The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A safety line rope grab adapted for selective sliding movement along a depending rope, comprising an elongated head having at one side of its longitudinal centre an aperture through which said rope is trained, said head at the other side of its longitudinal centre having an aperture directed at right angles to the first mentioned aperture, and a rigid stem integral with said head and extending outwards therefrom from a point between said apertures, said stem being inclined towards the end of said head through which the second mentioned aperture passes, there being provided thereby a substantially-V-shaped recess at the junction of said stem with said head, said stem being of substantially greater length than the portion of said head through which said second mentioned aperture passes and being adapted to be passed through a half-hitch in the rope.

2. A safety line rope grab adapted for sliding movement along a depending rope, comprising an elongated head having at one side of its longitudinal centre an aperture through which said rope is adapted to be trained, said head at the other side of its longitudinal centre formed to provide a ring-like member lying transversely with respect to said first side and having its opening directed at right angles to the first mentioned aperture, a rigid stem integral with said head and extending outwards therefrom at a point between said apertures in a slight incline in a direction towards said ring-like member.

3. A safety line rope grab according to claim 2, characterised in that said stem comprises a rigid strap-like member having a relatively wide face opposing said ring-like member and extending therebeyond.

The invention relates to improvements in a Rope Grab for association with a safety line such as is usually anchored on the top of a building to depend downwards across a swing scaffold, or other structure, occupied by a workman and being connected to the belt or harness of such person for the purpose of holding him suspended in the event that he should accidently fall from the scaffold or that the scaffold should tip and dislodge the occupant.

The main object of the invention is to provide a safety rope grab of simple, durable and inexpensive construction which will be instantaneous and positive in action and which can be readily adjustable by the uses as circumstances dictate.

Heretofore safety devices of different types have been proposed and/or put into practice for the purpose of preventing a person from falling from a scaffold or other structure but in the main such devices have not proven entirely satisfactory. In the use of some of such heretofore proposed devices the weight of a falling body is utilized to perform some function to set the device to its grab condition, such, for instance, as to invert a sleeve through which the safety rope extends, or to pull some lever to alter the direction of the rope or to perform some other function necessary to effect a grab on the rope, during which time the body is allowed to drop freely with the result that when the grab takes place the falling body is arrested with a sudden jerk, which is most unpleasant to the person involved and puts a great strain on the safety

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equipment. In other cases where springs, levers and other operating parts are employed there is the danger of failure at a critical time and with some devices it is necessary that the user maintains a grip on the safety line at all times.

I eliminate the disadvantages of the above-mentioned and other heretofore proposed fall arresting devices by the provision of a simple, unitary, cast or forged device readily attachable to a line from the user's belt or harness and being of such form that a simple half hitch taken in the safety rope at a critical point provides an initially set immovable obstruction to the downward movement of the grab device which increases in holding ability under weight until manually released.

With the above and other objects in view the invention consists in the novel features of construction arrangements and combinations set out in the present specification and claimed.

In describing the invention reference will be had to the accompanying drawings in which:

Figure 1 is an edge elevational view of a rope grab embodying my invention, the safety rope being shown in broken lines with a half hitch formed therefrom in process of being tightened.

Figure 2 is a face elevational view of the structure shown in Figure 1, the rope receiving ring being broken away and sectioned.

Figure 3 is an illustrative view showing the relative relation of the workman to the work and the rope grab.

Figure 4 is a broken top perspective view of a structure embodying a modified method of providing a passage for the safety rope, portions of the structure being broken away and sectioned.

Like numerals of reference indicate corresponding parts in the various Figures.

Referring to the drawings and particularly first to Figures 1-3 wherein is illustrated a complete embodiment of the invention, 1 denotes a safety rope such as is usually secured at its one end to a suitable object on the top of a building, indicated at 2, so as to depend downwards across a swing scaffold (not shown) such as is used to support a workman engaged in painting, window washing, or some other occupation.

"A" denotes generally my improved safety rope grab which is constructed of heavy metal cast or forged as a unit.

The rope grab comprises a body 3 adapted normally to assume a position at an angle of approximately 45% in relation to the horizontal, said body having a substantially vertical opening 4 therethrough at one side of its longitudinal centre to loosely receive the rope and having a substantially horizontally directed opening 5 therethrough near its other, or lower, end providing a ring 6 adapted to be engaged by a snap hook 7 carried on one end of a flexible hanger 8 which at its other end is attached to a belt 9 of a person standing on the scaffold, so that when the rope grab is in holding engagement with the rope 1 the person to whose belt the hanger 8 is attached will be held suspended should he become parted from the scaffold.

Integral with and depending downwards from the body 3 from a point between the openings 4 and 5 is a narrow plate 10, preferably about eight inches in length, the said plate being inclined in a direction towards the ring 6 of the body with its flat face 10a facing in the direction of inclination of said ring so as to provide a substantially V-shaped recess 11 between the plate and the body. The plate 10 is bent at a point 12 not far removed from its outer end to provide an end part 13 inclined to correspond substantially to the incline of the body.

In the use of the invention the safety rope is passed downwards loosely through the opening 4 in the body and the rope grab unit is adjusted on the rope to a position preferably above the belt of the user a distance approximately the length of the hanger 8, by means of which the rope grab is connected to the belt. The portion of the rope below the grab unit is then pulled up sufficiently far to allow the rope to be looped in the manner to provide a conventional half-hitch which is placed over the end of the plate 10 whereby a portion 20 of the rope below the body of the grab unit will lie across the face of the plate 10 beneath the ring 6 and continue to the other face of the plate where it will cross the portion of the rope above the loop, as at 21, and then extend downwards, so that when the grab unit is allowed to drop, with the plate 10 within the loop, until in its downward movement it reaches the position where the portion 20 of the rope which lies across the face of the plate is firmly wedged in the recess 11 between the plate and the part of the body behind the ring 6 and

the portions of the rope at the other side of the plate are crossed and extending in opposite directions from the point of crossing, downward movement of the grab unit is positively impossible. It will, therefore, be obvious that as the rope grab unit cannot move downwards because of the half-hitch around the plate at its junction with the body, the greater the strain put on the rope below the grab unit, as by the weight of a falling person, the greater will be the pressure applied by the grab unit on the looped part of the rope.

By the hereinbefore described construction and arrangement the grab unit is always in grabbing position and as a consequence, in the event that the user should fall from the scaffold, or the scaffold drop from under him, the fall of his body will be arrested the instant the hanger 8 reaches a taut condition. When it is necessary to re-adjust the rope grab unit on the safety rope, as when the scaffold is being lowered from one level to a lower level, it is only necessary for the occupant to grasp the rope above the grab unit and raise himself up a distance slightly greater than the length of the plate 10 and thus create a slack in the rope above the grab unit whereby pressure on the looped part of the rope is relieved so that the half-hitch will be loosened and will fall off the plate 10 and the grab unit will then be free to move downwards on the rope. The user can then go down the rope hand over hand, or with the scaffold, to the new location, after which he then applies a half-hitch of the rope to the grab unit, in the manner hereinbefore explained.

In Figure 4 a modified form of device is shown wherein a passage 14 for the safety rope is formed by the provision of spaced arms 15 and 16 providing such passage therebetween, said passage being adapted to be closed by a headed bolt 17 slidable through an opening in one of said arms and having a threaded end portion 18 threading into an internally threaded opening in the other arm.

The safety rope grab unit described hereinbefore will be found to be instantaneous in action; thoroughly reliable; easy to adjust to new positions; simple and sturdy of construction and cheap to produce.

While I have shown and described herein the present preferred embodiments of my investion, manifestly these are capable of modification and re-arrangement of parts without departing from the spirit of the invention. I, do not, therefore, wish to be understood as limiting this invention to the precise forms herein disclosed, except as I may be so limited by the appended claims.

FIG 1

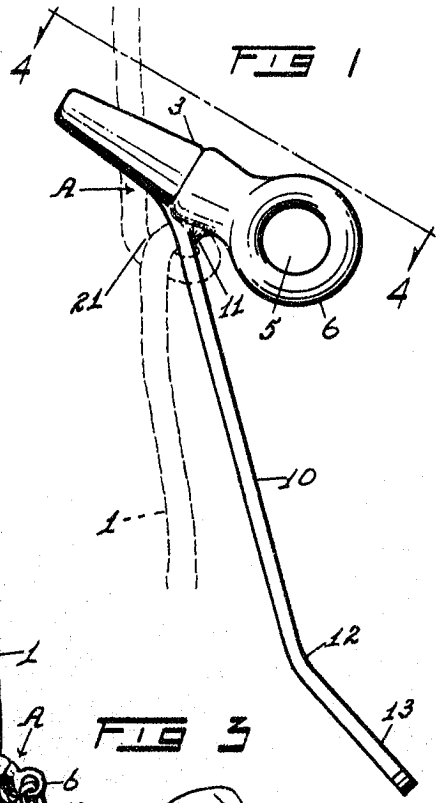


FIG 2

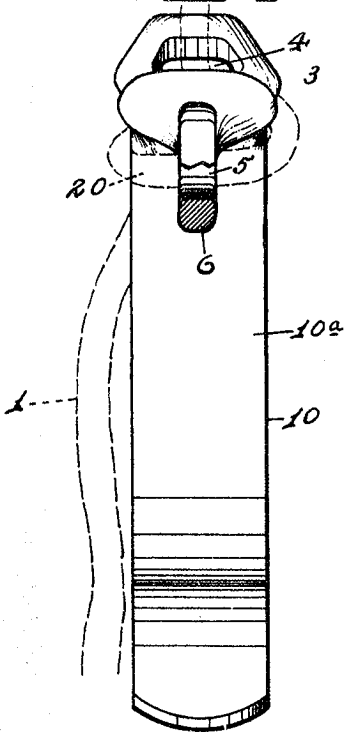


FIG 3

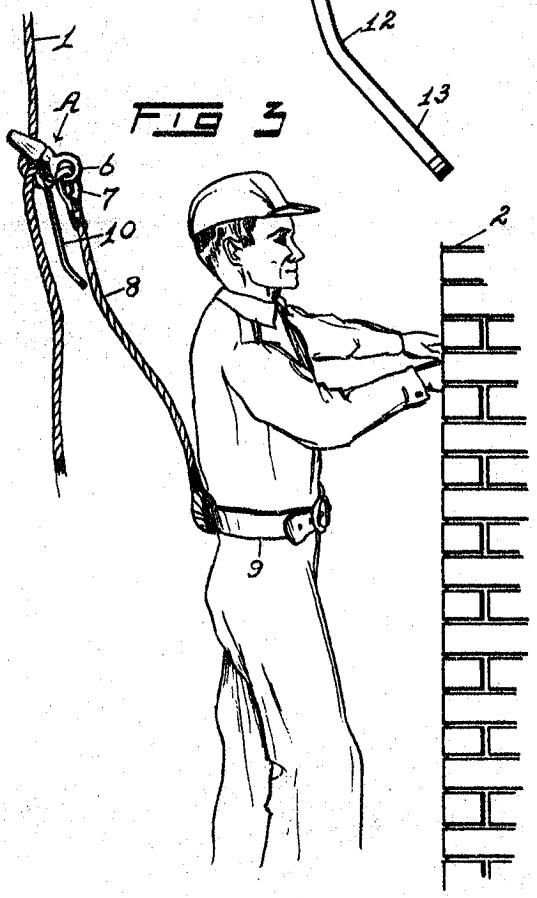
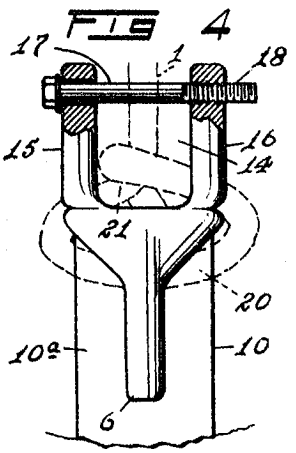


FIG 4



INVENTOR,
WALTER H. HUNTLEY.
W. E. Hammond
ATTORNEY.