(No Model.) 2 Sheets—Sheet 1.

W. L. MURPHY.

FIRE ESCAPE.

No. 285,832. Patented Oct. 2, 1883.

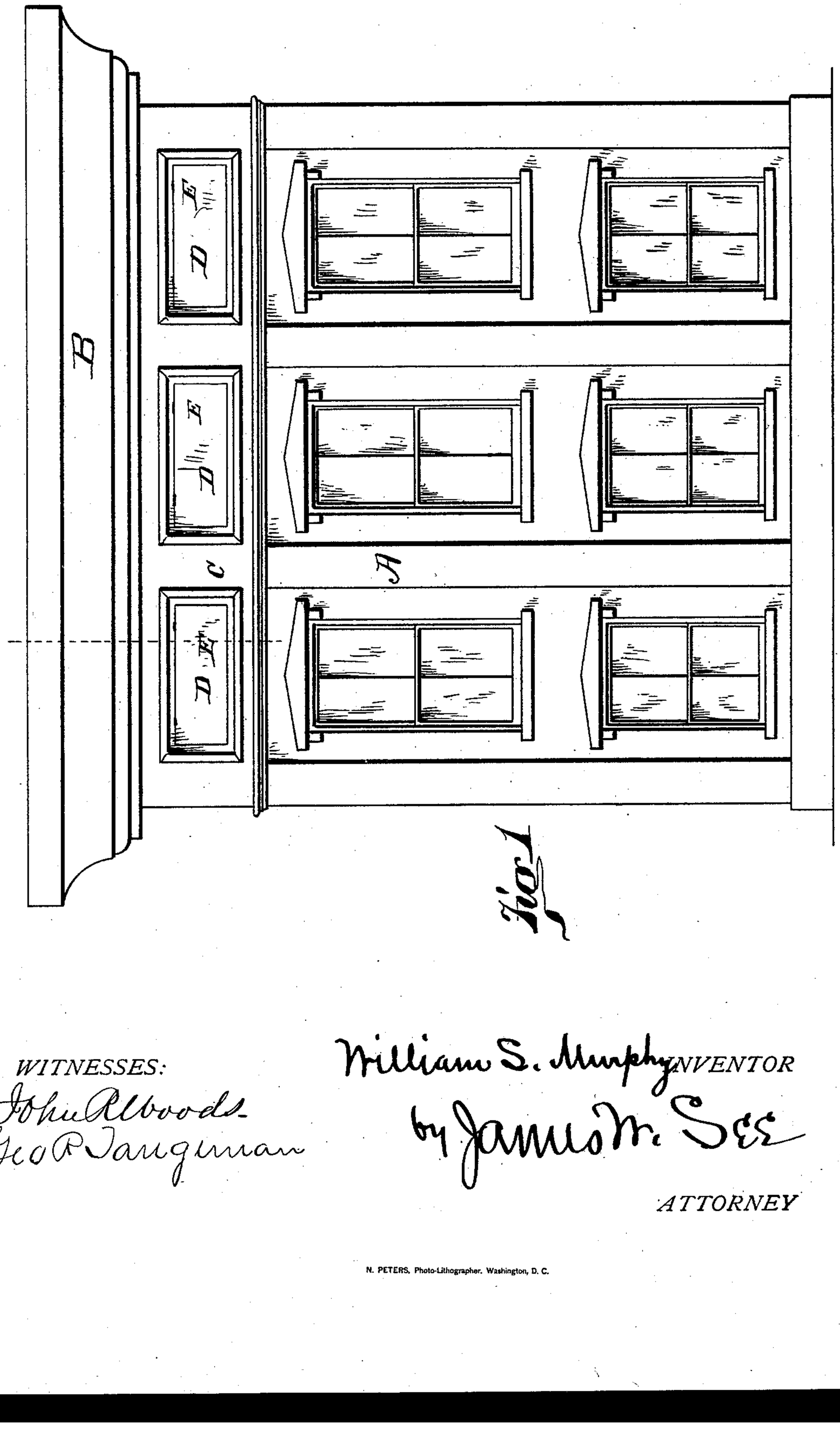

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

W. L. MURPHY.

FIRE ESCAPE.

No. 285,832. Patented Oct. 2, 1883.

Fig. 2

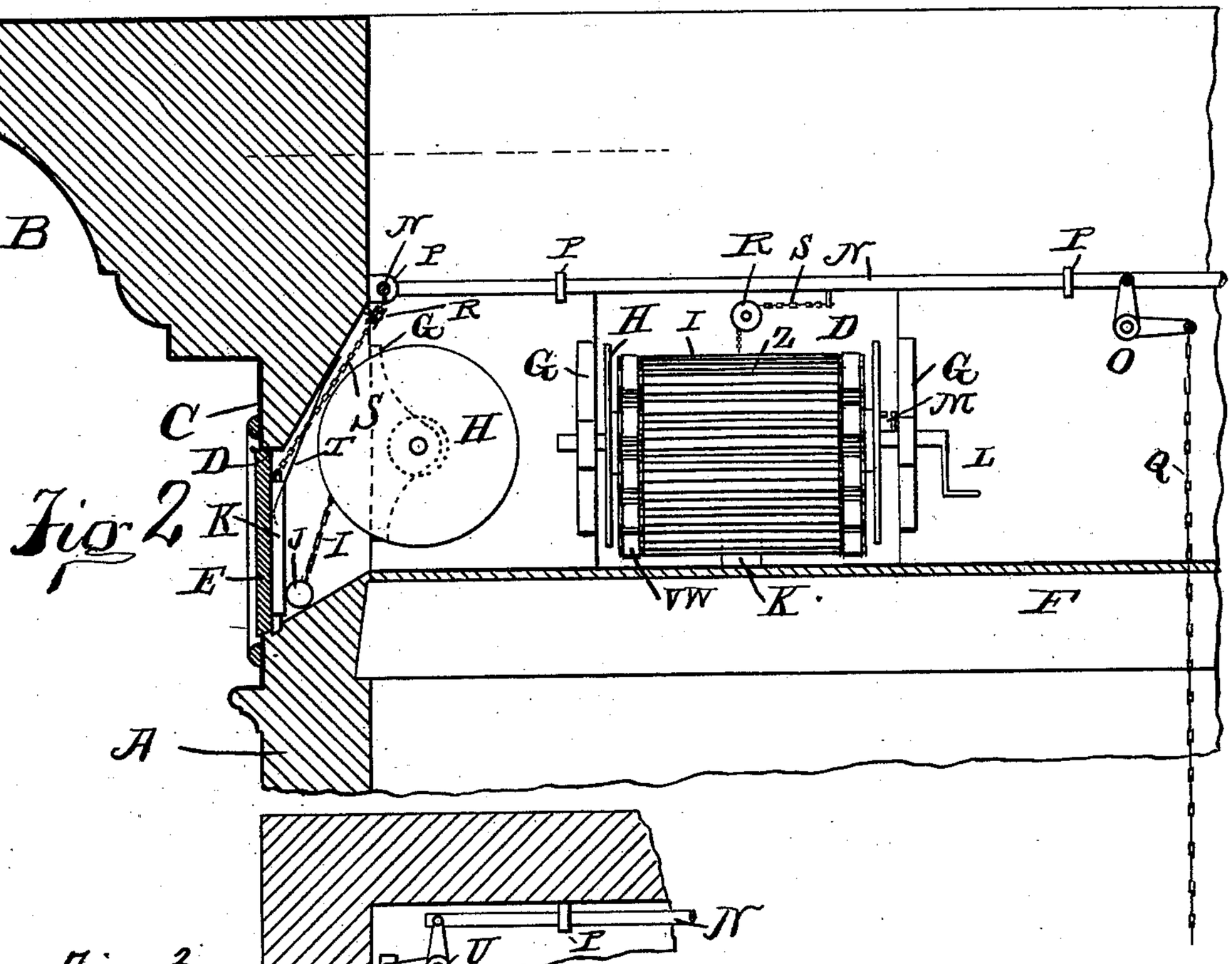


Fig. 3

Fig. 4

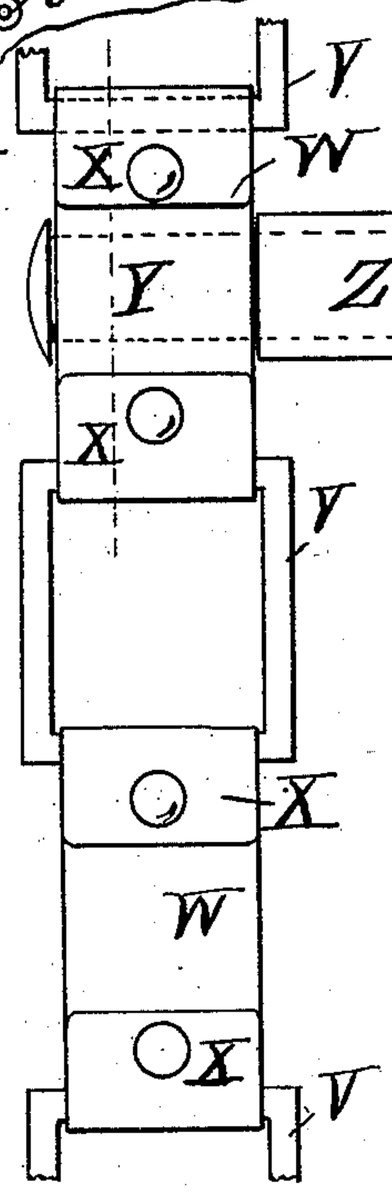
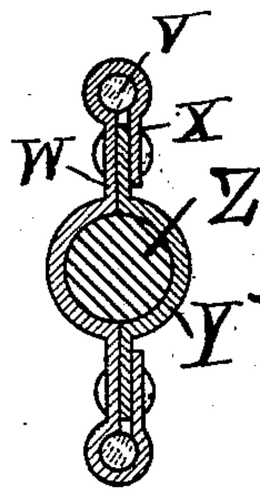


Fig. 5



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UNITED STATES PATENT OFFICE.

WILLIAM L. MURPHY, OF OXFORD, OHIO.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 285,832, dated October 2, 1883.

Application filed April 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. MURPHY, of Oxford, Butler county, Ohio, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

This invention relates to an arrangement of reeled ladders upon a building, and will be understood from the drawings and description.

In the accompanying drawings, Figure 1 is a front view of a building arranged with my improved fire-escape; Fig. 2, a vertical section of the same at the frieze; Fig. 3, a horizontal section of fire-walls, showing corner connections of release-rods; Fig. 4, a front view of ladder-links, and Fig. 5 a vertical section of a ladder-link.

In the drawings, A represents the front of a building; B, the cornice; C, the frieze; D, ports or openings in the frieze through the wall, located one over each vertical row of windows in the house front; E, hinged doors closing the ports D; F, the roof of the house; G, brackets secured to rear of wall at sides of the ports; H, reels or spools journaled in the brackets; I, a flexible ladder secured to the reel and wound upon it; J, a weight secured to lower or free end of ladder; K, a spring-bolt to secure door E when closed; L, a crank on the reel-shaft for winding the ladder upon the reel; M, a clutch by which the reel-shaft is engaged with the reel-spool when the ladder is to be reeled up; N, a release-rod arranged to have a sliding motion; O, a bell-crank, through the medium of which the rods N are operated; P, bearings fixed in the wall to support the release-rods; Q, a rope or chain attached to bell-crank O and leading to the lower floor of the house, or to some point not liable to be inaccessible in case of fire; R, a pulley located on the rear of the wall over the port and under the release-rod; S, a chain or rope attached to bolt K, passing over pulley R and attached to release-rod; T, a spring to force the port-door open when bolt is released; U, a bell-crank located in the angle of two walls to connect the release-rods of each wall; V, ladder-links of square open structure of circular section, of metal; W, ladder-links joining links V, and formed of sheet metal; X, portions of ladder-links W, folded over the end bars of the open links and secured to the main portion of the link by rivets, as shown; Y, front straps at the links, which support the ladder-rounds, formed of sheet metal bent to fit the ladder-round, and having ends to project in under folds X and be secured by the link-rivets; and Z, the ladder-rounds, formed of rods held in straps Y, and provided with tubular bodies surrounding them.

The mode of operation will now be described, it being assumed that there is but one vertical row of windows, one port, and one ladder-reel. The reel-shaft is pushed endwise till the engagement of clutch M locks the spool to its shaft. The ladder is then reeled up and the port-door closed and bolted. The floor of the port slopes downward and outward, as shown, and the weight on the lower end of the ladder rests on this slope and against the port-door. The reel-shaft is unclutched, leaving the spool free to turn on its shaft. In case of fire the rope Q is pulled. This moves the release-rod endwise, draws the bolt of the port-door, and the port-door flies open, being urged by the spring T and by the weight J. The weighted end of the ladder will then go through the port, and the ladder will instantly unreel till it forms a ladder reaching from the ground to the reel and passing each window in the vertical row. The ladder, being flexible, may, by properly handling its lower end, be swung outward or sidewise to clear obstructions, or to clear flaming windows in the vertical row, or to reach a contiguous row of windows not provided with ladders.

There being, as there should be, a ladder for each vertical row of windows, the action of the release-rod is to simultaneously release all the ladders.

There being several fronts to a building, each front with a series of ladders, the one releasing-cord serves to simultaneously release all the ladders of the building.

The form of ladder-chain shown is very flexible, strong, and cheaply constructed.

The reels shown as supported by brackets secured to the rear of the walls may be supported in other positions and by other means, and need not necessarily be above the roof. The nature of the building will determine these details.

I claim as my invention—

1. The combination of wall A, series of ports D, doors E, with their bolts, ladder-reels at the ports, rope or chain Q, release-rod N along the wall, past the series of ports, and ropes S, attached to the release-rod and to the door-bolts, substantially as and for the purpose set forth.

2. The combination of walls A, at right angles to each other, ports D, with their doors and bolts, ladder-reels at the ports, rope or chain Q, release-rods N along the two walls, and bell-crank U in the angle of the wall, joining the rods, substantially as set forth.

3. The open links V, connecting-links W, with folds X, and rounds Z, combined substantially as and for the purpose set forth.

WILLIAM L. MURPHY.

Witnesses:
A. MYERS,
J. W. SEE.