

[54] **WRIST EXERCISER DEVICE**

[72] Inventor: **Harold Zinkin, Fresno, Calif.**

[73] Assignee: **Whittaker Corporation**

[22] Filed: **Aug. 20, 1970**

[21] Appl. No.: **65,369**

[52] U.S. Cl. **272/68, 272/DIG. 3, 272/DIG. 5**

[51] Int. Cl. **A63b 21/30**

[58] Field of Search **272/67, 79 R, 80, DIG. 3, DIG. 4, 272/DIG. 5, 68**

[56] **References Cited**

UNITED STATES PATENTS

677,824	7/1901	Troxler	272/68
1,229,658	6/1917	Sandow	272/68
1,576,602	3/1926	Haims	272/68
1,604,333	10/1926	Anderson	272/67
2,307,856	1/1943	Porter	272/79 R

2,543,729 2/1951 Magida.....272/DIG. 3 UX

Primary Examiner—Richard C. Pinkham

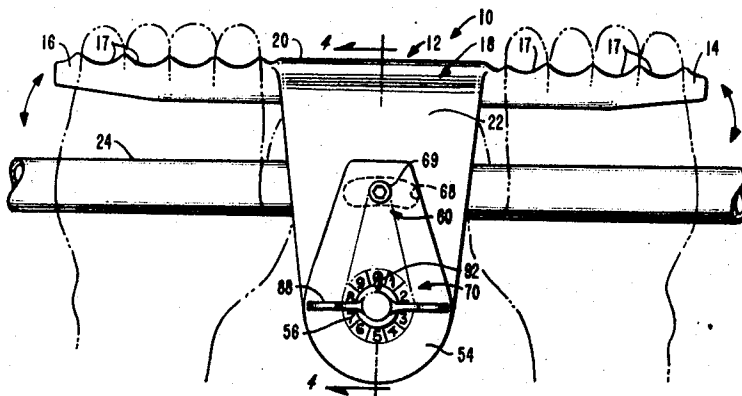
Assistant Examiner—R. T. Stouffer

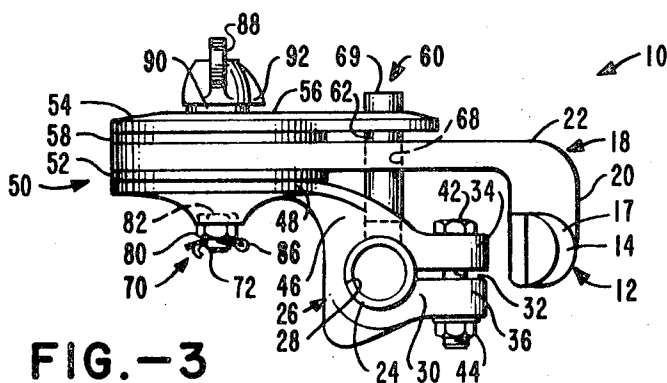
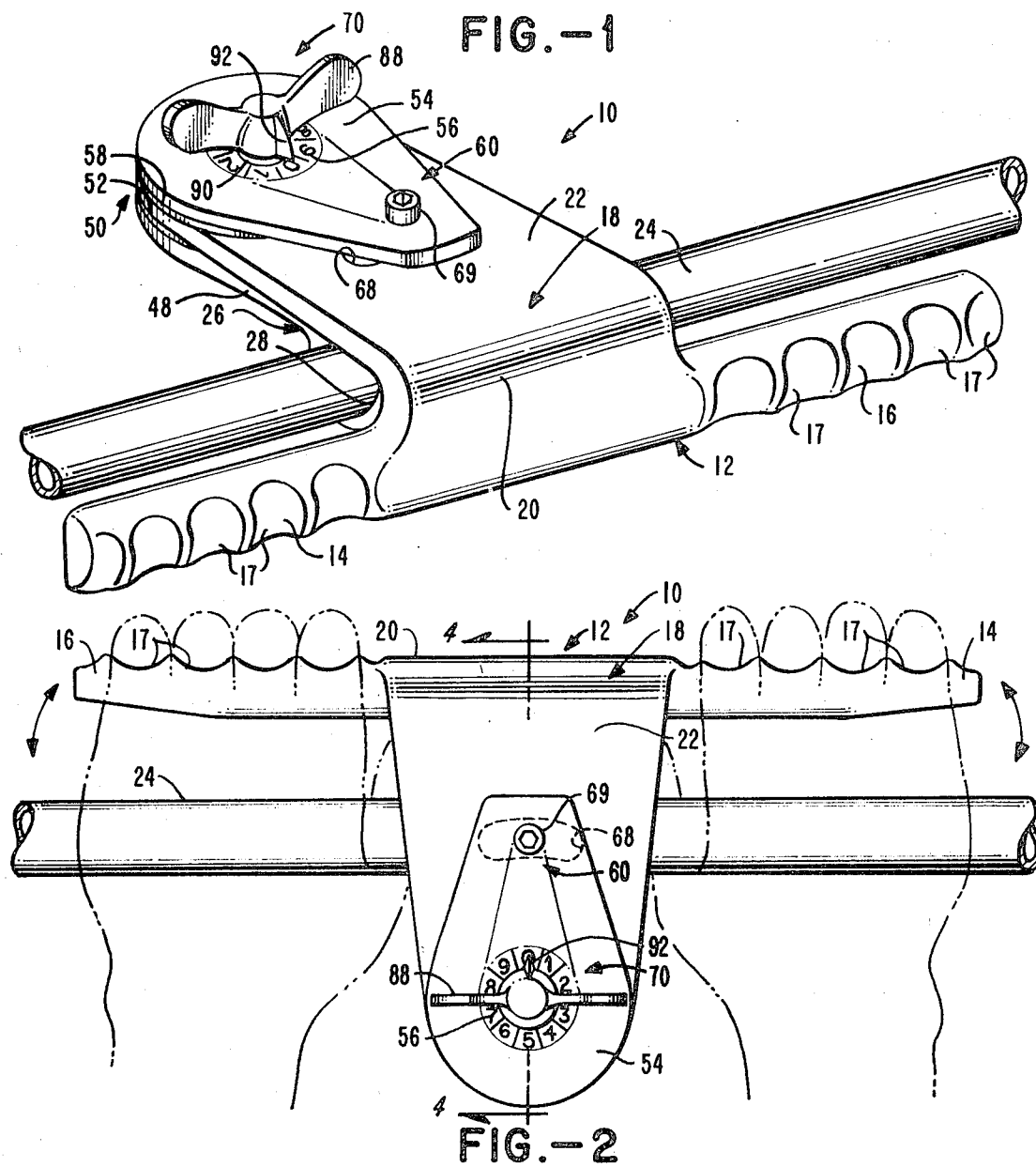
Attorney—Donald E. Nist

[57] **ABSTRACT**

An improved wrist exerciser device with a pair of pivotally mounted hand grips which are rigidly held together along a unitary axis. Each hand of a user alternately squeezes a hand grip against a shaft which automatically repositions the other hand grip outward from the shaft for the user subsequently to squeeze with his other hand. The device can be readily adjusted with respect to the resistance necessary to squeeze the hand grips and includes the aforementioned hand grips, a connector which secures the device to a shaft extending therethrough in the same plane as the hand grips, and a tightening mechanism, including a first and second plate, the latter bearing a resistance indicator dial, friction imparting disc, and pivot mounting.

8 Claims, 5 Drawing Figures





INVENTOR.
HAROLD ZINKEN
BY *Donald E. Velt*
ATTORNEY

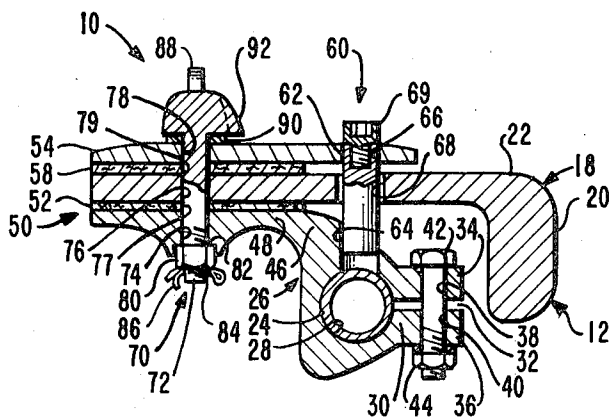


FIG.—4

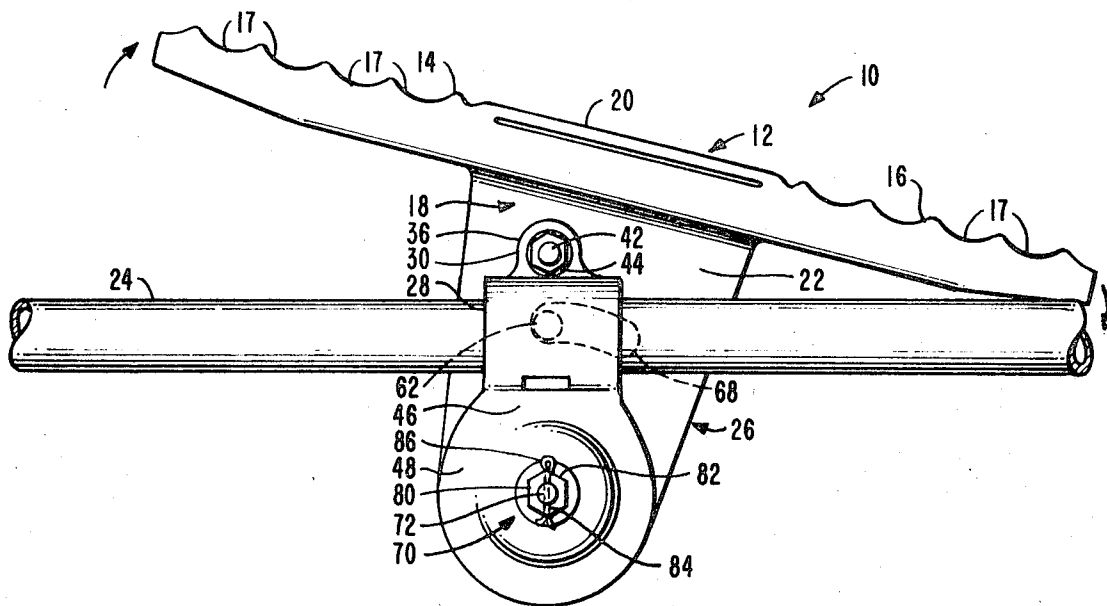


FIG.—5

INVENTOR.

HAROLD ZINKEN

BY

Donald E. Fiser

ATTORNEY

WRIST EXERCISER DEVICE

BACKGROUND

1. Field of Invention

This invention generally relates to exerciser devices.

2. Prior Art

Various devices have been provided for conditioning, developing and rehabilitating finger, hand and wrist muscle groups. However, many of such devices are expensive and most have no means for adjusting the force required to turn components of the device in order to obtain the desired exercise. Even those devices which appear to have means for adjusting the tension or force required do not provide means for visually and accurately indicating the extent of that force nor for re-adjusting or recalibrating such means as components of the device wear or loosen. Accordingly, it would be desirable to provide a simple, inexpensive, uncomplicated unitary device, capable of performing the aforesaid desired functions in an efficient manner.

SUMMARY OF INVENTION

The present invention is as generally summarized in The Abstract herein. It is particularly directed to an improved exerciser device adapted to condition, develop and rehabilitate simultaneously the muscle groups which control the action of the fingers, hand and wrist. The device is constructed such that both hands alternately exercise on the device and in so exercising automatically reposition the device for continuing exercise. The device is designed to be releasably connected to a shaft extending generally in the same direction as the pair of hand grips provided for the device.

The hand grips are in turn connected through a rearwardly extending tongue to tightening means comprising a pair of plates spaced from opposite sides of the tongue and pivotally connected therewith but fixedly secured to each other. The lower plate is connected to means securing the device to a transversely extending shaft. The tongue and hand grips can pivot relative to the plates and shaft. Friction spacer means are disposed between the two plates adjacent the opposite surfaces of the tongue and means are provided whereby the plates can be controllably proximated to the spacer means and tongue so as to increase or decrease the resistance of the device to have the tongue and grips pivot.

In use, the device is installed by connecting the device to the shaft and the shaft to a support, such as a gym apparatus. The device is gripped in a manner such that the fingers of each hand extend over the hand grips on opposite sides of the tongue and the thumbs of each hand hook over the transversely extending shaft. Force is then applied to move the fingers and thumb of one hand towards each other thereby pivoting the tongue and hand grips. The hand grip on the side where the force is applied will move close to the shaft. The opposite hand grip is automatically moved away from the shaft. The fingers and thumb of the opposite hand disposed around the shaft and second hand grip are then proximated to pivot the tongue and move that hand grip close to the shaft. Thus, alternate exercise of one hand and then the other can take place. The device is simple, inexpensive and durable and is readily adjustable with regard to the extent of resistance to pivoting. Also, it can be recalibrated when the spacer means begin to wear by tightening and relocating the pivoting means in the device.

DRAWINGS

FIG. 1 is a perspective view of a preferred embodiment of the device of the invention;

FIG. 2 is a top plan view of the device of FIG. 1;

FIG. 3 is a side elevation of the device of FIG. 1;

FIG. 4 is a cross-section taken along the section line 4—4 of FIG. 2; and

FIG. 5 is a bottom plan view of the device of FIG. 1.

DETAILED DESCRIPTION

Tongue and Hand Grips

Now referring more particularly to the improved wrist exerciser device of the present invention, FIG. 1 depicts a preferred embodiment of the device 10 in perspective view. Device 10 includes handle means 12 comprising a pair of spaced hand grips 14 and 16, preferably provided with finger-receiving depressions 17 on the front surfaces thereof, and a tongue 18 interconnecting hand grips 14 and 16 at their inner margins adjacent one end 20 of the tongue. Preferably, tongue 18 includes a flat portion 22 extending rearwardly of the hand grips 14 and 16, as shown in FIGS. 1 and 2, portion 22 being interconnected with grips 14 and 16 through front end 20. End 20 is at approximately a right angle to portion 22 and extends down to grips 14 and 16, also as shown in FIG. 1. Accordingly, portion 22 is spaced above and rearward of grips 14 and 16.

Connector Means

Device 10 is connected to a shaft 24 disposed generally parallel to and rearward of hand grips 14 and 16, as shown in FIG. 1, by connector means 26 which define an aperture 28 adapted to receive shaft 24, as shown more particularly in FIGS. 3, 4 and 5. Thus, aperture 28 is defined by a split ring 30 having a gap 32 and ears 34 and 36 disposed on opposite sides of gap 32 each containing aligned apertures 38 and 40 through which securing means adapted to secure releasably the device 10 to shaft 24 are disposed, for example, a threaded bolt 42 to which is secured a threaded nut 44 adapted to proximate ears 34 and 36 when tightened on bolt 42.

Tightening Means

First Plate

Connector means 26 is connected adjacent its upper rearward end 46, as shown in FIG. 3 and 4, to a rearwardly extending plate 48 generally parallel with portion 22 of tongue 18. Plate 48 is spaced from portion 22 by spacer means 50 comprising a first disc 52 made of leather, cork or other wear-resistant friction-imparting material. Plate 48, together with spacer means 50 and a second plate 54 (disposed generally parallel to but spaced from the opposite surface of portion 22 of tongue 18, as shown in FIGS. 1-5 inclusive) form with pivot means (hereinafter described) means for adjusting the force required to turn tongue 18 and the associated hand grips 14 and 16 relative to shaft 24, also as hereinafter more particularly described.

Second Plate

Second plate 54 includes on its outer (upper) surface visible indicia, preferably in the form of a numbered dial 56 as shown in FIGS. 1 and 2, for indicating the force required to turn tongue 18 relative to shaft 24. A second disc 58 is disposed between plate 54 and the adjacent portion 22 of tongue 18 as a friction-imparting portion of spacer means 50.

Locking Means

Plate 54 is fixedly secured to plate 48, preferably in a releasable manner as by locking means 60 comprising a shaft 62 extending through apertures 64 and 66 in the forward end of plates 54 and 48 respectively, and through an aligned aperture 68 in tongue 18, all as shown in FIG. 2. Aperture 68 is slotted in a direction generally along the axis of hand grips 14 and 16 to permit pivoting of tongue 18 relative to shaft 24 and plates 48 and 54. Shaft 62 is received in tightly fitting engagement within aperture 66 in plate 48 adjacent the intersection of plate 48 and connector means 26. Shaft 62 may be threaded, tapped, wedged or otherwise releasably secured in place within aperture 66 such that a head 69 at the opposite end of shaft 62 abuts the outer surface of plate 54, whereby plates 48 and 54 are secured together and act as a unit.

Pivoting Means

Plates 48 and 54 are further secured to each other through pivot means 70 adjacent the rear end of plates 48 and 54, as shown in FIGS. 1-5 inclusive. Pivot means 70 comprises a threaded shaft 72 extending through apertures 74, 76 and 78 in plate 48, portion 22 and plate 54 respectively, and apertures 77 and 79 in discs 52 and 58 respectively, and a nut 80 threaded on the end of the shaft 72 adjacent plate 48 and dimensioned to sit securely within a recess 82 in plate 48. Shaft 72 is provided with an aperture 84 through which a locking pin 86 holding nut 74 in place thereon is positioned, as particularly shown in FIG. 3.

Shaft 72 is provided with a wing nut 88 spaced from the adjacent surface of plate 54 in the area of dial 56 by a washer 90. Wing nut 88 bears an indicator pointer 92 for dial 56. Wing nut 88 is fixedly secured to shaft 72 so that when it is turned shaft 72 turns therewith while nut 74 remains in a fixed location. Accordingly, tongue 18 can pivot relative to plates 48 and 54.

Adjustability

Wing nut 88 can be turned to adjustably force plates 48 and 54 towards each other causing them to press with controlled force on the interposed discs 52 and 58, thereby controlling the frictional resistance to pivoting of tongue 18 during use of device 10. The particular degree of force necessary to overcome such resistance to pivotal movement of tongue 18 is indicated in a relative manner by the position of pointer 92 relative to the indicia on dial 56. Such force can be carefully controlled by turning wing nut 88 to the desired position. Moreover, this force can be reproduced merely by setting wing nut 88 and its pointer 92 in each instance to the same location relative to dial 56.

Recalibration

Over a period of use of device 10, some wear of discs 52 and 58 may cause the frictional resistance to pivoting of tongue 18 to decrease for any given setting. In such an instance, pin 86 can be withdrawn and shaft 72 unthreaded from nut 80. Shaft 72 can then be turned slightly and then reengaged with nut 80, after which pin 86 can be reinserted. The extent of turning of shaft 72 before reengagement can be controlled such that pointer 92 will be at zero just before noticeable frictional resistance to pivoting of tongue 18 is encountered during turning of nut 78 and pointer 92 relative to dial 56. That is, device 10 can thus be recalibrated to a zero resistance reading on dial 56 for a friction-free condition in pivoting of tongue 18.

Preferably, grips 14 and 16 are integral with tongue 18 and connector means 26 is integral with plate 48. Also preferably, plates 48 and 54, hand grips 14 and 16, tongue 18 and connector means 26 are largely or totally fabricated of aluminum or other light metal. Alternatively, one or more of such components can be fabricated of steel, brass, durable plastic, plastic impregnated wood or other suitable materials. The same is true of wing nut 88. Preferably, the remaining components of device 10, except discs 52 and 58, are fabricated of hardened material, such as steel or the like. Discs 52 and 58 can be made of any suitable material, preferably cork, leather of the like which provide the or cushioning and frictional resistance while minimizing wear of the engaged surfaces of plates 48 and 54 and tongue 18.

CONCLUSION

The present exerciser device provides a novel inexpensive means for exercising various muscle groups which control the fingers, hand and wrist. Both hands are exercised alternately with the one device under any selected reproducible resistance. Initially, low frictional resistance may be used, and the resistance can be controllably increased as muscle strength and/or physical training requirements increase. When the device is used from time to time by more than one person, each user at any particular time can accurately adjust the frictional resistance via the dial setting for his own purposes. The

device can also be recalibrated as needed. The device is of simple durable construction, is readily connected to and disconnected from the usual types of gym apparatus, and can be easily repaired and serviced.

Various changes, modifications, additions and alterations in the present device can be made. All such changes, modifications, additions and alterations as are within the scope of the appended claims form a part of the present invention.

What is claimed is:

1. An improved wrist exerciser device which comprises in combination:

a. handle means including

1. a pair of hand grips along a generally unitary axis; and
2. a tongue interconnecting said hand grips;

b. connector means including

1. means defining an aperture extending generally parallel to said hand grips; and
2. securing means adapted to releasably secure said connector means to a shaft when disposed through said aperture;

c. tightening means comprising

1. a first plate secured to said connector means and disposed adjacent one side of said tongue;
2. a second plate disposed adjacent the opposite side of said tongue;
3. locking means extending between said plates and releasably securing them together;
4. friction spacer means disposed between at least one of said plates and said tongue; and
5. pivot means extending through said plates, spacer means and tongue at a point remote from said hand grips, connector means and locking means and adapted to adjust frictional resistance to pivoting of said tongue relative to said plates.

2. The improved device of claim 1 wherein said pivot means comprises a threaded shaft, a nut releasably disposed around said shaft and fixedly secured to said first plate, a dial pointer secured to said shaft adjacent the outer surface of said second plate and spaced therefrom, and washer means disposed between said dial pointer and said second plate.

3. The improved device of claim 1 wherein said hand grips and tongue are unitary and wherein said hand grips project from opposite sides of and adjacent one end of said tongue and include surface indentations adapted to receive fingers of the hand.

4. The improved device of claim 1 wherein said connector means and said first plate are unitary, wherein said means defining said aperture comprises a split ring connector with a pair of spaced ears and wherein said securing means comprises a threaded bolt, disposed through apertures in said ears, and a nut on said bolt.

5. The improved device of claim 4 wherein said locking means includes a shaft extending through apertures in said second plate, tongue and connector ring and wherein said aperture in said tongue is slotted to permit pivoting of said tongue around an axis generally parallel to said hand grips.

6. The improved device of claim 5 wherein said friction spacer means comprise a first leather disc disposed between said first plate and tongue and a second leather disc disposed between said second plate and tongue and wherein said dial pointer comprises a wing nut.

7. The improved device of claim 6 wherein said second plate includes indicia disposed on the outer surface thereof adjacent said pointer and wherein said handle means, connector means and plates comprise aluminum.

8. The improved device of claim 7 wherein said pivot means comprises a threaded shaft, a nut releasably disposed around said shaft and fixedly secured to said first plate, a dial pointer secured to said shaft adjacent the outer surface of said second plate and spaced therefrom, and washer means disposed between said dial pointer and said second plate and wherein said hand grips and tongue are unitary and wherein said hand grips project from opposite sides of and adjacent one end of

said tongue and include surface indentations adapted to receive fingers of the hand.

* * * * *

5

10

15

20

25

30

35

40

45

50

55

60

65

70

75