(No Model.)

H. MULLENNEX.

FIRE ESCAPE.

No. 455,232. Patented June 30, 1891.

Fig. 3

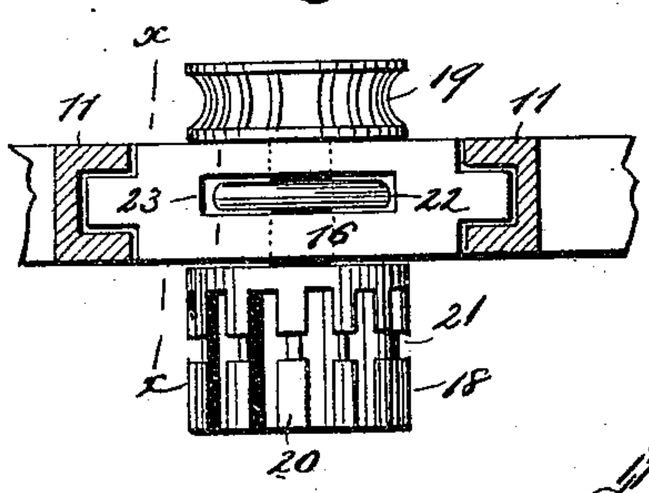


Fig. 1.

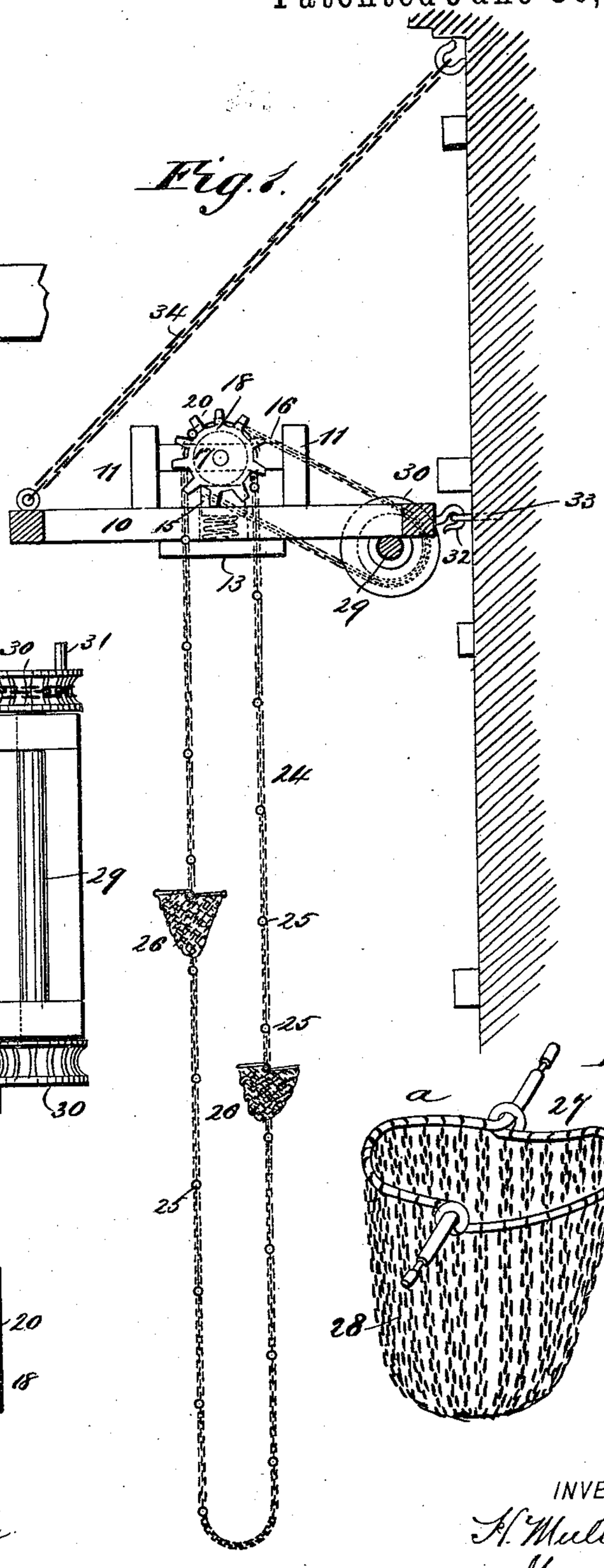


Fig. 2

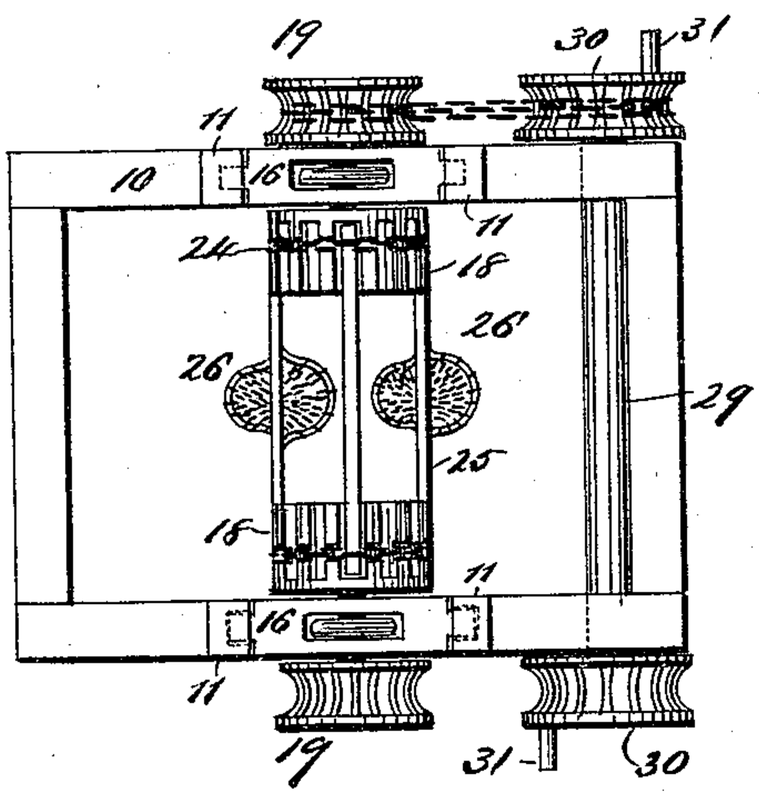
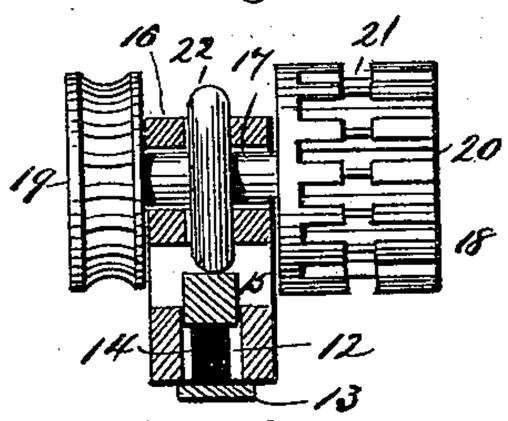


Fig. 5.

Fig. 4.



WITNESSES:

H. McArdle

C. Sedgwick

INVENTOR:

H. Mullennex

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

HORRACE MULLENNEX, OF ALPINE, NEW YORK.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 455,232, dated June 30, 1891.

Application filed August 30, 1890. Serial No. 363,526. (No model.)

To all whom it may concern:

Be it known that I, HORRACE MULLENNEX, of Alpine, in the county of Schuyler and State of New York, have invented a new and Improved Fire-Escape, of which the following is a full, clear, and exact description.

My invention relates to an improved fire-escape, and has for its object to provide a device of simple and durable construction, capable of attachment to any building, and of safely landing an unlimited number of persons from any height to the ground.

A further object of the invention is to provide a device capable of being automatically operated by the weight of the descending person or persons, and wherein the rapidity of the descent may be controlled when desirable.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a central vertical section through the device, the said device being illustrated as attached to a building. Fig. 2 is a plan view of the device detached from the building. Fig. 3 is an enlarged detail plan view, partly in section, of a part of the device. Fig. 4 is a vertical section through the brake mechanism, taken practically on the line x x of Fig. 3; and Fig. 5 is a perspective view of one of the baskets detached from the endless carrying-chains.

The frame 10 of the device is preferably rectangular, consisting of two side pieces and two end pieces or cross-bars connecting said side pieces. At each side of the center of each side piece of the frame an upright 11 is secured, and between said uprights a recess 12 is made in the side pieces of the frame, extending preferably through from top to bottom, the bottom of the recesses being closed by plates 13, one plate being attached to the under face of each side piece of the frame, as best illustrated in Figs. 1 and 4.

Within each recess 12 a spiral or other spring 14 is located, having a bearing upon the plates 13, and to the upper portion of said spring a friction-block 15 is attached. In each pair of uprights 11 a journal-block 16 is held to slide vertically, the opposed faces of the uprights being to that end provided with a vertical groove or channel extending nearly to the top, and the journal-blocks with tongues adapted to enter and slide in said grooves, as is best illustrated in Fig. 2.

In each journal-block 16 a shaft 17 is journaled, each of which shafts extends beyond both sides of the bearing-block in which it turns, and upon the inner end of each shaft a drum 18 is rigidly fastened, and upon the outer end of each shaft a chain-wheel 19 is secured. These chain-wheels may be of the sprocket type, or may be provided with a grooved and roughened peripheral surface, as illustrated.

The drums 18 are of peculiar construction, each drum being provided with a series of diametrical grooves 20 in its periphery, the said grooves being made to extend from the inner face of the drums to within a short distance of the opposed or outer face, and each drum is further provided with a circumferential groove 21 in its periphery, located preferably at the center thereof, as best illustrated in Figs. 3 and 4.

Upon each shaft 17, between the drum 18 and the chain-wheel 19, a friction-roller 22 is fixedly mounted, and each bearing-block 16 is provided with a longitudinal opening 23, whereby the said friction-rollers 22 extend upward beyond the top of the bearing-blocks and downward below their under faces to a contact with the spring-pressed friction-blocks 15, as is best illustrated in Fig. 4.

In connection with the frame and the mechanism above described an endless-chain carrier 24 is employed, consisting of two endless chains passed one over each drum in the groove 21 thereof, which chain-sections are united by a series of cross-bars 25, preferably round in cross-section, which cross-bars, as the carrier is operated, enter the diametrical grooves 20 of the drums.

At intervals in the length of the carrier baskets 26 are substituted for the straight bars 25, which baskets are constructed substantially in the manner illustrated in Fig. 5, each basket being provided with an upper stiff frame 27, comprising two sections a and

a'. The section a consists of a bar of sufficient length to enter the chain-sections of the carrier, the center of which bar is bent at a right angle to its ends to an essentially U or yoke shape. The section a' is U-shaped, and the extremities of its members are bent upon themselves to form eyes which surround the straight members of the section a. Thus the two sections are hinged together.

To the frame 27 a netting 28 is attached, preferably consisting of a net-work of chain.

Each and every portion of the device is constructed of metal.

The device is completed by the addition of a transverse shaft 29, journaled upon the under side of the frame 10 at one end, which shaft projects beyond the sides of the frame and is preferably provided at each extremity with a chain-wheel 30, one or both of said chain-wheels being connected with the chain-wheels 19 upon the short shafts 17. Each of the chain-wheels 30 may be, if desired, and preferably is, provided with a crank-pin 31, whereby the shaft 29 may be revolved.

The device is preferably secured to the outer face of the building as near its top as possible and at such a point that the chain-carrier will when let down fall in front of the windows of the dwelling, and the frame is held in a horizontal position in any suitable or approved manner, one means of accomplishing this result being illustrated, and consisting in passing hooks 32, secured in one end of the frame, through eyes 33, secured in the building, the outer end of the frame having attached thereto one end of chains 34, the other end of said chains being secured to the building in any approved manner beneath the cornice thereof.

In operation, the body having been placed in position and the chain-carrier thrown downward, if a person steps into one of the baskets 26 the weight of the occupant of the basket causes the side of the carrier to which said basket is secured to descend, whereby the baskets upon the opposite side are elevated. The rapidity of the descent of the party is regulated to a certain extent by the frictional contact of the rollers 22 with the spring-pressed friction-blocks 15 and the frictional contact of the cross-bars 25 with the walls of the diametrical drum-grooves 20, and likewise by the frictional contact of the chain with the circumferential grooves 21 of the drum, the latter grooves performing another function as well—namely, that of guiding the chain upon the drum. If it is desired that the party occupying the basket shall descend very slowly, the rapidity of the descent may be controlled by a person standing near the frame 10 and grasping one of the pins 31, attached to the chain-wheels of the shaft 29; or, if it is desirable that a basket should be brought in front of a certain window, by the rotation of the shaft 29 the basket may be carried to the desired point.

I contemplate connecting a burglar-alarm with the device, whereby should a marauder try to escape by way thereof notice will be given.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A fire-escape comprising the endless carrier, the drums around which said carrier passes, friction-wheels carried by the drum-shafts, vertically-movable bearings for said shafts, friction-blocks mounted under said wheels, and springs pressing the blocks upward, substantially as set forth.

2. The combination, with a frame, spring-pressed friction-blocks contained in the side pieces thereof, journal-blocks held to slide vertically above each side piece of the frame, and a shaft journaled in each bearing-block, provided with an attached friction-roller capable of contact with one of the spring-pressed blocks, of a drum secured to the inner end of each of the said shafts, provided upon its periphery with a series of diametrical grooves and a circumferential groove, a chain-carrier consisting of chain-sections passing over the drums in the circumferential grooves thereof, cross-bars connecting the said chain-sections, adapted to enter the diametrical grooves of the drum, and carrying-baskets secured to the said chain-carrier, substantially as and for the purpose specified.

3. The combination, with a frame, spring-pressed friction-blocks contained in the side pieces thereof, journal-blocks held to slide vertically above each side piece of the frame, and a shaft journaled in each bearing-block, provided with an attached friction-roller capable of contact with one of the spring-pressed blocks, of a drum secured to the inner end of each of the said shafts, provided upon its periphery with a series of diametrical grooves and a circumferential groove, a chain-carrier consisting of chain-sections passing over the drums in the circumferential grooves thereof, cross-bars connecting the said chain-sections, adapted to enter the diametrical grooves of the drum, carrying-baskets secured to the said chain-carrier, chain-wheels attached to the outer ends of the drum-shafts, a drive-shaft journaled beneath the frame, chain-wheels attached to the extremities of the said drive-shaft, and a belt-connection between the chain-wheels of the drive-shaft and those of the drum-shaft, substantially as and for the purpose specified.

4. The combination, with a frame and drums journaled in said frame, of a chain-carrier passing over said drums, and baskets attached to the said chain-carrier, consisting of a frame comprising the sections a and a', and the net-body 28, secured to the said frame-sections, substantially as shown and described.

HORRACE MULLENNEX.

Witnesses:
EMMA B. PERRY,
ARTHUR C. WOODWARD.