Jan. 4, 1966 J. A. MINASOLA 3,227,446

FINGER, HAND AND WRIST DEVELOPER

Filed May 7, 1962

FIG - 1

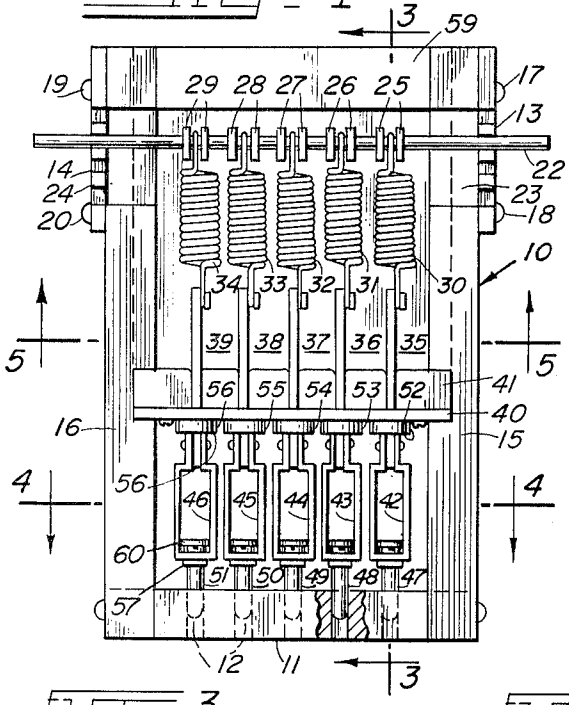


FIG - 2

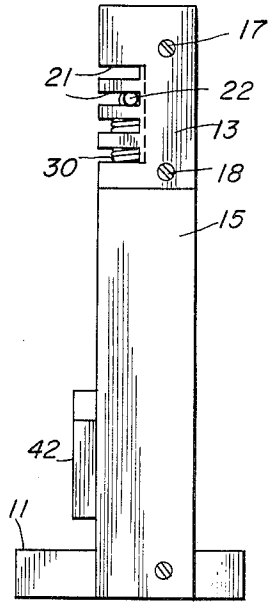


FIG - 3

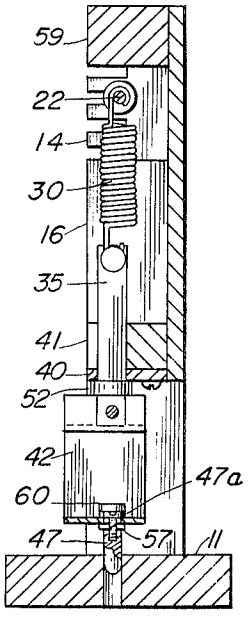


FIG - 4

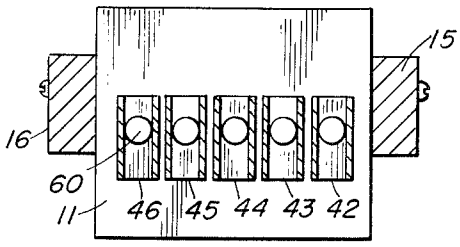
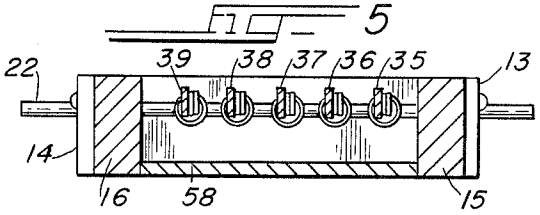


FIG - 5



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FINGER, HAND AND WRIST DEVELOPER

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This invention provides an exercising device for the development of the fingers, hands, wrists, and arms. Exercises with this device may be performed for the purpose of increasing the strength, or for improving the coordination and general condition of these members. It is the objective of this invention to provide a structure having superior arrangements for positioning the fingers of the hand, while preserving compactness, portability, and economy.

The structural details of the preferred form of the invention will be analyzed through a discussion of the particular embodiment illustrated in the accompanying drawing, in which:

FIGURE 1 is a front elevation of the device.

FIGURE 2 is a side elevation in projection with FIGURE 1.

FIGURE 3 is a sectional side elevation taken on the plane 3—3 of FIGURE 1.

FIGURE 4 is a section taken on the plane 4—4 of FIGURE 1.

FIGURE 5 is a section taken on the plane 5—5 of FIGURE 1.

The housing **10** has a base **11** provided with a group of guide holes **12**. The brackets **13** and **14** are secured to the posts **15** and **16** of the housing by screws as shown at **17–20** to form a unitary structure. The brackets **13** and **14** are notched as shown at **21** in FIGURE 2 to provide opposite groups of vertically-spaced notches for receiving the bar **22** in selected vertical positions. The cut-out areas **23** and **24** and the posts **15** and **16** provide clearance for this adjustability.

A group of pairs of washers **25–29** are secured to the bar **22** to locate the top ends of the springs **30–34** as shown, and the lower ends of these springs are pivotally connected to the connector links **35–39**. These links are rectangular in cross-section, and are slidably received in the similarly-shaped holes in the bar **40**, and also in the slots in the guide **41** arranged opposite to the holes in the bar **40**. The bar **40** and the guide **41** are secured together by screws as shown, and are received in recessed portions in the posts **15** and **16** as best shown in FIGURE 1.

The lower extremities of the links **35–39** are pivotally connected to the finger receptacles **42–46**, which are shaped as a rectangular frame to provide opposite parallel walls defining passages for receiving and isolating the fingers of the user. The alignment of the lower end of the finger receptacles is maintained by the guide projections **47–51** slidably engaging the holes **12**. These projections are secured to the receptacles by screws as shown at *47a* in FIGURE 3. The result of this arrangement is to establish a guided path of parallel movement of the receptacles **42–46**, with the springs **30–34** biasing the receptacles upwardly until movement is either controlled by the operator's fingers, or arrested by the pads **52–56** surrounding the links **35–39**. The degree of tension of the springs is controlled by shifting the bar **22** in the notches **21**. Shock absorbers as shown at **57** are mounted on the projections **47–51** to cushion the downward movement. A panel **58** is preferably mounted on the back of the housing **10** as viewed in FIGURE 1, to protect the mechanism, and a cross member **59** interconnects the tops of the posts **15** and **16**. It is also preferable to incorporate pads as shown at **60** on the tops of the screws **47***a* to give desired surface characteristics for receiving the thumb and four fingers of a hand of the user.

In normal operation, the placement of the bar **22** is selected to create the desired degree of tension, and fingers and thumb are inserted in the receptacles **42–46**. Downward pressure is then applied to the limit of vertical movement permitted by the device, with the number of repetitions being selected according to good judgement. The position of the bar **22** may be reset for the exercise of each finger, with the amount of tension being determined to provide the best effect without over-strain.

The particular embodiments of the present invention which have been illustrated and discussed herein are for illustrative purposes only and are not to be considered as a limitation upon the scope of the appended claims. In these claims, it is my intent to claim the entire invention disclosed herein, except as I am limited by the prior art.

Having thus completely and fully described the invention, what is now claimed as new and desired to be protected by Letters Patent of the United States is:

1. An exercising device, comprising:
- a housing having a series of parallel guide holes in the lower portion thereof, and having opopsite groups of vertically-spaced notches;
- a bar normally fixed with respect to said housing and having a series of spaced rectangular holes;
- a series of connecting links of rectangular cross-section slidably and non-rotatively received in said rectangular holes, respectively;
- a series of finger receptacles secured respectively to the lower ends of said links, said receptacles each forming a substantially rectangular frame;
- a guide secured to the lower portion of each of said receptacles and slidably engaging said guide holes, respectively;
- a series of coil tension springs connected respectively to the upper ends of each of said links;
- a bar received in said housing in said notches and engaging the upper ends of said springs; and
- resilient stop means limiting the upward and downward movement of said receptacles.

2. An exercising device, comprising:
- a housing having a series of parallel guide holes in the lower portion thereof, and having opposite groups of vertically-spaced notches;
- a bar normally fixed with respect to said housing, and having a series of spaced rectangular holes;
- a series of connecting links of rectangular cross-section slidably and non-rotatively received in said rectangular holes, respectively;
- a series of finger receptacles secured respectively to the lower ends of said links, said receptacles each forming a substantially rectangular frame;
- a guide secured to the lower portion of each of said receptacles and slidably engaging said guide holes, respectively;
- a series of coil tension springs connected respectively to the upper ends of each of said links; and
- a bar received in said housing in said notches and engaging the upper ends of said springs.

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