Oct. 23, 1962 G. L. SPRADLIN 3,059,476

ARM EXERCISER

Filed Jan. 25, 1960

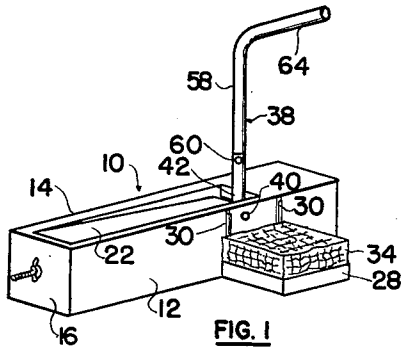


FIG. 1

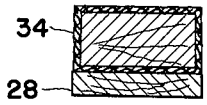


FIG. 5

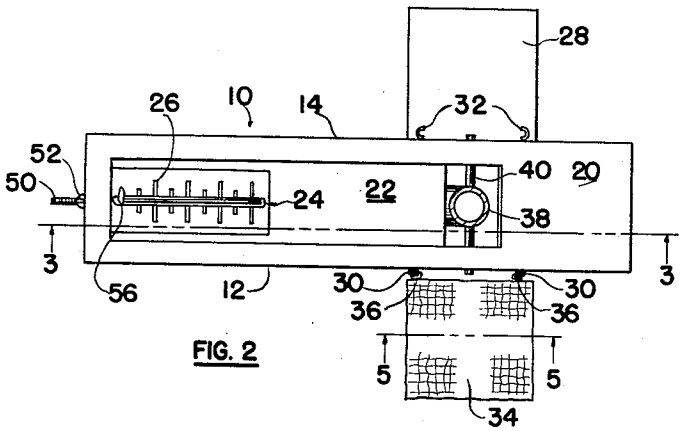


FIG. 2

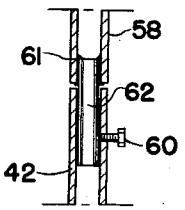


FIG. 6

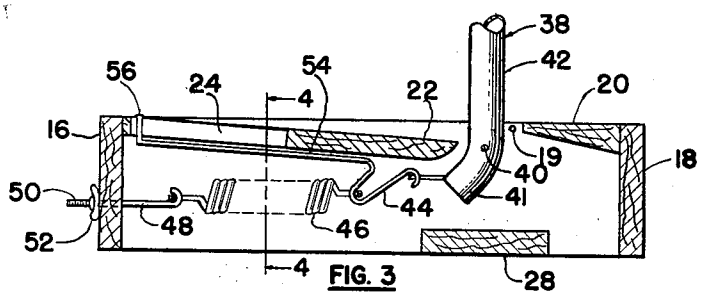


FIG. 3

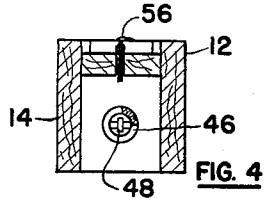


FIG. 4

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ARM EXERCISER

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This invention relates to an exercising device and, more particularly, to such a device designed specifically to develop the arm, wrist and hand muscles.

The arm exercisers of the prior art are complex in construction and, in most cases, must be secured to a table or other supporting structure in order to prevent them from turning over in operation. Furthermore the complexity of the prior art structures adds to the cost and shipping expense of the devices. Also no suitable means has heretofore been provided to adjust the device so that it may be used easily by persons having different lengths of arms and so that each arm may be exercised.

In accordance with the present invention, an exerciser which is simple in construction and lightweight has been provided which has adjustable means whereby an operator of any age or length of arm can easily adapt the device for his own particular use. This device is also simple in construction and lightweight, making it commercially feasible for production and sales on a large volume. It may be shipped as a small compact unit and easily assembled at the point of destination. The present device also provides a scale so that the amount of force being applied to the handle by various operators can readily be observed and compared. Alternate means are also provided for adjusting the length of the operating arm to the length of the arm of the individual operator. Furthermore, both arms can be exercised by the exerciser of this invention.

Accordingly it is an object of this invention to provide a new and improved exercising device.

It is a further object of this invention to provide a new and improved arm exerciser which is lightweight, efficient and easy to construct.

It is a further object of this invention to provide an arm exerciser which has adjusting means to adjust the device to the particular length of the operator.

Another object of this invention is to provide an arm exerciser which can be used to exercise either arm by a simple adjustment of the device.

A still further object of this invention is to provide scale or indicating means on the device whereby the relative pressures being applied by various operators to the handle can easily be observed and compared.

Various other objects, advantages and features of the invention will become apparent from the following description and the accompanying drawings which disclose a preferred specific embodiment of the invention.

In the drawings,

FIG. 1 is a perspective view of a preferred specific embodiment of the arm exerciser.

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

FIG. 3 is a cross section taken along the lines 3—3 of FIG. 2.

FIG. 4 is a cross section view taken along the lines 4—4 of FIG. 4 looking in the direction of the arrows.

FIG. 5 is a cross section view along the lines 5—5 of FIG. 2 showing the elbow pad and base in cross section.

FIG. 6 shows the preferred manner of adjustably connecting the two tubular members which form the operator arm of the device.

Referring now to the drawings in detail, the novel arm exercising device of this invention includes an elongated housing, shown generally at **10**, having two sides **12** and **14**, and ends **16** and **18**. A reinforcing rod **19** can be

used to strengthen the housing **10** if necessary, such being secured to the sides **12** and **14**. The top **20** of the housing preferably includes a portion **22** which is inclined to the general plane of the rest of the top, and has a longitudinally extending slot **24** in one end thereof, with scale or indicating means **26** on each side of said slot. The scale or indicating means can conveniently be calibrated to measure pounds of force. As will be seen from FIGS. 1 and 3, a portion of the inclined part of the housing **22** will be recessed within the housing **20**. This permits arm operator **38**, described in detail hereinafter, to be operated without interference from the top of the housing. The housing **10** fits on a base **28** which projects from each side of the housing, and which is mounted in slots formed in sides **12** and **14**. Base **28** is preferably easily removably mounted in any suitable manner for easy shipment in disassembled condition. Tracks **30** and **32** are mounted on each of the two sides of the housing **10** directly over the extending portions of the base.

Elbow pad **34**, preferably having tracks **36** mounted on one side, is received in either of the tracks **30** or **32** mounted on each side of the housing, with tracks **36** engaged with tracks **30** or **32** in interlocking relation. The elbow pad **34** can be made in various thicknesses in order to accommodate arms of different lengths. As will be apparent from FIG. 2 pads can be inserted over either portion of the base extending from the housing in order that the right hand or the left hand can be exercised by this device.

A tubular arm operator **38** is mounted within the housing **10** on pivot pin **40** which extends through the sides **12** and **14** of the housing. The lower end **41** of the arm operator **38** which extends below the point of pivot **40** is preferably bent slightly from the axis of the arm operator **38** toward the end **16** of the housing. The end **41** of the arm operator **38** is attached, through linkage **44**, to resilient means, such as a tension operating spiral spring **46** which in turn has its other end connected to a hook **48**. Hook **48** preferably has a threaded shank portion **50** which extends through an aperture in the end **16** of the housing and receives a thumb screw **52** thereon. As will readily be apparent from FIG. 3 of the drawings the tightening of thumb screw **52** will adjust the tension on spring **46**.

A pointer **54** is preferably rigidly attached to one end of the spring **46** and extends underneath the inclined portion **22** of the housing to the slot **24**, projects therethrough, and has an indicating head **56** secured thereto.

The arm operator **38** is preferably composed of two coaxial tubular members **42** and **58** preferably held together by a set screw **60** which is threadedly mounted in the upper end of member **42** and engages a cylindrical plug **62** which is coaxial with both of the members **42** and **58**, and which extends when mounted into a portion of each of them. Plug **62** is preferably secured within member **58** by welds **61**, or other suitable means. The upper end **64** of the arm operator **38** forms a handle which is preferably curved to fit the hand of the user. The arm operator **38**, when assembled in position, extends through the top of the housing **20** between the track means **30** and **32** mounted on the sides thereof. The handle **64** can be adjusted to overlie either extending portion of the base **28** by loosening set screw **60**, rotating the handle **64** to the desired position, and again tightening set screw **60**. Before tightening set screw **60**, the effective length of the arm operator **38** can be adjusted to fit the arm length of the user by elevating member **58** and attached plug **62** relative to member **42**. Thus means have been provided for exercising either arm and adjusting the device to fit the arm of the user.

To assemble the device for operation the two members **42** and **58** which form operator arm **38** are assembled

in coaxial relation with plug **62** therein. Lock screw **60** is tightened to secure them relative to each other after adjustment has been made for the arm length of the user in the manner previously described. Arm operator **38** is then placed within the housing and pivotally mounted therein by pivot pin **40**. The lower end **41** of operator arm **38** is then attached to spring **46** through link **44** and the other end of spring **46** is engaged by the hook **48**. Hook **48** is then passed through an aperture in the end **16** of the housing and thumb screw **52** is turned on threaded shank **50** to retain the parts in operative relationship. Pointer **54** is then secured to the end of spring **46** adjacent the link **44** and the other end of the pointer is extended through the inclined portion **22** of the housing **20**. Thumb screw **52** is then tightened until the indicator **56** on pointer **54** overlies the zero mark on the scale **26**. Elbow pad **34** is then placed in position underneath the handle **64** of arm operator **38** and removably secured in this position by tracks **30** and **36**. Thus the device is readily assembled into operating relation with the minimum expenditure of time and effort.

To use the arm exerciser the operator first adjusts the device to the length of his arm by choosing the appropriate elbow pad **34** and/or adjusting the length of the arm operator **38** by loosening the set screw **60** and extending or retracting the upper portion **58** of the arm operator **38**. The the operator places his arm on the elbow pad **34**, grasps the handle **64** and moves the handle in a direction to oppose the spring **46**. The upper portion of arm operator **38** will then overlie the inclined portion **22** of the housing. The force being applied to the handle **64** will be registered on the scale or indicator **26** in order that the daily progress of the operator can be recorded or his value compared with that of an opponen. As previously indicated the elbow pad **34** and handle **64** may overlie either portion of the extending base **28** in order that both arms can be individually exercised by this device.

The housing **10**, base **28** and interior of the elbow pad **34** are shown as being made of wood. However suitable metals, plastics, and the like can also be used. The arm operator **38** is preferably a lightweight strong metal such as aluminum, however plastic or wood again can be used. Elbow pad **34** is preferably covered with a felt or similar fabric but can also be covered or made entirely of an elastomer or other resilient material, if desired.

While the invention has been described in connection with a preferred embodiment thereof, it will be understood that this description is intended to illustrate and not limit the scope of the invention, which is defined by the appended claims.

It will be evident to those skilled in the art that various modifications of this invention can be made, or followed, in the light of this disclosure without departing from the scope of the disclosure or from the scope of the claims.

I claim:

1. An exercising device comprising, in combination, an elongated housing having two sides, a top and being closed at the ends, said top having a portion recessed and inclined from one end portion of said housing and having a scale thereon, a base on which said housing fits and having a removable portion extending beyond said two sides of said housing when mounted thereon, tracks mounted on each of said two sides of said housing directly over said extending portions of said base to receive elbow pads of variable thickness, an elbow pad slidably and removably received in at least one of said tracks, a spiral spring within said housing, a tubular arm operator pivotally mounted within said housing and extending through the top of said housing between said tracks, the upper end of said arm operator being curved to form a handle which fits the hand of the user and the lower end of said arm operator extending beyond the pivot mounting and being attached to one end of said spiral spring, the other end of said spiral spring being adjustably secured in said end portion of said housing by a hook having a threaded shank portion extending through the end of said housing and receiving a thumb screw thereon whereby the tension of said spring can be adjusted, said arm operator being formed by two coaxially joined tubular members held together by a set screw so that the handle portion of said arm can overlie either of said portion of said base, a pointer rigidly attached to said spring and extending out of said housing through a slot in said inclined portion of said top of said housing and overlying said scale on the top of said housing to indicate on said scale the force being applied by an operator to the upper end of said arm operator in opposition to the force of said spiral spring.

2. An exercising device comprising, in combination, an elongated housing, a base on which said housing fits and having a removable portion extending beyond two sides of said housing when mounted thereon, tracks mounted on at least one of the two sides of said housing directly over said extending portions of said base to receive elbow pads of variable thicknesses, an elbow pad having track means thereon slidably and removably receivable in said track means, the portion of said removable portion extending beyond said housing receiving and mounting said elbow pad when such is mounted on said tracks, an arm operator pivotally mounted within said housing and extending through the top thereof between said tracks, a handle formed by the upper end of said arm operator, a spiral spring within said housing, the lower end of said arm operator extending beyond the pivot mounting and being attached to one end of said spiral spring, the other end of said spiral spring being adjustably secured to an end portion of said housing by a hook having a threaded shank portion extending through an aperture in the end of said housing and receiving a thumb screw thereon to adjustably tension said spring, a pointer rigidly attached to said spring and extending out of said housing through a slot formed therein to overlie a scale on said housing thereby indicating the force being applied by an operator to the handle of said arm operator in opposition to the force of the said spiral spring.

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