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SAFETY DEVICE FOR USE IN WINDOW CLEANING AND OTHER EXPOSED POSITIONS.

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1,409,702. Patented Mar. 14, 1922.

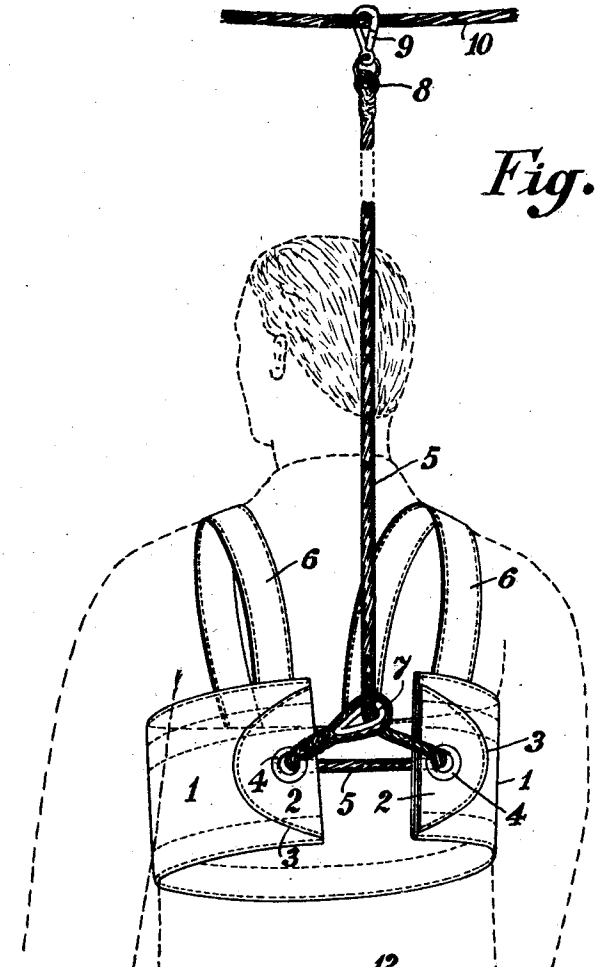


Fig. 1.

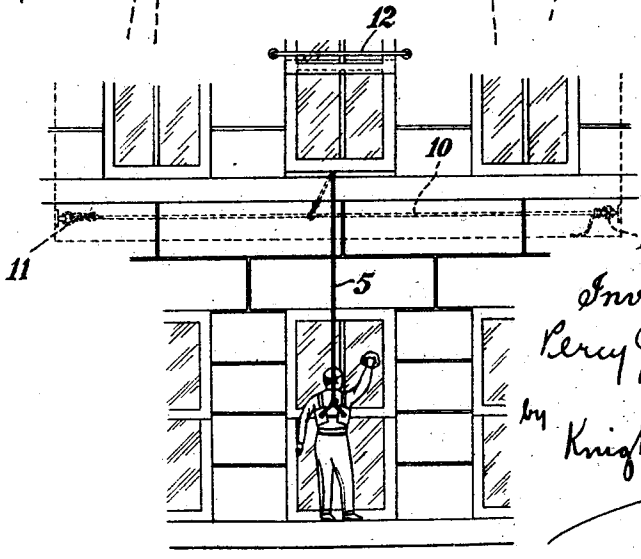


Fig. 2.

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UNITED STATES PATENT OFFICE.

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SAFETY DEVICE FOR USE IN WINDOW CLEANING AND OTHER EXPOSED POSITIONS.

1,409,702. Specification of Letters Patent. Patented Mar. 14, 1922.

Application filed April 3, 1920. Serial No. 371,009.

To all whom it may concern:

Be it known that I, PERCY JOHN GILL, a subject of the King of Great Britain, residing at Liverpool, in the county of Lancaster and Kingdom of England, have invented certain new and useful Improvements in Safety Devices for Use in Window Cleaning and other Exposed Positions, of which the following is a specification.

This invention has reference to safety devices for catching falling workmen, such as window cleaners, house painters, steeplejacks, ship's painters and cleaners, warehousemen and others. The device is of the type which comprises a safety belt which is passed round and firmly secured to the workman's body, and a rope one end of which is secured to the said belt while the other end is fastened to a fixed object, so that if a workman wearing this appliance should slip, while engaged in his hazardous task, his fall will be instantly arrested and his life saved.

The improvements which constitute the present invention will be understood from the following description, reference being had to the accompanying drawings, in which:—

Figure 1 is a general view of my improved safety device applied to a workman,

Figure 2 is an elevation of a portion of a building showing the safety device in use by a window cleaner.

Referring to the drawings, 1 is the safety belt whose length is somewhat less than the girth of the wearer's body so that when worn the ends do not quite meet. It is made wide so as to extend from above the waist to beneath the arm pits, and the two ends 2 of the belt are folded over and sewn to the belt at 3 so as to reinforce or strengthen the belt at the ends and produce a double thickness of material thereat. The belt at the two folded over ends is eyeletted, that is to say, holes are punched in the said ends 2, and a short metallic tube or eyelet 4 is passed through each hole and flanged over against the surfaces of the belt, and through these eyelets 4, one end of a rope 5 is passed, the said metallic eyelets 4 preventing any tearing by the rope of the fabric or material of which the belt is made. Two shoulder straps 6 are applied and firmly secured to the belt by stitching, rivets, buckles or other suitable means, these two straps 6 passing from the front of the belt to the rear thereof. The rope 5 is passed through one eyelet 4 from the outside to the inside of the belt, and through the other eyelet 4 from the inside to the outside, and the end of the rope has a spliced eye 7 that is to say the rope is bent round a metallic thimble or dead-eye 7 and spliced into the standing part. The rope 6 is looped through this dead eye 7 so as to form a running noose passing through the eyelets 4, so that when a pulling strain is applied to the rope, such noose will draw the ends of the belt closer together and so tighten the belt around the workman's body as will be understood by reference to the drawing, while when the pulling strain is relaxed, the tightness of the belt round the body will be slackened and enable the ends of the belt to spread themselves further apart.

The upper end of the rope 6 has a spliced eye 8 formed by passing it round a metallic dead eye, and to this is coupled a snap hook 9 or any other suitable hook or fastening device for attachment to a fixed support. This fixed support may consist of a bridle rope 10 passing along a range of windows and coupled at the two ends to ring bolts 11 secured to the walls or floors, the hook 9 being fastened to this bridle rope 10 when the apparatus is in use. Instead of a bridle wire 10, a fixed bar 12 secured across a window or doorway from side to side might be used.

The invention is a certain safeguard against a workman losing his life by falling from a great height. For instance a window cleaner or painter applies the belt 1 to his body with the straps 6 lying over his shoulders, and the upper edge of the belt 1 coming under the arm-pits so as to distribute the pulling strain of the rope 5. When standing for instance on a window sill, he fastens the hook 9 to the bridle wire 10 or to the bar 12 or other fixed object. In the event of the workman slipping and falling, he is at once caught up by the rope 5, the pulling strain on the rope instantly bringing the two ends of the belt 1 towards one another and tightening the belt round the body, and holding him absolutely securely in a suspended and erect position with head upwards and feet below, the rope being made of such a length that there is only a drop of a foot or so, or even less. The greater the weight of the workman the more tightly will the safety belt be gripped round his body. In the case of a workman

standing on a ladder, he would fasten the hook to a rung or a side bar, so that if he slipped the belt would at once tighten itself round his body and hold him suspended. The invention can be used by men engaged in the dangerous occupation of delivering or receiving goods that are being lowered from or delivered to warehouse doorways at considerable altitude from the street, also by steeple jacks when climbing. When the pulling strain on the rope 5 is relaxed, the tightness of the belt round the body will be slackened, so that a man can work or move about with full freedom and with full powers of respiration. Hence the belt 1 can be worn permanently under the coat with the rope 5 wound round his waist, as he goes from one job to the next.

The safety belt can be made of cotton canvas, doubly sewn with strong sail twine. It can be worn as shown in the drawing with the rope connected behind, or the belt can be reversed so that the rope attachment is in front. Instead of the rope 5 wire, chain or leather strapping may be used.

The belt when in use supports the workman at the strongest part of the body namely across the chest and back, and not round the waist, and consequently he can be held suspended without injury and without straining himself.

I declare that what I claim is:—

1. A safety device for catching falling workmen, comprising in combination a wide body belt folded over at its respective ends so as to reinforce and strengthen it, eyelets in the center of said reinforced ends, shoulder straps secured to the belt, said shoulder straps being of such length as to position the upper edge of the belt immediately beneath the armpits of the wearer, said belt being of such length that its ends are spaced apart, a rope or line passed through the eyelets and provided with a dead-eye through which the line is looped so as to form a noose which draws the ends of the belt closer together when a pulling strain is applied, and means at the other end of the rope or line for attachment to a fixed object.

2. A safety device for catching falling workmen, comprising in combination a wide body belt folded over at its respective ends so as to reinforce and strengthen it, eyelets in the center of said reinforced ends, shoulder straps secured to said belt, said shoulder straps being of such length as to position the upper edge of the belt immediately beneath the arm pits of the wearer, said belt being of such length that its ends are spaced apart, a rope or line passed through the eyelets and provided with a dead-eye through which the line is looped to form a running noose, a snap-hook attachment at the other end of said line, ring-bolts spaced apart and secured to a building and a bridle rope coupled at its two ends to these ring-bolts so as to form a means to which said snap-hook can be fastened.

In witness whereof, I have hereunto signed my name this 16 day of March 1920, in the presence of two subscribing witnesses.

PERCY JOHN GILL.

Witnesses:

J. McLachlan,

Dorothy Gray.