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[54] **THERAPUETIC DEVICE**

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[52] **U.S. Cl.** ..... **128/25 R**

[51] **Int. Cl.** **A61h 1/02**

[58] **Field of Search** ..... 128/25 R, 24; 272/79 R, 272/80

[56] **References Cited**

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[57] **ABSTRACT**

An apparatus adapted for exercising the arms of a patient recovering from a mastectomy or one having bursitis or the like combines a pulley, a cord disposed over a pulley and having two freely swinging ends, a handle carried by the cord on each side of the pulley and spaced longitudinally from each other a distance which permits one arm of a standing patient to be upright in a plane substantially parallel to the longitudinal axis of the patient's body while the other arm depends from the shoulder along the side of the body also in a plane which is substantially parallel to the longitudinal axis of the body when the patient is grasping both handles but less than the vertical distance between the patient's hands when the arms are so disposed, and a U-shaped bracket adapted to fit over the top edge of a door and carrying an outwardly and upwardly projecting pole to which the pulley is attached.

5 Claims, 2 Drawing Figures

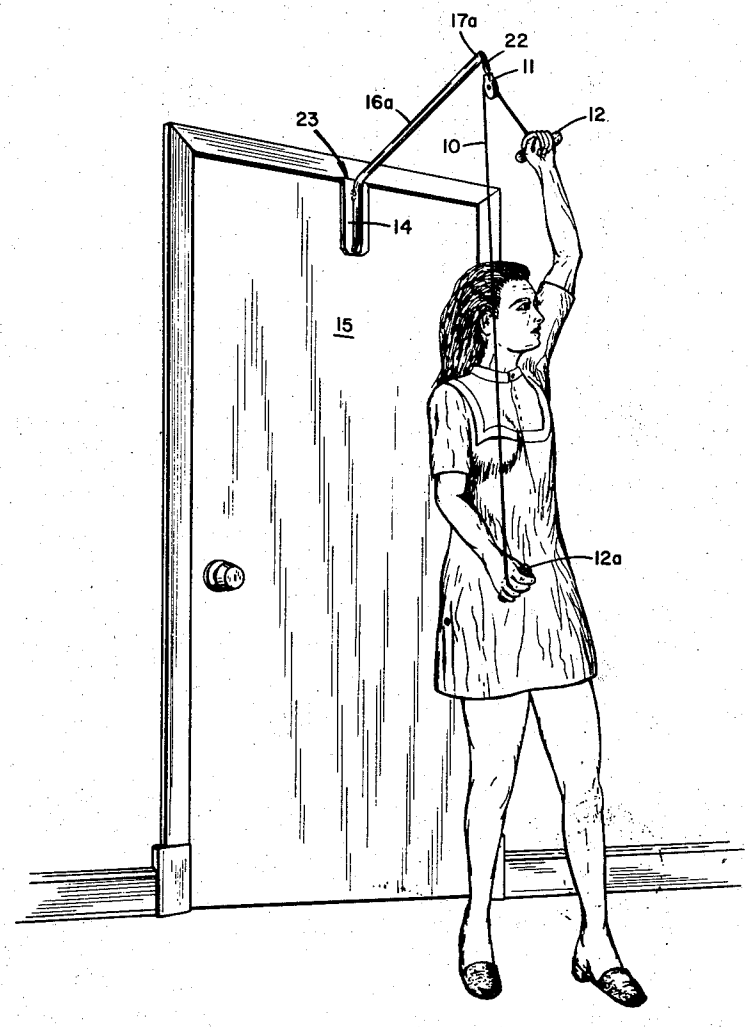


FIG. 1

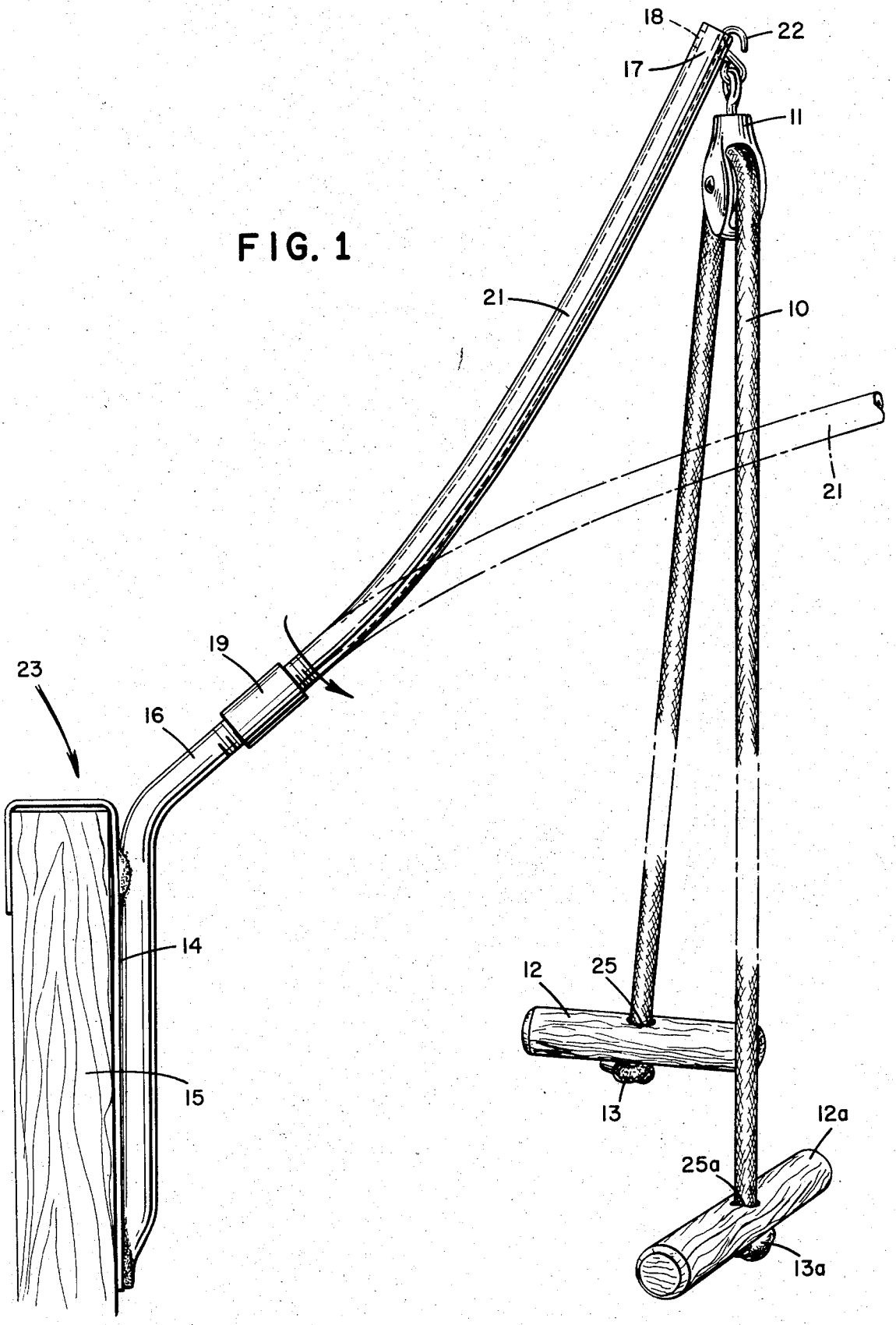
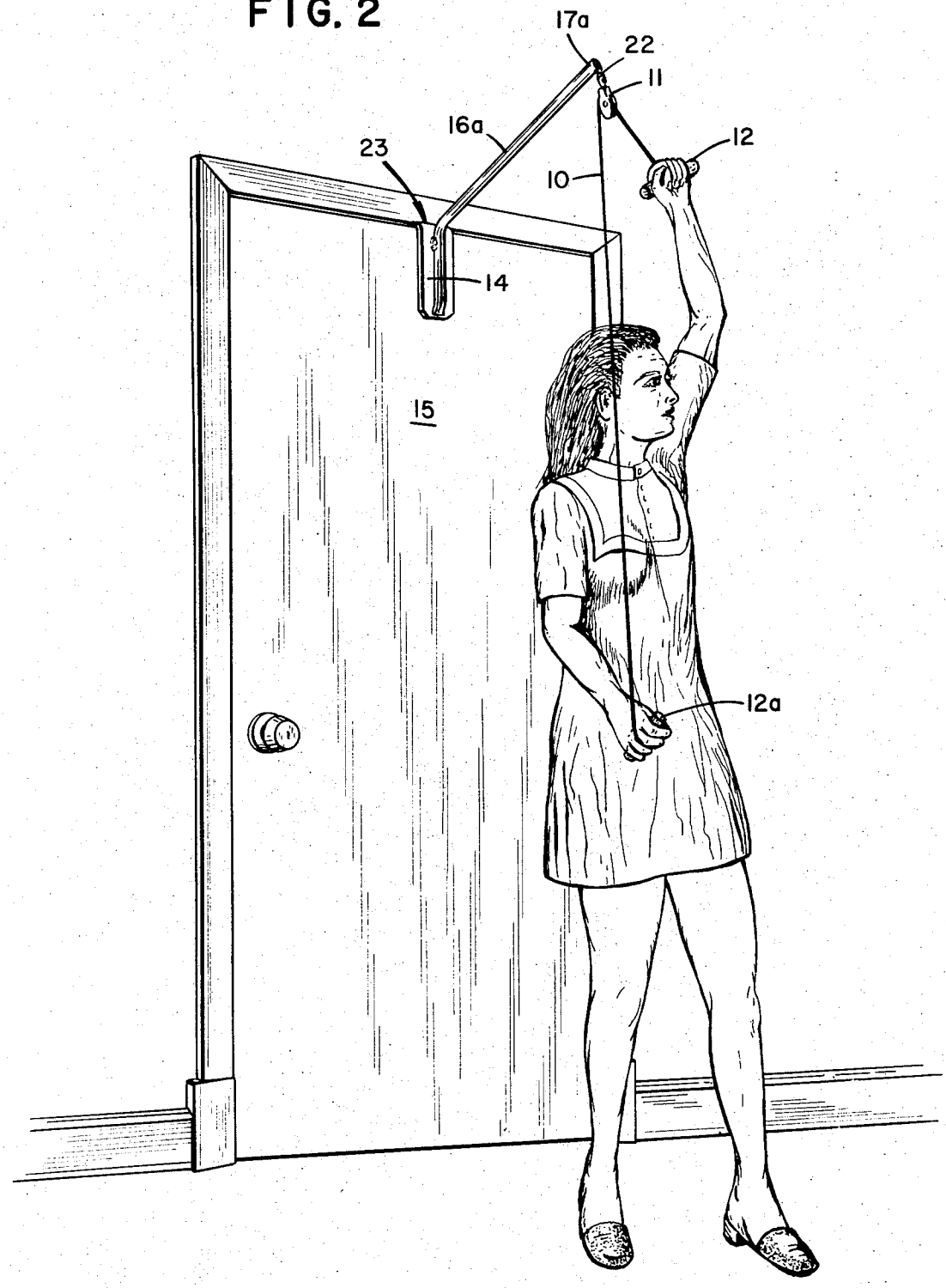


FIG. 2



THERAPUETIC DEVICE

This invention relates generally to exercising devices and more particularly to an exercising device to be used for therapeutic purposes by women convalescing from a mastectomy or by a person suffering from bursitis.

Substantially all of the lymph nodes in the chest area and under the arm are removed during the performance of a radical mastectomy. The removal of the lymph nodes affects the muscles as they are stripped during surgery. These muscles are sewn together and there is a tendency for most post-operative patients to avoid as much as possible moving of the arm on the side where the breast was removed because of the pain associated with its movement. As a result, the muscles of the arm stiffen and the patient often loses the use of the arm. Most surgeons prescribe an exercise treatment which requires the patient to move the arm and thereby avoid stiffening of the muscles. Proper exercising requires that the arm be moved upwardly over the head to pull and strengthen the muscles. Various types of exercising devices adapted for use for therapeutic purposes have been proposed heretofore but they have the disadvantage that they are large and cumbersome and none of them is particularly well suited for exercising an arm by moving it up and down as required by patients who have had a mastectomy.

It is therefore an object of this invention to provide a small relatively inexpensive, simple apparatus for use in exercising the arms of a patient following surgery. Another object of the invention is to provide an effective but simple device for exercising the arms which is adapted to be moved about from place to place with the patient and to be installed without a complicated or cumbersome supporting structure. A more specific object of the invention is to provide a small compact exercising device particularly well suited for mastectomy patients and adapted to be moved from place to place and quickly installed almost any place the patient may be.

Other objects will become apparent from the following description with reference to the accompanying drawings wherein

FIG. 1 is a side elevation of one embodiment of the exercising device provided by the invention; and

FIG. 2 is a pictorial representation of another embodiment of the exercising device provided by the invention being utilized by a patient.

The foregoing objects and others are accomplished in accordance with the invention, generally speaking, by providing an exercising device for therapeutic purposes having a cord and pulley arrangement combined with a support bracket which can be quickly assembled for exercising and/or disassembled for packaging and transporting from place to place with a patient. More specifically, the invention provides an apparatus for exercising an arm for the therapeutic treatment of a patient comprising a pulley, a cord disposed over the pulley with two freely swinging ends, a means carried by the cord on each side of the pulley for grasping the cord, means for securing the grasping means on the cord in longitudinally spaced relationship a distance which permits one arm of a standing patient to be upright with the elbow straight and in a plane which is substantially parallel to the longitudinal axis of the patient's body and the other arm to extend downwardly

with the elbow straight along the side of the patient's body in a plane substantially parallel to the longitudinal axis of the body while the patient is grasping the grasping means but less than the vertical distance between the patient's hands when the arms are so disposed, means for supporting the pulley comprising a substantially U-shaped bracket adapted to fit over the top edge of a door or the like and a rod rigidly secured to the bracket and projecting outwardly and upwardly therefrom, and a means for securing the pulley to the rod at a height above the reach of the patient. The distance between the grasping means must be such that the affected arm of the patient can be pulled to a substantially straight upright position by the other hand and arm. In other words, the distance between the handles should not be so great that the cord becomes slack before one arm has been pulled by the other to its fully extended upright position.

Referring now to FIG. 1 of the drawing, a cord **10** is disposed over pulley **11** with its two free ends passing through centrally disposed holes **25** and **25***a* through handles **12** and **12***a*. Knots **13** and **13***a* near the ends of cord **10** secure the handles **12** and **12***a* thereon. One end of a metal plate **14** is bent into a substantially U-shaped configuration to form a bracket **23** adapted to fit snugly over the top edge of door **15** or other supporting structure. Tubular rod **16** is disposed longitudinally across and welded to the face of plate **14** and is inclined upwardly at an enclosed oblique angle as it projects outwardly from the face of plate **14** to form a pole. The pole may be an elongated single piece **16***a* as illustrated in FIG. **2.** Alternately, the pole may be in two pieces as illustrated in FIG. **1** with an elongated tube **21** threadably secured by a coupling **19** to the end of rod **16.** Tube **21** may be bent as illustrated in FIG. **1,** so that the height of pulley **11** may be adjusted to accommodate patients of different heights by rotating tube **21** one-quarter or one-half turn. Pulley **11** is attached to its support by an S-hook **22** disposed in a hole **18** at the end **17** or **17***a* of pole **16***a* or tube **21.** The longitudinal spacing between handles **12** and **12***a* must be such that the affected arm can be pulled to its full upright extended position above the shoulder by the other hand and arm without the cord becoming slack and such that the affected arm can return to a position below the shoulder similar to the position of the right arm illustrated in FIG. **2.** In other words, the position of knots **13** and **13***a* on the cord may be varied from patient to patient so the cord length therebetween is somewhat less than the vertical distance between the patient's hands when one arm is substantially upright and the other is disposed along the patient's side.

As illustrated in FIG. **2,** the patient may assume a position with her back toward door **15** and grasp handles **12** and **12***a*. The good arm is moved downwardly thereby pulling the affected arm upwardly towards pulley **11** until the arm is extended upwardly above the shoulder and the muscles under the arm are stretched somewhat. The affected arm is then permitted to return to a depending position below the shoulder, preferably with the hand below the waist. The unaffected arm is now above the shoulder and positioned to again lift the affected arm. The process is continued for the prescribed period of time. Immediately following the operation, the patient may not be able to raise the affected arm above the shoulder but as exercising continues from day to day the stiffening of the muscles will begin

to disappear and eventually the affected arm will move practically as freely as the unaffected one.

Cord **10** may be conveniently a cotton rope and pole **16** may be made from a ½ inch pipe. The inner surfaces of the U-shaped bracket may be covered with felt or other material to avoid scratching the door.

It is apparent from the foregoing that the invention accomplishes its objectives. The apparatus is small and compact which adapts it for simple packaging by the manufacturer and packing by the patient for transporting it from place to place. Pulley **11** is supported at an elevation which permits pulling the affected arm to a position where stretching of the chest muscles occurs. The length of cord **10** between knots **13** and **13***a* is such that it permits the affected arm to move from approximately the position of the right arm in FIG. **2** to an upright position with the elbow substantially straight. The U-shaped bracket permits quick and simple installation.

Although the invention has been described in detail for the purpose of illustration, it is to be understood that such detail is solely for that purpose and that variations can be made by those skilled in the art without departing from the spirit and scope of the invention except as it may be limited by the claims.

What is claimed is:

1. An apparatus adapted for exercising an arm for the therapeutic treatment of a patient comprising a pulley, a cord disposed over the pulley and having two freely swinging ends, a means carried by the cord on each side

of the pulley for grasping the cord, means for securing said grasping means on the cord in longitudinally spaced relationship a distance which permits one arm of a standing patient to be upright in a plane substantially parallel to the longitudinal axis of the patient's body and the other arm to depend simultaneously downwardly from the shoulder along the side of the patient's body in a plane substantially parallel to the longitudinal axis of the body while said patient is grasping said grasping means but less than the vertical distance between the patient's hands when the arms are so disposed, means for supporting the pulley comprising a substantially U-shaped bracket adapted to fit over the top edge of a door or the like and a pole rigidly secured to the bracket and projecting outwardly and upwardly therefrom, and means for securing the pulley to the pole at a height above the reach of the patient.

2. The apparatus of claim **1** wherein said grasping means are wood handles having centrally disposed transverse openings therethrough, the cord passes through the opening and a knot secures the handle on the cord.

3. The apparatus of claim **1** wherein the pole is a single piece.

4. The apparatus of claim **1** wherein the pole is composed of two tubes coupled together.

5. The apparatus of claim **4** wherein said pole comprises a bent tube coupled to a second tube.

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