Aug. 13, 1940. C. H. DIEHL ET AL 2,211,259

FIRE ESCAPE

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Fig. 1.

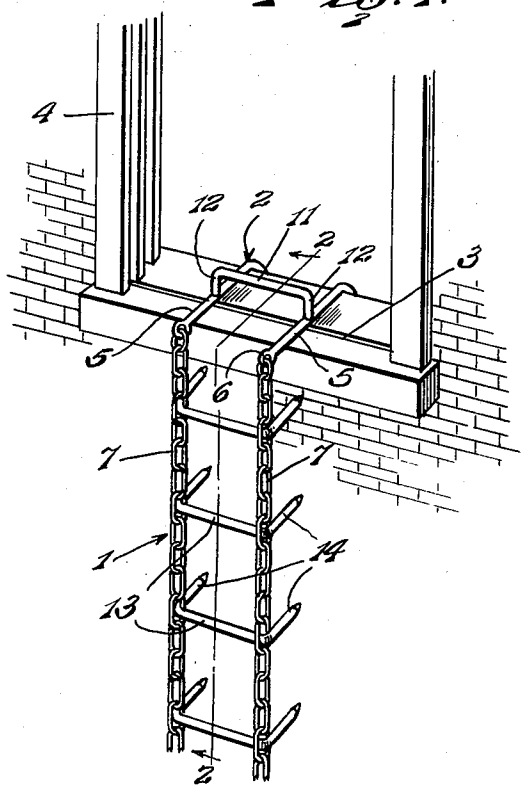


Fig. 2.

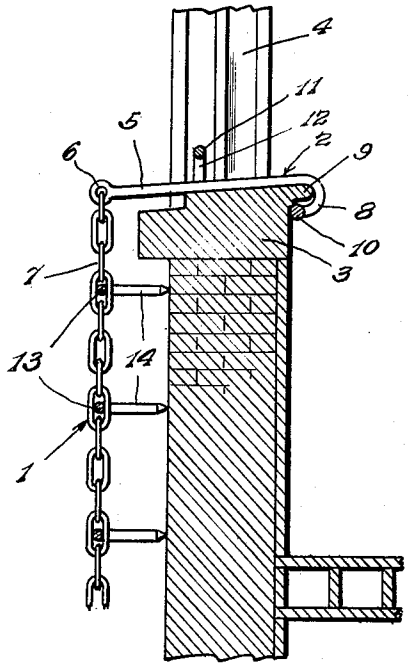


Fig. 4.

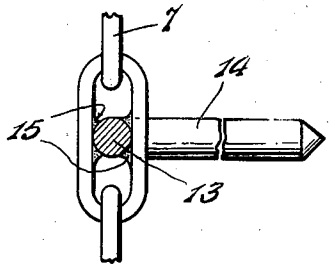
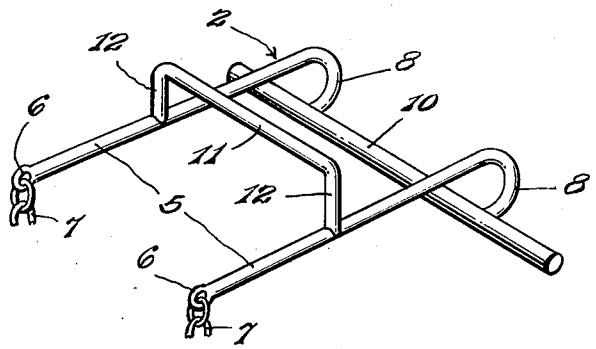


Fig. 3.



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FIRE ESCAPE

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2 Claims. (Cl. 228—40)

This invention relates to a fire escape of the ladder type and it is one object of the invention to provide a device of this character consisting of a light weight ladder having a grapple at its upper end for engaging a window sill and suspending the ladder therefrom in such position that a person may climb down the ladder and thus escape if trapped in a room by fire.

Another object of the invention is to so form the grapple that its hooked end portion will be very firmly engaged with the inner portion of a window sill and prevented from slipping during use of the fire escape.

Another object of the invention is to so form the grapple that a cross bar constituting a transverse brace for side bars of the grapple will serve as a hand hold adapted to be grasped by a person crawling through a window and down upon the ladder suspended from the grapple.

A further object of the invention is to provide the ladder with rungs so formed that portions extending inwardly from side chains of the ladder will serve as spacers for maintaining the chains and cross rungs spaced outwardly from the wall of a building. It will thus be seen that a person using the fire escape may readily grasp the rungs and climb down the ladder without the fingers becoming caught between the rungs and the wall of the building.

And the invention has as a still further object to provide a fire escape of this type which is of light weight and may be stored in a small space or small container when not in use, its light weight permitting it to be very easily applied to a window sill in position for use when needed.

The invention is illustrated in the accompanying drawing, wherein:

Fig. 1 is a perspective view showing the improved fire escape in position for use.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged perspective view of the grapple.

Fig. 4 is an enlarged fragmentary view illustrating the manner in which the rungs are connected with the side chains of the ladder.

This improved fire escape consists briefly of a ladder 1 and a grapple 2, by means of which the ladder is suspended from the sill 3 of a window frame 4. The ladder may be of any length desired, adapting it to extend from the window to the ground, and thus permit a person trapped in a room by fire to crawl through the window and climb down the ladder to the ground in safety.

The grapple is formed of strong metal and has side bars 5 having eyes 6 at their outer ends through which the upper end links of the side chains 7 of the ladder are engaged to suspend the ladder from the grapple. Inner end portions of the side bars 5 are bent downwardly and back upon themselves to form hooks 8 for engaging under the ledge 9 of the window sill and these hooks are welded to an anchoring bar 10 which is of appreciably greater length than the distance between the hooks and projects laterally from the hooks, as shown clearly in Fig. 3 of the drawing. Therefore, when the fire escape is in use and the grapple set in place across the window sill, the anchoring bar will bear against the inner face of the window sill under the ledge 9 a sufficient distance to firmly anchor the grapple and thus prevent transverse tilting thereof. It will thus be seen that there will be no danger of the grapple tilting transversely and slipping out of proper engagement with the window sill. A cross bar 11 which serves as a brace for the side bars 5, extends transversely between the same midway their ends and has depending arms 12 which are welded to the side bars. This cross bar serves very effectively to brace the side bars and since it is spaced upwardly from the side bars it constitutes a hand hold so disposed that it may be readily grasped while crawling through the window and stepping down upon the ladder.

A swinging ladder is hard to climb by an inexperienced person due to the fact that it swings freely. In order to prevent the ladder from having free swinging movement and also prevent a person's fingers from becoming caught and mashed between the ladder and the wall of the building, there have been provided rungs of special construction. Each rung is formed from a metal bar having its end portions bent to form arms or spacers 14 which are of such length that they may bear against the wall and hold the ladder spaced outwardly from the sill 3 and the outer surface of the wall. These rungs are passed through links of the chains 7, as shown in Figs. 2 and 4, and firmly welded to the links, as shown at 15 in Fig. 4. Therefore, the rungs will be firmly united to the links of the chain and prevented from slipping through the links. This also prevents the rungs from turning in the links and the arms 14 will be held at right angles to the chains. The fact that the arms have pointed ends also permits them to engage in the mortar points of a wall and thus assist in maintaining the ladder in its proper position relative to the wall. A ladder so formed may be easily descended as it will be prevented from swinging

toward and away from the building wall and, in addition, its rungs may be readily grasped without danger of the fingers being mashed, and there will be no danger of a person's toes striking against the wall and thus caused to slip from the rungs.

The fire escape is normally stored in a box or other container, or it may be deposited in a pile in a closet or corner of a room. When a fire occurs and it is impossible for the occupant of the room to escape by way of the door, the fire escape is carried to the window and the grapple thrust across the window sill and anchored by engagement of the hooks 8 under the ledge 9. The ladder is then thrown or fed out of the window until it hangs from the grapple, as shown in Figs. 1 and 2, with the arms 14 of the rungs 13 abutting the outer face of the wall. The person may then crawl through the window and by grasping the hand hold 11, easily step downwardly upon the ladder and climb down the ladder to the ground. The anchor bar 10 aids in holding the hooks 8 under the ledge 9 and, in addition, prevents transverse rocking of the grapple. Therefore, the grapple cannot slip out of engagement with the window sill.

Having thus described the invention, what is claimed is:

1. In a fire escape, a ladder consisting of side chains, rungs extending between said side chains and having their end portions passed through links of the chains and bent to form arms projecting from the chains for engaging a wall and maintaining the rungs in spaced relation to the wall, and means for securing the rungs to the links of said side chains.

2. In a fire escape, a ladder consisting of side chains, and rungs formed of bars extending between said chains and having their end portions bent to form arms passed through links of said chains and projecting from the chains in a direction to abut a wall and maintain the rungs spaced from the wall, said bars being welded to the links to firmly unite the rungs to the chains and prevent turning of the rungs relative to the chains.

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