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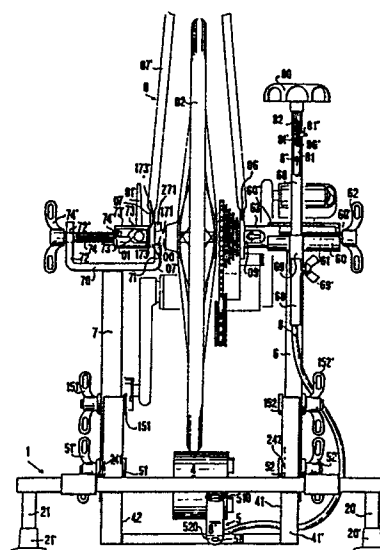
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Bag portable bicycle training apparatus.

The apparatus comprises an organic unit of the weight of about kg. 7 which, duly compacted, may be placed in a bag (9), more extended then thick. From this compacted condition, pillars (6 and 7), supporting the bicycle (0) at one (07') of the rear axle brackets of the bicycle, and a member (3, 33), widening the base, may be developed. The apparatus comprises, as well, members (8, 68, 80) for remote control of a brake (5) positionable in a suitable place for the user during training.



The present invention relates to a bicycle training apparatus of the weight of about kg. 7 which, duly collapsed, may be placed in a bag sized cm.58 x cm.52 x cm.21.

At the time being a bicycle training apparatus is known,
5 as set forth in U.K. Patent Application G.B. 2,026,876 A filed March 9, 1979, claiming the priority of Italian Utility Model Application No. 60925B/78 and entitled "Bicycle training apparatus". Such a device realizes a considerable progress in the field of bicycle apparatus because it is capable of being used with a wide range of
10 bicycles of differing shapes and sizes. The apparatus according to this patent application is collapsible but there are some difficulties to assemble it and, when collapsed to a reduced size, it could not be easily disposed. Moreover, the apparatus of UK patent application 2,026,876 required small disassembling and
15 assembling which, even if easy, could provide a support on the user laziness providing a mind justification of a delay of training. In fact, sport training represents a tribute of suffering in view of health and of being quite fit. Such apparatus should be always and everywhere available so as to provide potential users, kept away
20 from gymnasiums and roads by present day trend engagements.

An object of the present invention is to provide a form of bicycle training apparatus wherein the aforementioned disadvantages are obviated and which incorporates means enabling it to be available everywhere, at any time, by any user, with any bicycle.

25 With this object in view, the present invention provides bicycle training apparatus of the kind adapted to receive and form a stationary mounting for bicycle, which can then be ridden under condition simulating road use, which is quickly and easily

collapsible and disposable in a bag of reduced size which is adapted to be carried by the user and follow him anywhere.

In the apparatus of the invention to obtain such simplifications comprise the provision of an extending hinged member connectable to the frame in at least two positions: a first extended position, 5 suitable to receive the forward wheel tire and a second collapsed position wherein the extending member is folded and connected flat with the flat structure. The road simulating means is provided by a single drum and the brake control comprises a wheel bolt, placed at the top of an arcuated hollow member, whose level, as that of 10 uprights, supporting the bicycle rear wheel axle, i.e., the whole bicycle, may be adjusted in accordance with the user needs. Also the uprights may be swung flat, simply by lowering them upon releasing two butterfly bolts. The wheel bolt, placed at the top of 15 the arcuated hollow member, easily adjustable by the user provide a remote control, whereby the user may adjust the braking power of the road simulating drum.

However, an important object of the invention is to provide an apparatus 20 characterized in that it provides an organic unit of the weight of about kg. 7 which, in collapsed condition, may be placed in a bag which is disposable in a bag, extending more in length and height than in thickness, substantially shaped as a prism 21 cm. height or thick, with ends in the shape of isosceles trapezoid 52 cm height 25 and 30 cm and 58 cm length parallel sides. The bag being provided with a pair of big handles merging from top sides of trapezoid and comprising a single closed band.

A better understanding of the bicycle training apparatus according to the present invention will be understood upon reference 30 to the following detailed description when read in conjunction with

the accompanying drawings, wherein like reference characters refer to like parts throughout the several views and in which:

Figure 1 shows a bag containing a collapsed bicycle training apparatus according to the present invention.

5 Figure 2 shows the bag corresponding to Fig. 1, in open condition, illustrating and getting available the bicycle training apparatus according to the present invention and its availability.

Figure 3 shows the bicycle training apparatus, taken off from the bag and illustrating a first step in the mounting of same.

10 Figure 4 shows a bicycle training apparatus, according to the present invention, ready for mounting of the bicycle on the apparatus.

Figure 5 is a fragmentary perspective view of bicycle training apparatus, according to the present invention, in slightly
15 enlarged scale taken from the bottom to show details not shown in Figures 1, 2, 3 and 4.

Figure 6 is a back view, in an enlarged scale, of a bicycle training apparatus, according to the present invention, with a racing cycle 0 mounted, in its suitable position, on the apparatus
20 and in use, only the rear part of the bicycle being shown.

The illustrated embodiment of the bicycle training apparatus, according to the present invention, comprises a generally triangular lattice base frame 1, preferably hollow which at an angle
10 is provided with a square cross-sectioned joint member 12. To said triangular lattice frame, which is supported by three short
25 legs 20, 21, 22, each provided with an antislip shoe 20', 21', 22', the carrying and operating members, are connected. In fact, joint 12 may receive a back-bone 3, comprising two sections 30 and 31 and an elbow 32 with hinges 32', 32". The outward end of back-bone section
30 31 is provided with a bottom short leg 23 with a shoe 23' and with

an upper lengthwise locator or receiver in the form of a channel member 33 to carry the tire of bicycle 0 forward wheel (not shown). Frame 1 is characterized by pair of lengthwise parallel members 13, 13'. Frame sections 13, 13' are provided, at a short distance from frame back side 11, with a "U" shaped bracket 4, comprising a base section 40 and two uprights sections 41, 42 each in the form of an angle member. Each uprights, in the form of an angle member, has one side 41', 42' parallel to frame side 11 and the other side 41", 42" parallel to lengthwise 13, 13'. The upper ends of uprights 41 and 42, i.e. of sides 41", 42" of same, are provided with a seat 141, 142 in the form of a saddle to be described in the following. Also on sides 41", 42" of uprights 41 and 42, at a level of sections 13, 13', each upright is provided with a hole 241, 242 to receive a bolt 51, 52 with a butterfly nut. Each upright 41, 42 may be coupled, by said bolts 51 and 52 and nuts 51' and 52', as well as by bolts 151 and 152 and nuts 51' and 152', to a pillar 6 and 7 which are complementary each other, as explained in the following. The upper end of pillar 6 is provided with a socket 60, whose hollow space receives, at one end 60', a butterfly bolt 61-62 and at the other end 60" with a bush 63 of which it will be spoken in the following. Connected with socket 60 there is another vertical socket 69, square in cross-section, which receives a sliding rod 68, which may be fastened by a butterfly bolt 69'. Such rod is hollow and receives a cable 8, to be spoken with in the following and the upper end of sliding rod 68 is provided with a knob 80 of which it will be spoken in the following. The second pillar 70 is "U" shaped, comprising two uprights 71 and 72. The upright 72, is provided therethrough with a threaded 72' hole of which it will be spoken in the following and the upright 71 is provided with a saddle seat 71, which is substantially coaxial with hole 72'. In the threaded hole 72' is

mounted a butterfly bolt 74'. The bolt free end 74, is idle connected with a pressing member 73. In fact, on the free end 74" of screw 74, there is a groove 73" receiving the inner flange edge 73' of pressing member 73. Pressing member 73 is in the form of a bush which is provided with forward sockets 173. In other words, pressing member or bush 73 is shaped and sized so as to receive therein any nut 01 such as a poligonal nut, armed nut 01', butterfly nut or the like, of any bicycle rear axle 00. Since pressing member or bush 73 receives, in its hollow and sockets 173, the whole nut 01, its flat forward surface 173' may engage the surface 07 of the rear axle bracket 07' of bicycle 0. Thus, bracket 07 is urged toward the bicycle wheel 02 but, since the rear surface 07" of bracket 07' is engaged by the arms 271 of upright 71, the rear axle bracket 07' of bicycle 0 is strongly fastened to the apparatus. In a like manner operates, at the other end of axle end, the pressing member or bush 63 which, however, simply engages the outer surface of bracket 06. It will be appreciated that the fastening power, provided by pressing member or bush 73, is more effective in fastening the bicycle 0 to the apparatus, due to the thorough reaction provided by the rear surface of the same bracket member. Whereas, the pressing member or bush 63, engaging the power accepting surface of the other axle bracket 06 of bicycle 0, provides only a vertical support to receive, therein in its hollow space, the nut 09, while the axial power applied by bush 63 on power accepting surface is not correspondingly confronted by a direct reaction power and such reaction occurs.

Reference will now be made to those apparatus members simulating the road, comprising a road simulating roller which provide a bicycle support and a braking means 5 to simulate different road gradients and/or conditions. Brake means 5 comprise a plunger 50, connected

for swinging movement about fulcrum 510 in the form of a first class lever whose effort 520 is driven by one end 58 of operating cable 8' which is slidably mounted through sheating 8, wherein the other end 8" of cable 8' is connected to a bush 81 with a threaded hole 81',
5 which receives a wheeled bolt 80. Bush 81 is provided with a radial rod 81" engaging the lengthwise opening 86' of hollow upright 68. It is thus self explaining how, clockwise and anticlockwise rotating the wheel bolt 80, the brake means may be suitably adjusted in accordance with user needs.

10 It will be appreciated that the collapsed apparatus may be disposed in a bag 9 extending more in length and height than in thickness, substantially shaped as a prism 21 cm height or thick, with ends in the shape of isosceles trapezoid 52 cm height and parallel sides 30 cm and 58 cm length. Bag 9 is provided with a pair
15 of big handles 90, merging from short top sides bn) of trapezoid and comprising a single closed band 90'. Bag 9 is provided with a slip fastener 91, extending along tree sides so that it may be opened substantially flat (see figure 2). It will be appreciated that, as shown in figures 1 and 2 the apparatus may be collapsed to a
20 substantially flat shape thus providing a sustantially flat shape of the bag too. Once that the apparatus is taken off from the bag it is in the conditions, as shown in figure 2, of course aside of the latter. As shown at figure 3 the first steps to be taken are to rise uprights 6 and 7, as well as extracting backbone 3 completely from
25 joint 12 and remounting it after an anticlockwise rotation of a right angle, whereby to place leg 23 parallel to leg 22, i.e., in vertical fashion and whereby channel member 33 is topwise open (see figure 4).

It will be appreciated that uprights 6 and 7 are simply swung up
30 and bolts 151 and 152 set in seats 141 and 142 and this is

particularly easy since uprights 6 and 7 are provided with lengthwise opening theretrough. Thereupon the butterfly nut 151 and 152 are fastened. The apparatus is now ready to install thereon one of a wide range of bicycles, e.g. 0. Of course some apparatus members are to be adjusted and adapted to the bicycle, particularly setting butterfly nut and bolt 151', 152', 62, 74', and 69', as well as adjusting the position of channel member 33.

It will be appreciated there is no need for making any physical adaptations or modifications, even of a temporary nature, to the bicycle itself.

It is to be understood that the foregoing description serves only to illustrate one form the apparatus can take, and that variations may be made thereto without departing from the scope of the invention as defined by the following claims.

Claims:

1. Bicycle training apparatus of the kind comprising a base lattice metal structure 1, provided with at least one roller (4) simulating the road and longitudinally (3) and vertically (6 and 7) extensible means and for stationary mounting for bicycle (0) particularly engaging the end nuts (09 and 01) of the axle of the rear wheel (02) of the bicycle as well as for encreasing the stability of base (1) substantially as described and claimed in Italian utility model application No. 60925B/78, characterized in that it provides an organic unit of the weight of about kg. 7 which, in collapsed condition (figure 2), may be placed in a bag (9) more extended than thick and that from this collapsed condition may be developed the uprights (6 and 7) which support the bicycle (0) at one (07') of rear wheel axle brackets and backbone member (3, 33) which enlarge the base structure, as well as members (8, 68, 80) for remote control of bracket (5) capable to be placed in a comfortable position for the user.

2. Bicycle training apparatus, as claimed in claim 1, characterized in that said bag is in the form of prism with trapezoidal top and bottom sides with a zip-fastener running along three sides of said bag and two handles on the side opposed to closed side.

3. Bicycle training apparatus, as claimed in claim 1, characterized in that the bicycle supporting means (6,7) which are in the form of uprights and at least one (7) of them is provided at the upper end with a bracket (70) one arm (71) of which engages the inner side of wheel axle bracket (07') of the bicycle (1) and the other arm (72) bear the reaction of a pressing screw member (73) which engages said wheel axle bracket outside (07').

4. Bicycle training apparatus, as claimed in claim 1,

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characterized in that its erection and collapsing are obtained by operating butterfly bolt and butterfly nuts substantially without removal of bolts (61, 62, 74, 74', 69', 151, 151', 152, 152', 51, 51', 52, 52').

- 5 5. Bicycle training apparatus, as claimed in claims 3 and 4, characterized in that the forward backbone extension (3, 33) widening the base and receiving the forward wheel tire is slidable and connectable to a square cross-sectioned bush so as to be joined in two different angular dispositions corresponding to extended
10 (figure 4) and collapsed (figure 2) conditions such backbone extension being provided with a double hinge (32 and 32') elbow connection (32).

FIG. 1

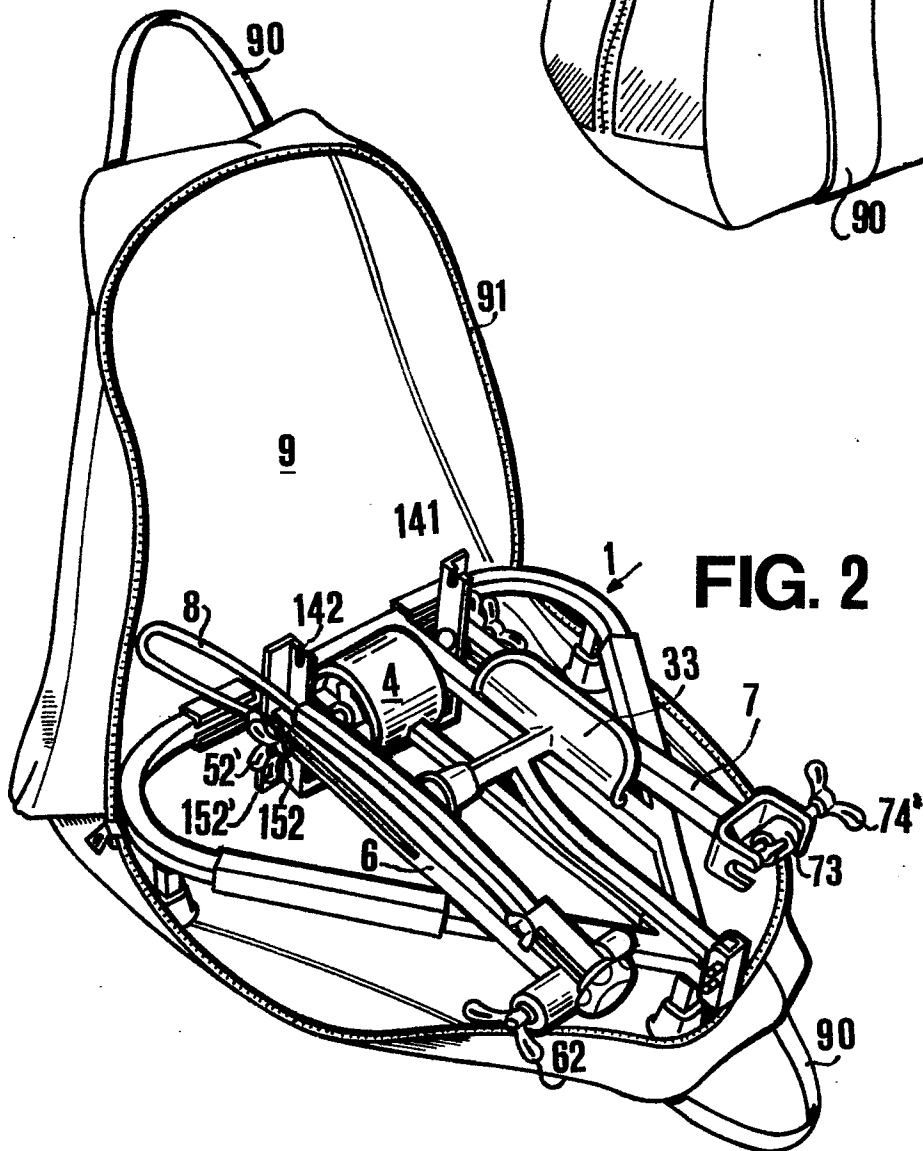
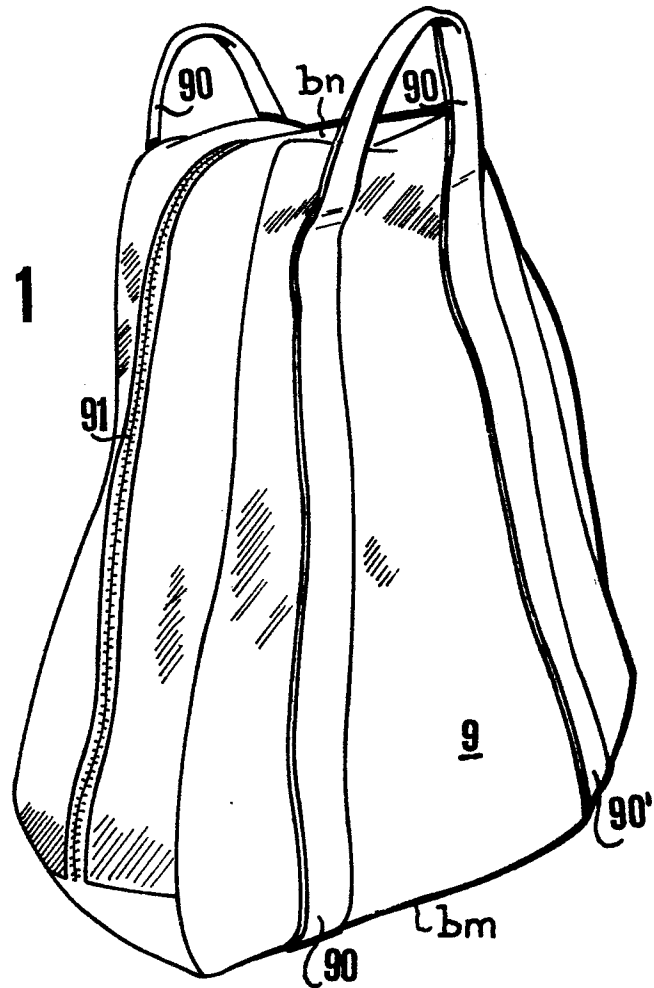


FIG. 3

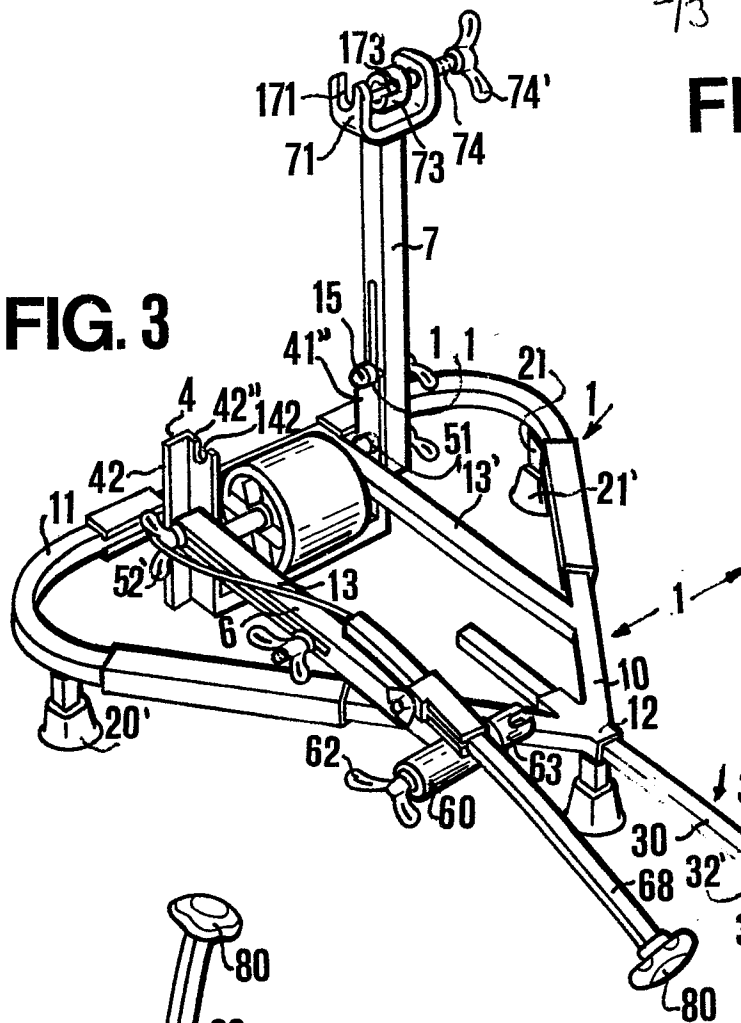


FIG. 5

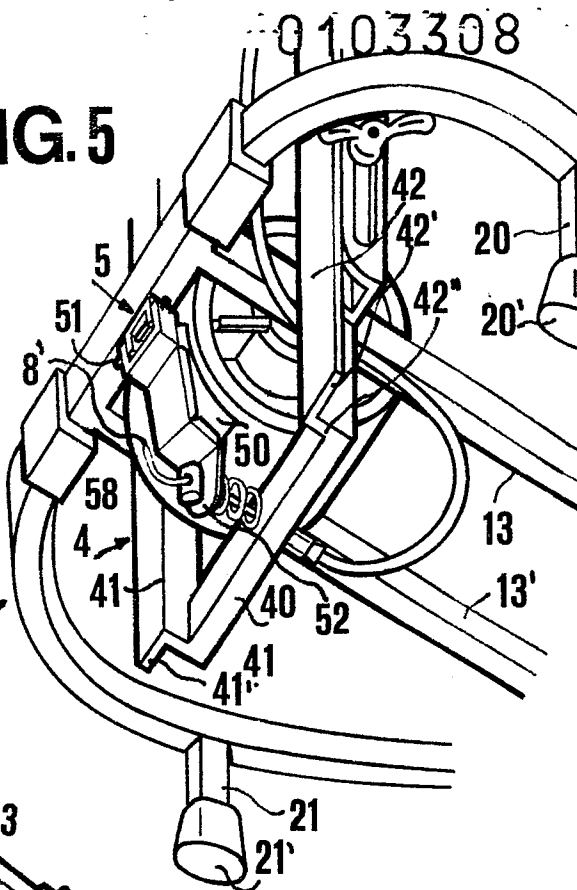


FIG. 4

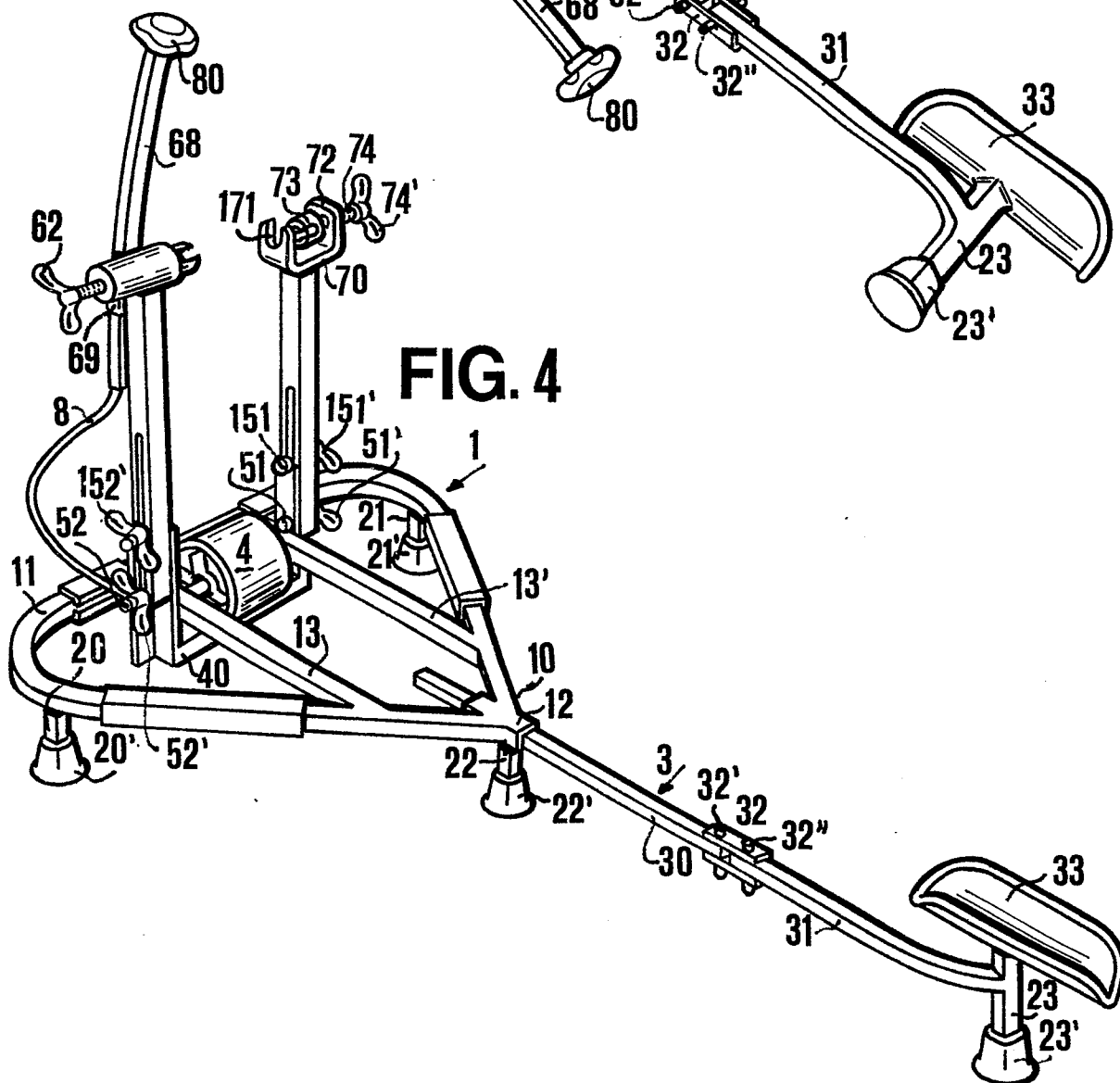
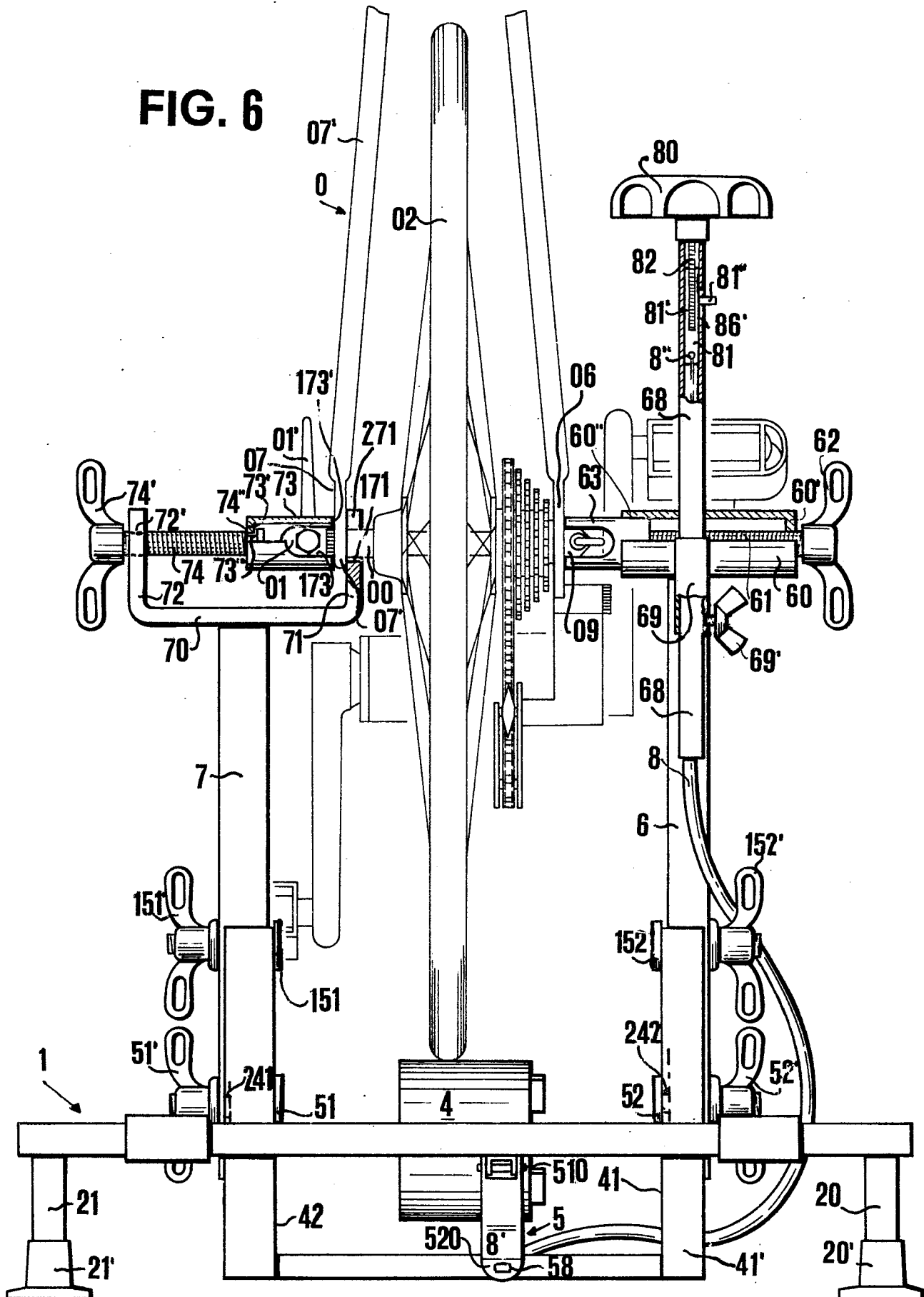


FIG. 6





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EUROPEAN SEARCH REPORT

0103308
Application number

EP 83 10 9129

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
Y,D	GB-A-2 026 876 (PREVITALI) * Page 2, lines 18-103; figures *	1-4	A 63 B 69/16
A		5	
Y	--- US-A-2 850 063 (HORWITZ) * Figures 1,2 *	1-4	
A	--- FR-A-2 403 090 (GARAUD) * Page 3, line 35 - page 4, line 25; figures *	1,3-5	
A	--- US-A-3 521 690 (DAVIS) * Abstract; figures * -----	1,2	
			TECHNICAL FIELDS SEARCHED (Int. Cl. ³)
			A 63 B B 62 J A 45 C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 24-11-1983	Examiner GERMANO A.G.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document	