

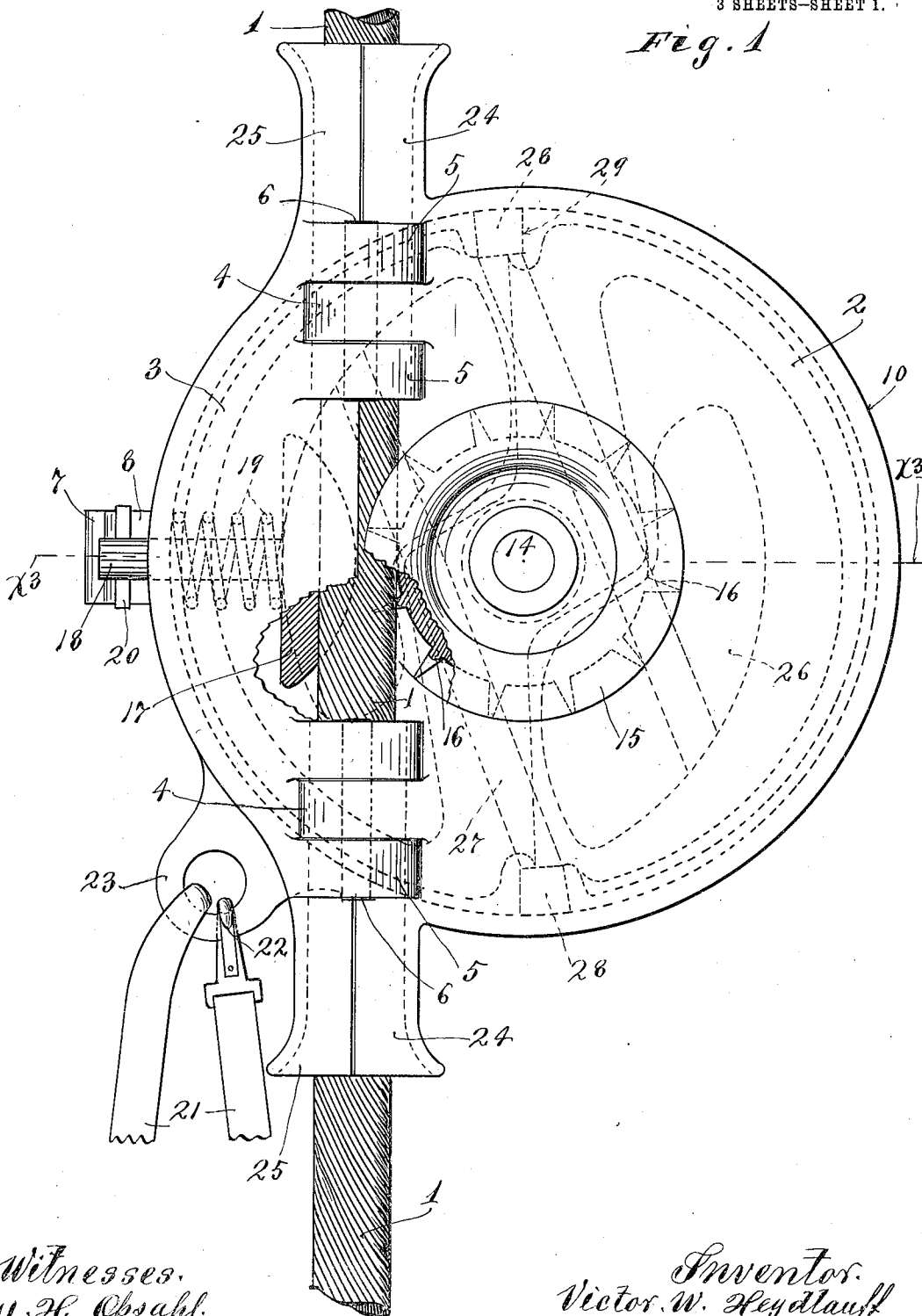
V. W. HEYDLAUFF.
FIRE ESCAPE.
APPLICATION FILED JULY 13, 1911.

1,022,417.

Patented Apr. 9, 1912.

3 SHEETS—SHEET 1.

Fig. 1



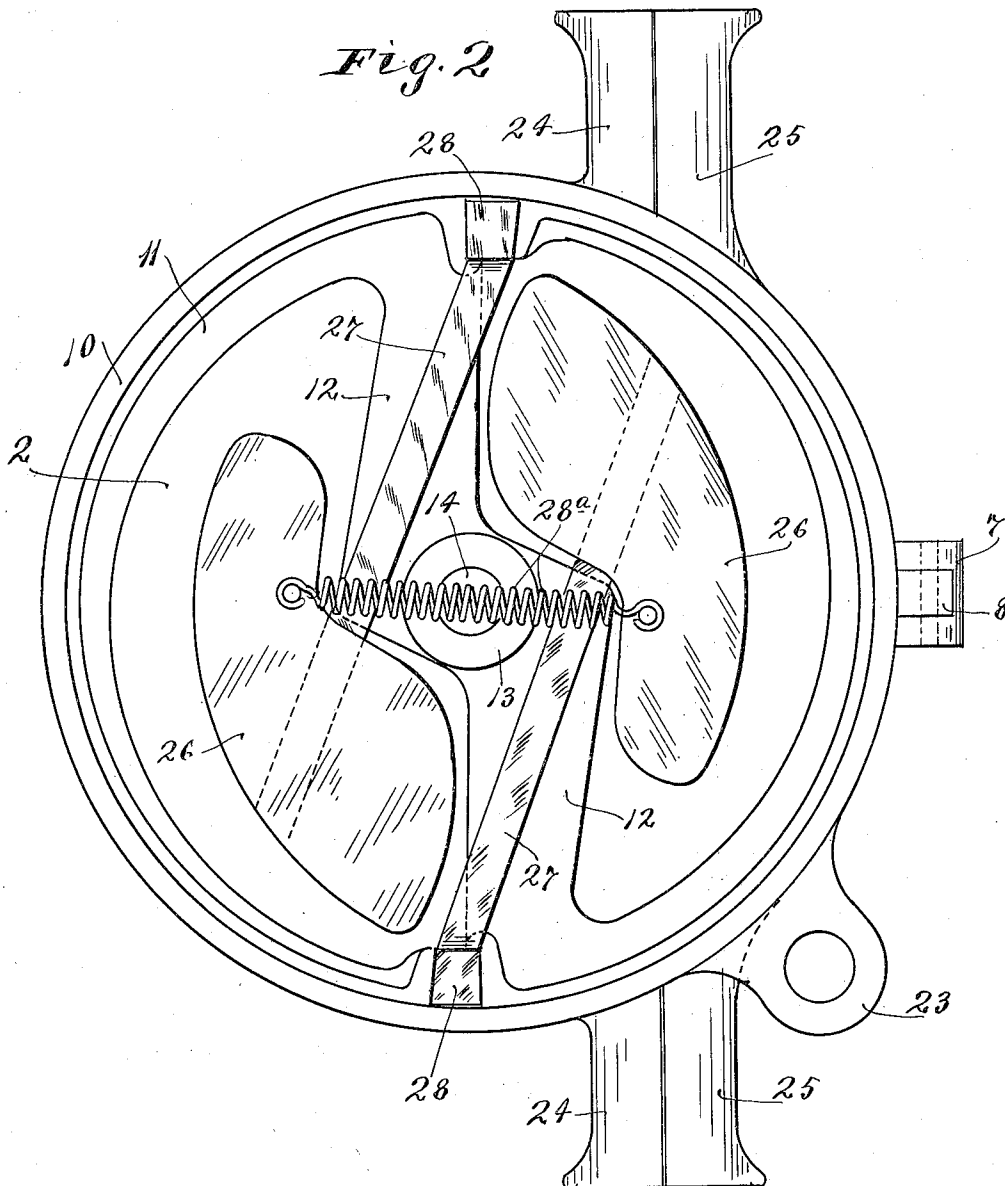
Witnesses.
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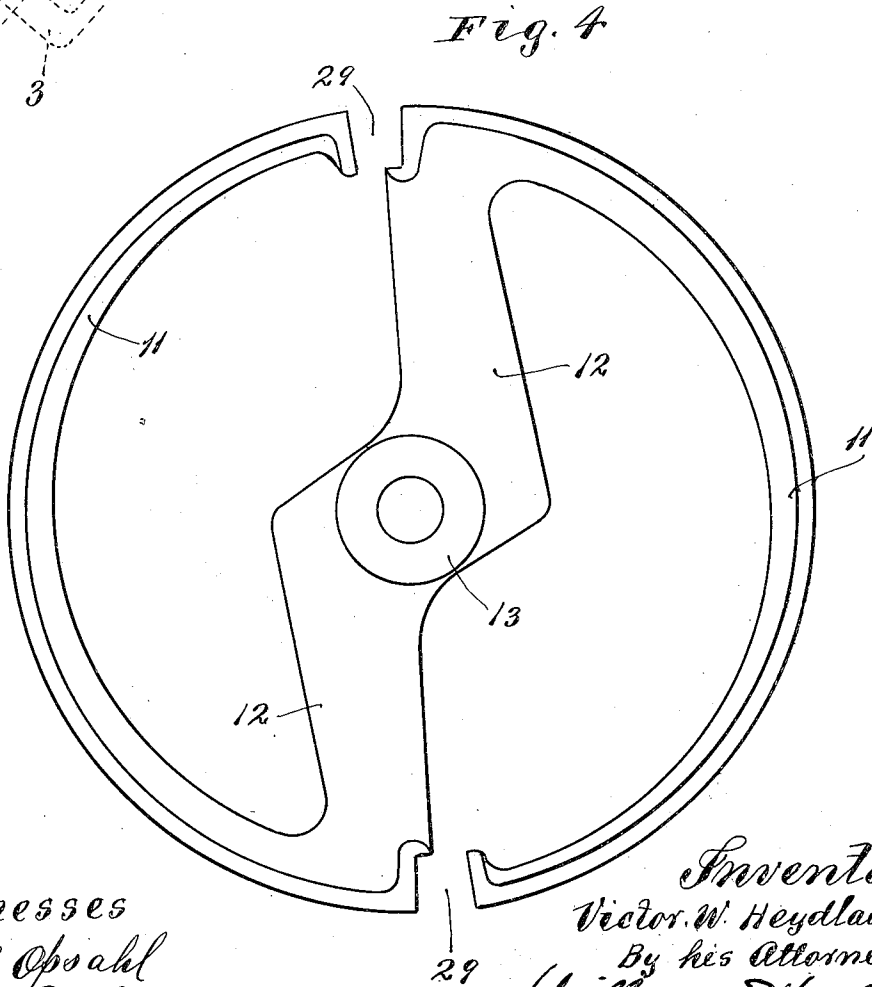
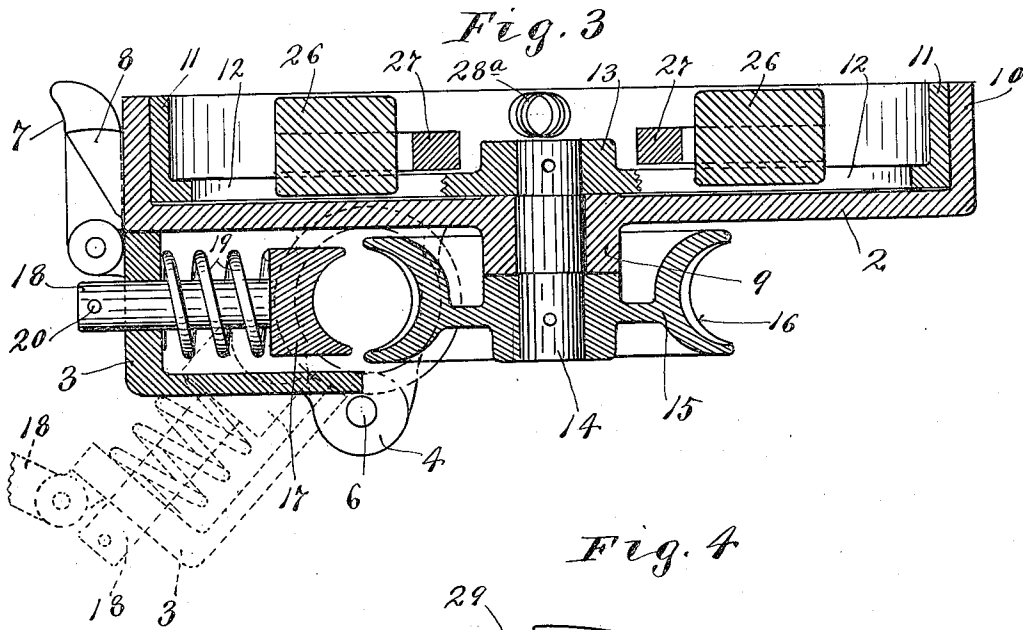
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UNITED STATES PATENT OFFICE.

VICTOR W. HEYDLAUFF, OF HAVRE, MONTANA.

FIRE-ESCAPE.

1,022,417.

Specification of Letters Patent.

Patented Apr. 9, 1912.

Application filed July 13, 1911. Serial No. 638,260.

To all whom it may concern:

Be it known that I, VICTOR W. HEYDLAUFF, a subject of the King of Great Britain, residing at Havre, in the county of Chouteau and State of Montana, have invented certain new and useful Improvements in Fire-Escapes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide a simplified and improved fire escape of that type wherein the carrier is arranged to travel downward on a rope or other cable attached to a building at its upper end, and wherein the downward movements of the carrier with the person supported thereby, is limited or controlled by a governor.

As one of the chief features of the present invention, the carrier is so constructed that it may be quickly and easily applied to the supported upper portion of the cable, thereby adapting a plurality of any desired number of carriers to be applied to the cable in succession and used to lower persons from a burning building.

Other features of the invention are directed to an improved frictional device and frictional centrifugal actuated governor for preventing too rapid descent of the carrier and the person supported thereby.

Generally stated, the invention consists of the novel devices and combination of devices hereinafter described and defined in the claims.

In the accompanying drawings which illustrate the invention in its preferred form, like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view in side elevation, with some parts broken away, showing the improved fire escape; Fig. 2 is a side elevation of the device looking at the opposite side from that shown in Fig. 1; Fig. 3 is a horizontal section taken on the line $x^3 x^3$ of Fig. 1; and Fig. 4 is a detail showing the expansible clutch wheel removed from the case of the carrier.

The numeral 1 indicates a supporting cable which may be an ordinary rope, or wire rope, the upper end of which is adapted to be attached to any suitable portion of a building, usually in the vicinity of an upper window. The case or frame of the carrier is made up of a main section 2, and a

supplemental section 3, which sections are provided, respectively, with hinge lugs 4 and 5, pivotally connected by hinge pins 6. These two case sections are adapted to be normally held together, or interlocked, as shown in the drawings, by a suitable lock device shown as comprising a lock lever 7 hinged to the supplemental section 3 and engageable with a lock lug 8 in the main section 2. A suitable spring, not shown, may be employed for normally holding the lock lever 7 engaged by the lock lug 8. The main frame or case section 2 is provided with a central hub 9 and with a laterally projecting annular flange 10, which latter serves as the external member of the friction clutch. The other member of the said friction clutch is in the form of a divided and expansible clutch ring 11, the sections of which are secured at one end to arms 12 carried by a hub 13.

A short shaft 14 is journaled in the hub 9 of the frame section 2, and the hub 13 of the wheel, made up of the elements 11, 12 and 13, is rigidly secured to one end of the said shaft. To the other end of the said shaft, the hub of a driving sheave or grooved wheel 15 is rigidly secured. The groove in the periphery of the sheave 15 is made to approximately fit the cable 1, and to increase frictional engagement therewith, it is provided with sharp edged traction ribs 16.

The cable is pressed into tight engagement with the ribbed channel or periphery of the sheave 15 by means of a frictional abutment or presser block 17, the face of which is also preferably grooved to approximately fit the cable 1. This frictional abutment 17 is provided with a stem 18 that works through the outer flange of the supplemental case or frame section 3, and a quite heavy coiled spring 19 is compressed between the said abutment 17 with the said frame section 3. This spring 19 causes the abutment 17 to tightly press the cable into contact with the ribbed channel of the sheave 15.

The numeral 20 indicates a stop pin in the outer end of the stem 18, which prevents the spring 19 from throwing the abutment out of place when the supplemental frame or case section 3 is turned into opened position indicated by dotted lines in Fig. 3.

The numeral 21 indicates a harness or strap, one end of which is shown as perma-

nently attached, and the other end of which is shown as provided with a snap hook 22, for detachably connecting the perforated lug 23, shown as cast integral with the case or frame section 2. Also, as shown, the case sections 2 and 3 are provided with supplemental upwardly and downwardly extended cable guides 24 and 25, which operate to form guide tubes or sleeves which give greater stability to the carrier when moving downward on the cable.

For operating the friction clutch above described, I preferably employ a centrifugal governor comprising weights 26, levers 27, and one or more coiled springs 28^a. The weights 26 are secured to the outer ends of the levers 27 and the spring 28^a connects the said weights and tends to draw the same and the levers 27 toward the axis of the shaft 14. At their outer ends, the levers 27 are provided with square shanks or heads 28 that fit seats 29 formed between the separate ends of the divided clutch ring or wheel rim 11.

Normally, and under predetermined low speeds, the spring 28^a holds the weights 26 drawn inward, and leaves the expansible clutch ring 11 out of action on the cooperating clutch rim 10, which latter, of course, is a non-rotary clutch member secured to the frame or case of the carrier. When, however, a certain predetermined speed is exceeded, the centrifugal force exerted in the weights 26 overcomes the spring 28^a, moves the levers 27 pivotally away from each other and thereby causes the angular heads 28 to expand the said clutch ring 11, which latter is connected for rotation with the driving sheave or wheel 15.

With this improved fire escape, it is not necessary that the carrier be left attached to the cable, but on the contrary, any desired number thereof may be left in the different rooms of the hotel or other building. These carriers, when the supplemental case or frame sections 3 are moved pivotally approximately into the open position indicated by dotted lines in Fig. 3, may be easily applied to the cable simply by closing and securing the said section 3, and thereby clamping the cable between the grooved periphery of the sheave 15 and the grooved face of the frictional abutment 17. The purpose of a harness strap 21, is, of course, to attach the person to the carrier and it would preferably be applied to the body just below the arms. Then when the carrier has been applied to the cable, as stated, the person desiring to make a descent, either climbs or jumps out of the window, and the descent of the carrier with its load will then immediately begin. The carrier, with its load, will move downward at a predetermined, desired speed under the control of the friction clutch and governor, already described.

As is evident, as many persons may escape from the building over the single cable as can find proper carriers for application to the cable. The descent of the carrier on the cable is also frictionally retarded by the frictional engagement between the cable and the frictional abutment of the presser head 17, and also, this retarding action will be somewhat further increased by the frictional engagement between the cable and the divided guide tubes 24—25.

The fire escape described is of comparatively small cost, is convenient and reliable, and generally efficient for the purposes had in view.

What I claim is:

1. A fire escape comprising a carrier frame adapted to travel downward on a cable and having hinged sections adapted to open for application to a cable, a frictional abutment on one of the said frame sections, a driving wheel opposite said abutment adapted to engage and be driven by said cable, and a friction clutch for restricting rotation of said driving wheel, and hence, controlling the descent of the carrier on the cable.

2. A fire escape comprising a carrier frame adapted to travel downward on a cable and having hinged sections adapted to open for application to a cable, a frictional abutment on one of the said frame sections, a driving wheel opposite said abutment adapted to engage and be driven by said cable, and a friction clutch for restricting rotation of said driving wheel and controlling the descent of the carrier on the cable, and a centrifugal governor controlling said clutch.

3. A fire escape comprising a carrier frame, a driving wheel journaled to said frame and engageable with the cable, a yielding frictional abutment engageable with the cable and pressing the cable into engagement with said driving wheel, a friction clutch comprising a frictional flange on said carrier frame and an expansible clutch ring rotatable with said driving wheel, and a centrifugal governor driven by said driving wheel and having connections for expanding said clutch ring and rendering the same operative, when a predetermined speed has been exceeded in the downward travel of the carrier.

4. A fire escape comprising a carrier frame adapted to travel downward on a cable and having hinge sections adapted to open up for application to the cable, of a driving wheel journaled to one of the frame sections, a device on the other case section for pressing the cable into engagement with said driving wheel, and a friction clutch for restricting rotation of said driving wheel and controlling the descent of the carrier on the cable.

5 A fire escape comprising a carrier frame adapted to travel downward on a cable and having hinge sections adapted to open up for application to the cable, of a driving wheel journaled to one of the frame sections, a device on the other case section for pressing the cable into engagement with said driving wheel, a friction clutch for restricting rotation of said driving wheel and controlling the descent of the carrier on the cable, and a centrifugal governor controlling the said clutch. 10

In testimony whereof I affix my signature in presence of two witnesses.

VICTOR W. HEYDLAUFF.

Witnesses:

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HARRY D. KILGORE.