

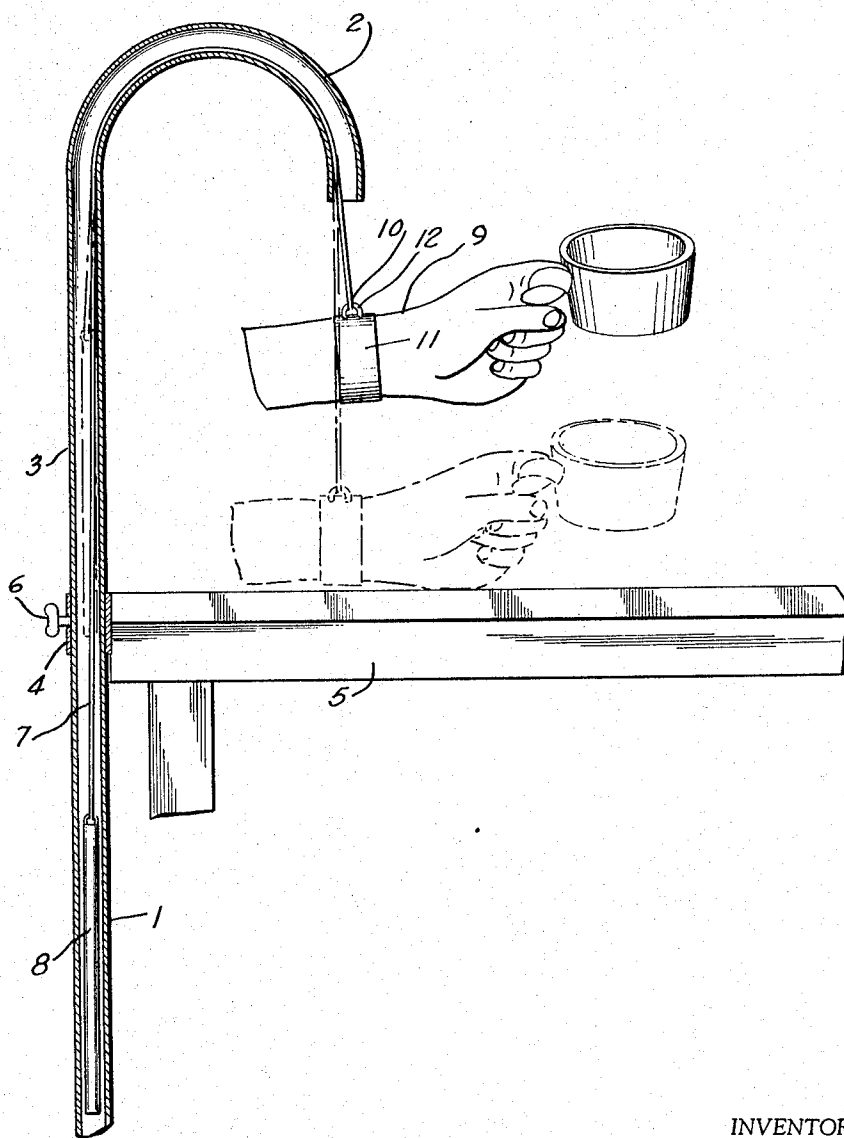
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M. G. S. RYAN

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WEIGHTED WRIST CUFF EXERCISER

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INVENTOR  
MARY G. S. RYAN  
BY *Joseph A. Hill*  
ATTORNEY

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## WEIGHTED WRIST CUFF EXERCISER

Mary G. S. Ryan, 15 Victory Road,

Dorchester, Mass. 02122

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7 Claims. (Cl. 272-80)

The invention described herein may be manufactured and used by or for the Government for governmental purposes without the payment to me of any royalty thereon.

The invention relates generally to improvements in rehabilitation devices for incapacitated patients.

The invention relates more specifically to improvements in rehabilitation devices for patients partially incapacitated in the use of their arms for eating and drinking. This device enables a person who lacks the normal strength of arms and hands to lift, lower, manipulate, and control utensils and food in order to eat or drink without the assistance of an attendant. Further, this invention trains and exercises the patient while eating.

It is a primary object of this invention to provide a device which will allow partially incapacitated patients to eat and drink without assistance.

Further objects of the invention will become apparent as the description proceeds, and the features of novelty will be pointed out with particularity in the course of the following description and in the appending claims.

The figure discloses an embodiment of the invention assembled and attached to the arm of a wheel chair and supporting the hand of a patient holding a utensil.

Referring to the figure, the invention consists of a conduit 1 having one end terminating in an arc 2 and a straight portion 3 rotatably telescoped within a larger portion of hollow pipe 4 secured to the arm 5 of a wheel chair. A threaded screw 6 through a hole in the outer hollow pipe 4 is tightened to secure the conduit 1 at the desired position. A length of wire rope 7, spliced at both ends, is secured at one end to a counterbalance 8 within the conduit 1 and the other end of the wire rope 7 is attached to the disabled arm 9 of a patient by means of a hook 10 and wrist cuff 11.

The counterbalance 8 of the device is adjusted in weight by adding or taking away portions of string lead, as needed, to or from the counterbalance in order to enable the patient to raise his arm from table to mouth or stop at any point in the vertical range of motion to perform the desired activity.

The cuff 11 is of leather with a hooking means to secure it about the wrist of the patient. It is adjustable so that it can be made to fit various wrist sizes. The cuff 11 is provided with an eye 12 to which the hook 10 is secured.

The device functions as follows. The device is attached to the patient's wheel chair by inserting the conduit 1 into the hollow pipe 4 mounted on the arm 5 of the wheel chair. The device may be adjustably mounted to conform to the shoulder height of the individual patient. Tightening the screw 6 in the outer pipe 4 will hold the conduit firmly at the desired elevation. The counterbalance 8 may then be adjusted in weight by adding or taking away string lead to enable the patient to raise and lower his arm

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and hand holding the utensils with which he may eat and drink.

Thus the patient may eat and drink without the assistance of an attendant who need only be present to make the necessary adjustments in the mounting of the device.

It is understood that this invention is not necessarily limited to the components and arrangements described, but that various modifications, changes and substitutions may be made therein without departing from the scope and intent of the invention as defined by the specification and claims appended hereto.

I claim:

1. A device for use by persons lacking normal strength in their arms and hands to assist them to eat or drink or perform other similar operations requiring vertical movement of the arm, comprising:

- (a) cuff means adapted to fit about the wrist of the user;
- (b) counterbalance means of suitable weight to counterbalance the weight of the user's arm and hand to assist the user in his arm and hand;
- (c) connecting means connecting the counterbalance means and cuff means; and
- (d) an upright conduit means having a smoothly curved free end facing downwardly and the remainder of said conduit means being straight, said connecting means extending in said conduit means.

2. The device of claim 1 and in combination therewith a holding means adapted to support said conduit means in a suitable position relative to the user.

3. The device of claim 1 wherein said smoothly curved free end is in the shape of a semi-circular arc.

4. The device of claim 3 wherein said connecting means comprises a wire rope passing through said conduit means and spliced at one end to said cuff means and at the other end to said counterbalance means.

5. The device of claim 4 wherein said counterbalance means comprises a tube adapted for selective addition and removal of weight increments to achieve a proper weight, said tube including fastening means for engaging said connecting means.

6. The device of claim 5 wherein said cuff means comprises a leather cuff which is adjustable to the wrist size of the user and which has a fastening means attached thereto to which said connecting means may be secured.

7. The device of claim 6 and in combination therewith holding means consisting of:

- (a) a tube fixedly mounted upon a support, the inside diameter of said tube receiving said conduit means therein;
- (b) a threaded hole drilled into said tube; and
- (c) a screw fitted to said hole for holding said conduit means at the desired position relative to the user.

### References Cited by the Examiner

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RICHARD C. PINKHAM, *Primary Examiner*.

W. R. BROWNE, *Assistant Examiner*.