(No Model.)

D. J. ARNOLD.

FIRE ESCAPE.

No. 301,657. Patented July 8, 1884.

Fig. 1.

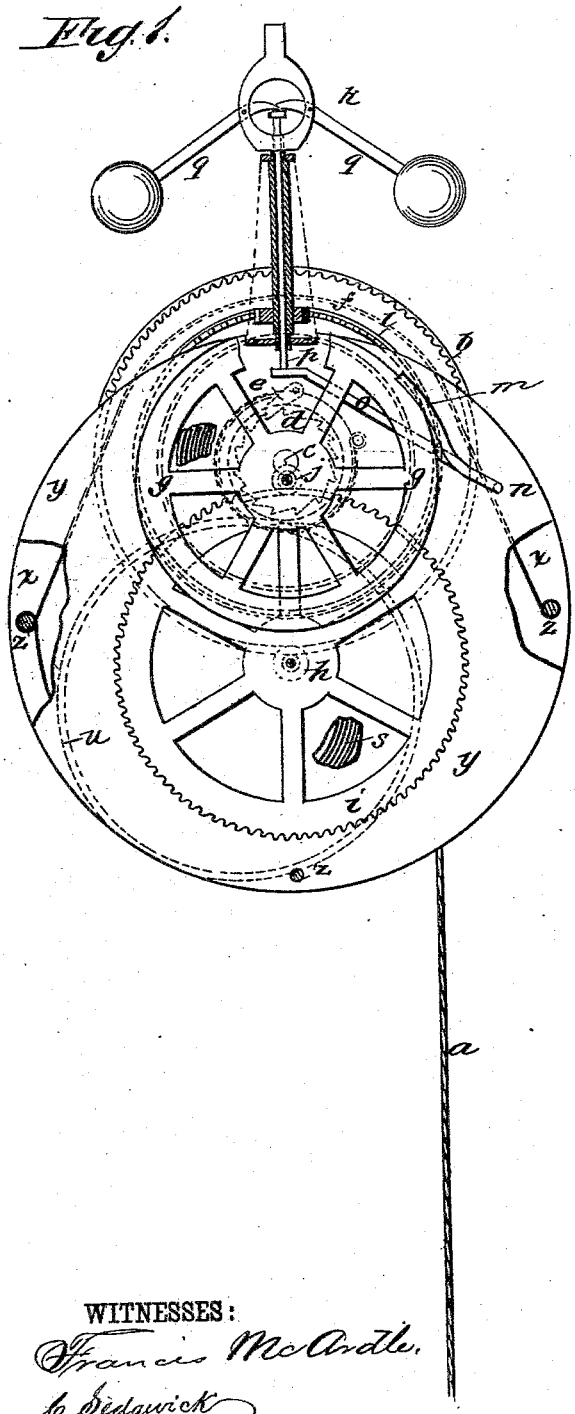
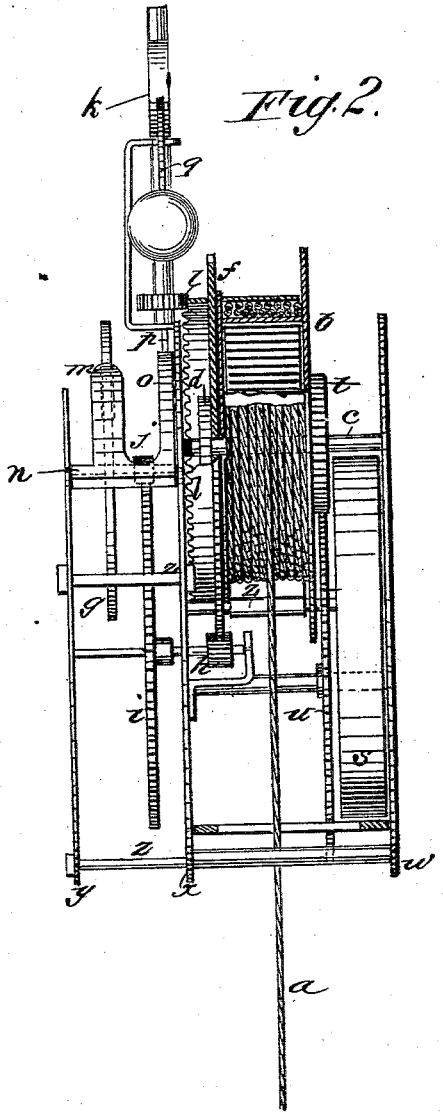


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

DON JUAN ARNOLD, OF BROWNVILLE, NEBRASKA, ASSIGNOR TO HIMSELF, AND PHILIP A. THOMPSON, OF LANGDON, MISSOURI.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 301,657, dated July 8, 1884.

Application filed April 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, DON J. ARNOLD, of Brownville, in the county of Nemaha and State of Nebraska, have invented a new and Improved Fire-Escape, of which the following is a full, clear, and exact description.

My invention relates to improvements in fire-escapes, having for its object to secure safety of descent, and to provide rapid accommodation by a common means to each of the persons seeking escape; and it consists in the combination and arrangement of parts, substantially as hereinafter fully described and claimed.

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

Figure 1 is a front elevation of my improved fire-escape with some of the parts broken out, and Fig. 2 is a side elevation.

The cord *a*, by which the escape is to be made, is coiled on a drum, *b*, the shaft *c* of which gears by a ratchet, *d*, fixed on a shaft, *e*, with the large driving-wheel *f*, which is loose on shaft *c*, and carries a spring-pressed pawl, *e*, for engaging ratchet *d*, so that when the rope is winding off from the drum motion is given to the high-speed brake-wheel *g* by the train *h*, *i*, and *j* by gearing of wheel *f* with pinion *h*, and motion is also given to the governor *k* by the crown-wheel *l*, fixed to wheel *f*, so that the governor may apply the brake *m* to the rim of the brake-wheel, and thus regulate the speed of the drum, so that persons may descend with safety by the rope, the speed being not materially different with persons differing in weight. The high speed of the brake-wheel makes it very sensitive to the pressure of the brake, and enables a centrifugal governor of ordinary construction to safely regulate the descent of a person from high buildings. The brake *m* is fixed on a pivot at *n*, from which a lever-arm, *o*, extends to the stem *p*, which is pressed down by the ball-arms *q*, when the speed throws out said arms. When the cord unwinds from the drum, it is also made to coil up the spring *s* by the wheels *t* and *u*, which also act as a retarder to the drum to some extent for limiting the speed of the descent; but the special object of the spring is to coil up the rope again for the use of other persons.

The apparatus is arranged in housing-plates or frames *w x y*, which are connected by bars or posts *z*, in the manner of frames for clock-gear, to support the bearings of the running-gears, and for attaching the machine to the side of the wall at or near the window, or in any convenient place for being ready for use when wanted, by simply throwing the rope out of the window.

The object of connecting the drum to the brake-wheel and governor-trains by the ratchet and pawl is to allow the drum to run free of them for winding up the rope by the spring.

Any approved form of sling may be employed for the person escaping to connect the rope to him.

The machine will be covered by any suitable case to protect it from the dust.

I desire it to be understood that the machine is also useful as a means of lowering goods of any kind from burning or other buildings, and I propose to use it for such purpose also.

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

1. The combination, in a fire-escape, of a cord, *a*, drum *b*, high-speed brake-wheel *g*, governor *k*, and brake *m*, the said drum being geared to the train for operating the wheel and governor by a ratchet and pawl clutch, allowing the drum to turn independently of them to wind up the cord, substantially as described.

2. The combination, in a fire-escape, of the cord *a*, drum *b*, high-speed brake-wheel *g*, governor *k*, brake *m*, and the spring *s*, the drum being geared with the governor and brake by a clutch, enabling the spring to wind up the cord without effect on the said governor and brake, substantially as described.

DON JUAN ARNOLD.

Witnesses:
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J. C. MCNAUGHTON.