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(54) Dorsal antifall rucksack.

(57) Dorsal antifall rucksack, characterized in that it comprises:
- belt means to fix the rucksack (1) to a person able to endure in pulling down the weigh of a body of the person and rucksack with respective deceleration in falling for stopping the falling down;
- cable rolling/unrolling means (2´-2, 3) the extremity of the cable being endowed of hooking means similarly able to endure in pulling down the weigh of a body of the person and rucksack with respective deceleration in falling for stopping the falling down;
- braking means for unwinding control (4-14/5´-5-6-7) said cable in falling down.

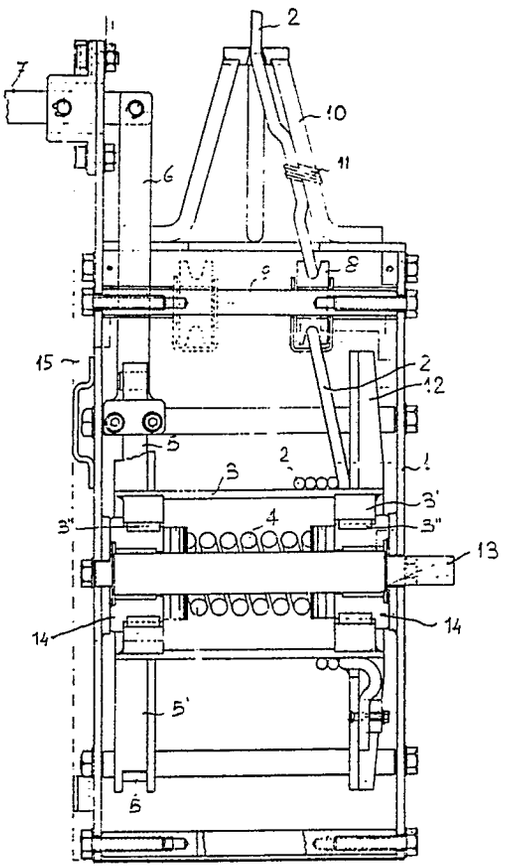

FIG. 2

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Dorsal antifall rucksack

The present invention relates to a dorsal antifall rucksack.

The innovation is particular useful as falling safety means for a trapped person in a firing building, obliged to launch himself from an height in which the jump will become a killing fall.

Safety devices of this type are not known in prior art.

Scope of the present invention is to realize an easy to use and practical safety device, for cheapening to earth in safe way from a certain height without assistance of ladders or parachute.

This and other scopes are reached with the claimed characteristics of the present invention by means of a dorsal antifall rucksack, characterized in that it comprises:

- belt means to fix the rucksack to a person able to endure in pulling down the weigh of a body of the person and rucksack with respective deceleration in falling for stopping the falling down;
- cable rolling/unrolling means the extremity of the cable being endowed of hooking means similarly able to endure in pulling down the weigh of a body of the person and rucksack with respective deceleration in falling for stopping the falling down;
- braking means for unwinding control said cable in falling down .

In such way we obtain the safe advantage of assuring the control of the fall from a certain height without causing damages to the person that let himself to fall down.

Advantageously said braking means for unwinding control said cable consists in adjustable unwinding resistance means.

As much advantageously the braking means are manually operated and controlled by handle branching means.

In this way the operator can regulate the falling speed in function of the proper weigh.

Advantageously the braking means are associated to adjustable spring controlled deceleration means.

In this way even without the braking action a certain unwinding resistance will reduce the falling down sped.

Hooking the antifall rucksack (that is shaped like a suitcase) on the back through belts with automatic fasteners (as the security belts of the motorcars) and hooking the free extremity of the cable to a part of the building the person can jump down avoiding for example the danger of a fire.

The height of the jump is limited from the lengthiness of the cable.

The winding/unwinding device will allow control of falling down.

The dorsal antifall rucksack is endowed, as previously described, with a compensation spring which attenuates the unwinding of the wrench (during the jump) and reduces the tension on the cable. The cable is continuously controlled by the spring in such a way that after the maximum elongation the spring will amortize the final "strap". The extremity of the cable has a hooking musketoon in order to quick hook to the building .

The charge (or person weigh) that the antifall rucksack can allow to descent is regulated from the tension of the spring which is regulated varying its shim that so is loaded to stairs (discontinuously) realizing a variable forcefulness. So the antifall rucksack is tared for thongs of man-weigh which utilize the manual brake for incrementing the forcefulness. This in the case the fall liberates ditches too much fast (because the spring has been loaded for a lower weigh).

These and other advantages will appear from the following description of a preferential solution with the drawings, the particulars of execution being not to be considered limitative but only exemplificative.

Figure 1 represents a frontal view of the antifall rucksack .device.

Figure 2 represents a transversal section view of the antifall rucksack represented in Figure 1;

Figure 3 represents a top view of the antifall rucksack.

Referring to the figures the antifall rucksack consists in a cash in form of rucksack (1) with dorsal forehead padded (15) for endorsing on the back and comprising means to belt (not illustrated) for safe belting on the back of the person that shall jump down. Inside the cash (that includes the device in the form of rucksack), a cable winding/unwinding (rolling/unrolling) reel (3) is comprised, being the cable in steel or naylon (2, 2′), guided in its unwinding and winding from a reel (8) on bars of scroll (9) and to the external by a cableguide (10) with a seal that controls the pulling in the moment of use (11).

The resistance (speed of unwinding of the reel (3) is controlled from the pressure of a helical spring (4) that can be augmented or diminished from shims in the respective opposed frictions (14) in respect to the axis (13) that protracts frontally to key for the rewinding of charging, being said axis keyed with key (3′, 3″) to the coiler reel (3).

Obviously the pressure of the helical spring can be varied rather than utilizing rings (internal shims in figure) with any other mean, for example threading the support axis and utilizing a rotatable

ferrule that causes a compression of the spring by means of manual regulation from the external.

The drawings further disclose that the braking sets are warranted from a pulley (5′) keyed to the reel coiler-unroller. The brake is realized by a semibelt (5) tensed from a double lever (7-7′) through respective couple of tierods (6).

The double lever (7) is protracted anteriorly frontally in side of the person on which the antifall rucksack is fixed being linked by a traverse (7′) as a handle of droop for regulating the braking, being further a security means of seizing in fall.

In such a way, during the fall the operator is fetched to keep itself on said lever and will act strongly on it in pulling for instinctive reaction with a major speed of falling.

In this way an automatic control for instinctive reaction of the operator is determined.

Claims

1. Dorsal antifall rucksack, characterized in that it comprises:

- belt means to fix the rucksack (1) to a person able to endure in pulling down the weigh of a body of the person and rucksack with respective deceleration in falling for stopping the falling down;
- cable winding/unwinding (rolling/unrolling) means (2′-2, 3) the extremity of the cable being endowed of hooking means similarly able to endure in pulling down the weigh of a body of the person and rucksack with respective deceleration in falling for stopping the falling down;
- braking means for unwinding control said cable in falling down (4-14/5′-5-6-7-7′).

2. Dorsal antifall rucksack as claimed in claim 1., characterized in that said cable winding/unwinding braking means comprises adjustable resistance means to control the cable unwinding in proportion to the falling weigh (4-14).

3. Dorsal antifall rucksack as claimed in claim 1., characterized in that said cable unwinding braking means (3) comprises manually operable braking lever means (7-7′-6-5-5′) during the fall.

4 . Dorsal antifall rucksack as claimed in claim 1., characterized in that said cable unwinding braking means (3) comprises an axis of command disposed transversely, with frontal termination to key for the rewinding device (13).

5. Dorsal antifall rucksack as claimed in claim 1., characterized in that said unwinding resistance means comprises an helical spring (4) coaxial with a transversal axis (13) in the cash of rucksack (1), with head friction means (14) that determine the resistance to the unwinding of respective reel (3) and consequently on the unwinding pulling cable (2).

6. Dorsal antifall rucksack as claimed in claim 1., characterized in that said unwinding resistance means of the cable (2) comprises roller guide means slidably to trolley (8, 9) for conforming the respective winding and unwinding for succeeding stratifications.

7. Dorsal antifall rucksack as claimed in claim 1., characterized in that said lever braking means (6-7) are connected to a wrapping belt means (5) that semiwrap a pulley (5′) keyed to a drum of the winding/unwinding reel (3). Udine,

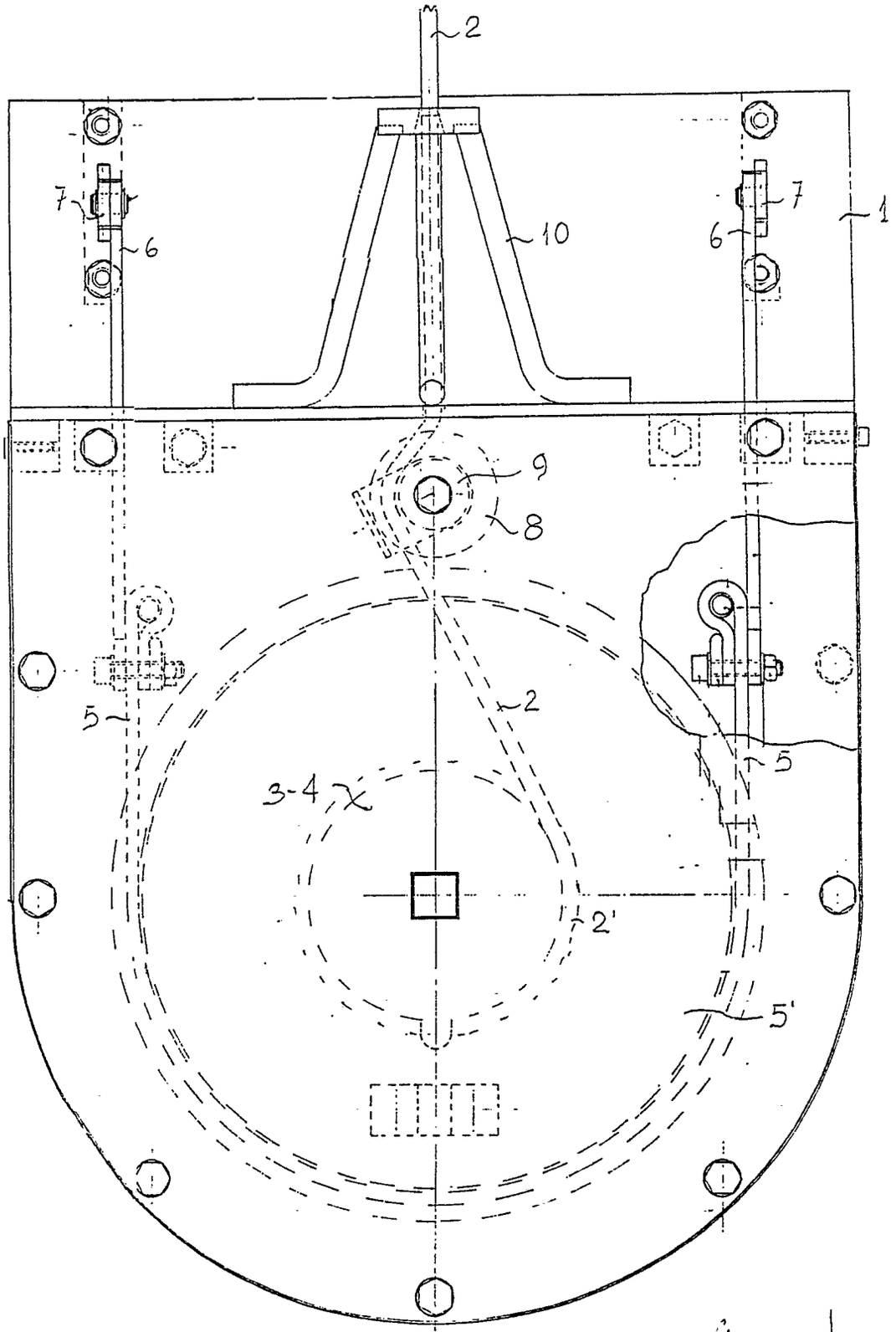

FIG. 1

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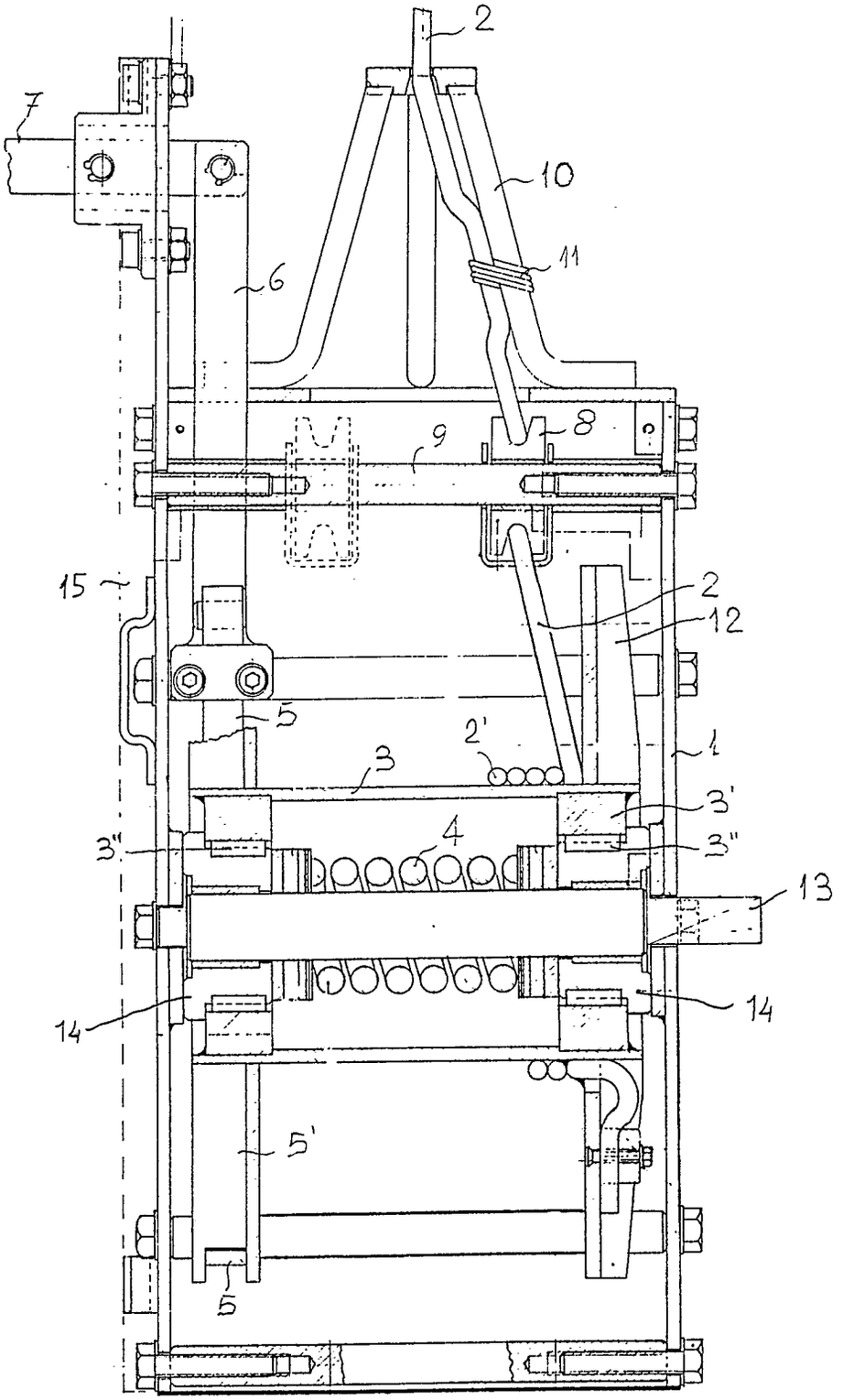

FIG. 2

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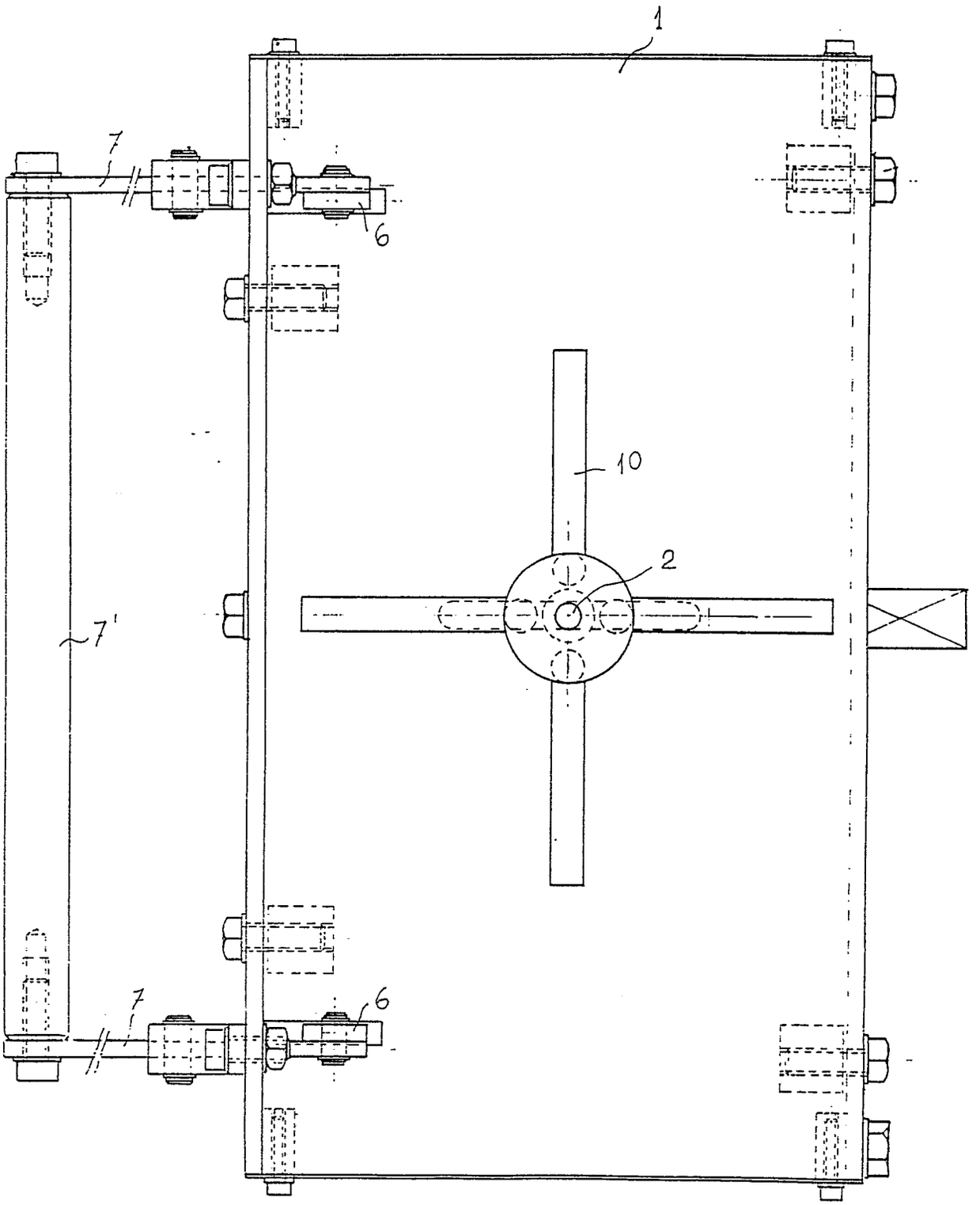

FIG. 3

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