Aug. 14, 1956 F. R. HEROD 2,758,887

SAFETY LIFELINE LOCK UNIT FOR BUILDING SUPPORTED SCAFFOLDS

Filed June 4, 1952

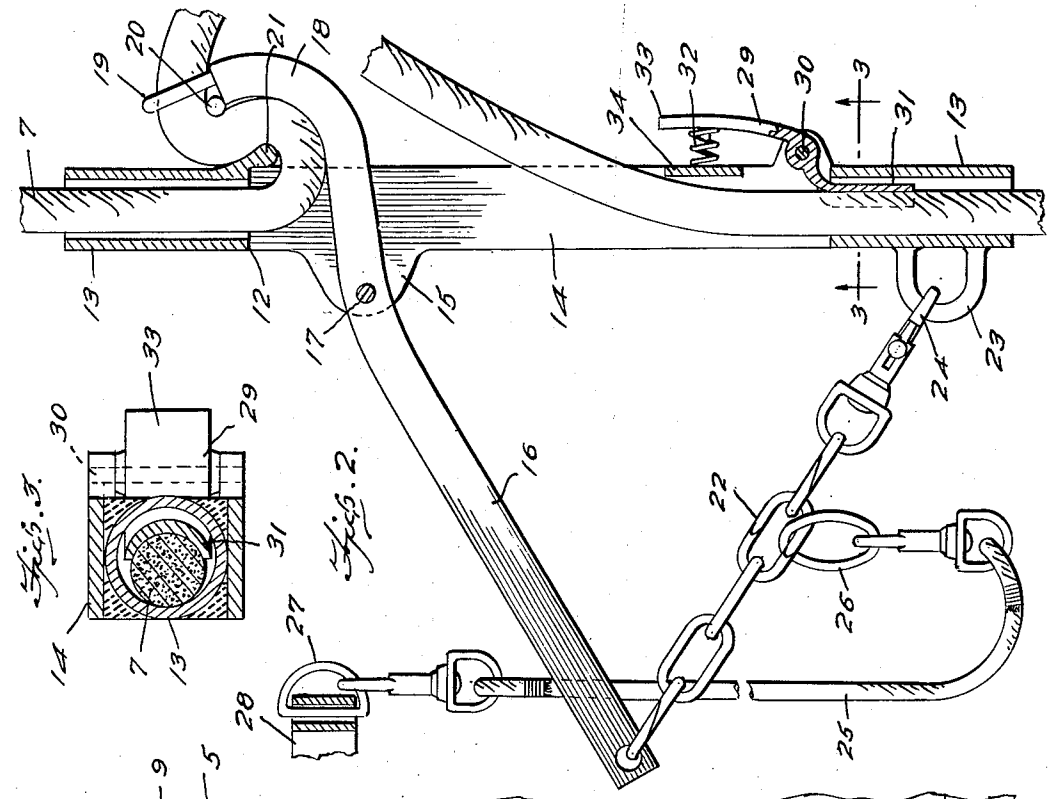


Fig. 3.

Fig. 2.

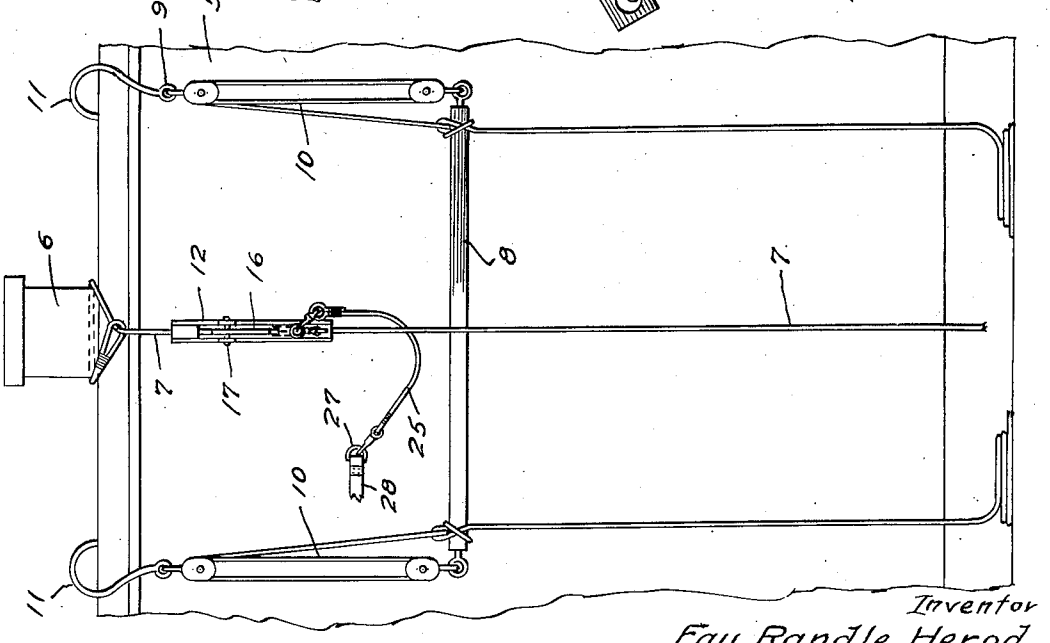


Fig. 1.

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SAFETY LIFELINE LOCK UNIT FOR BUILDING SUPPORTED SCAFFOLDS

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4 Claims. (Cl. 304—1)

This invention is a safety lifeline lock unit for use on building supported scaffolds, and is usable any place a swing scaffold is employed including smoke stacks, bridges, ships and the like.

As is now known in the art, it is customary to employ a so-called lifeline for use by artisans supported on swing scaffolds, the lifeline having one end attached to a fixed part of the building, above the scaffold, the opposite end extending downwardly to the ground with an intermediate part of the rope engaged with a safety belt secured to the person of the artisan. The lifeline used in the above manner has been remedial to a degree but is characterized by a salient deficiency due to the fact that the line must be untied and retied as the scaffold is raised and lowered. This is particularly hazardous when the scaffold is high up on a building because of the weight of the line, unually made of three quarter inch cable, pending below the scaffold, which must be lifted by the artisan each time the cable is untied from or retied to his safety belt.

It is therefore a principal object of this invention to provide a safety unit for connecting the lifeline to the artisan's safety belt in a manner which permits the artisan to be raised and lowered with the scaffold without disconnecting the line from his belt, the unit entity however being quickly detachable from the belt at the option of the user.

It is also an object of this invention to provide a relatively simple safety unit through which the free end of the safety line may be quickly passed, the unit including automatic means which normally engages the line to lock the unit from movement thereon, the means being manually releasable when the unit is to be slipped up or down on the line.

Other objects of the invention will be apparent from the following description of the presently preferred form of the invention, wherein:

Fig. 1 is a front elevational view of a unit constructed in accordance with the present invention illustrating its application;

Fig. 2 is a vertical sectional view of the unit applied to a lifeline cable showing the unit secured to the D ring of a safety belt, the latter being shown fragmentarily and in section, and

Fig. 3 is a detail horizontal sectional view taken on the line 3—3 of Fig. 2 looking in the direction of the arrows.

For the purpose of illustrating the application of this invention a portion of the building structure 5 is shown which may be equipped with a chimney or other support 6 to which the upper end of a lifeline cable 7 may be secured. The cable now ordinarily used is three quarters inch rope, but with the device of the present invention it is possible to use, if desired, a metal cable of much smaller cross section. The cable 7 in use extends downwardly below the horizontal supporting platform 8 of a standard swing scaffold generally designated 9. The scaffold includes block and tackle 10 and supporting

hooks 11 which are engaged with the roof or some other permanent part of the building 5. The platform 8 is raised and lowered on the side of the building in a manner well known in the art.

The locking unit of the present invention includes a housing generally designated 12 which includes a cylinder or tube 13 at each end through which the cable 7 passes. The intermediate part of the housing is open front and back, each side 14 of the intermediate part of the housing having a portion of its front edge, near the upper cylinder tube, extended to provide an ear 15 to which a locking lever 16 is pivotally engaged as indicated at 17. The inner end of the lever is formed to provide a hook 18 which is adapted for engagement with an intermediate part of the cable 7, as advantageously illustrated in Fig. 2. The free terminal of the hook 18 issues into a loop 19 which is sleeved over the cable 7. The free end of said hook is also equipped at its inter-margin with a lip 20 which coacts with a corresponding lip 21 formed on the lower end of the upper cylinder 13 at the rear of the latter. When the lever 16 is in a locked position, as shown in Fig. 2, the lips 20 and 21 bite into the cable to prevent possibility of slippage of the latter. The outer end of the lever 16 carries a locking connection 22 which is detachably engaged to an eye 23 formed on the front face of the lower cylinder or tube 13. The connection 22 in the present instance consists of a chain and a swivelled hook, the latter being designated 24 and being capable of manual operation by the user in an obvious manner.

The unit also includes a lanyard 25, one end of which is adapted to be detachably engaged with a ring 26 carried by one of the links of the connection 22. The opposite end of the lanyard is adapted for detachable connection with the D ring 27 of a safety belt 28, the belt being engaged with an artisan or other person carried by the platform 8 of the scaffold.

When it is desired to raise or lower the platform 8 the connection 22 is detached from the eye 23 of the housing which permits the free outer end of the lever 16 to be elevated in a vertical arc correspondingly permitting the hook end 18 of the lever to move downwardly in an arc. This action releases the cable and permits free movement of the unit on the cable. To the end that the person on the platform of the scaffold will be supported in the event of failure of the scaffold while the lever 16 is in a released position just described, I provide automatic latch means which consists of a detent 29 pivotally mounted, as indicated at 30, to the sides 14 of the housing just above the lower cylinder 13 including a cable engaging plate 31 which conforms to the contour of the cable and urges the latter against the inner wall of the lower cylinder under influence of a spring 32 interposed between the finger engaging portion 33 of the detent and a bar 34 of the housing. Therefore, before the unit can be raised or lowered on the cable 7 it is necessary, after release of the lever 16, to exert pressure on the finger portion of the detent to correspondingly disengage the lock plate 31 of the detent from the cable. If, during this operation, there should be a failure of the scaffold or if the person mounted thereon should slip or fall for any reason, the detent will automatically move into a locked position to prevent movement of the unit on the cable. Furthermore, the weight of the displaced person on the free end of the lever automatically moves the lever into a locking position to thereby hold said person in a suspended position until suitable support can be provided.

Various changes may be made within the scope of the appended claims.

What I claim is:

1. A safety lock unit including a cable, one end of which is secured to a support above a building-carried scaffold, an intermediate part of the cable being adapted for securement to a person on the scaffold; and a unit for securing the cable to a person on the scaffold, said unit comprising a housing slidably mounted on the cable, the housing including an upper member through which the cable is trained, and a lever pivotally connected to the housing at a point intermediate its length, one terminal of said lever being adapted to engage and deflect the cable from its normal path at a point below the upper member, said lever terminal being rotatable about the lever pivot to a point above the lower edge of said upper member to reverse the direction of an intermediate part of the lifeline cable and lock the unit.

2. A safety lock unit as set out in claim 1, with the addition of a cable encircling member affixed to said lever terminal to effect reversal of an intermediate part of the lifeline cable upon rotation of the lever about its pivot.

3. A safety lock unit as set out in claim 1, with the addition of a spring-pressed detent pivotally mounted on said housing, said detent comprising a finger-engaging portion, and a cable-engaging plate normally urged against the cable, said plate being released by operation of the finger-engaging portion.

4. A safety lock unit including a cable, one end of which is secured to a support above a building-carried scaffold, an intermediate part of the cable being adapted for securement to a person on the scaffold; and a unit for securing the cable to a person on the scaffold, said unit including a housing slidably mounted on the cable, a lever pivotally connected to the housing, one terminal of said lever being formed to provide a hook adapted to engage and deflect the cable from its normal path, and a cable-encircling loop cooperating with the lever hook to reverse the direction of an intermediate part of the cable upon rotation of the lever about its pivot, to lock the unit.

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