Sept. 22, 1931. J. KOLESZA 1,824,279

FIRE ESCAPE

Filed March 10, 1930

Fig. 1.

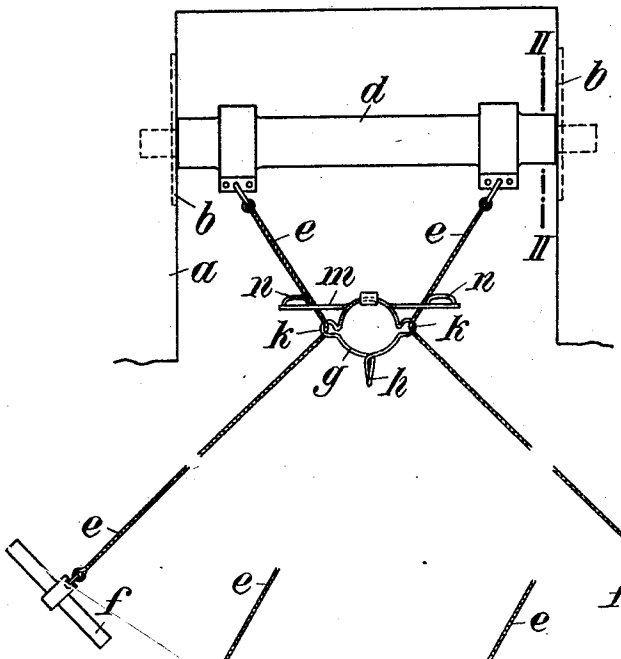


Fig. 2.

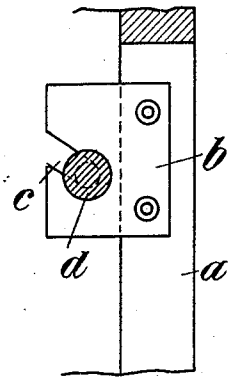


Fig. 3

Fig. 4

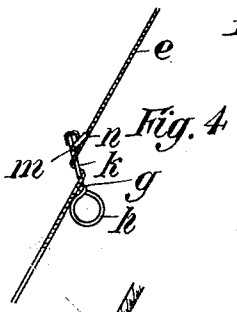


Fig. 5

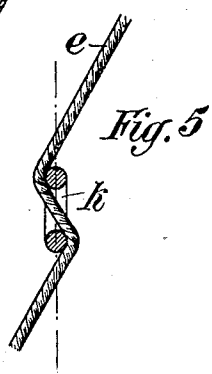
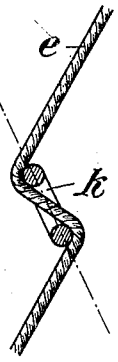


Fig. 6



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UNITED STATES PATENT OFFICE

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FIRE ESCAPE

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Appliances for enabling persons to descend by means of ropes, are already known, such appliances consisting of a safety belt, which is provided with an eye, constructed for example as a carbine hook or swivel through which there pass two ropes, which are pulled apart at their lower ends by helpers, in such a way that the eye, with the person suspended therefrom, slides down the two ropes more or less slowly.

If, however, as hitherto the two spreader ropes are secured at one point at the upper end, the lower ends must be spread rather far apart in order to obtain sufficient friction between the ropes and the carbine hook mounted on the safety belt. Nevertheless the slipping cannot be prevented from proceeding comparatively fast at the start, since notwithstanding the spacing of the ropes, particularly in the case of great heights, the upper ends of the ropes remain substantially parallel. Moreover in narrow streets wide spreading is not possible at all.

According to the invention easy and reliable regulating by the helpers of the speed of slipping down is obtained by securing the two spreader ropes at some distance from one another, so that the upper ends of the ropes are also spread apart above the swivel hook.

The speed with which the person hanging from the belt then slips down is determined by the angle which the spreader ropes, secured at the top to a window or the like, running through the aforementioned eye and held at their lower ends by the assistants, make with the vertical. The speed cannot therefore be affected at all by the person descending.

A personal regulation of the speed of descent by the individual descending is obtained by a further improvement according to the present invention, by shaping the eye that slides down the two ropes in such a way that the passenger, by tilting the ring, can pinch the ropes. The friction between the ropes and the eye being thereby increased, brakes the travel. A diminution in the angle of tilting reduces the braking. The person descending can accordingly regulate the speed of descent himself or even stop altogether.

Figure 1 is a front view of the device.

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

Figure 3 is a side view of the sliding ring, in the position which it occupies under load,

Figure 4 is a similar view showing the sliding ring in the position it occupies when braking force is applied by the person descending,

Figures 5 and 6 show the positions of the eye lugs and the rope of Figures 3 and 4 respectively on a larger scale.

In the construction illustrated the window *a* is provided on its two stanchions with cheeks *b* for the attachment of the life-saving appliance a cross bar *d* being placed in downwardly inclined slots *c* in the said cheeks.

From the cross bar the two ropes *e* are suspended as far as possible apart. To the other ends of the ropes are secured holding sticks *f*, which serve for tensioning and spreading apart the ropes *e* by the assistants in the street.

The two ropes *e* pass through an eye *g*, having a ring *h*, from which a person starting from the window *a* hangs by means of a swivel hook before starting down, the swivel hook being mounted on a belt which passes round the user.

The ropes are passed through lugs *k*. In an unloaded condition the eye runs along the ropes *e* without appreciable friction as soon as the spreading force exerted by the holders below is sufficiently small to enable it to slip down.

When the eye *g* is loaded with the weight of the person descending, as illustrated in Figures 2 to 7, owing to its tendency to erect itself as shown in Figures 2 and 4 under the action of the load, it exerts with its lugs *k* a pinching action upon the inclined ropes *e*, as clearly shown in Figure 6.

The passenger increases this pinching action if he pushes the handle bar *m* away from him, whereby the lugs *k* move out of the position shown in Figures 3 and 5 into the position shown in Figures 4 and 6, where they increase the pinching action and therefore the friction on the ropes, which results in braking the speed of descent.

The person using the appliance therefore has it in his power to regulate the speed of the travel. It is assumed that the assistants below are keeping the ropes *e* widely enough apart.

The lugs *k* are open towards the interior of the eye *g*, so that the ropes inserted through the eye *g* can easily be introduced through the apertures into the lugs *k*. In order that the ropes may not be able to escape from the lugs, the lugs ascend obliquely from the aperture.

The hands of the passenger holding the handle bar *m* are protected by curved guards *n* from contact with the ropes, which might give rise to pain and injuries.

What I claim is:—

1. A rope descent appliance for use as a fire escape and for like purposes, comprising a safety belt adapted to be fastened round the body of the person who is to descend, an eye attached to the safety belt, two lateral hollow lugs forming part of the eye, two ropes, one passing through each of the lugs, and both secured at their upper ends to two fixed points a substantial distance apart, and means whereby the person descending can tilt the eye and lugs, thereby increasing the friction between the lugs and the ropes.

2. A rope descent appliance for use as a fire escape and for like purposes, comprising a safety belt adapted to be fastened round the body of the person who is to descend, an eye attached to the safety belt, two hollow lateral lugs forming part of the eye, lying in the same plane as the eye, and with their hollows in open communication with the interior of the eye, the lugs extending obliquely upwards from the points of communication, two ropes secured at their upper ends to two fixed points a substantial distance apart, each of the ropes passing through one of the lugs, and means whereby the person descending can tilt the eye and lugs, thereby increasing the friction between the lugs and the ropes.

In testimony whereof I affix my signature.

JOHANN KOLESZA.