A. OCHSNER.

Fire-Escape

No. 209,916. Patented Nov. 12, 1878.

Fig. 1.

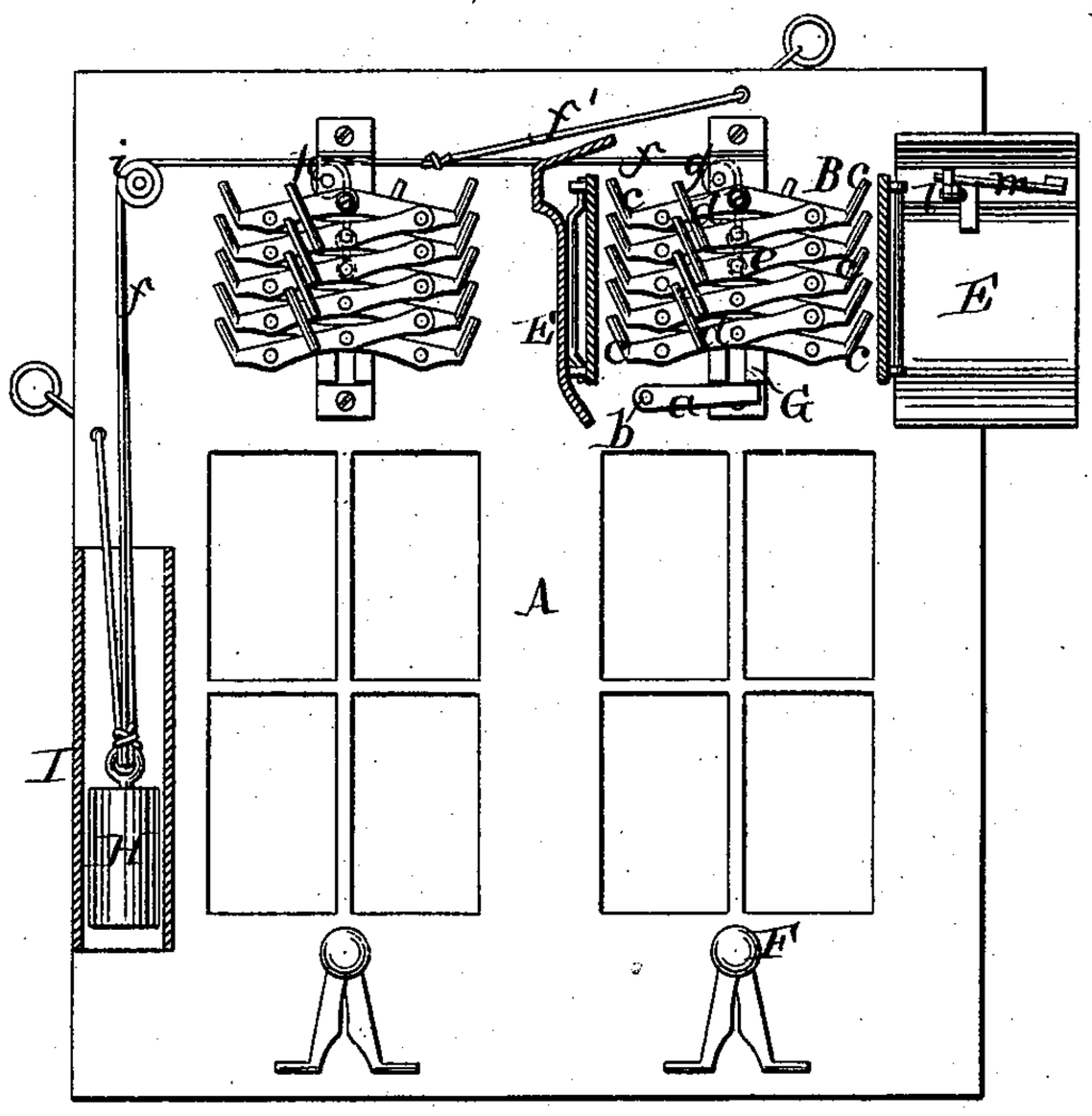


Fig. 4.

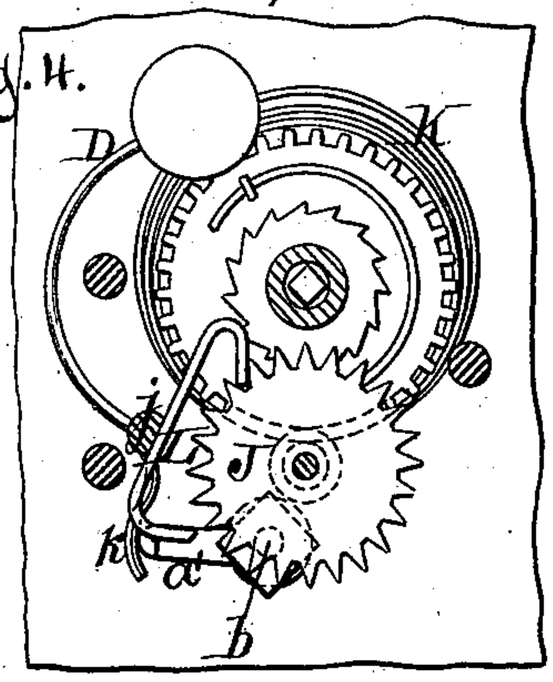


Fig. 5.

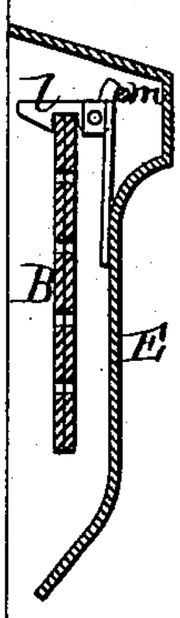


Fig. 2.

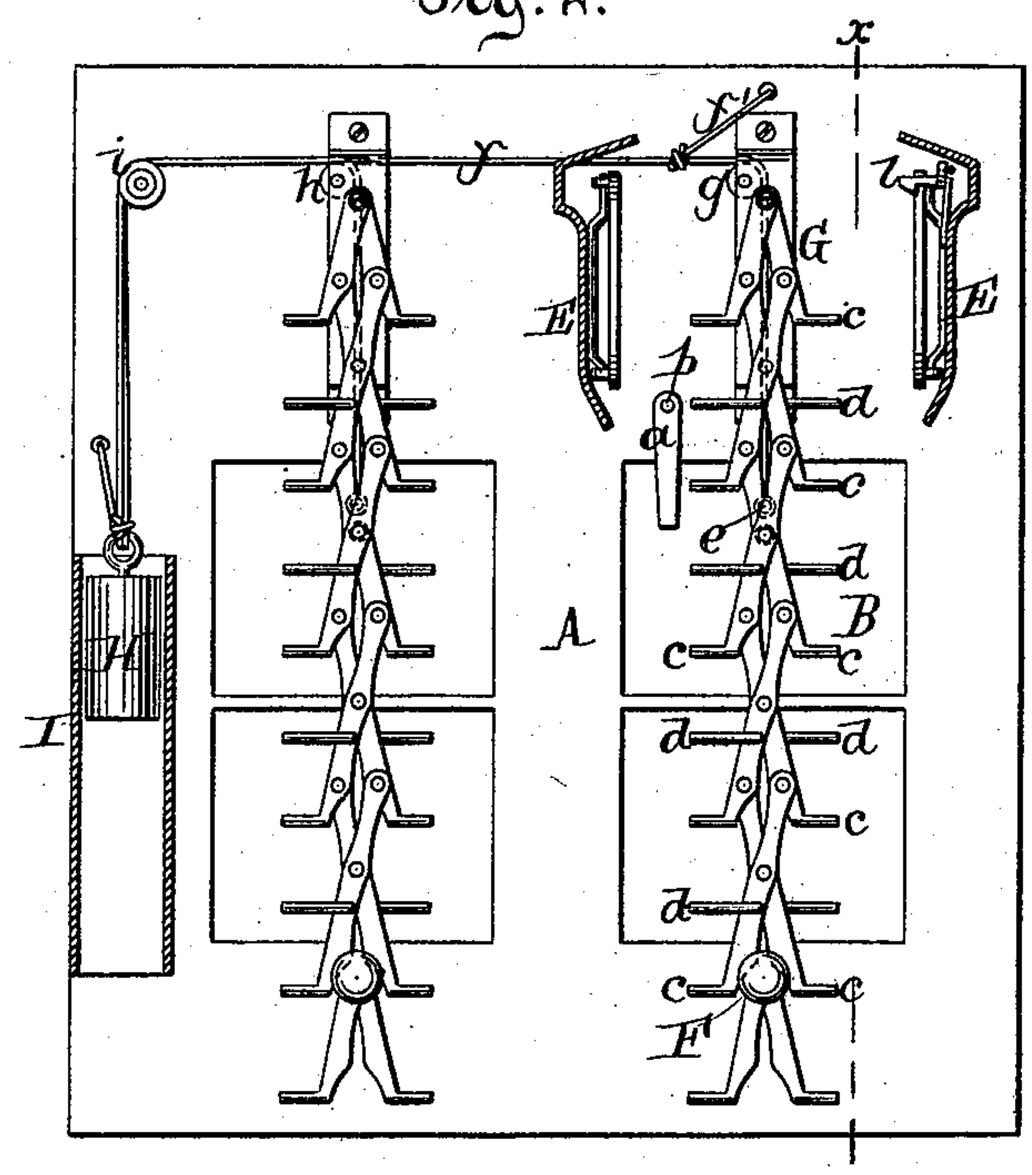
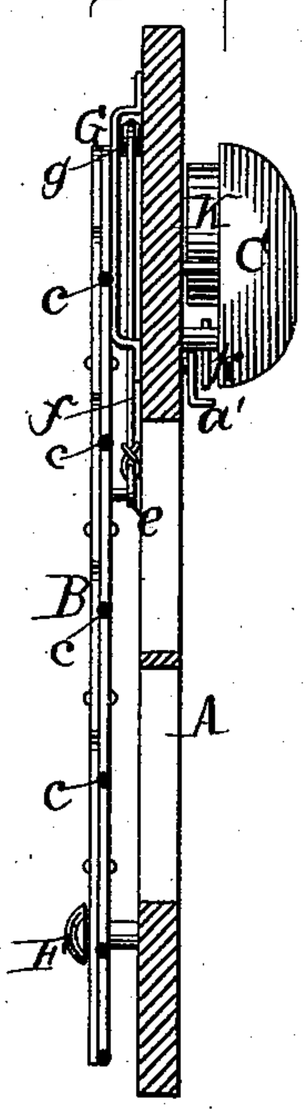


Fig. 3.



Witnesses.
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W. C. Hauff.

Inventor.
Anton Ochsner
by his Attys.
Van Santvoord & Hauff

UNITED STATES PATENT OFFICE.

ANTON OCHSNER, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN FIRE-ESCAPES.

Specification forming part of Letters Patent No. **209,916,** dated November 12, 1878; application filed August 15, 1878.

To all whom it may concern:

Be it known that I, ANTON OCHSNER, of New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Fire-Escapes, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a front elevation of my fire-escape, partly in section, showing the manner of applying the same to a building, and showing the ladder in its upper or retracted position. Fig. 2 is a like view thereof when the ladder is lowered or extended. Fig. 3 is a vertical section of the same in the plane of the line *x x*, Fig. 2. Fig. 4 is a front view of the alarm mechanism, partly in section. Fig. 5 is a vertical cross-section of one of the doors for covering the ladder, on a larger scale than in the previous figures, showing the manner of holding the door shut.

Similar letters indicate corresponding parts.

My invention relates to fire-escapes for buildings; and it consists in an extensible ladder, an alarm, a spring mechanism for working the alarm, and a detent to arrest the alarm mechanism, so arranged that it is thrown out of action through the medium of the ladder when the same is extended, the extensible ladder being constructed of lazy-tongs, each arm of which is provided with one or more lateral projections to form steps or rounds, and the ladder being operated by a rope or chain to which is connected a balance-weight, whereby the ladder is retained in its retracted position, while when the ladder is retracted it is covered by one or more doors provided with a catch, which engages with the ladder, and is automatically disengaged when the ladder is extended, as hereinafter fully set forth.

In the drawing, the letter A designates the front of a building to which my fire-escape is applied. B is the ladder. C is a gong, and D a hammer, composing the alarm, and *a a'* are two arms, which are secured to an arbor, *b*, passing through the wall A, and constitute the detent of the alarm mechanism located on the inside of the building. E are doors for covering and protecting the ladder when the same is retracted.

I construct the ladder B of a series of lazy-tongs, each of the arms of which is provided with a lateral projection, *c*, at one end, and with a corresponding projection, *d*, at an intermediate point. These projections *c d* do not interfere with the retraction of the ladder, while when the same is extended they form steps or rounds, as seen in Fig. 2.

When the ladder B is extended it is steadied by means of a button, F, which is secured at a suitable point to the front of the building, to allow of its being grasped by the lower pair of arms of the ladder.

The ladder B may be arranged to extend the entire height of a building, or of one of the stories thereof, as may be found most expedient. At its upper end the ladder B is fastened to a slotted plate, G, whose slot is open at the lower end, and in which works a stud, *e*, which forms one of the central pivots of the ladder and projects inwardly therefrom, as shown in Fig. 3.

When the alarm mechanism is arrested by the detent before referred to, the arm *a* thereof lies beneath the lower end of the slotted plate G, as shown in Fig. 1, and hence, when the ladder is allowed to drop, the stud *e* strikes against said arm and displaces the same, so that the alarm mechanism is released and the alarm is sounded.

For the purpose of lowering and raising the ladder B, I make use of a rope or chain, *f*, which is secured to the stud *e* at one end, thence passes over pulleys *g h i*, and at its other end is secured to a weight, H, working in a well, I. The weight H is intended to counterbalance the ladder B when the same is retracted, so that it is held in position without the use of any fastening devices, whereby its manipulation is greatly facilitated.

In the present example I have shown two ladders, each connected to the weight H, to illustrate that a single weight may be used in conjunction with a series of ladders. To permit of raising the weight H, and thus allow of extending or dropping the ladder B, I fasten to the rope *f* a retracting-rope, *f'*.

The alarm mechanism consists of an escapement-wheel, J, (see Fig. 4,) which is rotated by the action of a clock-spring, K, and is engaged by an anchor, L, secured to an arbor,

j, to which is secured also the shank of the hammer D and an arm, *k*. This arm *k* is engaged by the arm *a'* of the detent when the arm *a* is in the position shown in Fig. 1, which has the effect of arresting the alarm mechanism, while when the arm *a* is displaced by the ladder, as before stated, said arm *k* is disengaged from the arm *a'* and the alarm mechanism is released.

The doors E are arranged in pairs, and to lap one over the other, each door being hinged to the house-front, and being shown in an open or partly-open condition. In the upper part of the outer door is arranged a catch or hook, *l*, which is pivoted to a projection on said door and subjected to the action of a spring, *m*.

When the ladder B is retracted and the doors E are shut, the hook *l* catches over one of the upper arms of the ladder, as shown in Fig. 5, and by this means the doors are held shut, while, when the ladder is released and descends, the hook *l* is automatically disengaged and the doors are permitted to open.

I bend the doors E inward at their lower ends, so that when the ladder B descends it comes in contact with this bent part of the doors, and, inasmuch as they are released at the moment this contact takes place, the doors are automatically opened.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a fire-escape, the combination of a ladder constructed of lazy-tongs, an alarm, and spring mechanism for working the alarm, and a detent to hold in check the alarm mechanism and to be thrown wholly out of engagement therewith by the extension of the ladder, substantially as specified.

2. In a fire-escape, the combination of a ladder constructed of lazy-tongs, each arm of which is provided with one or more lateral projections to form steps or rounds, and a rope or chain for operating said ladder, substantially as shown and described.

In testimony that I claim the foregoing I hereunto set my hand and seal this 12th day of August, 1870.

ANTON OSCHNER. [L. S.]

Witnesses:

SIEGWART SPIER,

ELMER F. SCROEDER.