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(54)

Treadling exercise machine

(57) A treadling exercise machine has a main frame 3, a first treadle plate 4, a second treadle plate 4', two connection seats 6, a first fixed seat 5, a second fixed seat 5', a first oil cylinder 1, and a second oil cylinder 1'. The first oil cylinder 1 has a piston rod 21. The second oil cylinder 1' has a piston shaft 21'. The connection seats 6 are disposed on a bottom of the main frame 3. The first treadle plate 4 and the second treadle plate 4' are disposed on an upper portion of the main frame 3. The first fixed seat 5 is disposed on the first treadle plate 4. The second fixed seat 5' is disposed on the second treadle plate 4'. The connection seats 6 are connected to the respective first oil cylinder 1 and the respective second oil cylinder 1'. The piston rod 21 is connected to the first fixed seat 5. The piston shaft 21' is connected to the second fixed seat 5'.

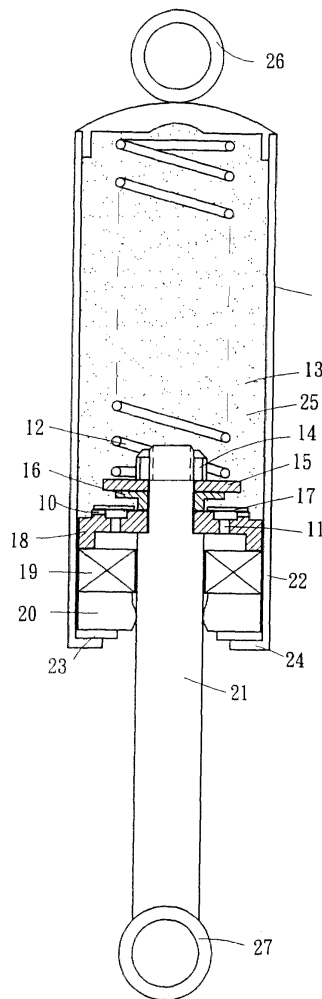


FIG. 1

Description

BACKGROUND OF THE INVENTION

[0001] The present invention relates to a treadling exercise machine. More particularly, the present invention relates to a treadling exercise machine which has a simplified structure.

[0002] A conventional treadling exercise machine has a one-way oil cylinder. Since a piston rod of the one-way oil cylinder cannot return to an original position of the piston rod after the piston rod is extended, a plurality of additional elements are required in order to force the piston rod returns to its original position.

SUMMARY OF THE INVENTION

[0003] An object of the present invention is to provide a treadling exercise machine which has an oil cylinder having a piston rod that can return to an original position of the piston rod after the piston rod is extended.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004]

FIG. 1 is a sectional view of an oil cylinder and a piston rod of a preferred embodiment while the piston rod is extended;

FIG. 2 is a sectional view of an oil cylinder and a piston rod of a preferred embodiment while the piston rod is retracted;

FIG. 3 is a first elevational view of a treadling exercise machine of a first preferred embodiment in accordance with the present invention;

FIG. 4 is a second elevational view of a treadling exercise machine of a first preferred embodiment in accordance with the present invention;

FIG. 5 is a perspective view of a fixed seat of a preferred embodiment in accordance with the present invention;

FIG. 6 is an elevational view of a treadling exercise machine of a second preferred embodiment in accordance with the present invention;

FIG. 7 is an elevational view of a treadling exercise machine of a third preferred embodiment in accordance with the present invention;

FIG. 8 is a perspective view of a positioning seat of a preferred embodiment in accordance with the present invention;

FIG. 9 is an elevational view of a treadling exercise machine of a fourth preferred embodiment in accordance with the present invention;

FIG. 10 is a perspective view of a fixed mount of a preferred embodiment in accordance with the present invention;

FIG. 11 is an elevational view of a treadling exercise machine of a fifth preferred embodiment in accordance with the present invention;

FIG. 12 is an elevational view of a treadling exercise machine of a sixth preferred embodiment in accordance with the present invention;

FIG. 13 is a perspective exploded view of a connection block, a shaft, a U-shaped seat, a movable rod, and an adjustment screw rod of a preferred embodiment in accordance with the present invention;

FIG. 14 is a sectional assembly view of FIG. 13; and

FIG. 15 is an elevational view of a treadling exercise machine of a seventh preferred embodiment in accordance with the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0005] Referring to FIGS. 1 to 5, a first treadling exercise machine comprises a main frame 3, a first treadle plate 4, a second treadle plate 4', two connection seats 6, a first fixed seat 5, a second fixed seat 5', a first oil cylinder 1, and a second oil cylinder 1'.

[0006] The first oil cylinder 1 has a hollow main body 22, a piston 18 inserted in the hollow main body 22, a chamber 25 defined by the piston 18 and the hollow main body 22, a spring 12 disposed in the chamber 25, a piston rod 21 inserted in the hollow main body 22, an oil return aperture 11 formed in the piston 18, an oil throttle plate 17 disposed on the piston 18 to cover the oil return aperture 11, an oil throttle seat 16 disposed on the piston 18, a spring receiving seat 15 disposed on the oil throttle seat 16, and a nut 14 disposed on the spring receiving seat 15.

[0007] The hollow main body 22 has a distal end 24. An oil seal 20 is disposed in the distal end 24 of the hollow main body 22. A guide cushion 19 is disposed on the oil seal 20.

[0008] The piston rod 21 passes through the oil seal 20 and the guide cushion 19.

[0009] A proximal end of the piston rod 21 passes through the piston 18, the oil throttle seat 16, and the spring receiving seat 15.

[0010] The nut 14 fastens the proximal end of the piston rod 21.

[0011] A positioning rod 26 is disposed on a proximal end of the hollow main body 22. A movable rod 27 is disposed on a distal end of the piston rod 21.

[0012] The hollow main body 22 contains a hydraulic oil 13.

[0013] The structure of the second oil cylinder 1' is the same as the structure of the first oil cylinder 1.

[0014] The second oil cylinder 1' comprises a piston shaft 21'.

[0015] The connection seats 6 are disposed on a bottom of the main frame 3.

[0016] The first treadle plate 4 and the second treadle plate 4' are disposed on an upper portion of the main frame 3.

[0017] The first fixed seat 5 is disposed on the first treadle plate 4.

[0018] The second fixed seat 5' is disposed on the second treadle plate 4'.

[0019] The connection seats 6 are connected to the respective first oil cylinder 1 and the respective second oil cylinder 1'.

[0020] The piston rod 21 is connected to the first fixed seat 5.

[0021] The piston shaft 21' is connected to the second fixed seat 5'.

[0022] An oil passage 10 is formed between the piston 18 and the oil throttle plate 17.

[0023] When the piston rod 21 is extracted, the oil throttle plate 17 seals the oil return aperture 11.

[0024] When the piston rod 21 is not extracted, the spring 12 will force the piston rod 21 to extend. Then the oil throttle plate 17 will not seal the oil return aperture 11. The hydraulic oil 13 will flow into the chamber 25 via the oil return aperture 11.

[0025] Referring to FIGS. 4 and 5, the first fixed seat 5 has a first through slot 50. The second fixed seat 5' has a second through slot 50'.

[0026] Referring to FIGS. 6 and 8, a first positioning seat 7 replaces the first fixed seat 5. A second positioning seat 7' replaces the second fixed seat 5'. The first positioning seat 7 has two oblong apertures 71 and a through aperture 70. The structure of the second positioning seat 7' is the same as the structure of the first positioning seat 7.

[0027] Referring to FIG. 7, a connection mount 8 replaces the connection seat 6.

[0028] Referring to FIG. 9, a connection mount 8 replaces the connection seat 6 and a positioning seat 7 replaces the fixed seat 5.

[0029] Referring to FIGS. 10 and 11, a fixed mount 90 replaces the connection seat 6. The fixed mount 90 has two lateral arms 901, two round holes 900, and two positioning rods 902.

[0030] Referring to FIG. 12, a fixed mount 90 replaces the connection seat 6 and a positioning seat 7 replaces the fixed seat 5.

[0031] Referring to FIGS. 13 to 15, a fixed mount 90 replaces the connection seat 6 and a connection block 91 disposed on the main frame 3. The connection block 91 has two oblong holes 910 receiving a shaft 911. A U-shaped seat 914 clamps the shaft 911. The shaft 911 has a threaded aperture 912. The U-shaped seat 914 has a threaded hole 915 matching the threaded aperture 912 of the shaft 911. The U-shaped seat 914 is connected to an end of the movable rod 27. An adjustment screw rod 913 fastens the shaft 911 and the U-shaped seat 914 together via the threaded aperture 912 of the shaft 911 and the threaded hole 915 of the U-shaped seat 914. A C-shaped cushion 916 surrounds the adjustment screw rod 913.

[0032] The invention is not limited to the above embodiment but various modification thereof may be made. Further, various changes in form and detail may be made without departing from the scope of the invention.

Claims

1. A treadling exercise machine comprising:

a main frame (3), a first treadle plate (4), a second treadle plate (4'), two connection seats (6), a first fixed seat (5), a second fixed seat (5'), a first oil cylinder (1), and a second oil cylinder (1'),
 the first oil cylinder (1) having a hollow main body (22), a piston (18) inserted in the hollow main body (22), a chamber (25) defined by the piston (18) and the hollow main body (22), a spring (12) disposed in the chamber (25), a piston rod (21) inserted in the hollow main body (22), an oil return aperture (11) formed in the piston (18), an oil throttle plate (17) disposed on the piston (18) to cover the oil return aperture (11), an oil throttle seat (16) disposed on the piston (18) and a spring receiving seat (15) disposed on the oil throttle seat (16),
 the hollow main body (22) having a distal end (24),
 an oil seal (20) disposed in the distal end (24) of the hollow main body (22),
 a guide cushion (19) disposed on the oil seal (20), the piston rod (21) passing through the oil seal (20) and the guide cushion (19),
 a proximal end of the piston rod (21) passing through the piston (18), the oil throttle seat (16), and the spring receiving seat (15),
 the hollow main body (22) containing a hydraulic oil (13), the structure of the second oil cylinder (1') being the same as the structure of the first oil cylinder (1),
 the second oil cylinder (1') comprising a piston shaft (211),
 the connection seats (6) disposed on a bottom of the main frame (3),
 the first treadle plate (4) and the second treadle plate (4') disposed on an upper portion of the main frame (3),
 the first fixed seat (5) disposed on the first treadle plate (4),
 the second fixed seat (5') disposed on the second treadle plate (4'),
 the connection seats (6) connected to the respective first oil cylinder (1) and the respective second oil cylinder (1'),
 the piston rod (21) connected to the first fixed seat (5),
 the piston shaft (21') connected to the second fixed seat (5), and
 an oil passage (10) formed between the piston (18) and the oil throttle plate (17).

2. A treadling exercise machine according to claim 1,

wherein a positioning rod (26) is disposed on a proximal end of the hollow main body (22), and a movable rod (27) is disposed on a distal end of the piston rod (21).

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3. A treadling exercise machine according to claim 1 or claim 2,

wherein a nut (14) is disposed on the spring receiving seat (15), the nut (14) fastening the proximal end of the piston rod (21).

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4. The treadling exercise machine as claimed in one of the proceeding claims,

wherein a connection block (91) is disposed on the main frame (3), the connection block (91) has two oblong holes (910) receiving a shaft (911), a U-shaped seat (914) clamps the shaft (911), the shaft (911) has a threaded aperture (912), the U-shaped seat (914) has a threaded hole (915) matching the threaded aperture (912) of the shaft (911), the U-shaped seat (914) is connected to an end of the movable rod (27), and an adjustment screw rod (913) fastens the shaft (911) and the U-shaped seat (914) together via the threaded aperture (912) of the shaft (911) and the threaded hole (915) of the U-shaped seat (914).

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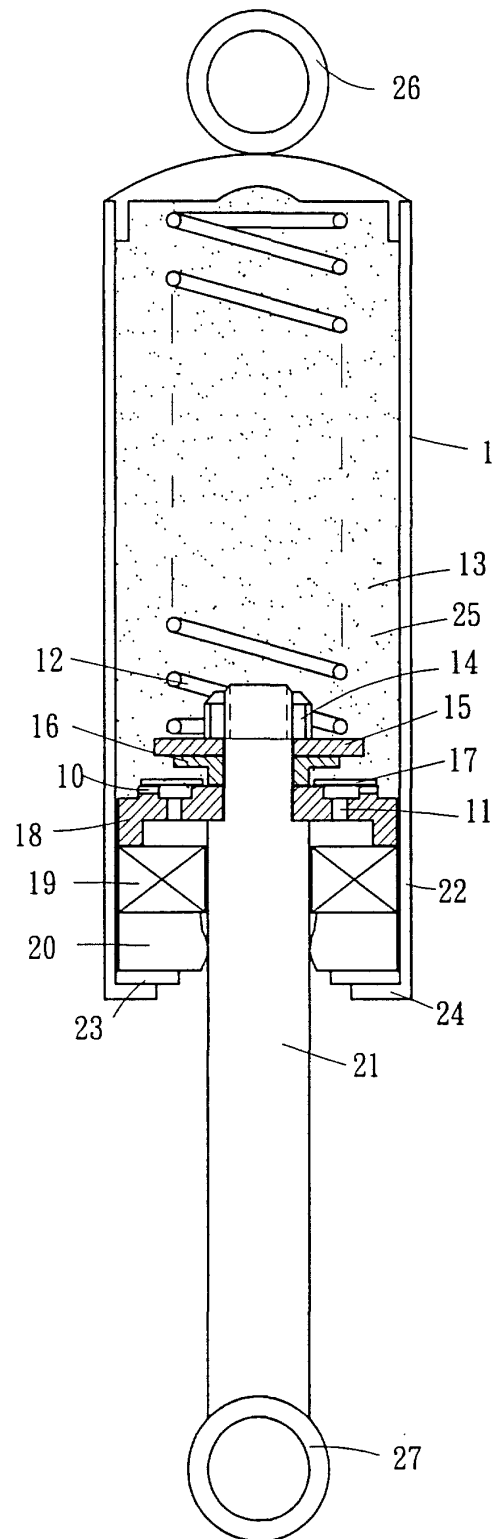


FIG. 1

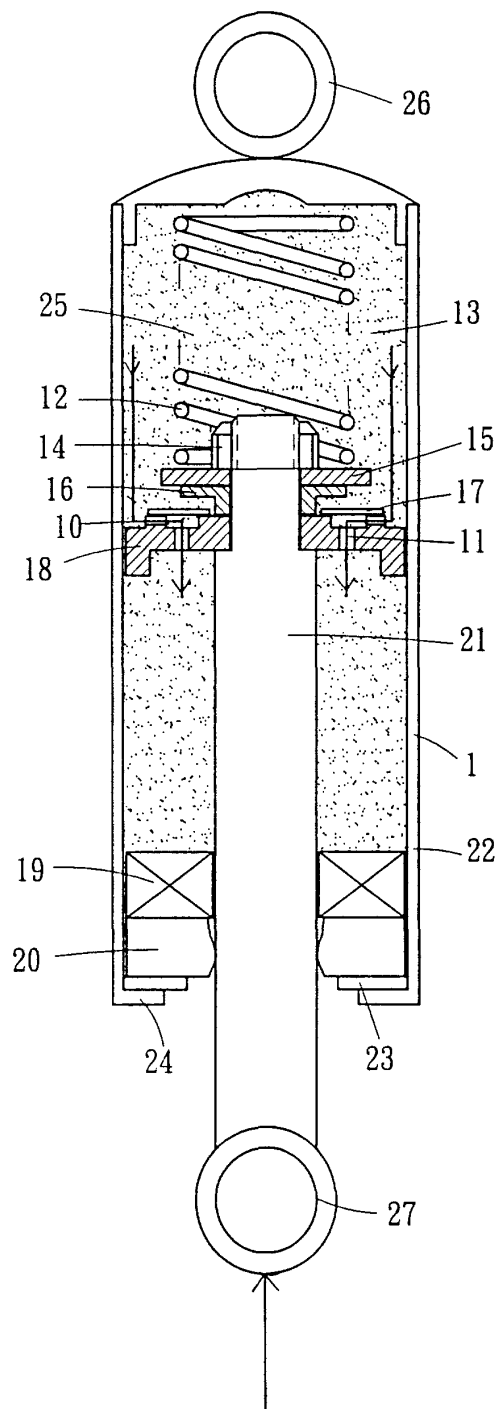
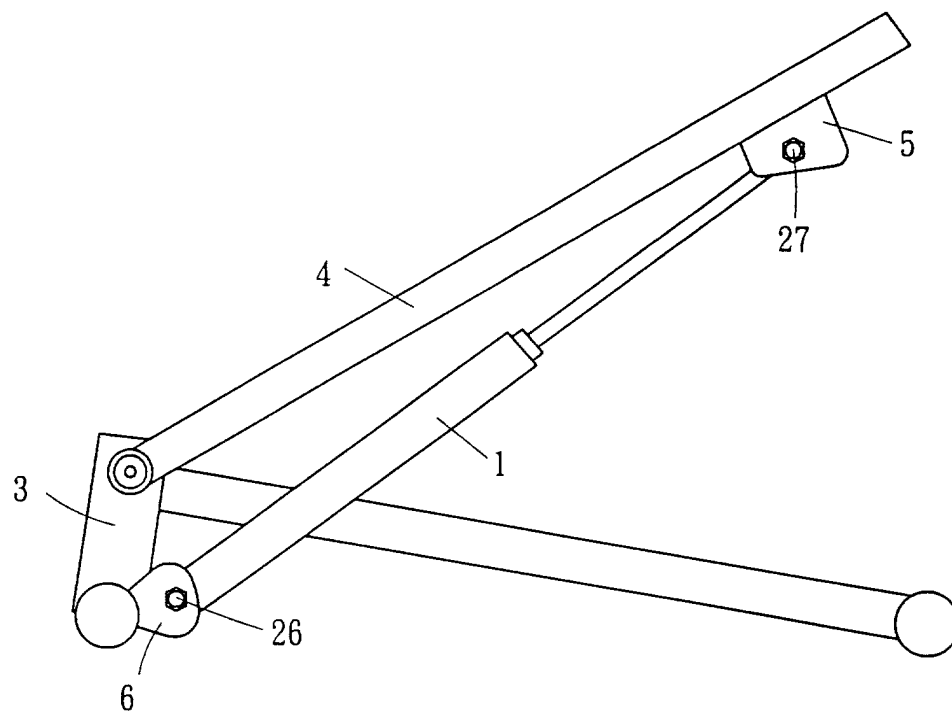


FIG. 2



F I G. 3

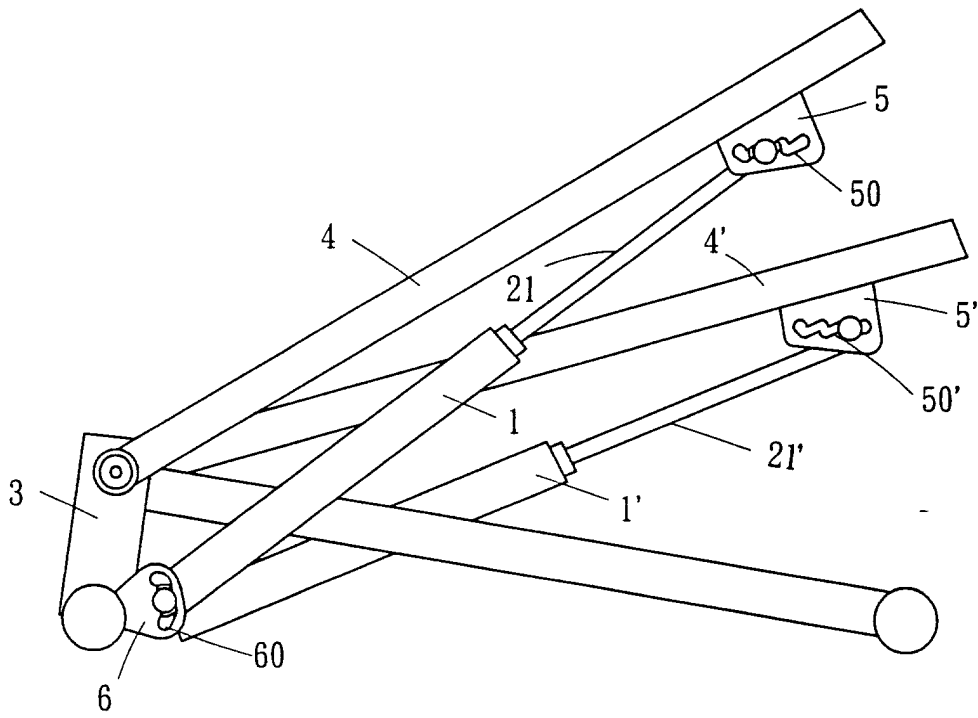


FIG. 4

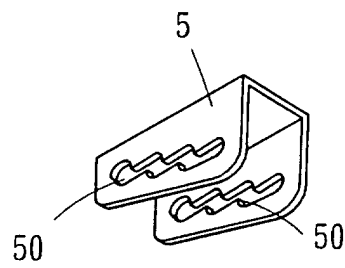
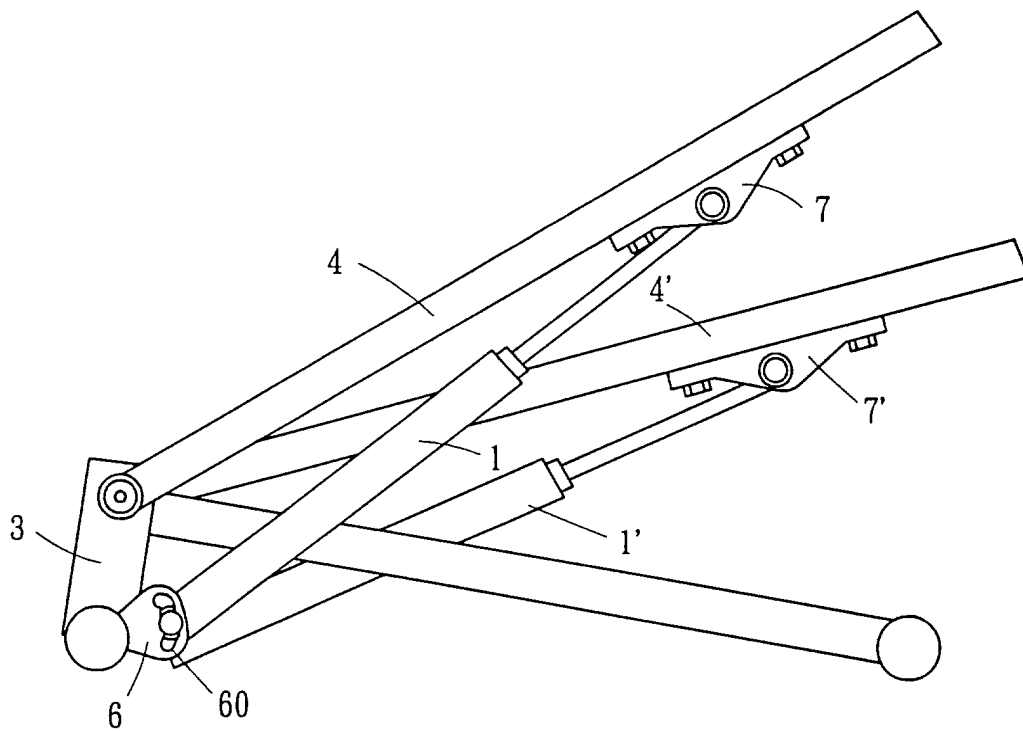


FIG. 5



F I G. 6

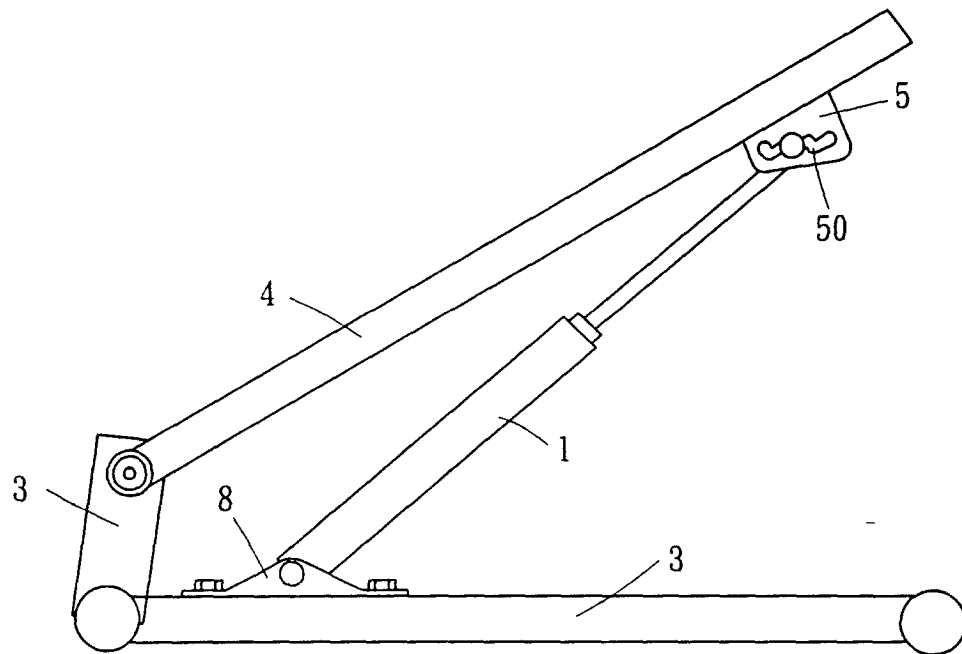


FIG. 7

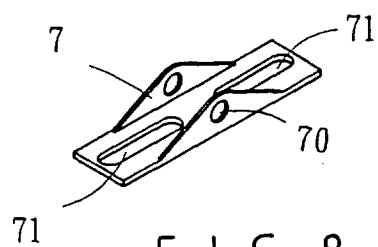
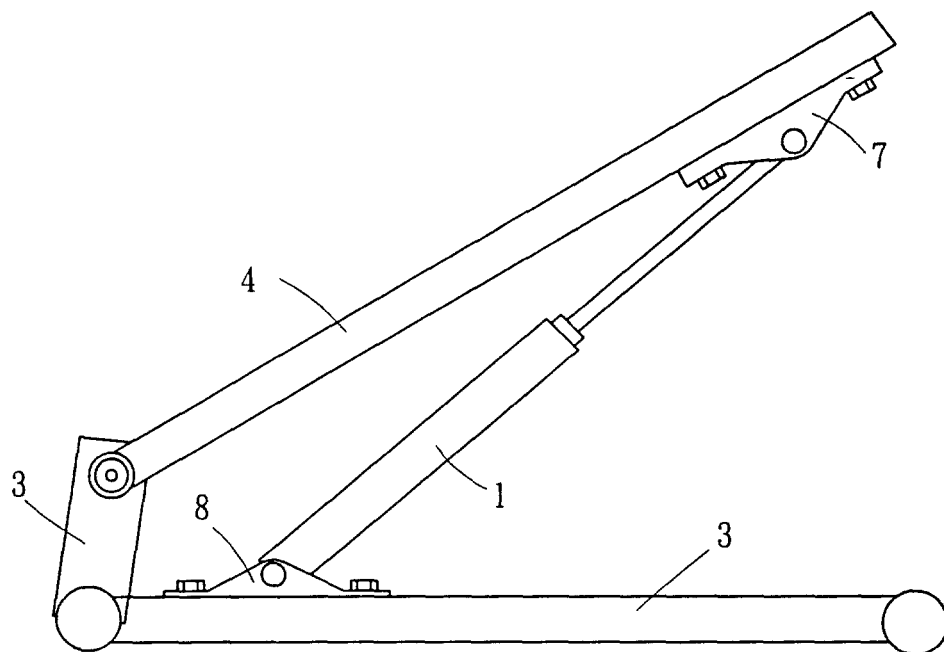


FIG. 8



F I G. 9

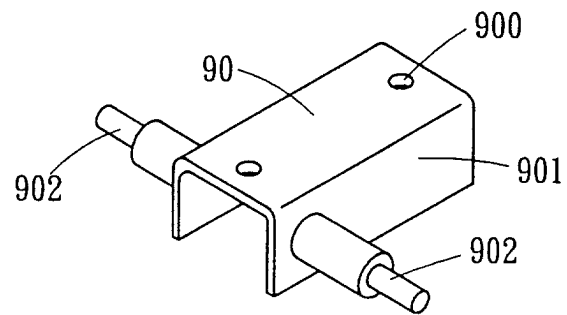


FIG. 10

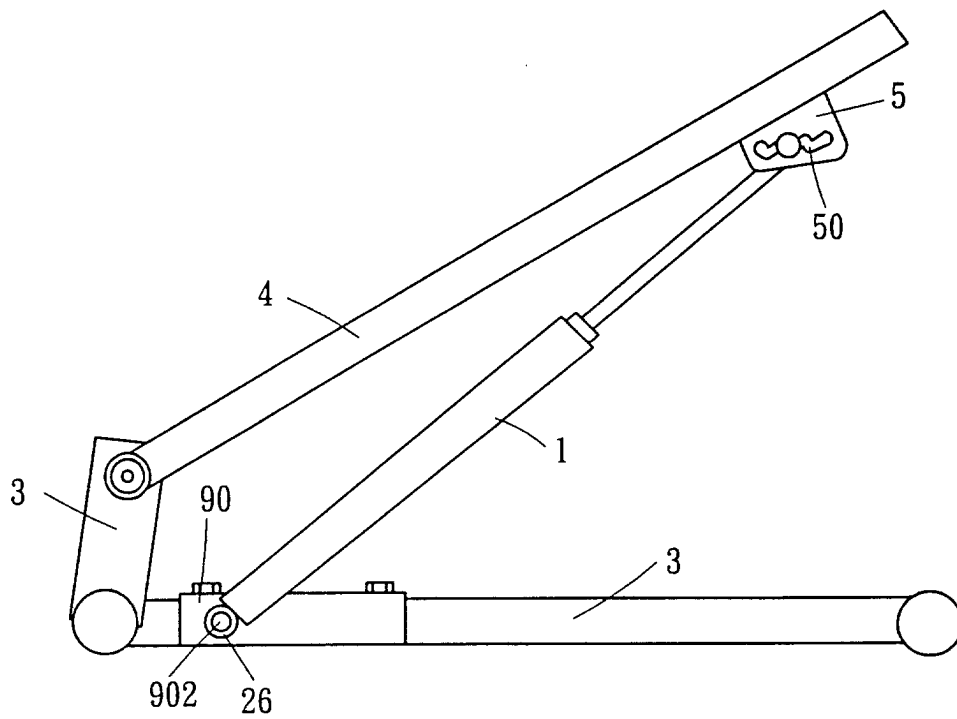
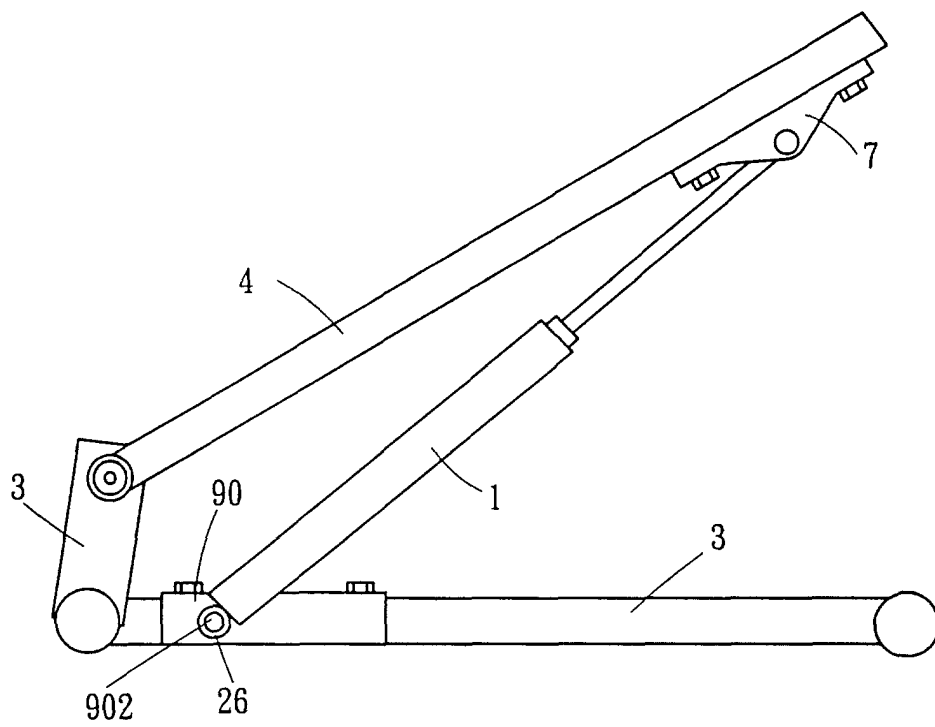
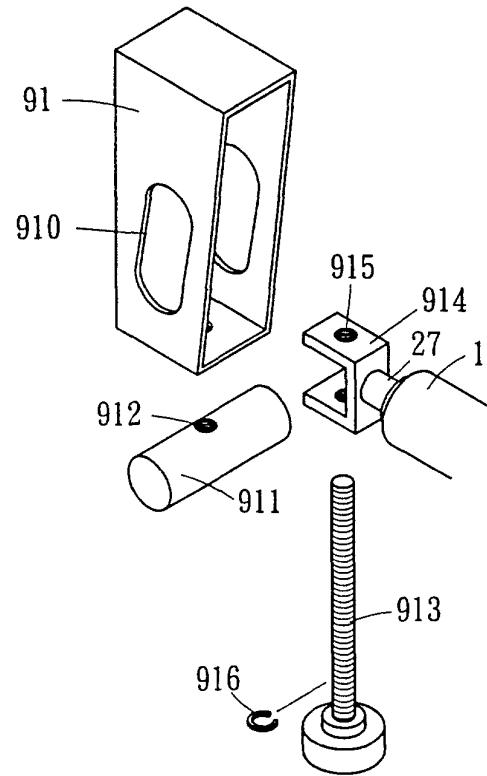


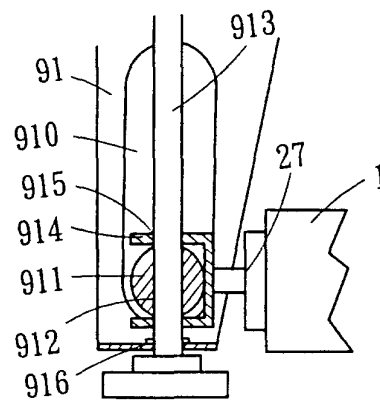
FIG. 11



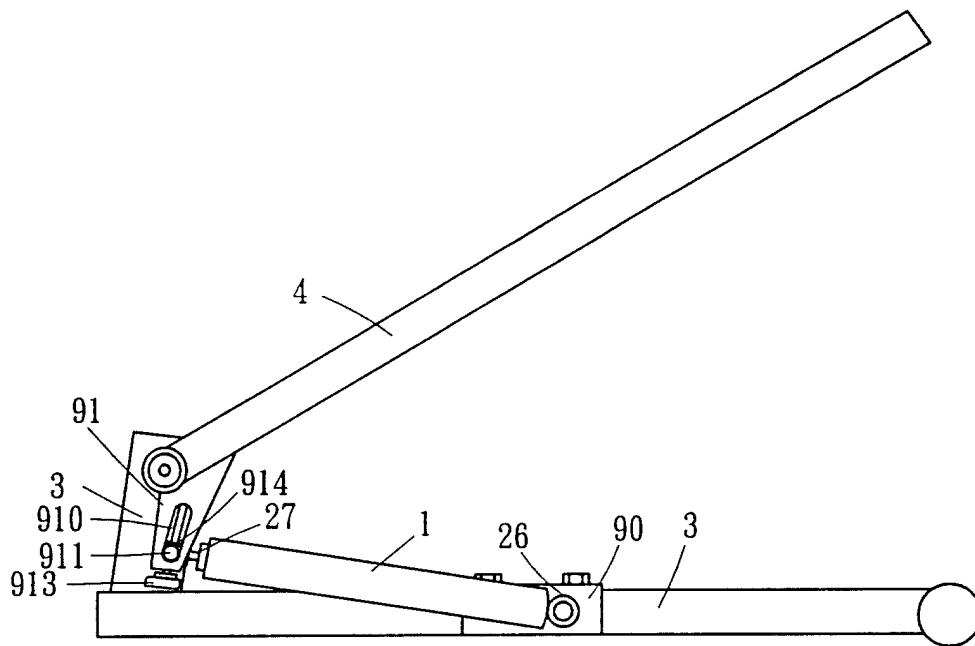
F I G. 12



F I G. 13



F I G. 14



F I G. 15



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 00 10 7369

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The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 6 June 2000	Examiner Curzi, D
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			

EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 00 10 7369

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