Oct. 7, 1958 R. KING 2,855,198

EXERCISER

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FIG. 1

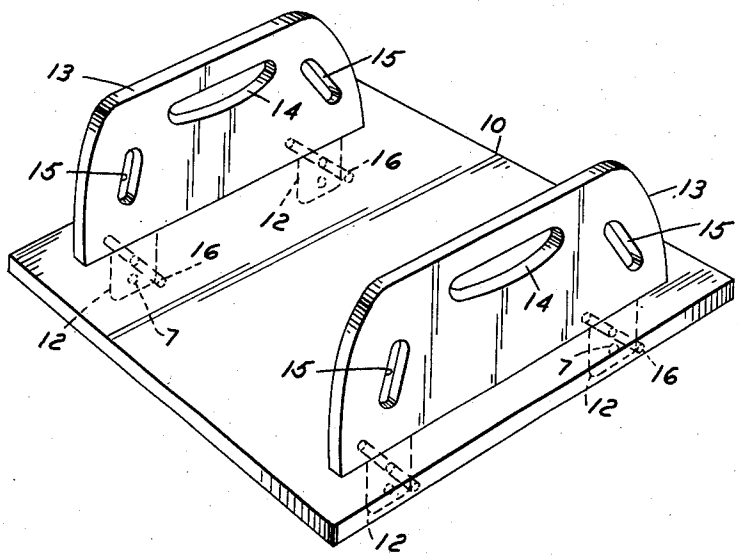


FIG. 2

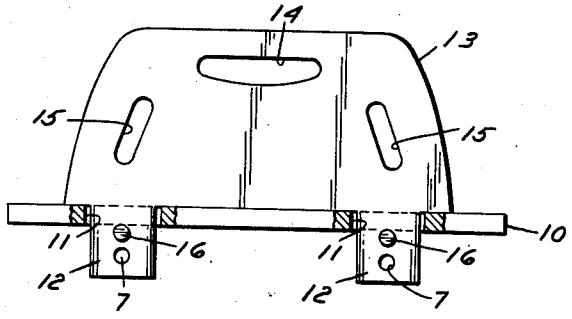
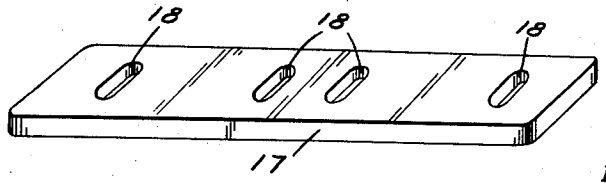


FIG. 3



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FIG. 4

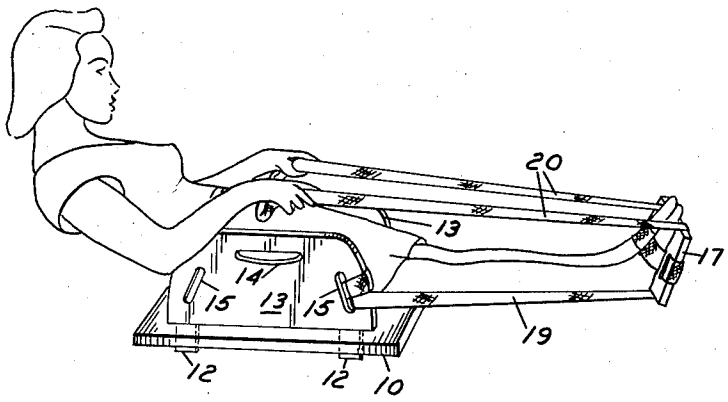
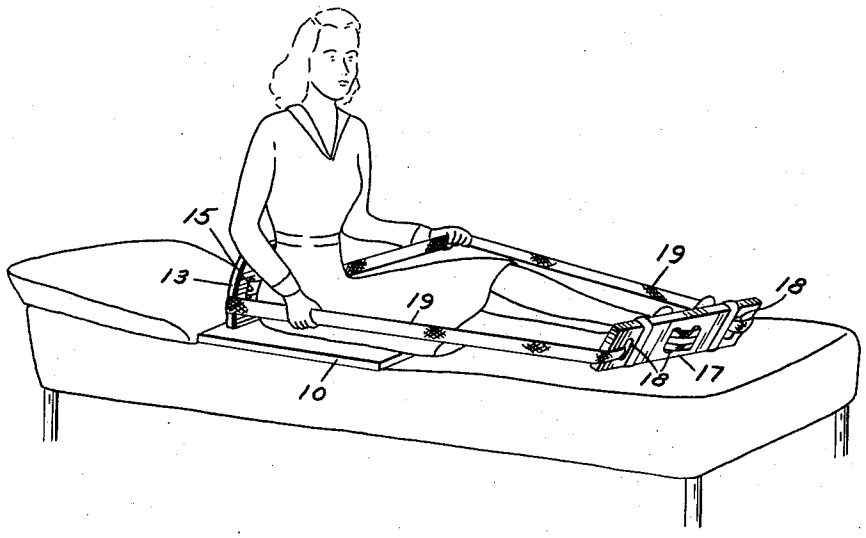


FIG. 5



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EXERCISER

Ruth King, Detroit, Mich.

Application March 23, 1953, Serial No. 343,991

4 Claims. (Cl. 272—58)

This invention relates to an exerciser and more particularly to a device adapted for self exercise of bedridden patients.

In many instances where persons have lost the use of their lower limbs through paralysis, fractures, or other causes, it is desirable to enable them to exercise those portions of the body afflicted in order to regain the use of such limbs. If the patient is confined to bed, exercise of the type required by the nature of the injury presents, in most cases, a great problem. It is the primary object of this invention to provide means for the self exercise of such patients which are both simple and inexpensive and adapted for either hospital or home use. By varying the arrangement of its parts, the exerciser may be used for special conditions of injury as well as for the exercise of various limbs.

In the drawings:

Fig. 1 is a perspective view of the exerciser of this invention showing the side supports mounted on the base.

Fig. 2 is a end view of the exerciser.

Fig. 3 is a perspective view of the foot support.

Fig. 4 shows the parts of the exerciser assembled for one type of exercise.

Fig. 5 is another arrangement of the parts of the exerciser.

Referring to the drawings and Figs. 1 and 2 in particular, there is shown a flat wood base **10** having four elongated holes **11** adjacent opposite sides, two on a side and spaced so a person can sit therebetween. Holes **11** are adapted to receive legs **12** of a pair of side supports **13** which are provided with a horizontal elongated hole **14** near their upper edge and with elongated holes **15** near each end inclined upwardly toward the center. The base **10** is adapted to be detachably mounted on the side supports at variable heights by means of pegs **16** which are received by holes **7** in legs **12**. The base is adjusted to the height desired and then pegs **16** are inserted in the holes **7** which are adjacent the under side of the base.

When assembled in this manner it will be seen that a rigid seat is provided which can be used by a patient seated in bed. By grasping handles **14** a person is enabled to raise and lower himself to and from a sitting position and perform other back strengthening exercises. It will be noted also that if the pegs **16** are inserted in holes **7** above base **10**, the device may be inverted to provide a convenient bed table.

For exercising the legs and back of a patient there is provided a rectangular shaped foot support **17** having four elongated holes **18** extending transversely thereof through which canvas straps **19** may be laced to secure and hold the patient's feet thereon in their normal spaced apart relation. Straps **19** may also be used to attach the foot support **17** to the base **10**. Hand straps **20** which may be attached to the foot support through holes **18** are also provided for use with some types of exercises. Straps **19** and **20** are preferably formed of fabric, such as heavy canvas.

The parts of the exerciser may be arranged in various relations according to the type of exercise desired. For example, as mentioned above, the side supports **13** and the base **10** may be assembled as shown in Fig. 1 and used without straps or foot support **17** to simply provide a seat on which the patient may be seated. With this assembly the patient may grip the handle portions provided by the holes **14** and lower and raise himself from and to a seated position to exercise the back muscles. Another type of exercise may be performed by using the arrangement illustrated in Fig. 4. In this arrangement it will be observed that the side supports **13** are mounted on base **10** in a manner similar to the arrangement shown in Fig. 1. In addition, straps **19** are extended from foot support **17** to one set of the openings **15** in the side supports **13**. The straps **19** are laced to secure the patient's feet in their normal spaced apart relation on the foot support **17**. The straps **20**, which may, if desired, be simply in the form of extensions of straps **19**, are extended from the foot support **17** and are of sufficient length so that the free ends thereof may be grasped by the patient sitting in the assembly of base **10** and side supports **13**. The straps **19** are laced so that, when the patient seated on base **10** as shown in Fig. 4 extends his or her legs fully, these straps are tightly stretched.

It will be observed that the side supports **13**, by reason of straps **19**, form a fulcrum around which the foot support **17** is adapted to be rotated. At the same time the patient may lean back while pulling on straps **20** and thereby exercise the back and leg muscles by raising his legs through the pull on straps **20**. Thus, the base **10**, with the side supports **13** mounted thereon, provides a center of fulcrum both for the patient and the foot support **17**. In other words, the foot support **17** and the feet of the patient tend to rotate in generally the same arc.

If it is advisable to keep the patient in a sitting position, only one of the side supports **13** is attached to the base **10** to form an armless seat as shown in Fig. 5. Straps **19** of the foot support are then fastened to the elongated holes **15** at each end of the side support and adjusted to the size of the patient so that the spine is maintained erect against the side support when the feet are outstretched in inserted in the loops **21** on the foot support. With this arrangement it will be observed that, by applying pressure alternately with one foot and then the other while at the same time pulling on the opposite strap **19**, a walking motion is simulated which aids in regaining the use of the legs, ankles, knees or hips. This simulated walking movement exercise can be also formed with the arrangement shown in Fig. 4. Likewise, it will be appreciated that the exercise explained above with respect to Fig. 4 can also be performed while the patient is in a seated condition such as shown in Fig. 5. As explained above with reference to Fig. 4, the base **10** and side support **13**, which in the showing of Fig. 5 actually provides a support for the back, form a center about which both the body and the foot support **17** are arranged to pivot or rotate.

It will be appreciated that the arrangements above-described are merely illustrative of some of the arrangements possible. The members may be laced together with straps **19** to provide a plurality of other arrangements, depending upon the particular type of exercise desired.

Thus, it can be seen that the simplicity and detachable nature of the component parts of this invention together with the adjustable securing means provided therefor results in a unique exerciser which can be readily adjusted to the size of any patient of normal proportions and enables him to exercise various afflicted parts of the body in a manner most conducive to regaining the normal use thereof.

This application is a continuation-in-part of my prior application Serial No. 701,554, filed October 5, 1946, covering Exerciser.

I claim:

1. An exerciser of the class described comprising a base support of rigid, substantially non-yielding material forming a seat dimensioned such as to be positioned beneath the buttocks so as to support the weight of a person's body in the region of the thighs, a foot support having means thereon for securing and maintaining a person's feet thereon in their normal, spaced apart relation, flexible and substantially non-yielding strap means directly connecting said base support and said foot support in spaced relation so that when a person is positioned on said base support with his feet secured on said foot support and his legs fully extended, said strap means are tightly stretched, the length of said strap means being generally equal to the length of the patient's legs, means on said base support generally aligned with the hips of a person supported on said base support and anchoring said strap means on said base support.

2. An exerciser of the class described comprising a base support of rigid, substantially non-yielding material forming a seat dimensioned such as to be positioned beneath the buttocks so as to support the weight of a person's body in the region of the thighs, a foot support having means thereon for securing and maintaining a person's feet thereon in their normal, spaced apart relation, flexible and substantially non-yielding strap means directly connecting said base support and said foot support in spaced relation so that when a person is positioned on said base support with his feet secured on said foot support and his legs fully extended, said strap means are tightly stretched, the length of said strap means being generally equal to the length of the patient's legs, said strap means forming the sole means connecting said base and foot supports together, said base support comprising a substantially flat plate member having removable side members, said side members each having a plurality of openings therein, at least one of said openings being disposed adjacent the upper edge of said side members to serve as handles, said strap means being connected to said base support at one set of said openings.

3. The combination set forth in claim 2 wherein said plate member is provided with a plurality of openings therein, said side members having leg portions at their lower edges which are adapted to be received and secured in said openings in said plate member.

4. An exerciser of the class described comprising a base support of rigid, substantially non-yielding material forming a seat dimensioned such as to be positioned beneath the buttocks so as to support the weight of a person's body in the region of the thighs, a foot support having means thereon for securing and maintaining a person's feet thereon in their normal, spaced apart relation, flexible and substantially non-yielding strap means directly connecting said base support and said foot support in spaced relation so that when a person is positioned on said base support with his feet secured on said foot support and his legs fully extended, said strap means are tightly stretched, the length of said strap means being generally equal to the length of the patient's legs, and flexible strap means attached to said foot support and adapted to be manually actuated by the person positioned on said base support in alternate sequence to provide his feet and legs with a movement simulating walking, said base support comprising a substantially flat plate member having a panel extending upwardly adjacent one side of said plate member, said panel having apertures adjacent the opposite ends thereof, said first mentioned strap means being secured to said base support by engagement with said last mentioned apertures.

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