

J. F. VICKERS.

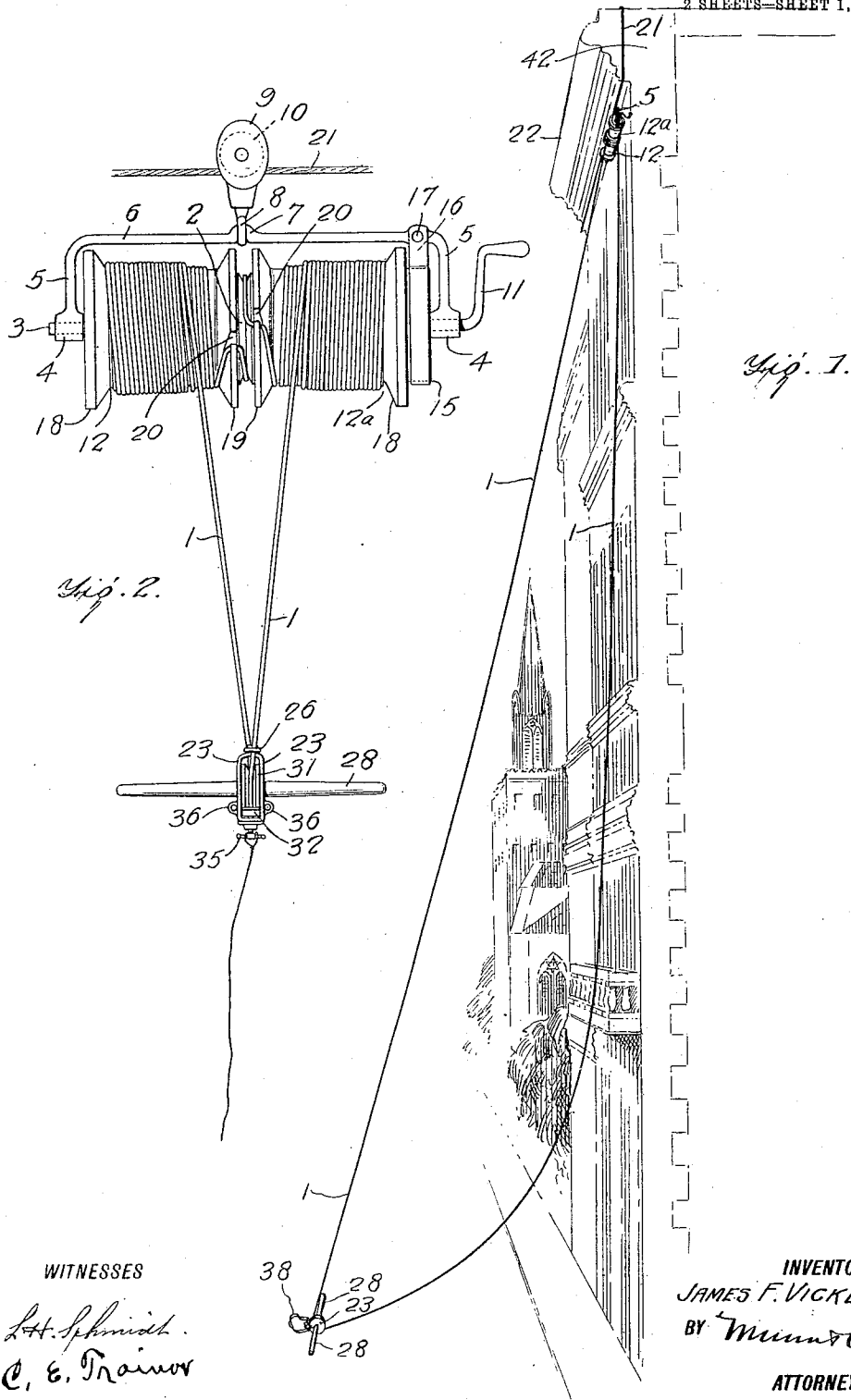
FIRE ESCAPE.

APPLICATION FILED JUNE 24, 1913.

1,110,169.

Patented Sept. 8, 1914.

2 SHEETS—SHEET 1.



WITNESSES

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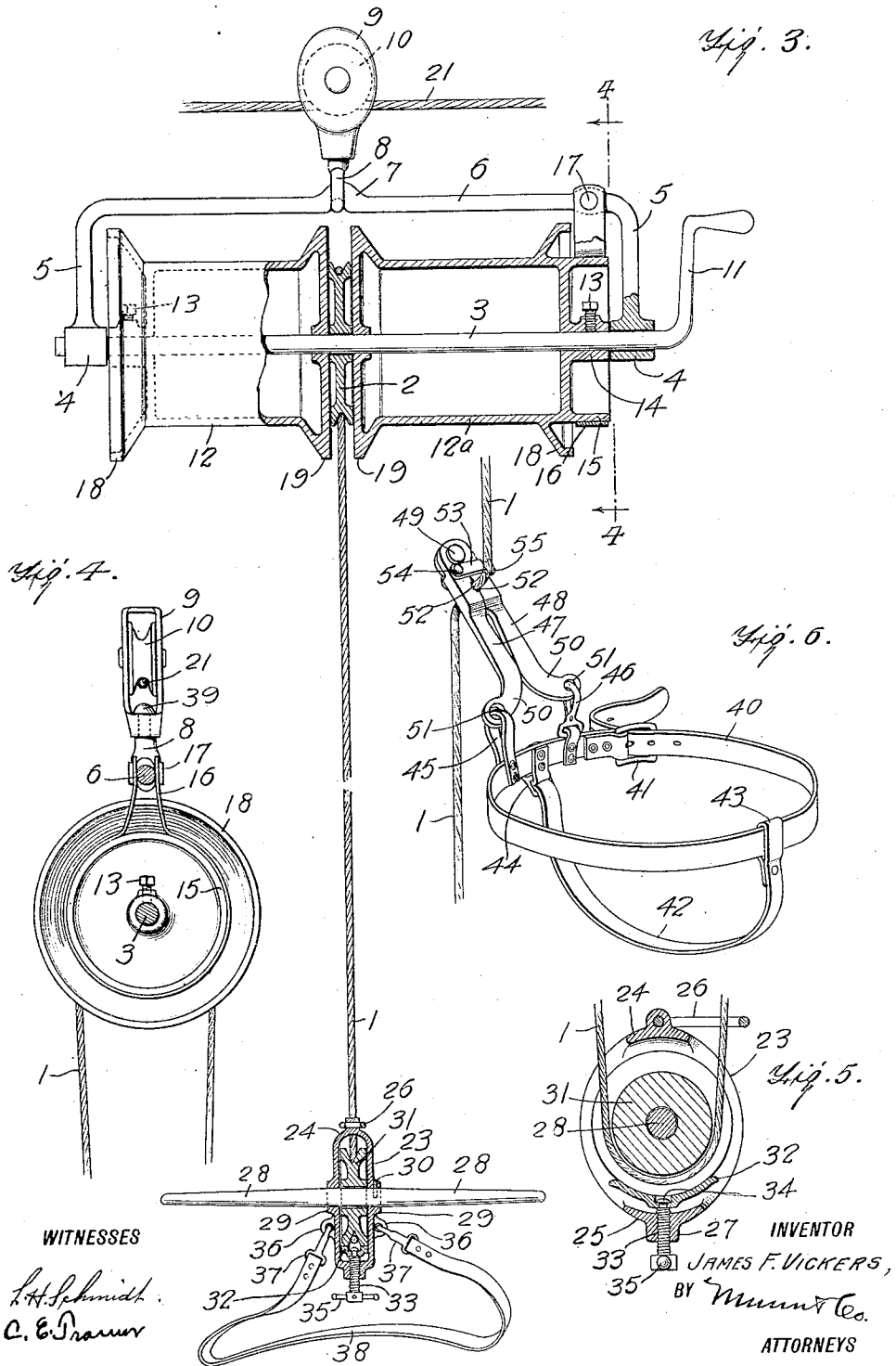
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UNITED STATES PATENT OFFICE.

JAMES FLOYD VICKERS, OF COLUSA, CALIFORNIA.

FIRE-ESCAPE.

1,110,169.

Specification of Letters Patent.

Patented Sept. 8, 1914.

Application filed June 24, 1913. Serial No. 775,456.

To all whom it may concern:

Be it known that I, JAMES FLOYD VICKERS, a citizen of the United States, and a resident of Colusa, in the county of Colusa and State of California, have invented a new and useful Improvement in Fire-Escapes, of which the following is a specification.

My invention is an improvement in fire escapes, and has for its object to provide an escape of the endless cable type, wherein the cable is supported on a reel adjacent to a window or other opening in position to be unreeled, wherein means is provided for holding the cable in position to permit persons to affix themselves to one run of the cable, and wherein other means is provided for use by the persons desiring to escape, for connecting themselves to the said run of the cable, and wherein mechanism is provided in connection with the holding means for permitting the speed of movement of the cable to be controlled.

In the drawings:—Figure 1 is a diagrammatic perspective view showing the improved escape in position for use, Fig. 2 is a front view of the reel with the cable ready to be withdrawn, Fig. 3 is a similar view with parts in section, Fig. 4 is a section on the line 4—4 of Fig. 3, Fig. 5 is a section through the holding mechanism, and Fig. 6 is a perspective view of the supporting mechanism for the person escaping, and the clamping mechanism for engaging the cable.

The present embodiment of the invention comprises an endless cable 1 of suitable size and length, the said cable passing over a grooved pulley 2, on a shaft 3, which is journaled in bearings 4 in the arms 5 of a hanger, the body 6 of the hanger having a loop 7 for engagement by an eye 8 of a supporting frame 9, in which is journaled a pulley 10. The shaft is provided at one end with a crank 11 for convenience in rotating the same, and reels 12 and 12^a, which are secured to the shaft on each side of the pulley 2. The pulley 2 is loose on the shaft, and the reels are rigidly connected to the shaft by means of set screws 13, the said set screws being threaded through extended hubs 14 at the outer ends of the reel and engaging the shaft. One of the reels is provided with a cylindrical extension 15 at its outer end, of the same diameter as the reel, and a brake band 16 encircles the said extension, the band being connected to the

hanger as indicated at 17. The band 16 is thus tight enough to slightly slow the movement of the reels and to prevent the weight of the anchoring device from unwinding the cable. Each of the reels 12 and 12^a is provided with a flange 18 and 19 at its ends, and the inner flanges 19 are provided with transverse grooves 20, for a purpose to be presently described.

The pulley 10 is preferably arranged to run on a track, the said track being constituted in the present instance by a cable 21, and the said cable is supported at or by the cornice 22 of the building in connection with which the escape is used. The track is so arranged that it extends above the windows, in order that the pulley and the hanger may be brought above any vertical row of windows. The cable is normally wound upon the reels, the said cable passing from the wheel 2 through the grooves 20, and then winding upon the reels in the same direction.

It will be evident that when the cable 1 is wound up on the reels, there will be a portion extending from one reel to the other, and this portion is engaged by the supporting mechanism, to be described. The said mechanism comprises a frame composed of parallel laterally spaced disks 23, the said disks being connected by integral webs 24 and 25, the said webs being diametrically opposite each other.

The web 24 is provided with an eye which is engaged by a loop or bail 26, and the web 25 is provided with an internally threaded boss 27. A shaft 28 is arranged transversely of the frame, the said shaft being held in hubs or bosses 29 at the center of the disks 23, and a set screw 30 is threaded through one of the bosses or hubs and is engaged with the shaft 28 to prevent rotation thereof. The ends of the shaft extend beyond the disks as shown to form handles, for permitting two persons to hold the frame.

A grooved wheel or pulley 31 is journaled on the shaft between the disks, and the cable 1 passes over the wheel. A brake shoe 32 is arranged adjacent to the web 25 for engaging the periphery of the wheel or pulley 31, and a rod 33 is threaded to the boss 27, and has a rotatable connection with the shoe, as shown at 34 in Fig. 5. The outer end of the screw is provided with a cross head 35,

for convenience in manipulating the same, and each disk 23 is provided with an eye 36, adjacent to the hub or boss 29.

The eyes 36 are engaged by snap hooks 37 on the ends of a belt 38, and the said belt is adapted to be passed around the waist of a third person who by his weight assists in holding the cable in proper position, and with one hand operates the screw 33 to control the speed of movement of the cable. The frame 9 of the pulley 10 is connected to the eye 8 by a swivel joint 39, as shown in Fig. 4, in order that the hanger 5--6 may revolve on a vertical axis with respect to the pulley.

The cable wound on the reels is supported in the manner described by the track 21, and a wire or other flexible member extends from the holding mechanism, that is, the frame consisting of the disks 23, down past the windows to a position near the pavement, that is, to a point where it may be grasped by firemen or policemen, or other parties, to unwind the cable. In case of fire, the holding mechanism is drawn down until it is in reach, when three persons hold the same, two holding by the ends of the shaft 28 and the third with the belt 38 around his waist, leaving his hands free to operate the brake.

The cable is so held that one of the runs thereof will depend in front of vertical row of windows. Those desiring to escape may now attach themselves to the run of the cable which hangs in front of the windows, and their weight will cause the cable to travel, the run thereof adjacent to the building moving downwardly and the other run moving upwardly. The speed of movement of the cable may be controlled by the brake. When the holding mechanism is drawn out all of the cable is unwound from the reels, so that the upper end of the endless cable is supported by the pulley 2, the said pulley running freely on the shaft 3.

The holding mechanism shown in Fig. 6 is especially adapted for use with the cable. The said mechanism comprises a belt 40 provided at one end with a buckle 41, for engagement by the other end of the belt. A strap 42 has one of its ends doubled upon the strap to form a loop 43, and the said loop is engaged with the belt 40, intermediate the ends thereof. A buckle 44 is secured to the belt near the buckle 41, for engagement by the free end of the strap 42. The belt is also provided with a loop 45, and a snap hook 46, the said loop and hook being arranged on opposite sides of the buckle 44. The loop and snap hook extend upward while the buckle 44 extends downward. The belt is adapted to be passed around the body of the wearer under the arms with the free end thereof engaged with the buckle 41 and with the strap 42

passed between the legs of the wearer from behind forwardly and engaged with the buckle 44. The person is now supported in such manner that he or she cannot fall through the belt. Mechanism is also provided for attaching the belt to the cable, the said mechanism consisting of a pair of levers 47 and 48, pivoted together at one end by means of a pivot pin 49, and the opposite end of each of the levers is curved outwardly as shown at 50. The free end of each of the curved portions 50 is provided with an opening 51, the opening of one lever being engaged by the loop 45 and the opening of the other lever being engaged by the snap hook 46. Each lever is provided with a transverse roughened groove 52, adjacent to the pivot pin, the said grooves coacting to grip the cable 1. A pair of spring arms 53 is secured to the lever 47 by a pin 54, between the groove 52 and the pivot pin 49, and each arm is provided at its outer end with a lateral inwardly extending lug 55. The said lugs engaged outside of the lever 48, to hold the levers in gripping position on the cable. The arms are resilient so that the levers may be separated to introduce the cable. The clamping mechanism is engaged with the cable, by releasing the snap hook 46 from the opening of the lever 48, and the said lever 48 is moved away from the lever 47. The cable is now engaged with the registering grooves 52 and the levers are clamped on the said cable. The resilient arms 53 prevent accidental disengagement of the gripping device.

The mechanism shown in Fig. 6 is arranged in the rooms to be served by the escape, one or more being placed in each room, in order that the occupants may make use of the same. After all have been rescued from one vertical row of windows, the hanger and the reels may be moved to another vertical row, until all have escaped.

After the gripping or clamping device shown in Fig. 6 has been engaged with the cable, with the belt in place, should the user have any hesitancy in leaving the window as is frequently the case, he or she may be forcibly withdrawn by pulling on that run of the cable which hangs loose in front of the window and to which he or she is attached. The weight of the user will cause the cable to run over the wheels 2 and 31, and the speed of the cable may be nicely regulated by means of the brake.

It will be understood that several persons may descend at once. In fact a continuous stream of people may pass from the different windows, provided that the anchoring and controlling device is held firmly in position. When not in use, the device hangs above the windows out of the way and practically out of sight. Preferably it is arranged at the corner of the

building near an alley, or the track may be arranged to move the device into the alley. The reels are used only as a support for the rope or cable when not in use. When in use, the cable is supported by the pulley 2 at its upper end. When not in use, the cable is engaged with the grooves 20 of the reels, and the reels are rotated by means of the crank arm 11, to wind up the cable. The cable is wound up until the supporting frame of the controlling device is adjacent to the reels.

I claim:

1. A device of the character specified, comprising an endless cable, a support for the cable, said support comprising a grooved wheel over which the cable passes, a shaft on which the wheel is journaled, reels on the shaft on each side of the pulley for receiving the cable when not in use, and an anchoring and controlling device for engagement by the cable, said device comprising a wheel over which the cable passes, a supporting frame for the wheel, said frame having oppositely extending handles, a brake shoe for engaging the wheel, means for moving the shoe toward and from the wheel, and a belt having its ends detachably connected with the said frame.

2. A device of the character specified, comprising an endless cable, a support for the cable, said support comprising a grooved wheel over which the cable passes, a shaft on which the wheel is journaled, reels on the shaft on each side of the pulley for receiving the cable when not in use, and an anchoring and controlling device for engagement by the cable, said device comprising a wheel over which the cable passes, a supporting frame having handles, a brake movable toward and from the wheel, and means for operating the brake.

3. A device of the character specified, comprising an endless cable, a grooved wheel over which the cable passes, a hanger for supporting the wheel, a reel on each side of the wheel for holding the cable when not in use, and an anchoring and controlling device, said device comprising a wheel over which the cable passes, a supporting frame in which the wheel is journaled and provided with handles for permitting the frame to be held, and brake mechanism in connection with the frame and coöperating with the wheel.

4. A device of the character specified, comprising an endless cable, a track, a hanger in which the wheel is journaled, reels coaxial with the wheel at each side thereof for holding the cable when not in use, a crank connected with the reels for rotating the same to wind up the cable, and an anchoring and controlling device comprising a wheel over which the cable passes, a frame in which the wheel is journaled, said frame having means for permitting the same to be held, and a brake in connection with the frame.

5. In a device of the character specified, the combination with the endless cable and the wheel over which the cable passes, of means for supporting the cable when not in use, said means comprising a reel on each side of the wheel, a shaft upon which the reels and the wheel are journaled, said reels having flanges at their inner ends, and the flanges having notches for permitting the passage of the cable to wind upon the reels, and a hanger for the shaft.

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Witnesses:

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