(No Model.)

C. IVES.

FIRE ESCAPE.

No. 287,764. Patented Oct. 30, 1883.

Fig. 1.

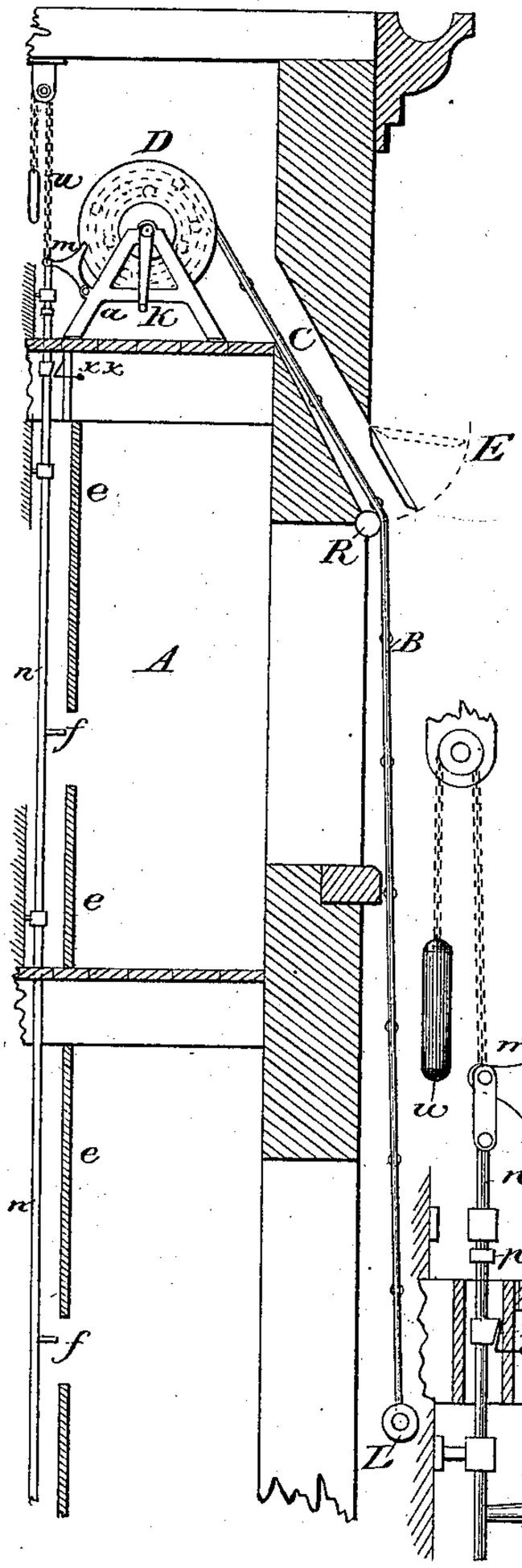


Fig. 4.

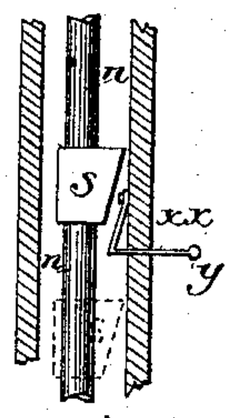
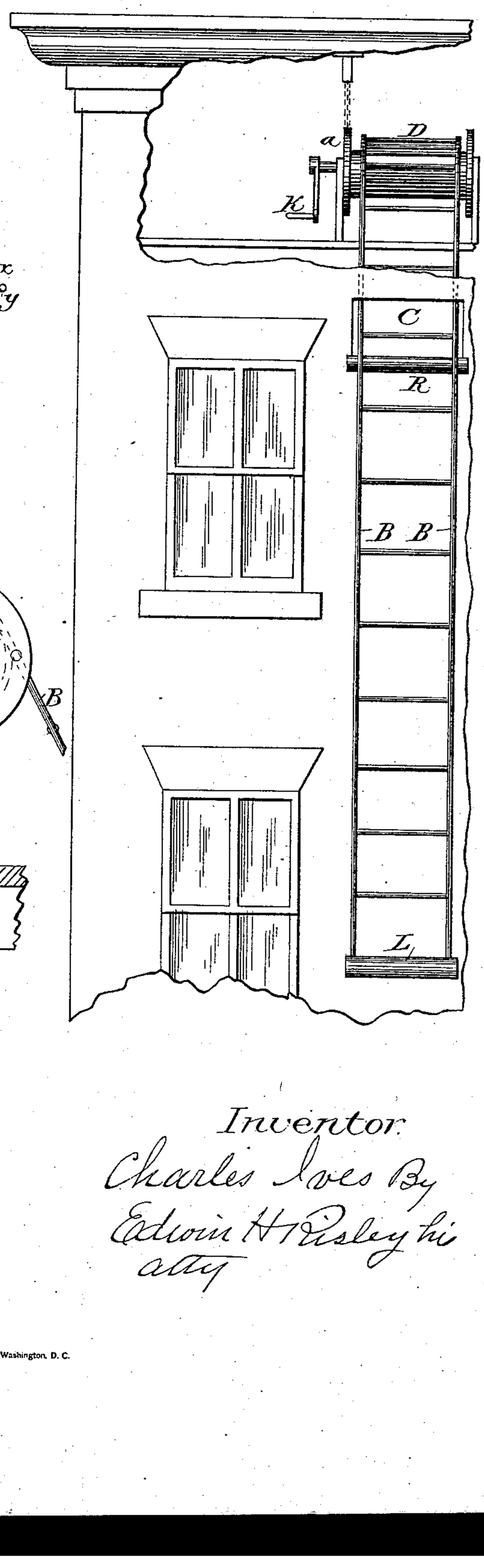


Fig. 3.

Fig. 2.



Witnesses:
Richard E. Evans
William P. Lewis

Inventor:
Charles Ives By
Edwin H. Risley his
atty

UNITED STATES PATENT OFFICE.

CHARLES IVES, OF KIRKLAND, NEW YORK.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 287,764, dated October 30, 1883.

Application filed June 4, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES IVES, of the town of Kirkland, county of Oneida, and State of New York, have invented and discovered a new and useful Improvement in Fire-Escapes, of which the following is a specification.

My invention relates to improvements used and operated in connection with hotels and public and private buildings of all descriptions where fire-escapes may be necessary or proper, to be used to enable people to escape through the outer windows of buildings, when prevented from so escaping by the ordinary methods provided for such buildings in case of fire.

In the accompanying drawings, Figure 1 represents a cross-section of the upper part of a building. Fig. 2 represents a front view of the same. Fig. 3 represents an enlarged size of the drum and the fire-escape attached and the apparatus for retaining and releasing the fire-escape. Fig. 4 represents an enlarged section of the apparatus for releasing the fire-escape.

Similar letters refer to similar parts throughout the several views.

The nature and construction of my invention consists in a flexible ladder, the side bars of which are constructed of ordinary chain, constructed of steel or wrought or malleable iron of sufficient strength to support the required weight. The chain is connected by rounds or steps fastened to the links of the side bars by means of hooks or rings. The size of the rounds is from three-eighths to one-half of an inch. The size can be varied to suit the convenience of the person using the same and the purposes for which it is to be used, and about fifteen inches in length. This, however, may be varied to suit the convenience of the person using the same without interfering with my invention. These rounds may be formed with a hook at each end of sufficient size and strength to fasten into the links of the side bars, and compressed so as to embrace the link closely; or the rounds may be attached to the side bars by having the links of the side bars pass through the ends of the rounds which form the ladder without interfering with the usefulness of my invention; or a wire cable may be substituted in place of the chain forming the side bars. A ladder thus constructed may be extended or contracted, according to the locality where the same is to be used. The end of a ladder thus constructed is attached to a revolving drum located in the attic or upper part of a building, as indicated in Figs. 1 and 2. The drum is constructed of wood, of sufficient size to accommodate the ladder when wound up. This is accomplished by means of a crank attached to the end of the shaft which supports the drum. The ladder, by means of this revolving drum, can be easily taken into the building and discharged from it in case of fire, as hereinafter described. The frame supporting the drum may be changed by fastening the same to the side of the building, or fastening to the floor, as indicated in Fig. 1, according to the convenience of the location where the the same is to be used, without interfering with my invention. The shaft to which the drum is attached may be of sufficient length to attach several drums to the same, so that a series of fire-escape ladders may all be discharged and extended at one time by the same operation. The fire-escape ladder is discharged, in case of fire, through an aperture in the outer wall of the building, as indicated by Fig. 1, by its own weight when the ratchet is detached from the drum, as hereinafter described. The ladder, when attached to the drum, is coiled round the drum, by means of the crank attached to the shaft, until the end of the ladder is drawn inside of the aperture in the outside wall of the building, and is held in this position by means of ratchet *m*. Attached to this ratchet is a cord, wire, or rod communicating with the different floors or rooms in the building, where the same is readily accessible in case of fire. By pulling the connection the ratchet is detached from the drum, which is set in motion by the weight of the ladder, and is instantly extended by its own weight and the revolution of the drum. The ratchet is kept in position on the drum in part by a weight running over a pulley, as indicated in Fig. 3, and the ratchet is kept from the drum, in case the ladder is desired to be extended, by means of a spring and catch, as indicated by Fig. 4.

Various devices have been used to provide proper fire-escapes for buildings in case of fire which disfigure the outer part of buildings.

By the use of my invention the fire-escape ladder is entirely inside of the building when not in use, and is readily available at all times, in case of fire, to the inmates of the building.

Having described the nature and construction of my invention, I will now describe it with reference to the accompanying drawings, in which—

A represents the building.

B represents the ladder extended.

C represents the opening in the side of building, through which the ladder passes.

D represents the drum, around which the ladder is wound or coiled when not extended for use.

E represents a door or cover, which opens outward by means of a flexible hinge, to allow the ladder to escape without obstruction, and to close by its own weight when the ladder is taken in, forming a complete cover to aperture C in the wall.

K represents the crank attached to the end of the shaft which supports the drum or drums, by means of which the drum is revolved, so as to coil the ladder when taking the same in after use.

L represents a weight attached to the lower end of the ladder, so that the same will be readily extended when the ratchet is detached from the drum.

R represents a roller or round to the ladder, of about three inches in diameter, which rests against the wall at the outer edge of aperture C, the purpose of which is to keep the ladder away from the building, so that the same can be more readily used.

a represents the frame, attached to the floor or to the wall, which supports the drum.

w represents the weight, attached to the ratchet by means of a cord or chain running over a pulley, to keep the ratchet in place when the fire-escape is not in use.

m represents the ratchet in place when the escape is not in use.

n represent the cord, wire, or rod attached to ratchet *m*, and extended to the different floors of the building, for the convenience of persons desiring the use of the fire-escape.

f represents the handle or knob attached to *n*. A person, by pulling handle *f*, will detach ratchet *m* from the drum, and the fire-escape will then be instantly extended.

p represents the collar attached to *n*.

x x represent the spring.

y represents the handle of the spring.

s represents a collar attached to *n*, which passes spring *x x* when the ratchet is detached and the fire-escape extended, and which, by means of *s* and *x x*, keeps the ratchet from the drum while the escape is being extended.

e e represents a box surrounding *n*. This, however, may be omitted, and *n* may be put inside of the wall of the building, and handles so attached as to be readily accesssible to suit the convenience of persons desiring to use the same.

What I claim as my invention and discovery is—

Fire-escape ladder B, in combination with revolving drum D, aperture C, frame *a*, ratchet *m*, connecting-rod *n*, handle *f*, collars *s*, spring *x x*, provided with handle *y*, weight *w*, crank K, and door E, as and for the purposes specified.

Signed at Utica, in the county of Oneida and State of New York.

CHARLES IVES.

Witnesses:

C. D. HAYES,

JAMES I. SCOLLARD.