No. 640,437. Patented Jan. 2, 1900.

F. H. ARNESEN.

FIRE ESCAPE.

(Application filed Feb. 2, 1899.)

(No Model.)

Fig 2

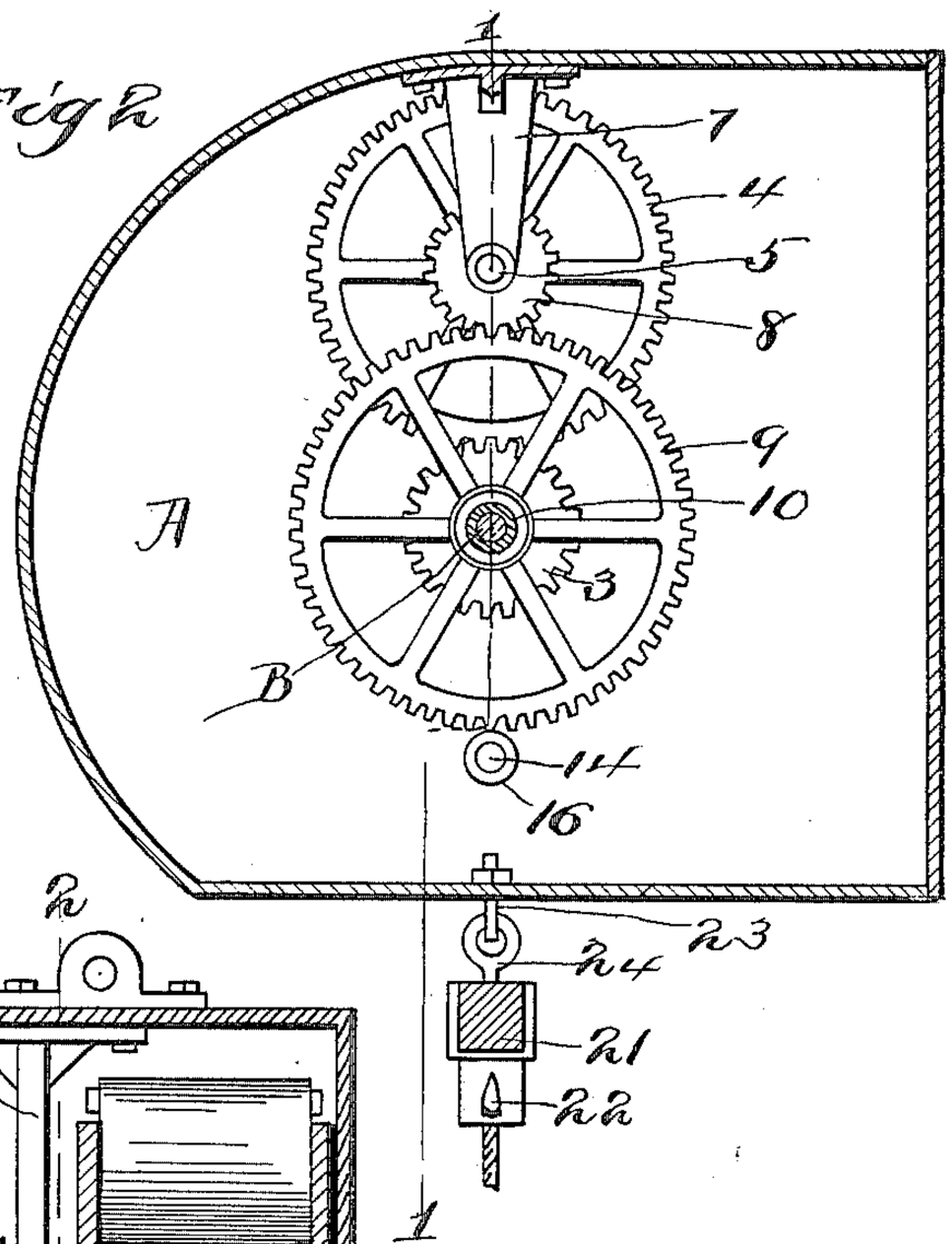


Fig 3

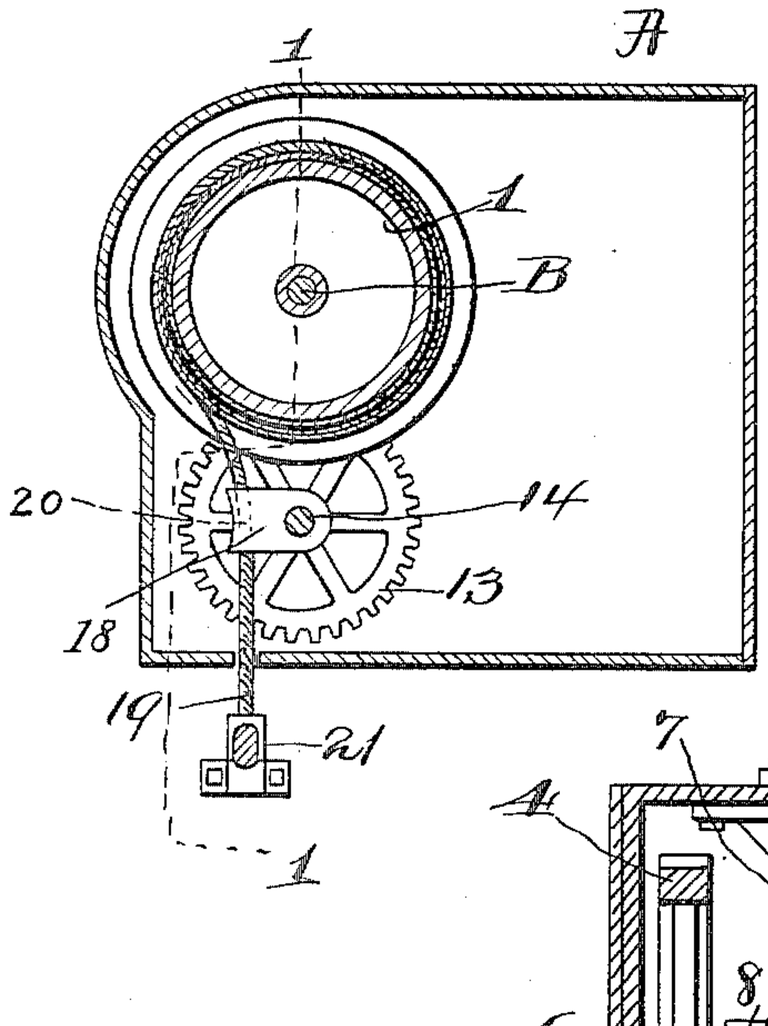
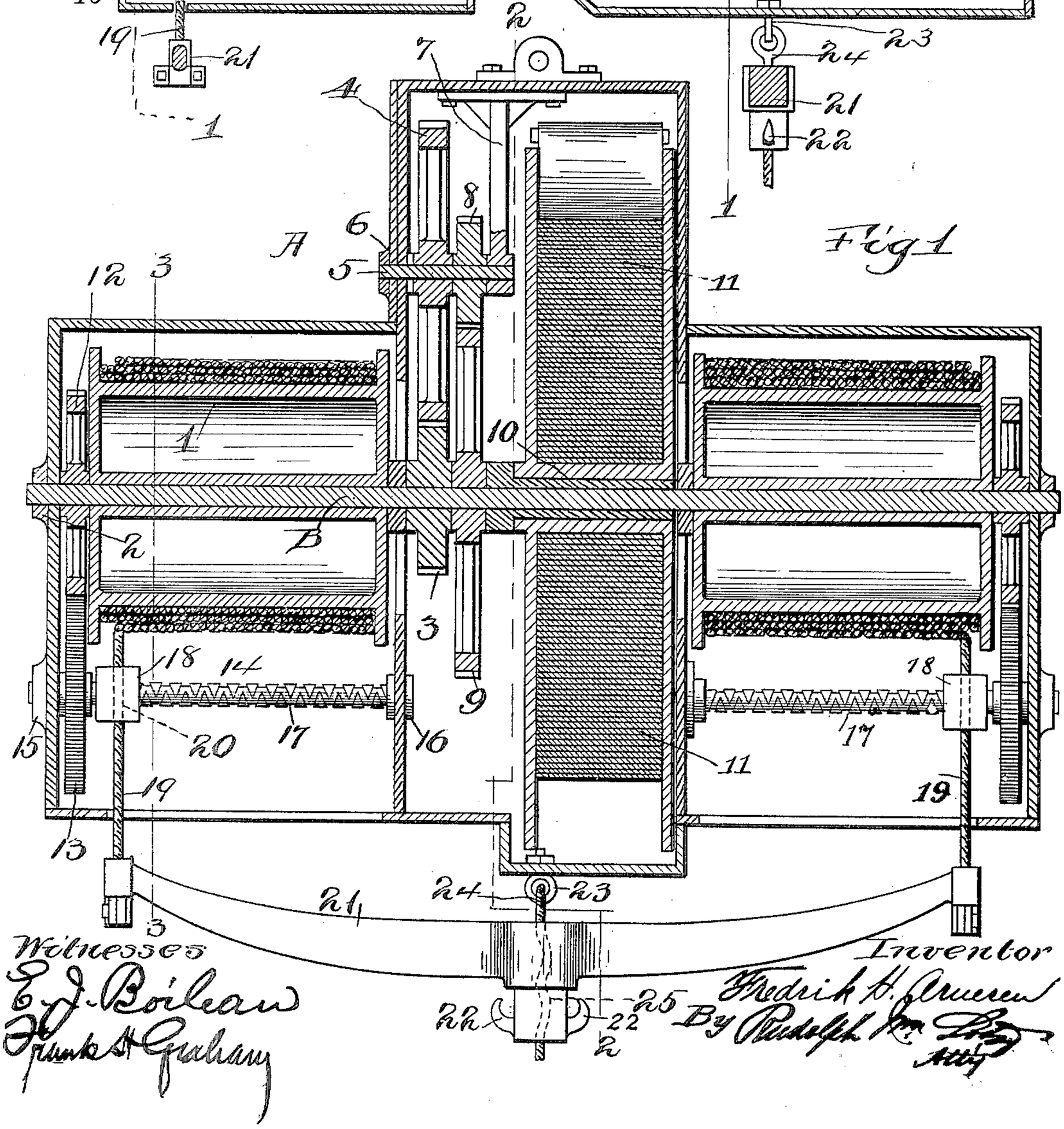


Fig 1



Witnesses
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UNITED STATES PATENT OFFICE.

FREDRIK H. ARNESEN, OF CHICAGO, ILLINOIS.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 640,437, dated January 2, 1900.

Application filed February 2, 1899. Serial No. 704,306. (No model.)

To all whom it may concern:

Be it known that I, FREDRIK H. ARNESEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, 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 relates to a novel construction in a fire-escape, the object being to provide a simple and efficient device of this character; and it consists in the features of construction and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is a sectional view of my device on the line 1 1 of Figs. 2 and 3. Figs. 2 and 3 are sectional views on the lines 2 2 and 3 3, respectively, of Fig. 1.

Referring now to said drawings, A indicates a casing enlarged at its middle portion and divided into three compartments. A shaft B, carrying drums 1, passes through all of said compartments and is journaled in bearings 2 in the end walls of same. Rigidly mounted on said shaft B in the middle compartment is a pinion 3, which intermeshes with a cog-wheel 4 on a shaft 5, journaled in a bearing 6 in the wall of said middle compartment and in a hanger 7, depending from the top wall of said middle compartment. Said shaft 5 carries a pinion 8, which intermeshes with a cog-wheel 9 on a sleeve 10, loosely mounted on said shaft B and to which sleeve one end of a spiral spring 11 is secured, the other end of which is suitably secured to one of the walls of said casing. Adjacent the end walls of said casing A said shaft B carries gear-wheels 12, intermeshing with gear-wheels 13 on shafts 14, journaled in bearings 15 and 16, of which the former are located in the end walls of the casing A and the latter in the partitions between the middle and end compartments. Said shafts 14 are each provided with reverse screw-threads or spiral grooves 17, adapted to give a rectilinear reciprocating motion to sleeves 18 mounted thereon. Cables 19, secured at one of their ends to said drums 1, pass through eyelets 20 on said sleeves 19 and at their lower ends are secured to a beam 21, carrying suitable devices to enable a person to secure himself thereto, such as the lugs 22. To the lower end of said casing A, at the middle portion thereof, I secure an eyelet 23, to which the upper end of a rope or cable 24 is adapted to be secured, the lower or free end of which is adapted to be let down to the ground and be pulled taut by a person on the street and at an incline to the wall of the building. Said rope or cable 24 passes through a spiral passage 25 in middle portion of said beam 21, whereby the latter is obviously prevented from running down at too great a speed for safety to the person depending therefrom. Said cables 19 are adapted to be normally wound upon said drums 1 and when the weight of a person is applied to the beam 21 to unwind, and thereby revolve said drums 1 and shaft B. The revolution of the shaft is transmitted to the sleeve 10 and winds up the spring 11. The motion is also transmitted to the shafts 14, thus causing a reciprocating motion of the sleeves 18. When the person depending from said beam reaches the ground and releases the beam, the spring 11 acts to revolve the drums in the opposite direction, thus winding the cables thereon and drawing up the beam. During this reverse motion of the parts the sleeves 18 guide the cables so that the latter are evenly wound upon the drum, thus preventing any snarls or uneven windings and preserving the operativeness of the device.

My device is designed to be mounted on the outer wall of the building above a window, and the working parts thereof are protected by the casing.

The rope or cable 24 is normally coiled and the coil placed within easy reach, so that it can be thrown out at a moment's notice.

I claim as my invention—

1. A fire-escape comprising a shaft journaled in bearings in a casing, drums mounted on said shaft adjacent its ends, cables adapted to be wound upon the same, a spring gearing between said shaft and spring whereby when said shaft is turned in one direction said spring is wound up, a beam carried by said cables and adapted to carry a person, said cables being adapted to unwind from and turn said drums and said shaft when the weight of a person is applied and wind up

said spring, and said spring being adapted to reverse said action upon relieving said beam of its weight, devices carried by said casing for guiding said cables, gearing between said devices and said shaft, a cable secured at one end to the middle portion of said casing and depending therefrom, and devices carried by said beam and adapted to engage said last-named cable to govern the motion of said beam, substantially as described.

2. A fire-escape comprising a casing, a shaft journaled in bearings in said casing, drums rigidly mounted on said shaft adjacent its ends, cables adapted to be wound upon same, a spring gearing between said shaft and spring a beam carried by said cables and adapted to carry a person, said cables being adapted to unwind from and turn said drums and shaft to wind up said spring when the weight of a person is applied to said beam, and said spring being adapted to reverse said motion when said beam is released, devices carried by said casing for guiding said cables, gearing between said devices and said shaft, a cable secured at one end to the middle portion of said casing and depending therefrom, and a spiral passage in said beam through which said cable passes, said cable being adapted to be grasped at its free end and drawn taut to guide said beam and likewise to govern the speed of said beam, substantially as described.

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

FREDRIK H. ARNESEN.

Witnesses:

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E. J. BOILEAU.