

Sept. 20, 1971

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3,606,342

WRIST CONTROL DEVICE

Filed June 30, 1969

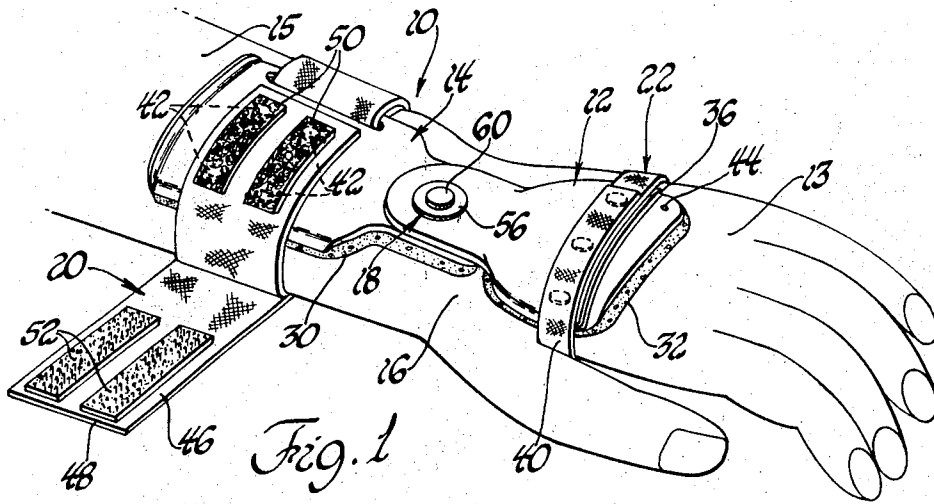


Fig. 1

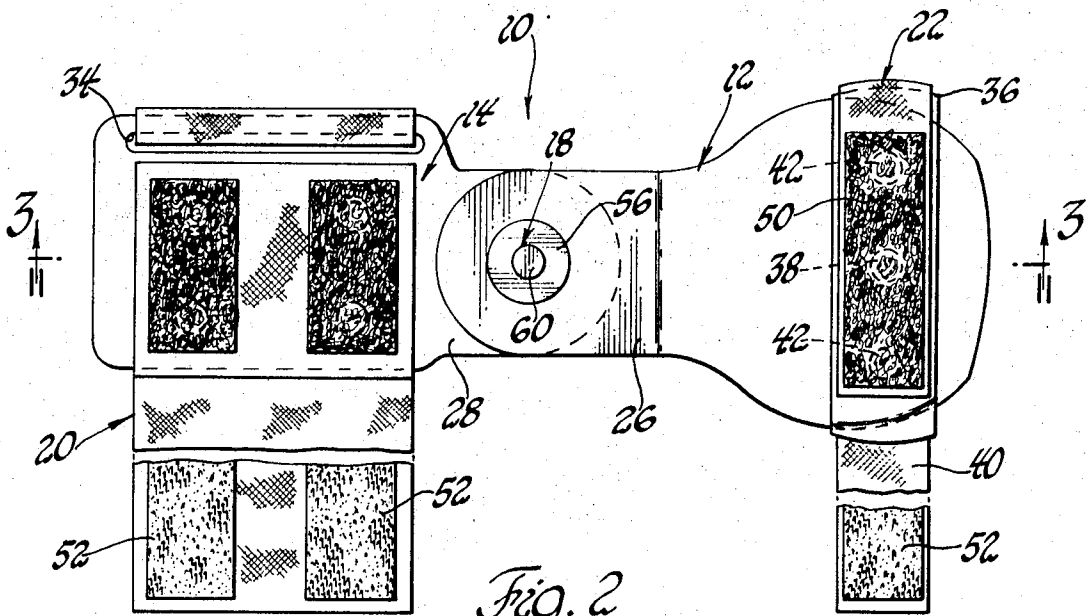


Fig. 2

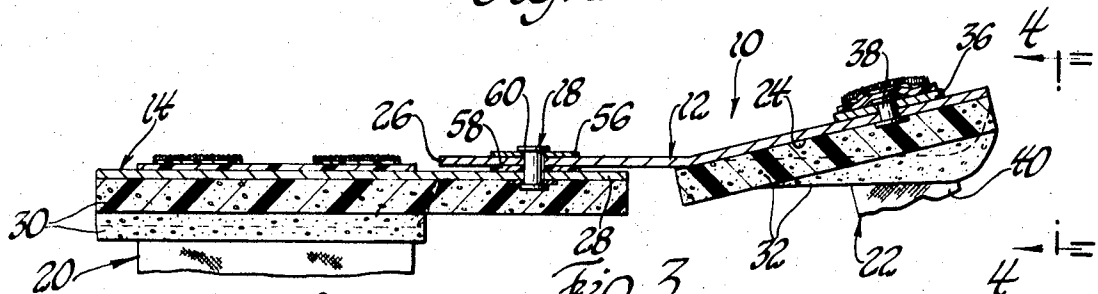


Fig. 3

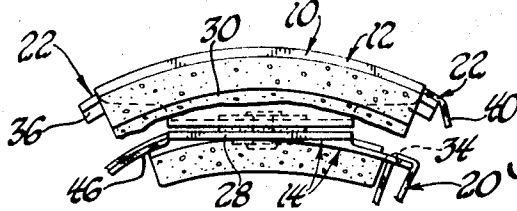


Fig. 4

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WRIST CONTROL DEVICE

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Filed June 30, 1969, Ser. No. 837,663

Int. Cl. A63b 69/36

U.S. Cl. 273—189R

21 Claims

ABSTRACT OF THE DISCLOSURE

A wrist control device including a hand member having at least a portion thereof being frusto-conical and an arm member pivotally connected to the hand member. A plate is pivotally connected to the top surface of the hand member, and a first strap means is connected to the plate so that the device may be utilized on either the right or left hand. A second strap means is connected at one end to the top surface of the hand member and extends about the opposite side and through a slot in the hand member and then back about the opposite side to a second end. The first and second strap means are respectively removably connected to the respective members and each have coating means at the respective ends thereof for releasably connecting the ends of the respective strap means together. A cushioning material is disposed on the under surfaces of the respective members.

This invention relates to a wrist control device which may be worn by the participants of various sports such as golf and bowling. The wrist control device of the instant invention is used in sports where the movement between the forearm and the hand should be limited to movement about an axis substantially normal to the back of the hand or wrist and passing through the wrist joint.

Various devices have been provided in the prior art for controlling the articulation between the hand and forearm. One such device is shown in United States Pat. 3,235,258 for use by bowlers. This prior art device includes a pair of straps which extend about the forearm for attaching a plate to the forearm and an arcuate member extending from the plate for engaging the back of the hand. The arcuate member is, however, attached to the back of the hand and, therefore, the back of the hand may move inwardly and away from the arcuate member, the arcuate member limiting movement of the hand only in an outward direction. Another prior art wrist control device is disclosed in U.S. Pat. 3,350,100. This device includes two members pivotally connected together and being substantially straight or in the same plane. The hand member has a glove attached thereto and strap means are associated with the arm member for attaching arm member to the forearm. When a participant in a sport, such as golf, grasps a game element such as a golf club, the hand position approaches that of forming a fist whereby the back of the hand moves out of the plane of the top of forearm. Thus, this prior art device wherein the arm and hand members are straight allows for no such movement in the hand and, therefore, does not limit the articulation between the hand and the forearm to that of the most desired character.

Accordingly, it is an object and feature of this invention to provide a wrist control device including arm and hand members pivotally connected together with the hand member being of the configuration to limit such articulation in the desired manner while providing for the proper position of the hand relative to the forearm and which device may be utilized with either a right or left hand.

Other objects and attendant advantages of the present invention will be readily appreciated as the same becomes better understood by reference to the following

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detailed description when considered in connection with the accompanying drawings wherein:

FIG. 1 is a perspective view of the preferred embodiment of the instant invention shown disposed on a left hand;

FIG. 2 is a plan view of the preferred embodiment;

FIG. 3 is a cross-sectional view taken substantially along line 3—3 of FIG. 2; and

FIG. 4 is a view taken substantially along line 4—4 of FIG. 3.

Referring now to the drawings wherein like numerals indicate like or corresponding parts throughout the several views, a preferred embodiment of the wrist control device of the instant invention is generally shown at 10.

The device 10 includes a hand member generally indicated at 12 for engaging the back of the hand 13. The device 10 also includes an arm member generally indicated at 14 for engaging the top of the arm 15 above the wrist 16. The device 10 also includes pivot means, generally indicated at 18, pivotally connecting the arm and hand members 12 and 14 together for pivotal movement relative to one another only about an axis which is generally normal to and above the wrist when the device 10 is placed upon the wrist as illustrated in FIG. 1.

The device 10 also includes means generally indicated at 20 for attaching the arm member 14 to the arm 15 and means generally indicated at 22 for attaching the hand member 12 to the hand 13.

The hand and arm members 12 and 14 are plate-like members and may be made of such materials as metal or plastic. The hand member 12 has an undersurface with at least a portion 24 which slants upwardly in a direction away from the pivot means 18. The undersurface 24 is arcuate transversely of the direction in which the hand member 12 slants upwardly. More specifically, the undersurface of the hand member 12 is generally frusto-conical, as best illustrated in FIG. 3. The hand member 12 is generally pear shaped when viewed in plan, as illustrated in FIG. 2. The small portion of the hand member 12 is indicated at 26. The arm member 14 is generally rectangular with a projection 28 extending from one end thereof as viewed in plan. The small portion 26 of the hand member 12 overlaps the projection 28 of the arm member 14 and the pivot means 18 pivotally interconnects the projection 28 and the small portion 26.

A first cushioning means 30 is secured to the undersurface of the arm member 14 and a second cushioning means 32 is secured to the undersurface 24 of the hand member 12. The cushioning means 30 and 32 are made of resilient foam or pad-like material. The arm member 14 has a slot 34 extending along one extremity thereof, the purpose of which will be set forth hereinafter, and the cushioning means 30 covers all of the undersurface of the arm member 14 except that portion containing the slot 34, which is best illustrated in FIG. 4. The cushioning means 32 covers all of the undersurface of the hand member 12 except the small portion 26 thereof.

The means 22 for attaching the hand member 12 to the hand 13 includes a plate 36, which is pivotally attached to the hand member 12 by the rivet 38, and a first strap means 40. Strap means 40 is connected to the plate 36 by a plurality of pairs of coating snap-together elements 42. Each pair of the elements 42 comprise a male and female element which may be snapped together and detached from one another. The longitudinal axis of a strap means 40 may be disposed, because of the pivotal attachment of the plate 36, at various angles relative to the direction in which the hand member 12 slants so that the device 10 may be attached to either a right or left hand. As illustrated in FIG. 1, the plate 36 is at an angle to the longitudinal axis of the device 10 and would be dis-

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posed at a substantially equal but opposite angle when the device is secured to a right hand. Positioning means 44, as shown in FIG. 1, coacts between the plate 36 and the hand member 12 for retaining the plate member 36 in one of the left or right-hand positions. The positioning means 44 preferably comprises a protrusion from either the plate 36 or the hand member 12 and a detent in the opposite member with the hand member 12 having two of either the protrusion or the detent. The protrusion or detent shown at 44 in FIG. 1 would engage the plate 36 when the plate 36 is moved to the position to accommodate a right hand.

The arm member, as alluded to above, is elongated and is arcuate in a direction transversely to its longitudinal axis. The arm member contains the slot 34 which extends therethrough adjacent one extremity. The means for attaching the arm member 14 to the arm 15 comprises a second strap means 46. A first end of the strap means 46 is connected to the arm member 14 by coacting snap-together elements 42 similar to those previously described in regard to the strap means 40. The first end of the strap means 40 is disposed adjacent the slot 34 and extends across the upper surface of the arm member 14 and away from the slot and around the opposite side of the arm member so as to go about the arm 15 and through the slot 34 and then back around the opposite side of the arm member 14 so as to go about the arm to a second end 48.

Opposite ends of the first and second strap means 40 and 46 include coacting means for releasably connecting the ends of each strap means together. More specifically, the coacting means associated with each strap means comprises a pair of interengageable fastener strips including strips 50 having a cloth-like base with a plurality of flexible loops extending therefrom and strips 52 having a cloth-like base with a plurality of flexible hooks extending therefrom and engageable with the loops on the strips 50. One of the strips 50 or 52 are attached at one end of the respective strap means and on one side thereof while the other of the strips 50 or 52 are attached to the other end of the strap means but on the opposite side thereof. Such hook and loop strips are well known in the art and are more specifically described in U.S. Pat. 3,009,235.

The pivot means 18 comprises a first washer 54 on the undersurface of the projection 28 of the arm member 14. Also included is a second washer 56 on the upper surface of the small portion 26 of the hand member 12. An organic polymeric washer 58 is disposed between the projection 28 and the small portion 26. The washer 58 may be made of a material such as nylon. There is also included a fastening means, or rivet, 60 extending through the respective washers and the members 12 and 14 for maintaining all of the members together.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A wrist control device comprising: a hand member for engaging the back of the hand, an independent arm member for engaging the top of the arm above the wrist, pivot means pivotally connecting said members together for pivotal movement relative to one another only about an axis which is generally normal to and above the wrist when said device is placed upon the wrist, means for attaching said arm member to the arm, and means for attaching said hand member to the hand, said hand member having an under surface with at least a portion which slants upwardly in a direction away from said pivot means.

2. A device as set forth in claim 1 wherein said under surface is arcuate transversely of the direction in which said hand member slants upwardly.

3. A device as set forth in claim 2 wherein said under surface is generally frusto-conical.

4. A device as set forth in claim 3 wherein said means

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for attaching said hand member includes a plate pivotally attached to said hand member and first strap means connected to said plate whereby the longitudinal axis of said first strap means may be disposed at various angles relative to the direction in which said hand member slants whereby the device may be attached to both right and left hands.

5. A device as set forth in claim 4 including first connecting means for removably attaching said first strap means to said plate.

6. A device as set forth in claim 5 wherein said means for attaching said arm member includes second strap means.

7. A device as set forth in claim 6 including second connecting means for removably attaching said second strap means to said arm member

8. A device as set forth in claim 7 wherein said arm member is elongated and is arcuate in a direction transversely to its longitudinal axis.

9. A device as set forth in claim 8 wherein said arm member has a slot extending along and adjacent one extremity thereof and a first end of said second strap means is disposed adjacent said slot with said second strap means extending across said arm member and away from said slot and around the opposite side of said arm member and through said slot and back around said opposite side to the second end thereof.

10. A device as set forth in claim 9 wherein opposite ends of said first and second strap means include coacting means for releasably connecting the ends of each strap means together.

11. A device as set forth in claim 10 wherein the coacting means associated with each strap means comprises a pair of interengageable fastener strips including a strip having a base with a plurality of flexible loops extending therefrom and a strip having a base with a plurality of flexible hooks extending therefrom and engageable with said loops, one of said strips being attached to one end of each strap means on one side thereof and the other of said strips being attached to the other end of each strap means and on the opposite side thereof.

12. A device as set forth in claim 11 wherein said arm member is generally rectangular with a projection extending from one end thereof as viewed in plan and said hand member is generally pear shaped when viewed in plan with the small portion thereof overlapping said projection, said pivot means pivotally interconnecting said projection and said small portion.

13. A device as set forth in claim 12 including first cushioning means secured to the undersurface of said arm member and second cushioning means secured to the underside of said hand member.

14. A device as set forth in claim 13 wherein said first cushioning means covers all of said undersurface of said arm member except that portion containing said slot, and said second cushioning means covers all of said undersurface of said hand member except said small portion thereof.

15. A device as set forth in claim 14 wherein said pivot means comprises a first washer on the undersurface of said projection, a second washer on the upper surface of said small portion, an organic polymeric washer disposed between said projection and said small portion, and a fastening means extending therethrough for maintaining said members together.

16. A device as set forth in claim 15 wherein said arm and hand members are plate-like members.

17. A device as set forth in claim 16 wherein said first and second connecting means comprises a plurality of pairs of coacting snap-together elements with each pair comprising a male and a female element which may be snapped together and detached from one another.

18. A wrist control device comprising: a hand member for engaging the back of the hand, an arm member for engaging the top of the arm above the wrist, pivot means

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pivotaly connecting said members together for pivotal movement relative to one another only about an axis which is generally normal to and above the wrist when said device is placed upon the wrist, means for attaching said arm member to said arm, plate means pivotally attached to said hand member, and first strap means connected to said plate means whereby said device may be comfortably attached to both a right and left hand.

19. A device as set forth in claim 18 wherein said arm member has a slot extending therealong and said means for attaching said arm member includes second strap means with one end connected to the top side of said arm member and extending away from said slot and around the underside thereof and through said slot and to a second end.

20. A device as set forth in claim 19 wherein opposite ends of said first and second strap means include co-

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acting means for releasably connecting the ends of each strap means together.

21. A device as set forth in claim 18 including positioning means coacting between said plate means and said hand member for retaining said plate member in one of left and right hand positions.

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U.S. Cl. X.R.

273-54B