

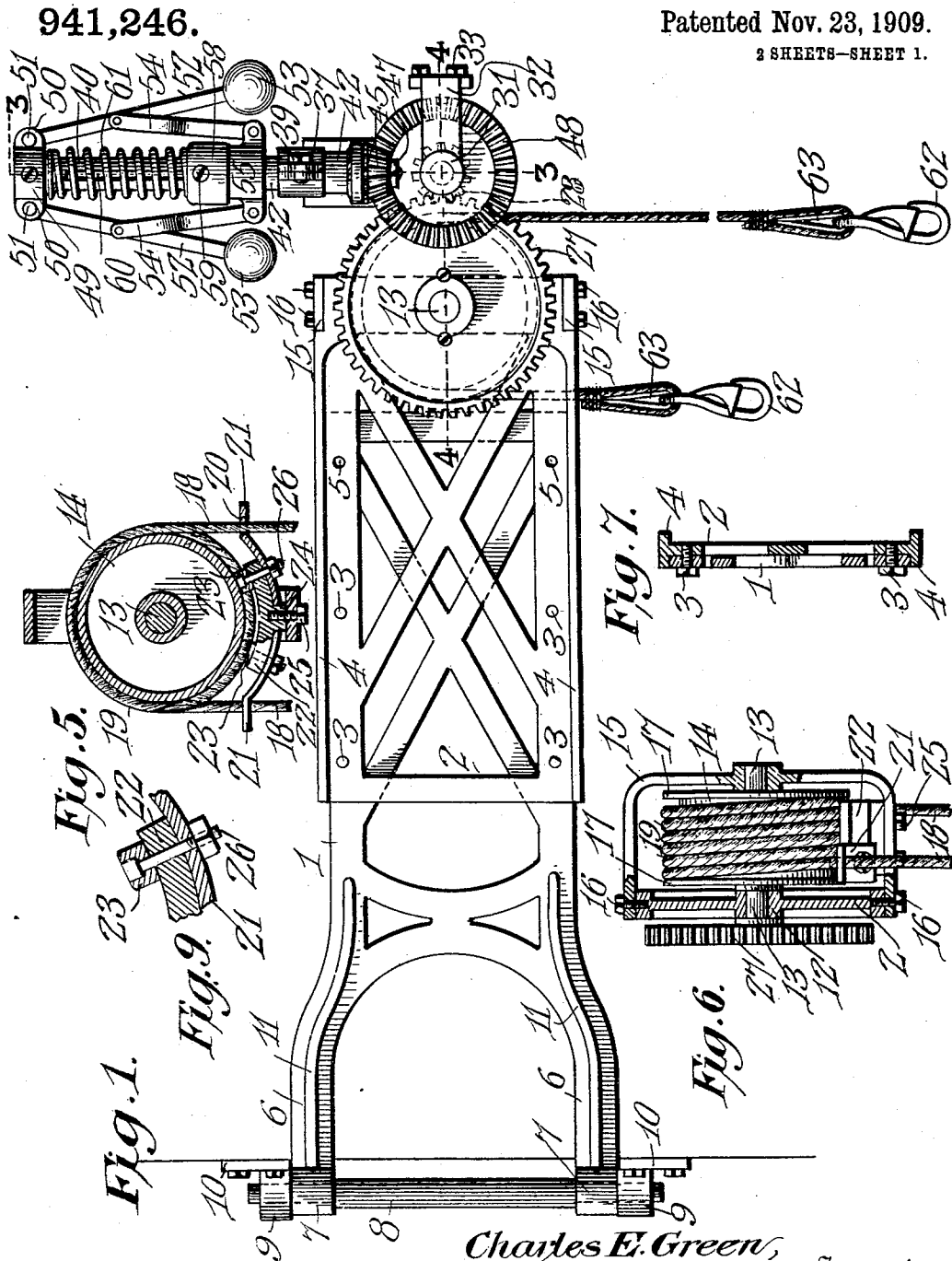
C. E. GREEN & T. C. BRASKET.

FIRE ESCAPE.

APPLICATION FILED NOV. 19, 1908.

Patented Nov. 23, 1909.

2 SHEETS—SHEET 1.



Charles E. Green,
Thomas C. Brasket, Inventors

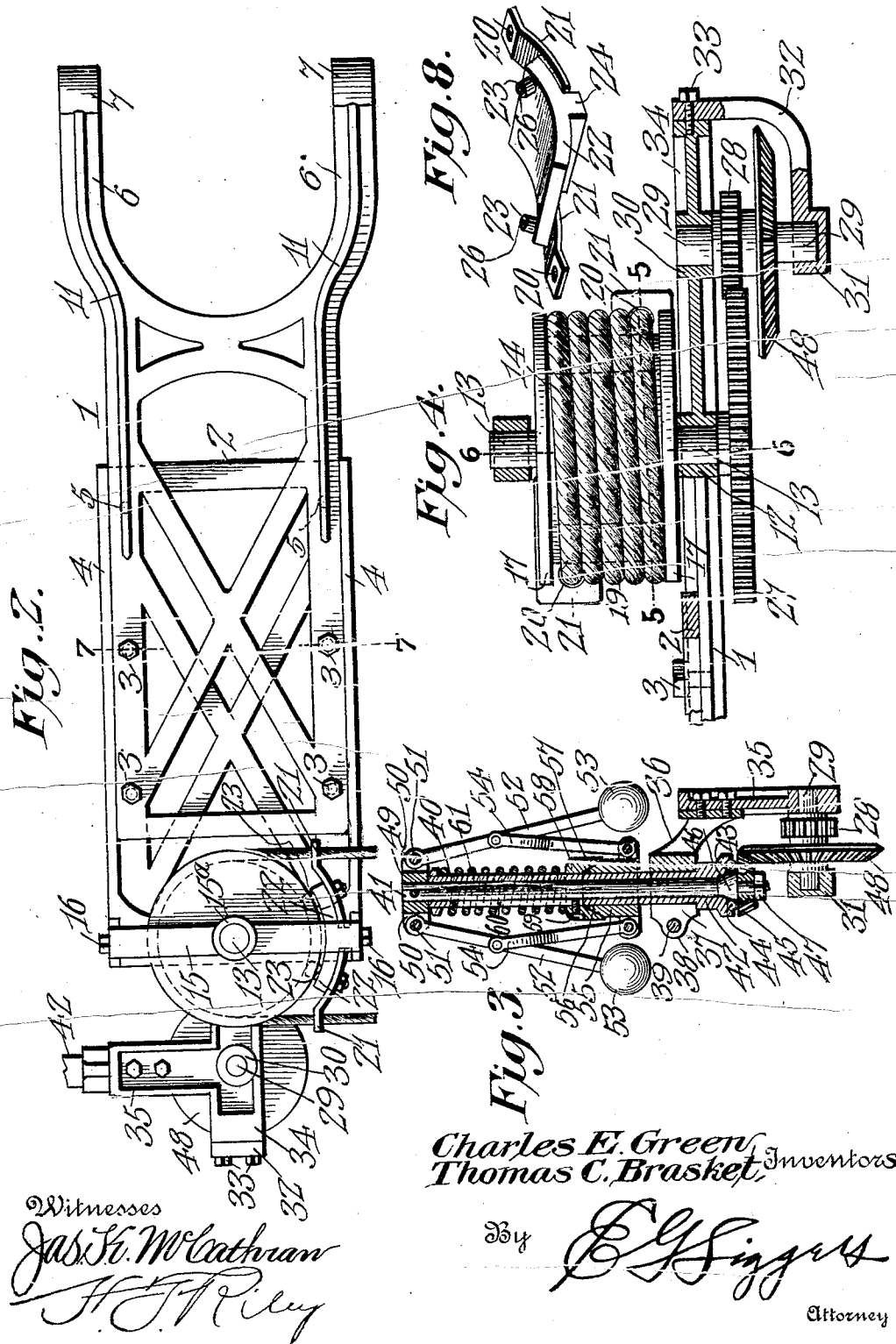
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Charles E. Green,
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By

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UNITED STATES PATENT OFFICE.

CHARLES E. GREEN AND THOMAS C. BRASKET, OF ANDERSON, INDIANA, ASSIGNORS
OF ONE-THIRD TO GEORGE W. HOPPE, OF ANDERSON, INDIANA.

FIRE-ESCAPE.

941,246.

Specification of Letters Patent.

Patented Nov. 23, 1909.

Application filed November 19, 1908. Serial No. 463,439.

To all whom it may concern:

Be it known that we, CHARLES E. GREEN and THOMAS C. BRASKET, citizens of the United States, residing at Anderson, in the county of Madison and State of Indiana, have invented a new and useful Fire-Escape, of which the following is a specification.

The invention relates to improvements in fire escapes.

The object of the present invention is to improve the construction of fire escapes, and to provide a simple, inexpensive and efficient fire escape, designed to be mounted interiorly of a building, and capable of being readily swung outward through a window, or other opening and equipped with continuously operable means for permitting persons to descend to the ground.

A further object of the invention is to provide a fire escape of this character, provided with a brake and governor for operating the brake to automatically control the descent of a person, whereby persons will be safely and expeditiously lowered to the ground.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a side elevation of a fire escape, constructed in accordance with this invention. Fig. 2 is a similar view, showing the other side of the fire escape, the governor being broken away. Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 1. Fig. 4 is a horizontal sectional view on the line 4—4 of Fig. 1. Fig. 5 is a detail sectional view on the line 5—5 of Fig. 4. Fig. 6 is a sectional view, taken substantially on the line 6—6 of Fig. 4. Fig. 7 is a sectional view on the line 7—7 of Fig. 2. Fig. 8 is a detail perspective view of the guide block or shoe. Fig. 9 is an enlarged detail sectional view, illustrating the construction of the projecting guides.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

The fire escape comprises in its construction a horizontally swinging frame composed of extensible sections 1 and 2, adjustably secured together by screws 3, or other suitable fastening devices. The frame is substantially oblong, and the section 2 is provided with upper and lower horizontal flanges 4 between which is arranged the attached portion of the section 1. The screws 3 pierce the section 1, and the section 2 is provided at intervals with perforations 5 to afford the desired adjustment of the frame. The section 1 is provided at its inner end with upper and lower arms 6, having approximately aligned eyes 7 for the reception of a vertical pintle 8, which is also arranged in eyes 9 of L-shaped brackets 10, designed to be secured within a room or apartment to the window frame, or other suitable support, and located in the horizontal plane of the upper portion of the lower sash and adapted to swing outward through the window, when the lower sash is raised for arranging the fire escape exteriorly of the building, or other structure to which it is applied. The flanges 4 project from opposite sides of the section 2, as clearly illustrated in Fig. 7 of the drawings, and strengthen the said section 2. The other section 1 is reinforced by opposite longitudinal ribs 11, extending along the side faces of the arm 6 and along the side portions of the frame, as clearly shown in Figs. 1 and 2. The frames are constructed of open work metal, but may be of any other desired construction to secure the necessary strength and the desired lightness, as will be readily understood.

The frame is provided at the outer portion of the section 2 with a bearing 12 for the reception of a transverse shaft 13, carrying a spool or drum 14 and supported at the outer end by a transversely disposed approximately U-shaped bracket or supporting member 15, secured at its ends to the section 2 of the frame at the upper and lower edges thereof by screws 16, or other suitable fastening devices, as clearly shown in Fig. 6 of the drawings. The U-shaped supporting member is composed of upper and lower horizontal arms or portions and a vertical connecting portion, which is provided with a central bearing 15^a for the outer end of the shaft 13. The spool or drum, which is suitably fixed to the transverse shaft 13, is provided at opposite sides with flanges 17, and

it receives a rope or cable 18, wound around the spool or drum a sufficient number of times to prevent it from slipping on the same and to insure a positive rotary movement of the spool or drum, when the rope or cable is actuated by the weight of a person using the fire escape. The wound portion 19 is located intermediate of the ends of the rope or cable, which is double acting or continuously operable, being so arranged that when one end portion is descending, the other end portion is ascending. When one end of the rope or cable reaches the ground, the other end is returned to the drum or spool and is in position for immediate use, so that it will be unnecessary to rewind the rope or cable after each descent before another descent can be effected.

The rope or cable passes through openings 20 of guide arms 21, extending in opposite directions from a curved block or shoe 22, which also carries projecting roller guides 23. The block or shoe 22 is provided at its lower face with a rib 24, and is secured thereat upon the lower portion of the U-shaped supporting member 15 by screws 25, which pierce the bottom portion of the supporting member and engage threaded openings of the block or shoe 22. The upper face of the block or shoe is concave and is spaced from the drum or spool a sufficient distance to clear the rope or cable. The guide arms 21 have their inner ends fitted against the side edges or faces of the rib 24, and they are firmly secured to the lower face of the guide block or shoe by means of bolts 26, which also form journals for the roller guides 23. By fitting the inner ends of the guide arms against the rib, they may be securely fastened to the block or shoe 22 by a single fastening device, as the rib will prevent the arms 21 from turning. The projecting rollers engage the adjacent intermediate coils of the rope or cable at opposite sides of the spool or drum a short distance from the points where the end portions of the rope or cable leave the spool or drum, and they are located at the space between the end portions of the rope or cable, as clearly illustrated in Fig. 5 of the drawings. By maintaining the intermediate coils of the rope or cable in proper position centrally of the spool or drum, the rope or cable is enabled to run freely without binding or becoming tangled on the spool or drum. The shaft 13 also carries a relatively large spur gear wheel 27, which meshes with a spur pinion 28 of a counter shaft 29, journaled in suitable bearings 30 and 31 of the outer section of the frame and a substantially L-shaped supporting member 32. The L-shaped supporting member, which is arranged horizontally, is secured at one end by screws 33, or other suitable fastening devices to the outer end of an arm 34 of the

section 2 of the hinged frame, and it extends inward or rearward, as clearly shown in Fig. 4 of the drawings, its bearing 31 being arranged in spaced relation with the bearing 30 of the frame. The arm 34 extends horizontally from the section 2 of the frame, and it also supports a vertical arm 35, extending upwardly and having a bracket 36 secured to it.

The bracket 36, which is provided with a lower attaching portion, extends upwardly and outwardly in a direction transversely of the frame, and is provided at its outer end with a clamping collar 37, split at its outer portion and provided thereat with projecting ears 38, which are connected by a bolt 39. The arm 35 is provided at its edges with marginal flanges, extending from opposite faces of the arm, and the flanges at one side are recessed to receive the attaching portion of the bracket 36. The collar 37 receives a vertically disposed tubular casing or sleeve 40, forming a bearing for a vertical governor shaft 41, which is connected at its lower end by bevel gearing with the counter shaft 29. The sleeve or casing 40 is provided with an enlarged lower end or head 42, having a groove 43 at the bottom to form a race for anti-friction balls 44, interposed between the lower end or head of the sleeve or casing 40, and a bevel pinion 45, which is secured to the lower end of the shaft 41. The lower end of the shaft is provided with an integral cone bearing 46 to engage the anti-friction balls 45, and it has a lower threaded extension for the reception of a nut 47 for securing the bevel pinion to the governor shaft. The bevel pinion, which is disposed horizontally, meshes with a vertical bevel gear 48, keyed or otherwise secured to the transverse shaft 29. When the drum or spool is rotated by the rope or cable, motion is communicated through the spur or bevel gearing to the vertical governor shaft.

Secured to the upper end of the governor shaft is a collar 49, provided with opposite ears 50, arranged in pairs and receiving pivots 51 of the upper ends of the long governor arms 52, normally arranged at a slight inclination and equipped at their lower ends with balls 53, adapted to be thrown outward by centrifugal force in the usual manner. The long arms 52 are connected by short arms or links 54 with a friction member 55, consisting of a sleeve having a conical upper engaging portion 56, which fits within a conical or cup-shaped recess 57 of a friction member 58, located above the friction member 55. The lower friction member 55, which is connected with the short arms or links of the governor, rotates on the sleeve or casing 40, being connected with the governor shaft, which rotates within the said sleeve or casing 40. When the balls or

weights 53 are thrown outward through centrifugal force, the lower friction member is moved upward and carries with it the upper friction member 58, which is held against rotary movement by means of a screw 59, piercing the upper friction member and operating in a longitudinal slot 60 of the sleeve or casing 40. The necessary friction to check the rotation of the spool or drum to control the descent of a person is produced by means of a coiled spring 61, disposed on the upper portion of the sleeve or casing 40 and interposed between the collar 49 and the upper friction member. As the friction members move upward, the spring is compressed and increases the friction resulting from the engagement of the upper and lower friction members, and thereby retards the rotary movement of the drum or spool. The ends of the rope or cable are equipped with suitable snap hooks 62, linked into suitable loops 63 of the ends of the rope or cable, and adapted to enable a belt or saddle to be connected with the fire escape for the accommodation of the person using the same.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent, is:—

30 1. A fire escape including a horizontally swinging frame provided at its inner end with upper and lower horizontal arms and composed of extensible inner and outer sections, one of the sections being provided at its upper and lower edges with horizontal guide flanges receiving the other section, fastening devices located between the flanges and piercing the sections, a spool or drum mounted on the outer section of the frame, a rope or cable wound around the spool or drum, and a governor for controlling the rotary movement of the said spool or drum.

45 2. A fire escape including a horizontally swinging frame hinged at one end and having a horizontal arm at its other end, said frame being also provided with a vertical arm extending upward from the horizontal arm, a transverse shaft journaled on the frame, a spool or drum mounted on the transverse shaft, and a substantially U-shaped supporting member secured to the frame and provided with a bearing receiv-

ing the transverse shaft, a substantially L-shaped horizontally disposed supporting member secured to the horizontal arm, a counter shaft journaled in the horizontal arm and in the L-shaped supporting member, gearing connecting the said shafts, a bracket secured to the vertical arm, a governor carried by the bracket, and gearing connecting the governor with the counter shaft.

3. A fire escape including a horizontally swinging frame, a spool or drum, a flexible connection arranged on the spool or drum, a bracket carried by the frame and extending laterally therefrom and provided with a collar, a vertical sleeve mounted in the collar, a governor located above the bracket and provided with a shaft journaled in the sleeve, and gearing for connecting the lower end of the shaft with the spool or drum.

4. A fire escape including a frame, a spool or drum, a flexible connection arranged on the spool or drum, a vertical sleeve, a governor including a shaft journaled in the sleeve, a friction member mounted on the sleeve and connected with the governor, and a spring actuated friction member slidably interlocked with the sleeve and cooperating with the said friction member, and gearing for connecting the governor shaft with the spool or drum.

5. A fire escape including a frame, a spool or drum, a flexible connection arranged thereon, a vertical sleeve having a slot, pivoted governor arms equipped with weights and connected with the shaft, upper and lower friction members arranged on the sleeve, links connecting the lower friction member with the said arms, a spring engaging the upper friction member, and means carried by the upper friction member and extending into the slot of the sleeve for interlocking the said upper member with the sleeve to prevent rotary movement.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

CHARLES E. GREEN.
THOMAS C. BRASKET.

Witnesses:

CHARLES R. BAGOT,
THOS. BAGOT.