No. 865,167. PATENTED SEPT. 3, 1907.

S. P. DEEDS.

FIRE ESCAPE.

APPLICATION FILED MAY 19, 1906.

2 SHEETS—SHEET 1.

Fig 1

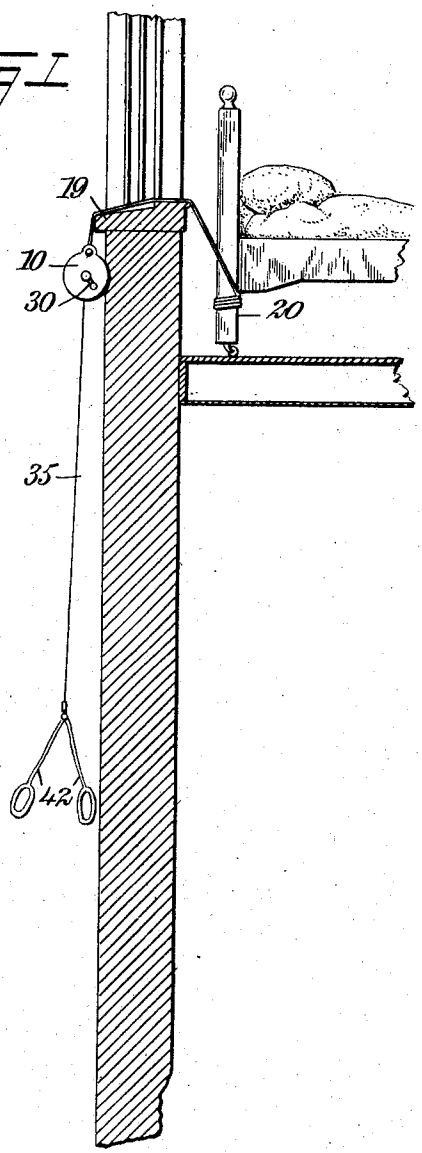
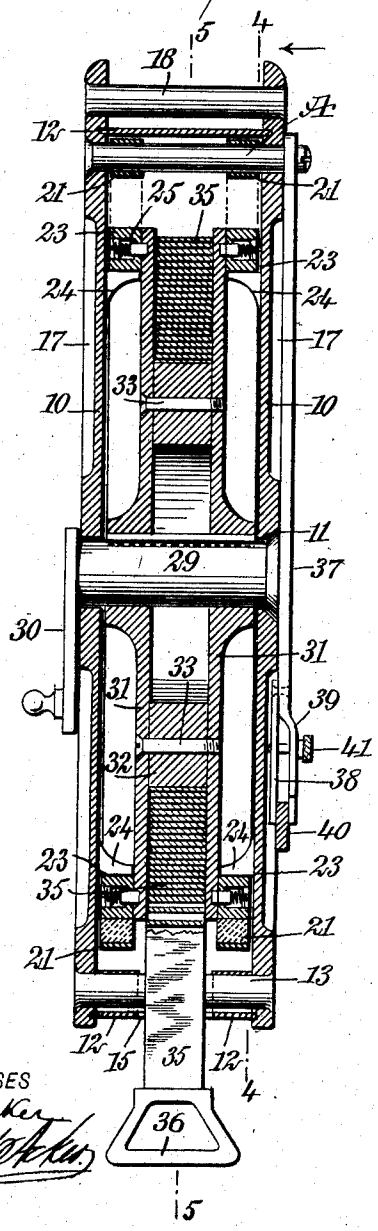


Fig 2



WITNESSES

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2 SHEETS—SHEET 2.

Fig 3

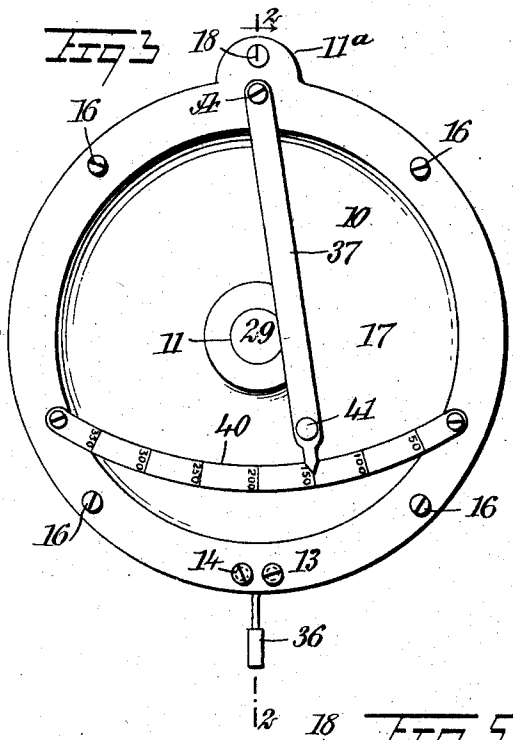


Fig 4

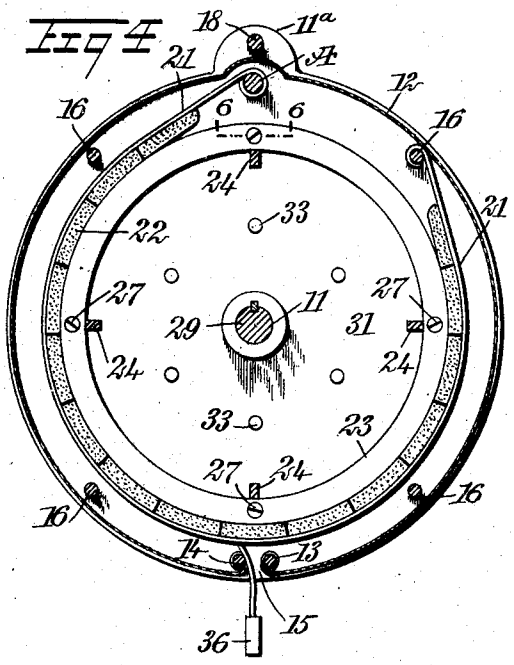


Fig 5

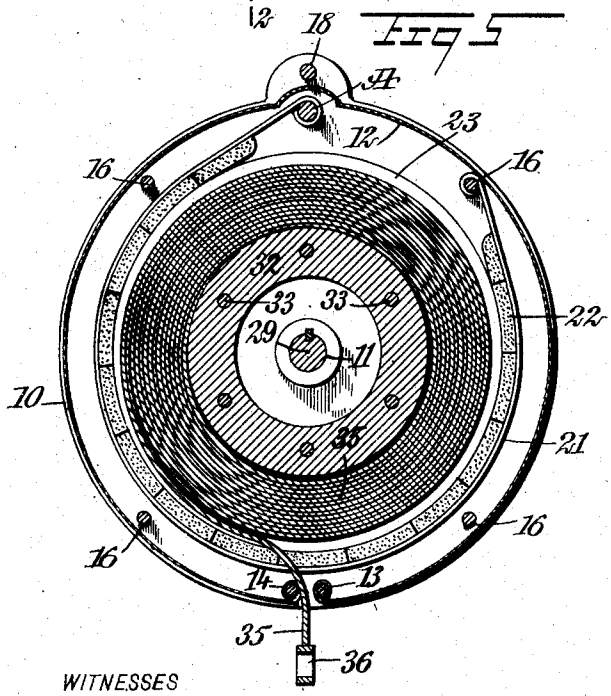
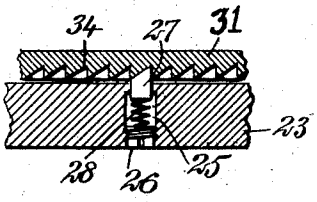


Fig 6



WITNESSES

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UNITED STATES PATENT OFFICE.

SAMUEL PRESTON DEEDS, OF CIRCLEVILLE, OHIO.

FIRE-ESCAPE.

No. 865,167. Specification of Letters Patent. Patented Sept. 3, 1907.

Application filed May 19, 1906. Serial No. 317,804.

To all whom it may concern:

Be it known that I, SAMUEL PRESTON DEEDS, a citizen of the United States, and a resident of Circleville, in the county of Pickaway and State of Ohio, have invented a new and Improved Fire-Escape, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide a portable fire escape that can be readily carried in a hand bag and secured when desired to any convenient support or article of furniture, or which may be a fixture in a building, in which event the device is placed convenient to the window or other opening.

A further purpose of the invention is to so construct the device that a metal tape is provided for attachment to any suitable harness, which tape is carried by a drum whose rotation is frictionally controlled by suitable appliances to accommodate persons of varying weights in making their escape, but wherein the said controlling appliances may be positively regulated to properly act within only a given range of pounds weight, if so desired.

Another purpose of the invention is to provide means which insures the drum, while the device is in use, turning only in direction to permit the tape to unwind, but wherein when the tape is relieved from weight it can be readily rewound upon the drum, and also to so construct the device that it will be light, durable and reliable in action, and well adapted for the purpose intended since the controlling or brake mechanism or appliance can be so set as to perfectly control the speed of the descent of a very light or of a very heavy person.

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 characters of reference indicate corresponding parts in all the figures.

Figure 1 is a section through a portion of a building illustrating the device in side elevation and in position for use; Fig. 2 is a central vertical section through the device drawn upon an enlarged scale, the section being taken practically on the line 2—2 of Fig. 3; Fig. 3 is a front elevation of the device; Fig. 4 is a section taken practically on the line 4—4 of Fig. 2; Fig. 5 is a section taken substantially on the line 5—5 of Fig. 2; and Fig. 6 is a detail sectional view taken on the line 6—6 of Fig. 4.

The body of the device is in the form of a circular casing, and consists of opposing circular side or cheek pieces 10, each having a central opening 11 and a connecting strip 12, the ends of which strip are separated at the lower central portion of the casing as shown best in Fig. 4, and said ends of the connecting strip 12 are passed around rollers 13 and 14, whereby a lower central outlet 15 is provided for the casing, and at said outlet the peripheral or connecting strip 12 of the casing is cut away to expose the said rollers as illustrated in Fig. 2.

The parts of the casing are held together by bolts 16 which are passed through the side or cheek pieces 10 at the inner side of the connecting strip 12 as is shown best in Fig. 4; and also preferably the outer faces of the side or cheek pieces 10 are more or less dished or recessed around their central portion as is clearly shown at 17 in Figs. 2 and 3.

A lug 11^a is formed at the upper central portion of each side or cheek piece 10 of the casing, and a bar 18 is passed through said lugs 11^a, to which bar a rope 19 is to be attached when the device is to be used. The said rope is also then attached to any support within the room, or to a bed post as is shown at 20 in Fig. 1, the rope 19 being of sufficient length to permit the device to hang below the sill of the window, for example.

Strap brakes 21 are located within the casing, and these strap brakes 21 are located one quite close to the inner face of each side or cheek piece 10. One end of each strap brake 21 is secured to a shaft A, which is mounted to turn in the said cheek pieces at their upper central portions but within the casing as is clearly shown in Figs. 2 and 4. The opposite ends of the said strap brakes 21 are secured to one of the connecting bolts 16, preferably the uppermost bolt at the side of the casing which is opposite that in direction of which the strap brakes are led from the said shaft, as illustrated in Fig. 4.

Each strap brake 21 is provided with a lining 22 of leather, paper, paper fiber, wood, wood fiber, or any other suitable frictional material, and said lining may be in sections as shown, or solid, and may be perforated, smooth or corrugated, in order to produce desired frictional results upon friction rings 23. One of these rings 23 is provided for each strap brake 21, and the linings 22 for the strap brakes are in close frictional engagement with the peripheral portions of the said rings 23 as shown in Figs. 4 and 5. These rings 23 are free to turn and are supported by brackets 24 or their equivalents, extending inward from the inner faces of the cheek or side pieces 10 of the casing, as is illustrated in Figs. 2 and 4. Each friction ring 23 is provided with any desired number of openings 25, which openings extend through from side to side of the ring; and the outer ends of the openings are closed by plugs 26 as is best shown in Fig. 6. The inner ends of the openings 25 are reduced and are of polygonal shape so as to accommodate, each opening, a pawl 27, the pawls having sliding movement in the said openings but being prevented from turning therein. The outer faces of the pawls 27 are beveled or inclined as is also shown in Fig. 6, and said pawls are normally forced outward by springs 28 located in the

said openings 25 and having bearing against the inner end portions of the blocks 26 and the pawls 27 as also best shown in Fig. 6.

A shaft 29 is mounted to turn in the central openings 11 in the casing, which shaft at one end is provided with a handle 30 as best illustrated in Fig. 2. A drum is secured to this shaft, which drum turns readily in the said casing and is of less diameter than the diameter of the casing.

The drum, which is best shown in Fig. 2 consists of opposing circular side pieces 31, splined upon or otherwise connected with the shaft 29, and a body section 32 which in the interest of lightness is in the form of a ring. This body or peripheral section 32 of the drum is between the side pieces and occupies a position between the center of the drum and its outer edge, the said body or peripheral section being held in position by bolts 33 or their equivalents.

The side pieces or sections of the said drum engage more or less closely with the inner faces of the friction rings 23; and near the edges of the side pieces of the drum a series of inclined teeth 34 is produced in circular arrangement in the outer face of each side piece of the drum, as best shown in Fig. 6. These teeth 34 on the drum are engaged by the dogs 27 carried by the friction rings 23.

A metal tape 35 is wound upon the drum in the space between its side sections, the said tape being secured at its inner end to the body or peripheral section 32 of the drum. When this tape is drawn out through the opening 15 in the casing the dogs 27 so engage with the teeth 34 on the drum as to compel the drum to turn the friction rings 23 carrying the said dogs, and according to the tension which has been placed upon the strap brakes 21 will the said drum turn with greater or less speed, and in this manner the friction on the drum may be controlled to accommodate the weight to which the tape is subjected. When the tape is to be rewound the dogs 27 slip by the teeth on the drum. The outer or free end of the tape 35 is provided with an eye or loop 36 securely attached thereto or made integral therewith. The loop or ring 36 is adapted to receive or to be attached to a harness 42 of any desired construction. In Fig. 1 of the drawings the harness shown consists of two straps connected at one of their ends, the other ends of the straps being provided with rings or loops to receive the arms of the person making the descent.

The shaft A is turned so as to increase or decrease the frictional resistance of the strap brakes 21 on the friction rings 23 usually through the medium of a regulating arm 37, which is secured to the end of the shaft A at what may be termed the front side of the casing as is shown in Figs. 2 and 3; and the lower end of the said regulating arm 37 is provided with two spaced and parallel members 38 and 39, adapted to receive between them an indicating or scale strip 40, which is attached at its ends to the marginal portion of the front side 10 of the casing. The scale produced on this indicating strip 40 may read as desired; as shown, however, the scale reads in variations of fifty pounds. In this construction it is evident that the device can be used by persons of different weights, since by the adjustment of the arm 37 the friction necessary to control the revolution of the drum in the descent of the person can be quickly obtained. It is also evident that in constructing the device the arm 37 may be omitted and likewise the indicating strip 40; and the strap brakes are set at a proper tension to control the revolution of the drum under the weight of a given number of pounds. The regulating arm 37 is held in adjusted position on the strip 40 by a set screw 41, passed through its members 38 and 39 above the said strip.

I desire it to be understood that instead of employing a shaft A a roller or other device may be substituted capable of tightening or winding up the end of the strap brake attached to it, and that any equivalent for the teeth 34 may be employed.

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

1. A fire escape, comprising a casing having inwardly projecting brackets on the inner faces of its sides between the center and periphery thereof, a drum mounted in the casing and provided with ratchet teeth on the outer faces of its sides adjacent to the periphery thereof, rings mounted to turn on the brackets of the casing, one at each side of the drum, the rings being each provided with a plurality of recesses opposite the teeth of the drum, and leading out through the inner faces thereof, a pawl mounted to slide but not turn in each recess of the rings, springs in the recesses for forcing the pawls out into engagement with the teeth of the drum, a shaft mounted in the casing, strap brakes in engagement with the rings, said brakes having one end secured to fixed supports in the casing and their other ends to the said shaft, an operating arm on one end of the shaft outside of the casing for operating the said shaft to increase or decrease the frictional resistance of the brakes on the rings, and means for locking the said arm in position.

2. A fire escape, comprising a casing having inwardly projecting members on the inner faces of its sides between the center and periphery thereof, a drum mounted in the casing and provided with ratchet teeth on the outer faces of its sides adjacent to the periphery thereof, rings mounted to turn on the inwardly projecting members of the casing, one at each side of the drum, the rings being provided with recesses opposite the teeth of the drum, sliding and spring pressed pawls in the recesses, strap brakes in engagement with the rings, each brake having one end secured to a fixed support in the casing, a shaft mounted in the casing and to which the other ends of the brake straps are secured, and means for operating said shaft.

3. In a fire escape, a casing formed of circular spaced side pieces each having a central opening, spaced rollers mounted in the lower portion of the side pieces, and a strip arranged between and connecting the side pieces, the ends of the strip being bent around the rollers and having their intermediate portions cut away to expose the said rollers, a drum mounted in the casing, means for controlling the revolution of the drum, and a tape on the drum and having one end extending out between the rollers of the casing.

4. In a fire escape, the combination of a casing, a drum mounted in the casing, a tape on the drum and extending out through the casing, friction rings within the casing on opposite sides of the drum and controlling the revolution thereof, strap brakes for the rings, a stationary support for one end of the brakes, a rotary support for the other end of the said brakes, an arm on one end of the rotary support outside of the casing, the arm having spaced members at its free end, an indicating strip on the outside of the casing and between the members of the said arm, and a screw engaging the members of the arm to clamp the same to the indicating strip.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL PRESTON DEEDS.

Witnesses:
JULIUS H. HELWAGEN,
BARTON WALTERS.