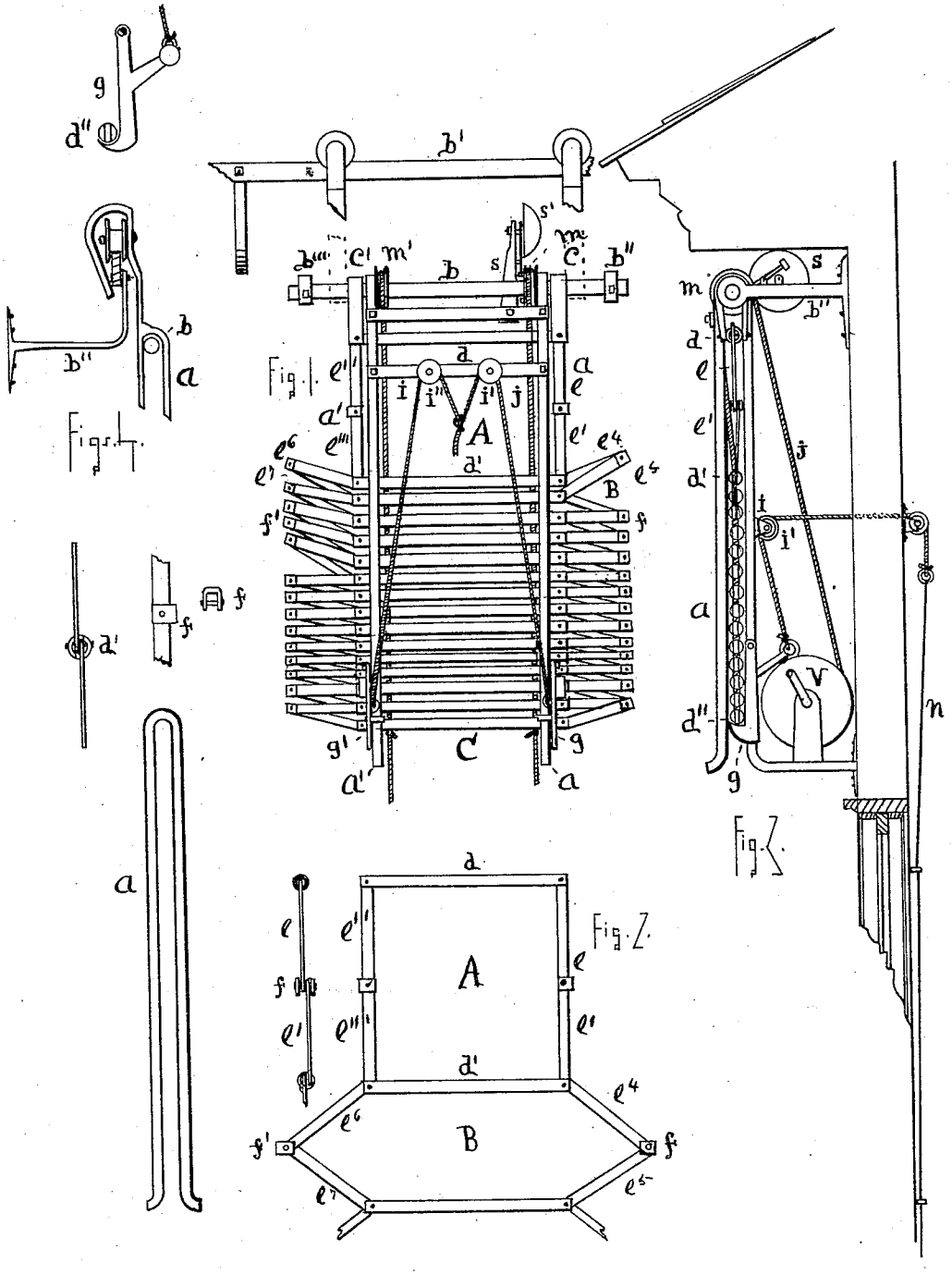
(No Model.)

J. H. SMILEY.

FIRE ESCAPE WITH AN ALARM ATTACHMENT.

No. 280,527. Patented July 3, 1883.



Witnesses.

H. L. Speed

James Harvey Smiley

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UNITED STATES PATENT OFFICE.

JAMES H. SMILEY, OF CAROLINE, NEW YORK.

FIRE-ESCAPE WITH AN ALARM ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 280,527, dated July 3, 1883.

Application filed March 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES HARVEY SMILEY, of Slaterville, in the town of Caroline, Tompkins county, New York, have invented an Improved Fire-Escape and Alarm, whereof the following is a specification, reference being had to the accompanying drawings.

My invention relates to a folding ladder placed outside and near to the top of a building, with a wire or cord, which, if drawn upon by any one occupying any of the rooms of any story near it whose windows are within reach of the ladder, shall cause it to unfold itself and be serviceable to the occupants, and shall by its unfolding cause a bell or gong to ring; and the nature of my invention will be apparent as I describe it.

Figure 1 is a front view of my device. Fig. 2 is a detached view of two folding step-sections of the ladder. Fig. 3 is an end view of my device attached to a building; and Fig. 4 are parts used in its construction, indicated by the letters.

In the figures, *a a'* are two U-shaped metallic frames, supported by a horizontal rod, *b*, or rail *b'*. The rod is used when it is desirable to make the ladder stationary. The rail is used when it is desirable to run the ladder the whole length of the front of a building near or before any window.

In case of the ladder being stationary, as seen in Fig. 1, two staples or clamps, *b'' b'''*, are fast to the ends of the rod *b*, and are secured to the building, near the cornice, and two bands, *c c'*, go over the rod, just outside of the U-shaped frames *a a'*, and are made fast to the top of the ladder to the first rung, *d*. By four side folding pieces the space to the next rung is made, two of which, *e e'*, make the length of the right-hand side of the step-section A, and two, *e'' e'''*, the left-hand side of the same section.

The second step-section, B, is shown in Fig. 1 to be folded against the section A, in which case the right-hand side pieces, e^4 e^5, are flexed, (shown intentionally elevated out of the direct line,) and the left-hand side pieces, e^6 e^7, are also flexed and elevated, but are nearer the horizontal line of the rung *d'*. To prevent inward flexion of the side pieces, metallic caps *f f'* are put over the middle joints of the side pieces. The side piece *e* is jointed to the rung *d*, at one end, and its fellow, *e'*, at the other end, and the side piece *e''* is hinged to the rung *d'*, at its lower end, and its fellow at its opposite side, and there is a similar hinging at both ends of the rungs of all the ladder.

Each step-section is made alike, and repeated, one after the other, the whole length of the ladder, and provides for the close folding of the ladder on itself, as seen in the lower part of Fig. 1.

Near the bottom of the reversed-U-shaped frames *a a'* there are two weighted hooks, *g g'*, one on each side, (seen in Fig. 4, detached,) with the lowest rung of the ladder lying in its hollow, and which, when unhooked, allow the ladder to unfold. In the cavity of the reversed-U-shaped frames the ladder is folded, the slit or space between the two parts of each frame being adapted to receive the ladder, as shown. The folding side pieces are outside of the frames, both when folded and unfolded. A cross-bar, *i*, is fast to the frames, and in Fig. 1 has two pulleys, *i' i''*, and in Fig. 3 but one pulley, *i'*, the arrangement being more definite in the latter figure. From the hooks *g g'* a cord or small chain reaches up to these pulleys, and thence is guided through the wall of the building, where it is attached to a wire or wire cord, *n*, which goes through the floor of each story of the building, except the lowest, or even that. By pulling on it the hooks are raised from beneath the lowest of the folded ladder-rungs, and the ladder, thus released out of the frames by its weight, unfolds. Through each rung, or in a loop just back of each rung, as may be best, there are cords *j* and *j'*, near the ends of each rung, and the lowest rung is lifted by it, and thus the ladded is folded. These cords pass over two pulleys at the top of the frames. By drawing on them the folding is done. These cords either go through the wall of the building and are put in any convenient place in an upper room, or are wound on a drum, *v*, as seen in Fig. 3, which drum is fast in any convenient place, as above the window outside of the building. It is desirable to case the release wire or cord *n* as it passes through the rooms, so that children cannot reach it. The cords *j* running out as the ladder is unfolded makes the pulley *m* revolve, to which is attached projections *s*, which operate the

hammer of the alarm bell or gong *s'*. The unfolding wire or cord *n* and folding-cords *j j'* may have their lower ends brought down outside of the building, their ends being out of ordinary reach, yet where they can be easily reached in case of fire—as, for example, eight or ten feet above the ground—and in that case the rod *b* may be made a rail the length of the building, with rail-wheels, as seen in Fig. 4 at *b'*, and by it the ladder, either when folded or unfolded, may be run along the rail and reach all the windows. The side jointed pieces are omitted in Fig. 3. In long ladders, the folding takes place in the frames up to the top rung, *d*.

Nearly all letters are used with a general import, as *d*, for all rungs; but *d d'*, definitely applied, indicates one part only. The letter C is used for the whole ladder. The other parts and the uses of my invention are apparent.

In a fire-escape device, I claim as follows:

1. The supporting-rod *b* or rail *b'* and reversed-U-shaped frames *a a'*, making the means or base-support of the folding ladder C, in combination with the said ladder, as set forth.

2. The alarm device consisting of the bell or gong *s'*, in combination with the folding ladder C and U-shaped frames, and operated by the pulley *m* or other part of the releasing apparatus, as set forth.

3. The releasing-cords *n* and the lifting and folding cords *j*, provided with pulleys, in combination with the hooks *g* and the folding ladder C, constructed substantially as set forth.

4. The rungs *d*, with jointed ends, in which are fast the middle jointed side pieces, *e e'*, &c., which fold outward, so that the rungs touch each other, making the compact folding ladder of my fire-escape, as set forth.

5. The metallic caps *f f'*, in combination with the side joint-pieces, *e e'*, &c., and rungs *d*, whereby inward flexion of these joint-pieces is prevented, thus keeping the rungs *d* clear of folds, as set forth.

JAMES HARVEY SMILEY.

Witnesses:
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