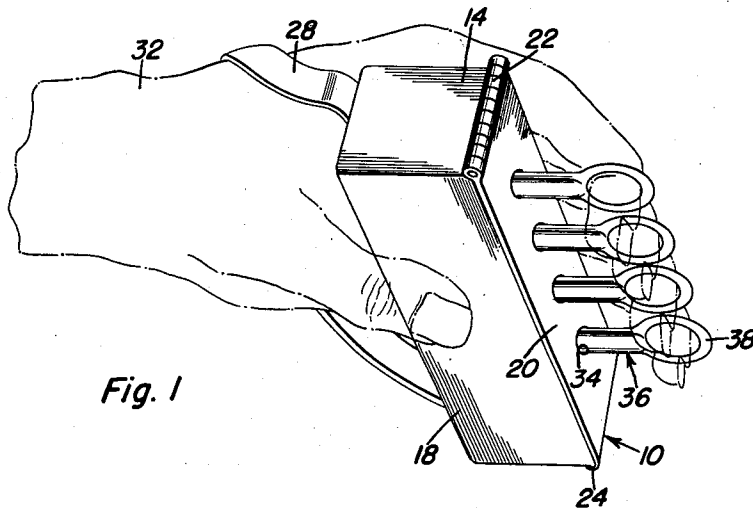
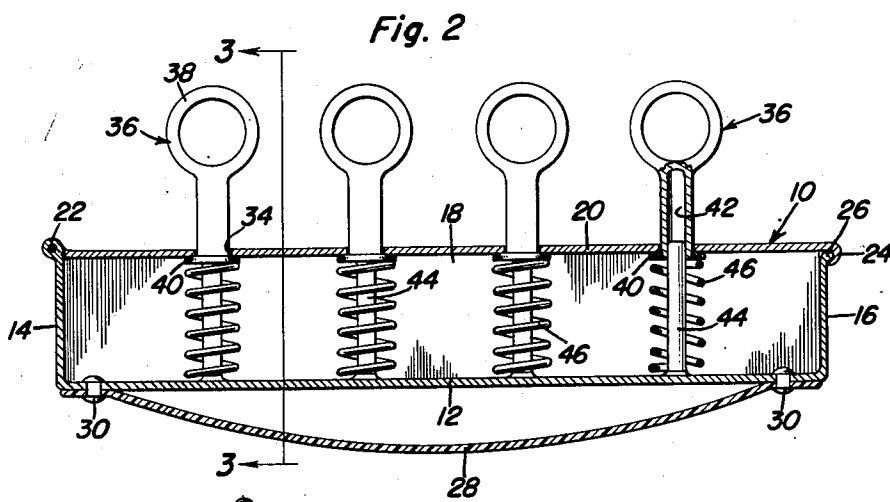
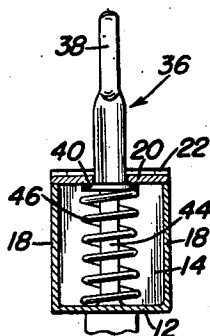


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J. E. MOCK
ADJUSTABLE GRIP DEVELOPER

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ADJUSTABLE GRIP DEVELOPER

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4 Claims. (Cl. 272-68)

1

This invention relates to new and useful improvements in grip developing devices, and more particularly pertains to such a device wherein provision is made for adjusting the resistance offered thereby to the individual fingers.

The primary object of this invention is to provide yielding resistance to the closing movement of the fingers of the hand during clenching of the same in such a manner that the yielding resistance met by each finger may be varied.

Another important advantage of the present invention resides in providing a hand exercising device in the use of which there is no possibility of having portions of the hand or fingers pinched between the working parts thereof.

Another important object of the present invention, in conformity with the preceding objects, is to provide a device of this character in which the working parts are housed to prevent interference in the actuation thereof or the access of foreign matter thereto.

A further object of the present invention resides in the provision of a device of this character having a housing which may be readily opened for the repair, replacement, or adjustment of the working elements contained therein.

A meritorious feature of the present invention resides in the provision of a housing to constitute a handle, which housing is provided with a hinged cover and latch means therefor, whereby access may be had to the compression spring.

Still another important feature of the present invention resides in the provision of finger exercising elements slidably extending from the housing through openings provided in the cover, the means for guiding inward sliding movement of the finger exercising elements into the housing, and the compression spring surrounding the element guiding means for urging the finger exercising elements to their outermost position.

These, together with various ancillary objects and features of the present invention, which will later become apparent as the following description proceeds, are realized by the present invention, one embodiment of which has been illustrated, by way of example only, in the accompanying drawings, wherein:

Figure 1 is a perspective view of the present invention showing the same in use in an operator's hand indicated in dotted outline;

Figure 2 is a central vertical longitudinal sectional view of the device, showing the finger exercising elements in their extended positions; and

Figure 3 is a vertical transverse sectional view of the present invention, this view being taken

2

substantially upon the plane of the section line 3-3 of Figure 2.

Reference is now made more specifically to the accompanying drawings, wherein like numerals designate similar parts throughout the various views, and in which the exercising device is designated generally by the reference numeral 10.

The device 10 includes a housing formed of a bottom wall 12, end walls 14 and 16, side walls 18, and a hinged cover 20, the hinged cover 20 being hingedly connected to the end wall 14, as at 22, and normally retained in the closed position by a downturned resilient lip 24 at the end thereof remote from the hinge 22 which resiliently engages a bead 26 formed at the upper edge of the end wall 16. As clearly shown in the drawings, the housing is provided with a strap 28 secured thereto by rivets or the like 30 for the purpose of receiving a wearer's hand 32 as shown in Figure 1, it being understood that the strap 28 may be formed of any suitable flexible material that may be resilient if desired.

Slidably extending through a plurality of openings 34 provided in the cover 20 are a plurality of finger exercising elements designated generally at 36. The elements 36 are provided with finger receiving loops 38 at their outer ends and with stop collars 40 threaded upon their inner ends, the stop collars 40 being for the purpose of limiting outward sliding movement of the elements 36 through the openings 34. In addition, the finger exercising elements 36 are provided with bores 42 which open into the housing and are in alignment with upstanding guide rods 44 suitably secured to the bottom wall 12 of the housing, it being understood that the rods 44 are slidably received within the bores 42 upon inward sliding movement of the finger exercising elements 36 into the housing. The elements 36 are resiliently urged to their outermost position by means of compression springs 46 surrounding the rods 44 and seated between the stop collars 40 and the bottom wall 12.

It will be noted that when the finger exercising elements 36 are in their outermost positions as in Figure 2, the rods 44 penetrate into the bores 42 for only a very short distance so that the cover 20 may be opened without interference therefrom, whereupon it will be seen that springs 46 may be readily removed or replaced with springs of various strengths for all of the elements 36 or individual elements 36, and in addition when the cover 20 is opened the device may be readily lubricated and/or repaired.

Since, from the foregoing, the construction

and advantages of this adjustable grip developer are readily apparent, further description is believed to be unnecessary.

However, since numerous modifications and equivalents will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings, it is not intended to limit the invention to the exact embodiment shown and described, but all suitable modifications and equivalents may be resorted to which fall within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A hand exercising device comprising a housing having a plurality of openings, finger exercising elements slidably extending through said openings being provided at their inner ends with stop collars for limiting outward sliding movement thereof, each of said elements having a bore opening into the housing, a plurality of guide rods carried by the housing therein which rods are in alignment with and slidably received in said bores, and compression springs surrounding the rods and seated against the stop collars for yieldingly urging the finger exercising elements outwards through said openings.

2. A hand exercising device comprising a housing having a plurality of openings, finger exercising elements slidably extending through said openings being provided at their inner ends with stop collars for limiting outward sliding movement thereof, each of said elements having a bore opening into the housing, a plurality of guide rods carried by the housing therein which rods are in alignment with and slidably received in said bores, and compression springs surrounding the rods and seated against the stop collars for yieldingly urging the finger exercising elements outwards through said openings, and means for hingedly opening said housing about an axis that lies in a plane perpendicular to said

rods and also for releasably retaining the housing closed.

3. The combination of claim 1 wherein said finger exercising elements include finger receiving loops outside said housing, whereby the housing may be held in the wearer's palm with the fingers extending through the loops and the hand clenched to force the elements into the housing against the action of the compression springs.

4. Mechanism for use in exercising apparatus, said mechanism comprising a pair of spaced members hingedly connected together for movement towards and away from each other, means for releasably retaining said members in fixed relation relative to each other, one of said members having an opening therethrough, an element slidably received through the opening for movement towards and away from the other member, a stop collar on the end of the element adjacent the other member for limiting movement of the element from the latter, said element having an elongated bore therein that opens towards the other member, a guide rod fixed to the other member that is in alignment with the bore and which extends towards said element, a coiled compression spring surrounding the rod and seated between the other member and the stop collar, said rod being slidably received in the bore when the element is moved against the action of the spring.

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