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(71) Applicant: **CATHAYLON LIMITED, 4 west street,**  
**Drighlington BD11 1BP West Yorkshire (GB)**

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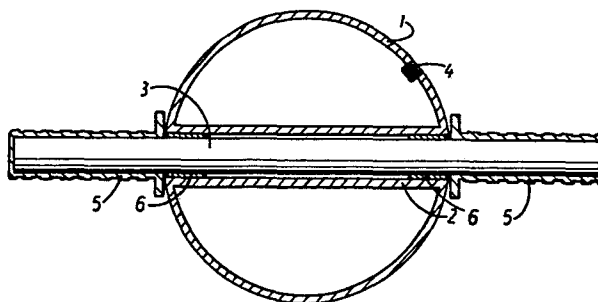
(72) Inventor: **Slack, Ian David, The Old Vicarage,**  
**Drighlington Bradford BD11 1LS (GB)**

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(74) Representative: **Taylor, Phillip Kenneth et al, W.P.**  
**THOMPSON & CO. Coopers Building Church Street,**  
**Liverpool L1 3AB (GB)**

(54) **Multi-purpose device for physical exercises.**

(57) The present invention relates to an exercise device comprising a substantially spherical body disposed about an axle which passes through the geometric centre of the said spherical body and which extends outwardly on either side of the said spherical body, hand-grips being provided by the projecting ends of said axle. In a particular embodiment the invention provides a swimming aid in which the substantially spherical body is formed from a closed cell polyurethane foam having an outer skin of collapsed foam formed thereon which provides a semi-hard layer over the surface of the spherical body.



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DESCRIPTIONMULTI-PURPOSE DEVICE FOR PHYSICAL EXERCISES

The present invention relates to a multi-purpose device for physical exercise.

5        There are available on the market many different types of exercise device to aid physical development. In recent years there has been a move towards supplying multi-purpose equipment to provide exercise for different parts of the body. However, as these devices  
10       have developed, they have tended to become bulky objects built around tubular metal frames, fitted with a variety of chains, pulleys and springs, and occupy so much space that a separate room or area in a house is required for what is essentially a permanent fixture.

15       One form of known exercise device consists of a small diameter rubber tyred wheel with the axle extended from each side, to which hand grips are fitted. This is a single purpose device which is used for rolling along the floor whilst in a kneeling or  
20       crouching position; alternatively for rolling against a vertical plane such as a wall. This device, whilst providing certain exercises for the arms and chest, can be extremely dangerous because any uneven distribution of weight between the two handles causes the wheel to  
25       cant over on to one side, causing severe spraining and even dislocation of the user's wrists. To overcome this problem, a modified device is available whereby two wheels have been fitted side by side, to widen the wheel base and give more stability. However, this  
30       has given only a slight improvement and of course does not increase the usefulness of the article as an exercise aid.

There are available on the market many different swimming aids. One form of known swimming aid is an

oblong compressed polystyrene of the type used for packing materials, etc. Another is the use of bands of air encased in plastic adapted to be disposed around the upper arm. These, whilst giving a certain amount of versatility in the water, can have their disadvantages, i.e. children can pick and prod the first type thereby clogging up the filter system of swimming pools with the debris and the second type can deflate or be burst or punctured and need to be physically blown up.

10       The present invention has for its principle object the provision of an exercise device which is compact so that it can be easily transported and stored, and yet provides the user with a multiplicity of exercises to cater for all aspects of physical development of the  
15       body.

Another object is to provide an exercise device which has a centre of gravity always perpendicularly above the point of contact with the surface against which it is pressed.

20       Yet another object is to provide an exercise device which minimises the risk of accidental injury to the user's wrists.

Still a further object is the provision of an exercise device which can be used as a swimming aid.

25       Another object is the provision of a swimming aid which maintains its centre of gravity directly above the point of the level of the water.

A still further object is the provision of a swimming aid which can be gripped with both hands a set  
30       distance apart.

According to the present invention these objects are achieved by providing an exercise device comprising a substantially spherical body formed about an axle which passes through the geometric centre of the spherical body

and which extends outwardly on either side of the spherical body to provide hand-grips.

5 In a preferred embodiment the spherical body is provided with a diametrically extended tube integral with said spherical body and through which the axle passes. Preferably a pair of brushes are disposed at the outer ends of the said tube to aid free relative rotation of the axle and tube. The hand-grips are preferably covered by a soft and/or resilient material  
10 to ensure a firm grip can be obtained.

In one embodiment the spherical body is hollow and is preferably provided with a removable closure member to enable the hollow interior to be filled with a suitable fluid such as water or a particulate solid  
15 such as sand and to be sealed again after filling.

In another embodiment adapted to be used primarily as a swimming aid the spherical body is made from a low density material such as foamed plastic or cork with a semi-hard coating to the outside to enable it not to be  
20 prodded or picked by children. In one embodiment of the swimming aid the spherical body is provided with a diametrically extended tube integral with said spherical body and through which the axle passes. The hand-grips are preferably covered with a soft and/or resilient  
25 material to ensure a firm grip can be obtained.

In another embodiment of the swimming aid, the spherical body is formed about a spindle integral therewith. In this embodiment the hand-grips may be journaled about the spindle if desired. Preferably  
30 the foamed plastic material has a closed cellular structure. The semi-hard coating may be formed by collapsing the surface of the foam against the mould and spindle during the moulding of the spherical body.

The invention will be further illustrated by reference to the accompanying drawings, in which:

Fig.1 is a cross-sectional view of a preferred form of the exercise device of the invention, and

5 Fig.2 is a cross-sectional view of a form of the exercise device adapted as a swimming aid; and

Fig.3 is a cross-sectional view of another form of the exercise device adapted as a swimming aid.

Referring to Fig. 1 of the drawings, a hollow  
10 sphere (1) approximately 200 mm in diameter, has a central tube (2) integral therewith and through which a spindle (3) passes. A removable plug (4) is provided in the hollow sphere (1) which allows the sphere to be filled with fluid or particulate solid to increase the  
15 weight thereof. The spindle (3) passing through the centre of the sphere acts as an axle and a pair of soft grips (5) are disposed on the extremities of the spindle, one at each side, to enable the user to take a firm, two handed grip on the device. A pair of  
20 bushes (6) are inserted at the extremities of the central tube (2) to reduce friction between the spindle (3) and the tube (2) to ensure free relative rotation.

Thus the device of Fig.1 provides for "wheeled" exercises but has the advantage of being sphere so  
25 that its centre of gravity is always directly above the point of contact with the floor and does not easily flip over as in the case of a narrow wheel.

Additionally the device of Fig.1 can be used for exercises involving lifting and has the ability to be  
30 increased in weight by a ratio of 4:1 by simply adding the required quantity of fluid such as water. This feature enables it to be used by young children as well as fully grown men and women.

In addition to its function as a gymnastic, athletic device, the device of Fig.1 can also be used as a swimming aid. The device of Fig.1 is basically a hermetically sealed sphere which, when empty provides a high degree of floatation, and because it has handles the user is enabled to take a firm grip whilst in a swimming bath. When used in this fashion, the device of Fig.1 is a superior aid for a person learning to swim.

Experienced swimmers will also find the device of Fig.1 an excellent aid to practice of the leg strokes, whilst holding it at arms length in front of the body.

Referring to Fig.2 of the drawings, a solid sphere 10 composed of a low density material such as cork or a polyurethane foam of closed cellular structure has an outer semi-hard skin 20 over the surface thereof. The solid sphere 10 is formed about a spindle 3 which passes through the centre of the sphere and is integral therewith, the skin 20 in contact with the said spindle 3 being adherent thereto. A pair of soft grips 5 are disposed on the extremities of the spindle one on each side, which enable the user to take a firm two handed grip on the swimming aid.

Referring to Fig.3 of the drawings, a solid sphere 10 composed as in Fig.2 and also having an outer skin 20 is formed about a spindle 3 as in Fig.2. Handles 7 are journaled about the extremities of the spindle, a pair of bushes 8 being inserted between the spindle and each of the handles to facilitate rotation of the handles about the spindle 3. A pair of soft grips 9 are disposed one on each of rotatable handles 7 to enable the user to exert a firm grip on the handles.

It will be apparent the fixed spindle and rotatable handles of Fig. 3 could also be used in the

construction shown in Fig.1 and the rotatable spindle mounted within a tube construction of Fig.1 could also be utilised in the construction of Fig.3.

7.  
CLAIMS

1. An exercise device comprising a member capable of being rolled over a flat surface and provided with a pair of hand grips extending therefrom characterised in that said member comprises a substantially spherical  
5 body disposed about an axle which passes through the geometric centre of the said spherical body and which extends outwardly on either side of the said spherical body to provide the said hand-grips.
- 10 2. An exercise device as claimed in claim 1, in which the spherical body is journalled about said axle.
3. An exercise device as claimed in claim 1 or 2, in which the spherical body is hollow.
- 15 4. An exercise device as claimed in claim 1 or 2, in which the spherical body is composed of a cellular material having a semi-hard skin disposed over the surface thereof an integral therewith.
- 20 5. A swimming aid characterised by comprising a solid, substantially spherical body composed of a material having a denisity lower than that of water, said body being disposed about an axle which passes through the geometric centre thereof and which extends outwardly on either side of the said spherical body whereby to provide hand grips and in which the said spherical body has  
25 disposed over the whole of its surface a semi-hard layer.
6. A swimming aid as claimed in claim 5, in which the said semi-hard layer is integral with said spherical body.
- 30 7. A swimming aid as claimed in claim 6, characterised in that the said spherical body is composed of a closed cell polyurethane foam, said foam having an outer skin of collapsed foam formed thereon which provides said semi-hard layer.



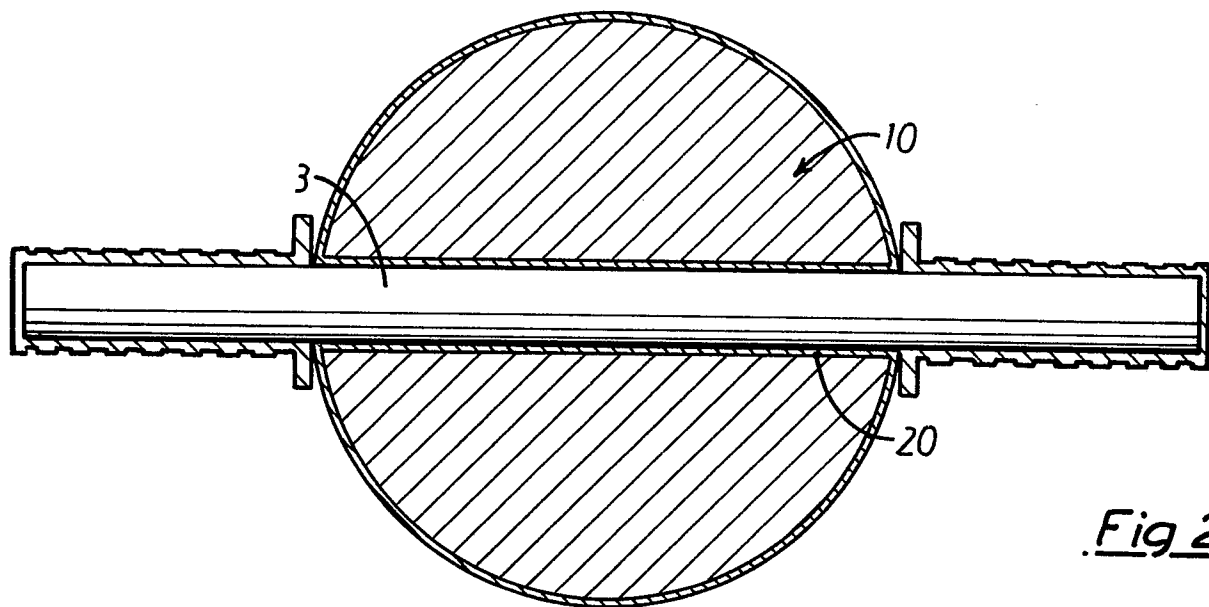
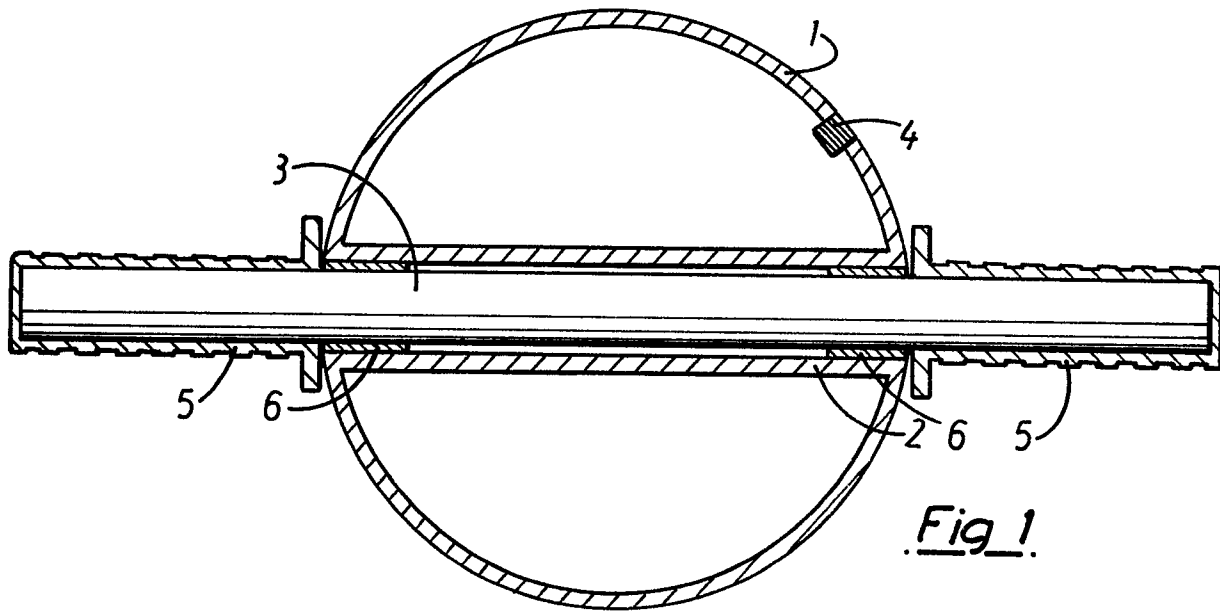
8. A swimming aid as claimed in claim 7,  
characterised in that said spherical body is formed  
about said axle and is integral therewith said outer  
skin being present between said closed cell polyurethane  
5 foam and said axle and integral both with said axle and  
said foam.

9. A swimming aid as claimed in claim 8,  
characterised in that a handle in the shape of a hand  
grip is journalled about each protruding end section of  
10 said axle.

10. An exercise device as claimed in claim 5, 6  
or 7, in which said spherical body is journalled about  
said axle.

11. An exercise device as claimed in claim 10, in  
15 which said spherical body is provided with a diametri-  
cally extended tube integral therewith and through which  
the said axle passes.

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