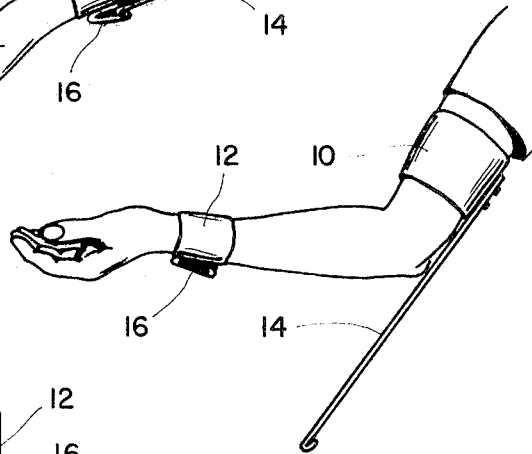


FIG. 2

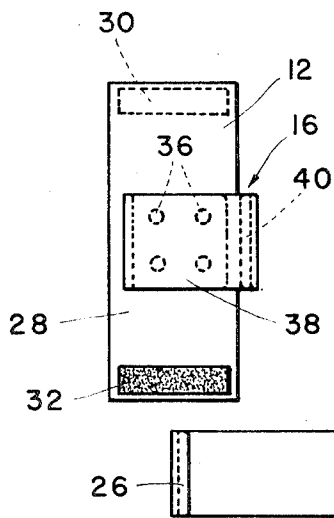


FIG. 3

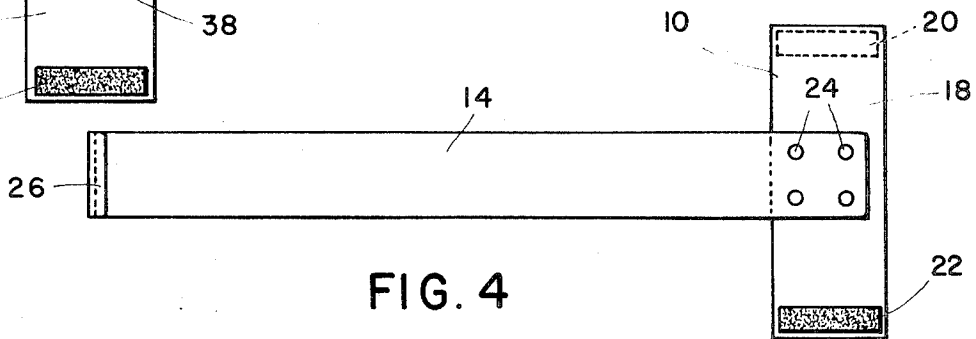


FIG. 4

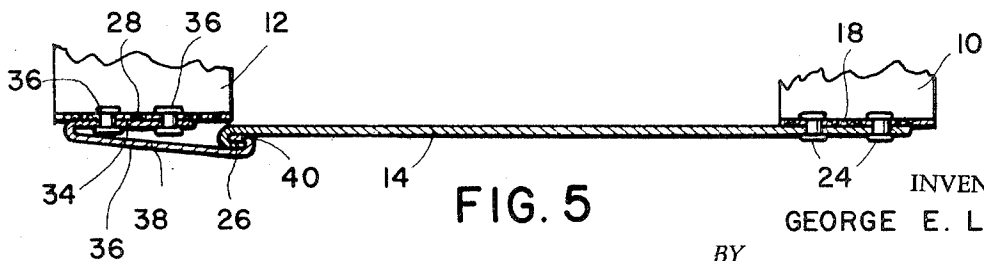


FIG. 5

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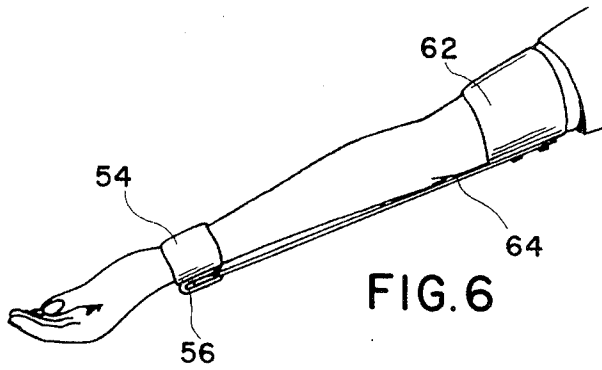


FIG. 6

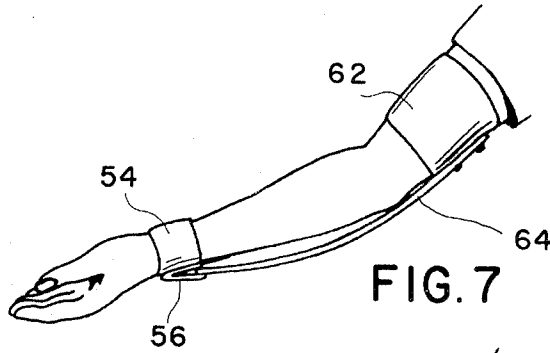


FIG. 7

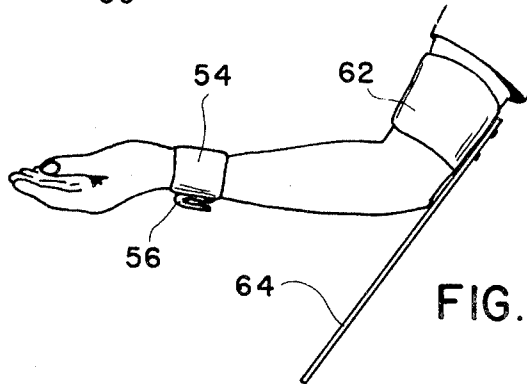


FIG. 8

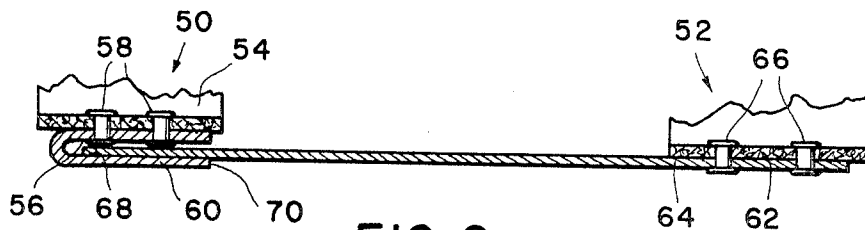


FIG. 9

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QUICK RELEASE ARM STRAIGHTENER DEVICE

Among the faults of many golfers is the tendency to bend the elbow during the swing. This bending of the elbow weakens the force of the swing thus limiting the length of the drive. It also increases the difficulty of controlling the club and hence of maintaining the proper direction of the drive.

The prior art teaches many different solutions to this problem. Certain defects, however, have limited the acceptance of these devices. Many of the prior devices are awkward to install and uncomfortable when worn for any period of time. Also, many of these devices are not easily released without removing the entire device from the arm. As a result, the golfer does not have the free use of his arm.

It is the primary object of my invention to provide a device for restricting the bending of the elbow to aid in maintaining the arm in a straight fashion which is easily applied and which is comfortable even when worn for a substantial period of time.

A further object of my invention is the provision of such a device which includes an easy release feature so that the golfer can freely bend his elbow when desired without the necessity of releasing or removing the entire device.

It is also an object of my invention to provide such a device in which the device may be easily placed in either its operating or free position with the use of only the arm and wrist and without requiring any assistance by the other hand.

A further object of my invention is the provision of a device which may be easily fastened in place by the user and which provides pressure against the user's elbow to encourage the user to keep the elbow straight but which may be overcome upon sufficient bending of the elbow thereby releasing the device and permitting unrestricted movement.

Another object of my invention is the provision of an elbow-straightening device for use by a golfer which is of simple and inexpensive construction and of attractive appearance.

The above and other objects of my invention which will become apparent in the following detailed description are achieved by providing an arm straightening device which includes a pair of encircling elastic bands, one of which is positioned immediately above the elbow while the other is positioned at the wrist, a spring steel plate fastened to the upper band and extending along the outer side of the arm to the wrist, and a short plate on the wrist encircling band. The overlapping edges of the two plates are bent into complimentary U-shaped ends. When the ends of the two plates are interlocked the elbow is held straight. A simple twist of the wrist disengages the hooked ends of the plates and thus permits free movement of the arm. In an alternate arrangement, the U-shaped ends of the plates are omitted. In this embodiment the spring steel plate attached to the upper band is long enough to extend between the second plate and the lower band. As the user bends his arm, the resilient plate is curved, applying pressure to the elbow to discourage further bending of the arm. At the same time the end of the resilient plate slides relative to the second plate. When the arm is bent beyond a certain amount the end of the resilient plate slides past the end of the second plate, thus releasing the device and permitting free arm movement.

For a more complete understanding of the invention and of the objects and advantages thereof reference should be had to the following specification and the accompanying drawing wherein there is shown a preferred embodiment of the invention.

In the drawing:

FIG. 1 is a pictorial view showing the elbow-straightening device in its operative position;

FIG. 2 is a pictorial view showing the elbow-straightening device in its released or inoperative position;

FIG. 3 is a plan view of the wrist-encircling band and latching plate portion of the device;

FIG. 4 is a plan view of the elbow-encircling band and the resilient plate;

FIG. 5 is a side elevational view showing the interlocking of the resilient plate and the latching plate when the device is in its operative position;

FIG. 6 is a pictorial view showing a second embodiment of my invention, with the user's arm in a straight position;

FIG. 7 is a pictorial view of the device of FIG. 6 showing the restraining action when the arm is partly bent;

FIG. 8 is a pictorial view of the device of FIG. 6 showing the method of releasing the device; and

FIG. 9 is a side elevational view showing the interlocking of the resilient plate and the latching plate of the device of FIG. 6.

As will be seen from the drawing, the arm straightener device has four major components; a first arm encircling band 10 which is applied immediately above the elbow, a second arm encircling band 12 which is applied in the wrist area, a flat elongated plate 14 which is secured to the band 10 and which extends along the outer side of the arm to the wrist-encircling band 12, and a short plate 16 attached to the wrist-encircling band 12 and engaging the end of the elongated plate 14.

The upper encircling band 10 and the associated elongated plate 14 are shown in more detail in FIG. 4. In the preferred embodiment, the band 10 consists of a length of elastic material 18 which is provided at opposite ends with suitable fastening means which may consist of mating pieces of Velcro 20 and 22. One of the members, for example the member 20, may consist of a piece of material having numerous closely spaced hooklike elements on one surface and the other member of a piece of material having numerous closely spaced looplike elements on one surface. This well-known fastening material interlocks when pressed together to hold the ends of the elastic piece 18 in a tightly fitting loop around the user's arm. The elongated plate 14 may be formed of a resilient plastic or of spring steel, for example, and is secured to the elastic material 18 by any suitable means such as the rivets 24. The free end of the plate 14 is bent in a U-shaped manner to provide a hook portion 26.

The wrist-encircling band, shown in FIG. 3, again consists of a piece of elastic material 28 which is provided with suitable fastening means 32 and 33 at its opposite ends. These fastening pieces 30 and 32 may again be pieces of mating Velcro. The latching member 16, which may be formed of a resilient plastic or spring steel, for example, is generally V-shaped and includes a base portion 38 which is secured to the elastic material 28, for example, by the rivets 36. The main portion 38 of the latching member 16 extends from the base portion 34 upwardly in the direction of the elbow and is bent into a U-shaped configuration at its end to provide a hook portion 40 which is complimentary to the hooked end portion 26 of the elongated plate 14.

When the two bands 10 and 12 have been properly positioned and tightened on the user's arm, the hooked end 26 of the elongated plate 14 engages the hooked end 40 of the latching plate 16. Any attempt to bend the elbow will now be transmitted by the elongated plate 14 to the latching plate 16 and wrist-encircling band 12. As a result, sufficient pressure will be applied to the elbow so that the user will keep the elbow in a straight position. When the user desires to have the free use of his elbow, as for example, when the golfer has completed his swing, he merely rotates the band 12 and latching plate 16 by twisting his wrist. This rotation will cause the interlocked ends 26 and 40 of the plates 14 and 16 to slide apart endwise. As a result the plate 14 will now be loose and the wearer can freely bend his arm. It should be noted that once the device has been properly positioned on the arm only one hand is needed to hook the plate 14 to the latching plate 16 and that the plates may be unlatched without the use of either hand.

A second embodiment of my invention is illustrated in FIGS. 6-9. As in the previously described embodiment, this device includes a wrist-encircling band 50 and an arm encircling band 52 which is worn above the elbow. The wrist-encircling band includes a cloth or elastic band 54 provided with suitable fasteners. A generally compressed V-shaped plate 56 is secured to the band 54, for example, by rivets 58, with the open side of the V directed upwardly toward the elbow. The

outer or free leg 60 of the V-shaped member 56 preferably extends substantially the entire length of the band 54. This plate 56 is preferably of steel or a relatively rigid plastic. The upper band 52 also includes an arm encircling cloth or elastic band 62 which is again provided with suitable fasteners. A resilient steel or plastic plate 64 is secured to the band 62, for example, by the rivets 66. This plate 64 is of sufficient length to extend downwardly along the arm to the wrist-encircling band 50.

As will be seen from FIGS. 6 and 9, the free end 68 of the resilient plate 64 is inserted between the outer portion 60 and the inner portion of the V-shaped member 56. As will be seen from FIG. 7, as the arm is bent at the elbow, the resilient plate 64 bends in a curved manner along the outside of the arm with pressure being applied to the elbow as indicated by the arrow 72. This pressure tends to discourage further bending of the elbow and prompts the wearer to hold his arm in the desired straight manner. As the plate 64 bends its lower end 68 slides upwardly against the outer portion 60 of the V-shaped latching member 56. The portion 60 of the latching member 56 is sufficiently long, however, to assure that the end 68 of the resilient plate 64 is retained even though the arm is bent to a suitable degree. However, continued bending of the arm will cause the end 68 of the resilient plate to move past the end 70 of the V-shaped member 56. As a result, the resilient plate 64 springs free of the latching member 56 and again assumes a straight position, relieving the pressure applied to the elbow. Thus, when the user desires to release the device he need merely bend his arm sufficiently to move the end 68 of the resilient plate 64 clear of the end 70 of the latching member 56.

It should be understood that the invention is not limited to the described embodiments in which the elongated resilient plate is attached to the band worn above the elbow but also encompasses the arrangement in which the resilient plate is attached to the wrist-encircling band and the latching plate is attached to the other band. Other changes may also be made in and to the described embodiments of the invention. Reference should therefore be had to the appended claims in determining the true scope of the invention.

I claim:

1. A device for restraining the bending of an elbow, comprising: a first arm-encircling band adapted to be worn immediately above the elbow; a second arm-encircling band adapted to be worn at the wrist area; an elongated resilient

plate secured to the first band and extending toward the second band; and a latching plate secured to the second band and having means for releasably engaging the end of the elongated resilient plate.

2. The device according to claim 1 wherein the end of the elongated resilient plate is bent into a hooklike configuration and the latching plate has a complimentary end portion for engaging the hooklike end of the elongated resilient plate.

3. The device according to claim 2 wherein the latching plate has a base portion secured to the second band and a platelike portion extending from one edge of the base portion, one end of the platelike portion being bent into a hooklike configuration complimentary to the hooklike end of the elongated resilient plate for engagement therewith.

4. The device according to claim 1 wherein the latching plate has a base portion secured to the second band and a platelike portion extending from the edge of the base portion most remote from the first band in spaced, generally parallel relation to the base portion; the end of the elongated resilient plate being received between the base portion and the platelike portion of the latching plate when the device is in its operative restraining position.

5. The device according to claim 4 wherein the length of the resilient plate is such that the end of the resilient plate is retained between the base and platelike portions of the latching plate until the elbow is bent beyond a predetermined amount.

6. The device according to claim 1 wherein the first and second bands are each comprised of a strip of elastic material having mating fastening members at opposite ends.

7. A device for restraining the bending of an elbow, comprising: a first band adapted to encircle the arm immediately above the elbow; a second band adapted to encircle the arm at the wrist; an elongated resilient plate secured to one of the bands and extending toward the other band; and a generally V-shaped plate, the first leg of which is secured to the second band with the open side of the V-shape directed toward the first band, the end of the second leg having latching means for releasably engaging the free end of the elongated resilient plate.

8. The device according to claim 7 where in the end of the second leg of the V-shaped plate and the free end of the elongated resilient plate are bent into complimentary U-shaped configurations.

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