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(54) **Amusement-park machine for muscular strength tests.**

(57) The amusement-park machine for muscular strength tests which comprises a hammer (6) which is slidingly retained on a guiding element (5) which defines its path. The hammer (6) is suitable to strike a mechanical sensor which is associated with indicator means. Means for locking and/or releasing the sliding of the hammer (6) are provided and are associated with a coin-operated or equivalent control device (31).

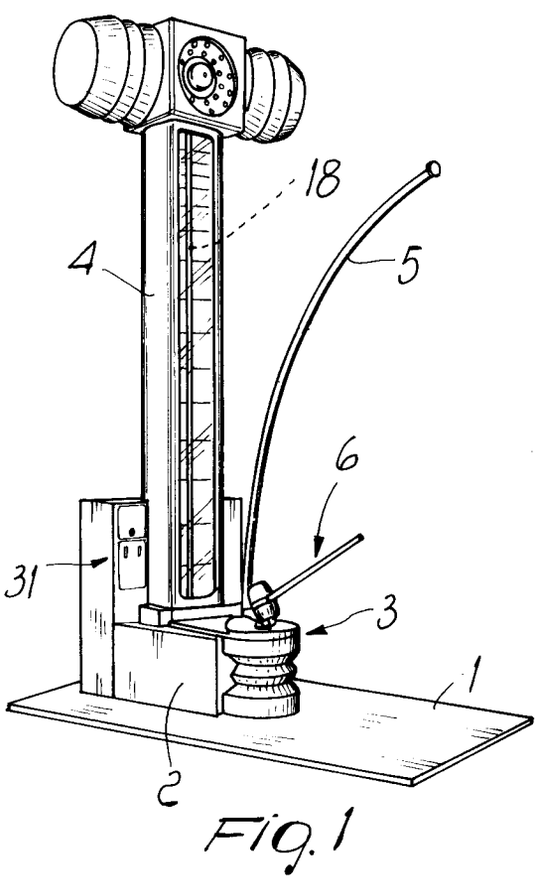

Fig. 1

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The present invention relates to an amusement-park machine for muscular strength tests.

Machines for muscular strength tests activated by coin-operated devices associated therewith are currently extensively used in amusement parks, fun-fairs, etc.

Among these, the best-known and most widespread one, known as punching ball, is substantially constituted by a ball which is arranged at the end of a rod which is articulated to the ceiling.

By giving a punch to the ball, said ball strikes a sensor which moves an indicator on a graduated dial.

Other machines provide, for the user, an arm-wrestling test against a mechanical arm, a soccer test with a football and a sort of fight against a bull-like template to be gripped by the horns.

The aim of the present invention is to provide an amusement-park machine for muscular strength tests which requires the user to exert a different action with respect to those currently commercially available.

An important object is to provide a machine with a muscular strength test which tempts a large number of possible users to try it.

Another important object is to provide a machine with minimal management costs.

Not least object is to provide a machine which is structurally simple and can be manufactured with conventional equipment and facilities.

This aim, these objects and others which will become apparent hereinafter are achieved by an amusement-park machine for muscular strength tests, characterized in that it comprises a hammer which is slidingly retained on a guiding element which defines its path and is suitable to strike a mechanical sensor associated with indicator means.

Advantageously, the machine is provided with means for locking and releasing the sliding of said hammer which are associated with a coin-operated or equivalent control device.

Further characteristics and advantages of the invention will become apparent from the detailed description of an embodiment thereof, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a general perspective view of the machine;

figure 2 is a side view of the machine of figure 1;

figure 3 is an internal side view of the part related to the actuation of the indicator of the striking force;

figures 4 and 5 are views of the mechanism for locking and releasing the sliding of the hammer.

With reference to the above figures, a box-like base 2 is placed on a metallic platform 1, is shaped at the front so as to represent a sort of cylindrical block 3 and is provided at the rear with a post 4 shaped so as to represent an enormous hammer.

A rod 5 with a circular cross-section extends upward from the base 2 and is curved so as to define the path of a hammer 6 which is slidingly retained thereon.

In particular, said hammer 6 is provided, on its head, with a wing 7 which is articulated, by means of a pivot 8, to another wing 9 which is rigidly coupled to a tubular slider 10 which can slide on the rod 5.

The hammer 6 is thus retained so as to define substantially circular downward and upward paths, as shown in figure 2.

At the bottom, the stroke of the hammer 6 ends at the block 3, on which a striking element 11 is located; said striking element is part of a mechanical sensor which is generally designated by the reference numeral 12.

Said mechanical sensor 12 comprises a rocker 13 which is arranged inside the base 2 in a substantially horizontal position and is pivoted to a support structure 14.

Said rocker 13 has the striking element 12 on one end and, on the other end, a lamina 15 which ends below a radial wing 16 which extends from a slider 17 which can slide on a vertical rod-like guide 18.

Said rod-like guide 18 is arranged inside the post 4, which is conveniently provided with a front glazing and with an internal graduated scale.

Said radial wing 16 constitutes an indicator which, by virtue of the blow received from the blade 15, due to the striking of the hammer 6, moves on the guide 18.

On the side opposite to said radial wing, said slider 17 has a small support 17a welded thereto for a free wheel 19 which meshes with a portion of chain (or rack) 20 which is vertically stretched between the ends of a bar 21.

Said bar 21 is supported by two connecting-rod systems 22 so as to form an articulated quadrilateral which is coupled to an upright 23.

One of said connecting rods 22 is associated with an electromagnet 24 which actuates the articulation in contrast with the action of a spring 25 which acts vertically between the bar 21 and the upright 23.

When the slider 17 moves upward, the free wheel 19 rises and meshes on the chain 20.

Once it reaches the stroke limit, the slider 17 remains in position without falling down, since the free wheel 19 prevents its descent.

This occurs until the electromagnet 24 moves the bar 21, and thus the chain 20, from the free wheel 19.

Conveniently, the ends of said rocker 13 are braked by shock absorbers, respectively 26 and 27, which are located between said ends and the lower part of the base 2.

At this point it should be stressed that said slider 10, which is associated with the hammer 6, has an annular peripheral groove 28 in which a tooth 29 can be inserted radially; said tooth is associated with a lever system generally designated by the reference numeral 30.

The lever system 30 is actuated, according to a per se known method, by an electromagnet which is not visible in the figures and is activated by a coin-operated control device 31, also per se known, arranged to the side of the post 4.

In practice, the insertion of a coin in an appropriate slot causes the activation of the electromagnet, the translatory motion of the tooth 29 and the release, as shown in figure 5, of the slider 10 and thus of the hammer 6.

After a preset number of blows of the hammer on the striking element 11, the electromagnet is deactivated and the tooth 29 returns to the position for locking the slider 10.

It should also be stressed that it is possible to associate with the mechanical indicator constituted by the wing 16 a display, for example a light-emitting one, constituted by lamps arranged to the side of the guide 18 which light progressively as the slider 17 rises.

As regards the use of the machine according to the invention, after releasing the hammer 6 according to the above described method it is sufficient to raise it and strike the striking element 11 with the greatest possible force.

In practice it has thus been observed that the above described machine has achieved the intended aim and objects of the present invention.

Within the scope of this concept, the block 3 can include at least one load cell which, by means of electric and/or electronic devices and transducers, actuates the indicator, which can be either mechanical (18) or of another type.

In practice, the materials employed, so long as compatible with the contingent use, as well as the dimensions, may be any according to the requirements.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the scope of each element identified by way of example by such reference signs.

Claims

1. Amusement-park machine for muscular strength tests, characterized in that it comprises a hammer which is slidingly retained on a guiding element which defines its path and is suitable to strike a mechanical sensor associated with indicator means.

2. Machine according to claim 1, characterized in that it comprises means for locking and releasing the sliding of said hammer which are associated with a coin-operated or equivalent control device.

3. Machine according to claims 1 and 2, characterized in that said guiding element which defines the path of said hammer is constituted by a rod which has a circular cross-section and extends upward in an arc-like shape, a tubular slider being slidingly retained on said rod, said hammer being coupled to said slider.

4. Machine according to one or more of the preceding claims, characterized in that said hammer is provided with a wing which is articulated by means of a pivot to another wing which extends radially from said tubular slider which can slide on said guide.

5. Machine according to one or more of the preceding claims, characterized in that said mechanical sensor is constituted by a rocker which supports a striking element at one end and, at the other end, an element which is suitable to activate said indicator means, said rocker being braked by two shock absorbers, each one located so as to act at a respective end thereof.

6. Machine according to one or more of the preceding claims, characterized in that said indicator means are constituted by a slider which can slide on a vertical guide and is associated with a graduated scale, said slider being located, at its lower stroke limit, above the end of a lamina which extends from said rocker, said lamina being suitable to strike said slider and hurl it upward.

7. Machine according to one or more of the preceding claims, characterized in that said slider which can slide on a vertical guide is provided with a free wheel which meshes with a portion of a chain (or rack) stretched vertically between the ends of a bar, said bar composing, together with a pair of connecting-rod systems, an articulated quadrilateral which is coupled to

an upright and is actuated by an electromagnet which acts in contrast with elastic contrast means.

8. Machine according to one or more of the preceding claims, characterized in that said means for locking and/or releasing the sliding of said hammer are constituted by a tooth which is suitable to radially enter and leave a peripheral annular groove of said slider to which said hammer is rigidly coupled, said tooth being rigidly coupled to a lever system which is actuated by an electromagnet which is activated by said coin-operated or equivalent control device.

9. Machine according to claim 1, characterized in that said sensor comprises a load cell which is connected to said indicator means by means of electric and/or electronic devices and/or transducers.

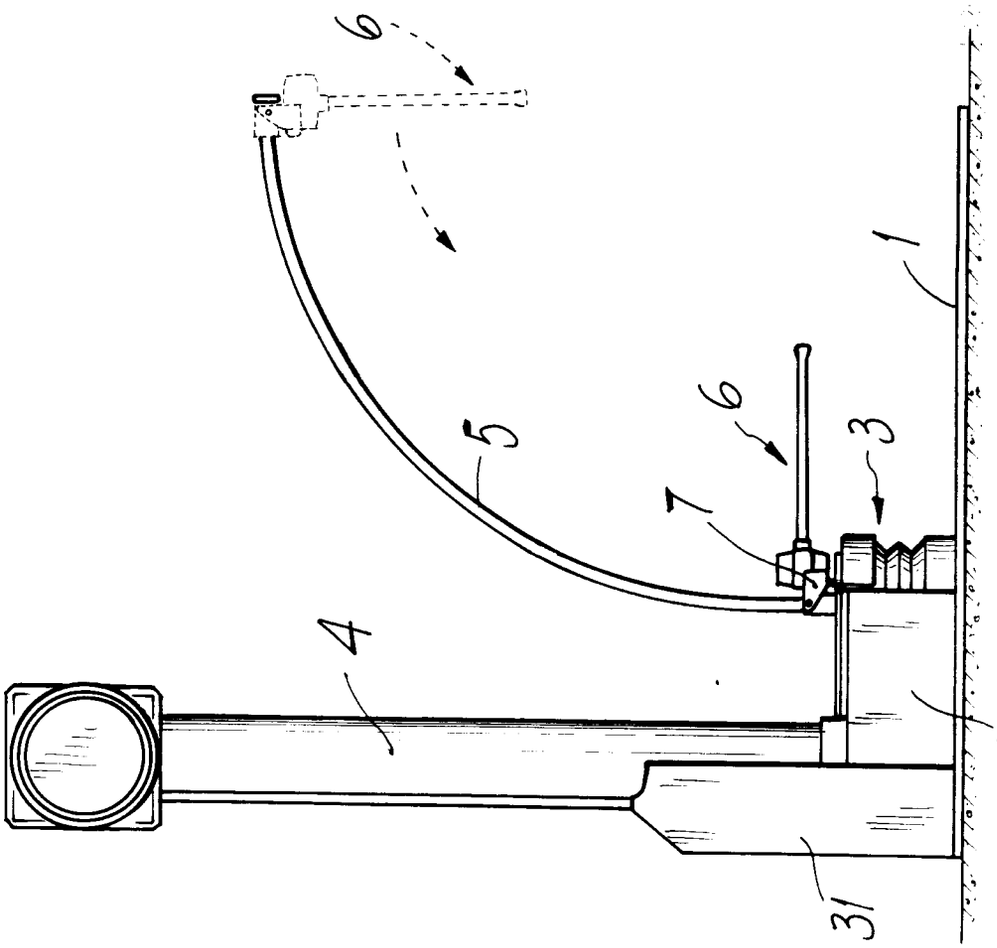

Fig.2

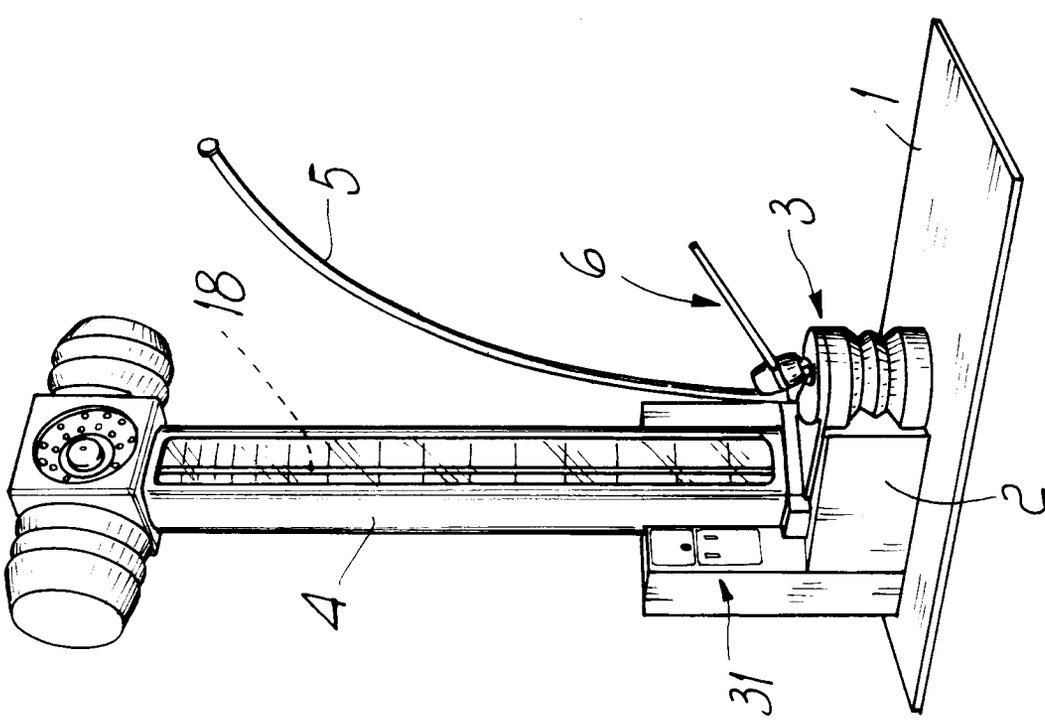

Fig.1

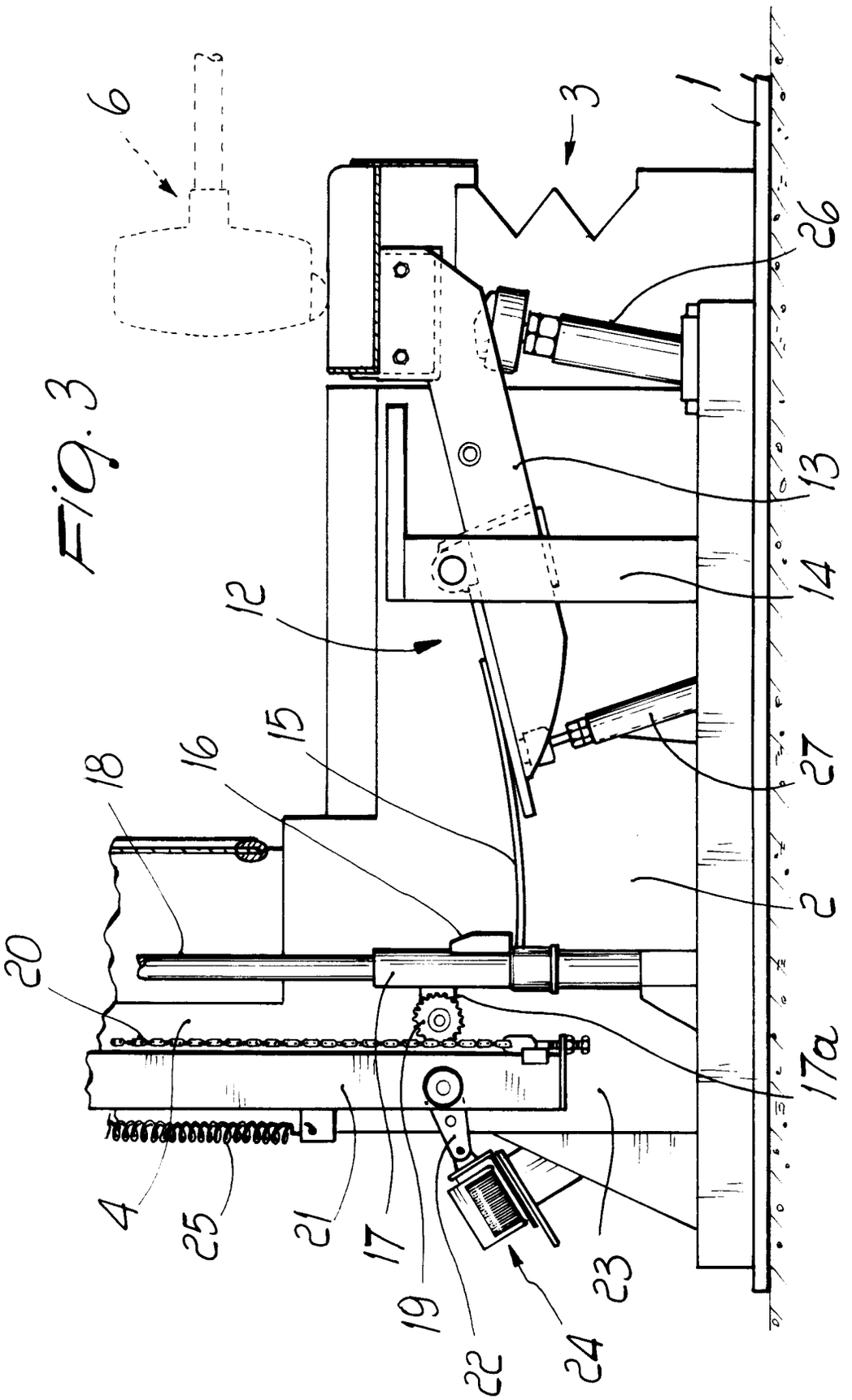

Fig. 3

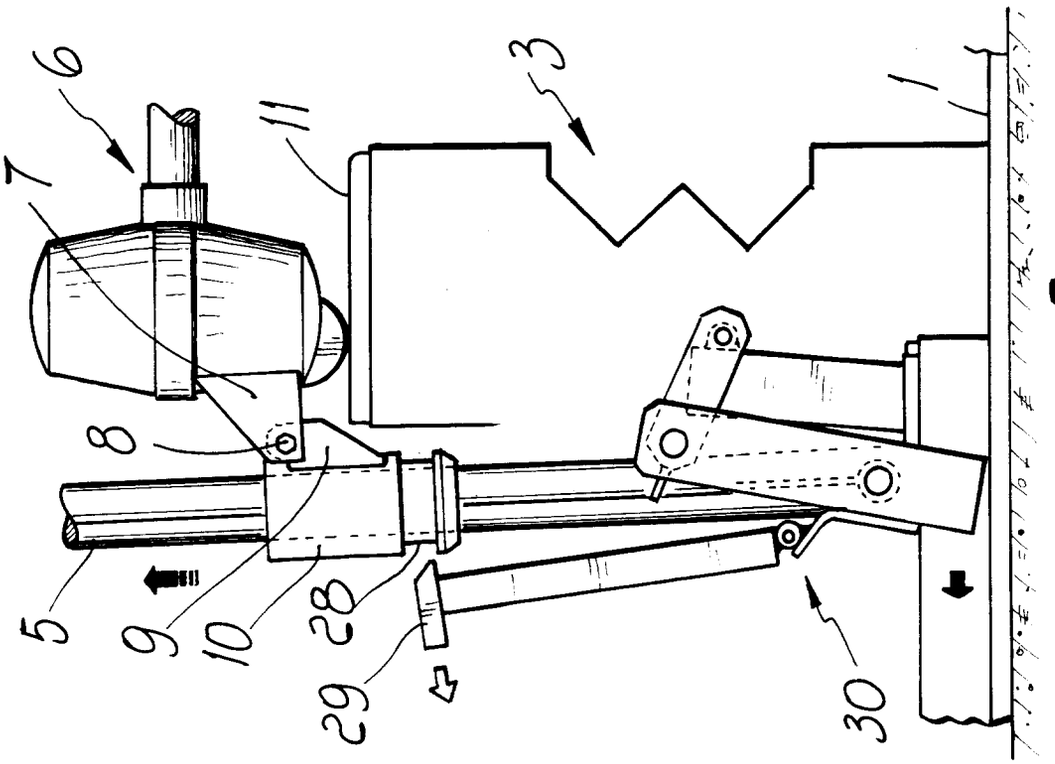

FIG. 5

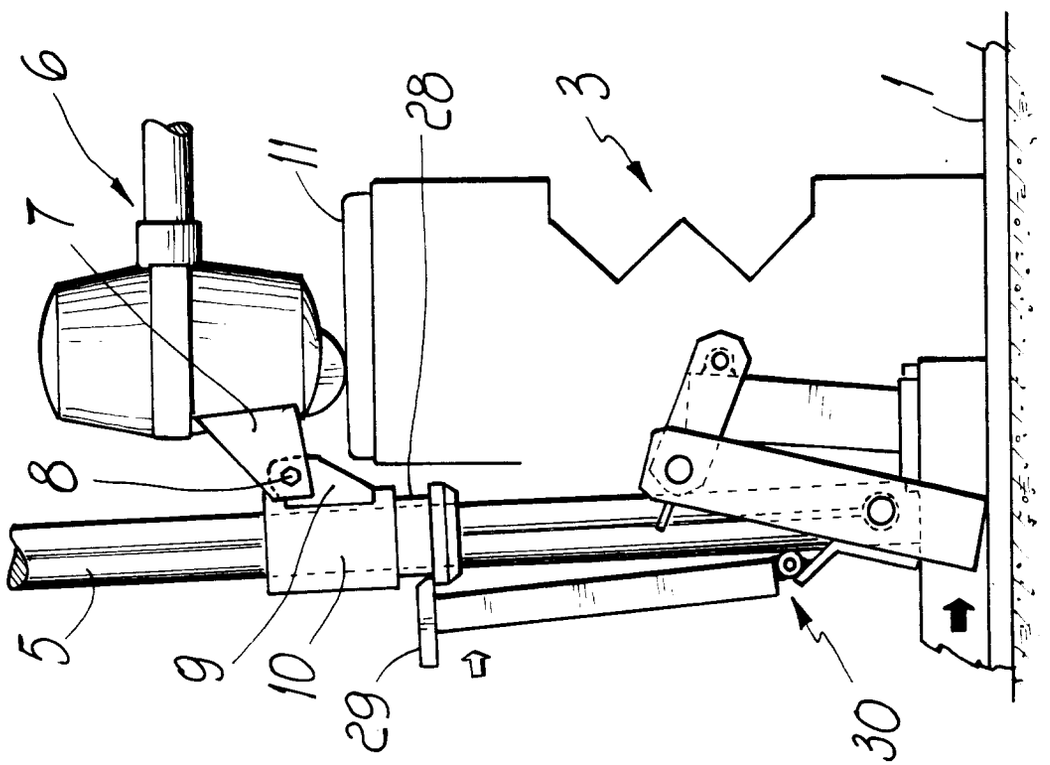

FIG. 4

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EUROPEAN SEARCH REPORT

Application Number

EP 92 11 7618

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.5)
X	FR-A-565 925 (C BARNHART) * page 1, line 37 - line 46 * * page 1, line 60 - page 2, line 25 * * page 2, line 60 - line 90 * * page 4, line 23 - line 87 * * figures * -----	1-3,5,6	A63G1/00 A63B69/32
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			A63B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	25 JANUARY 1993	VEREECKE A.

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
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& : member of the same patent family, corresponding document

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