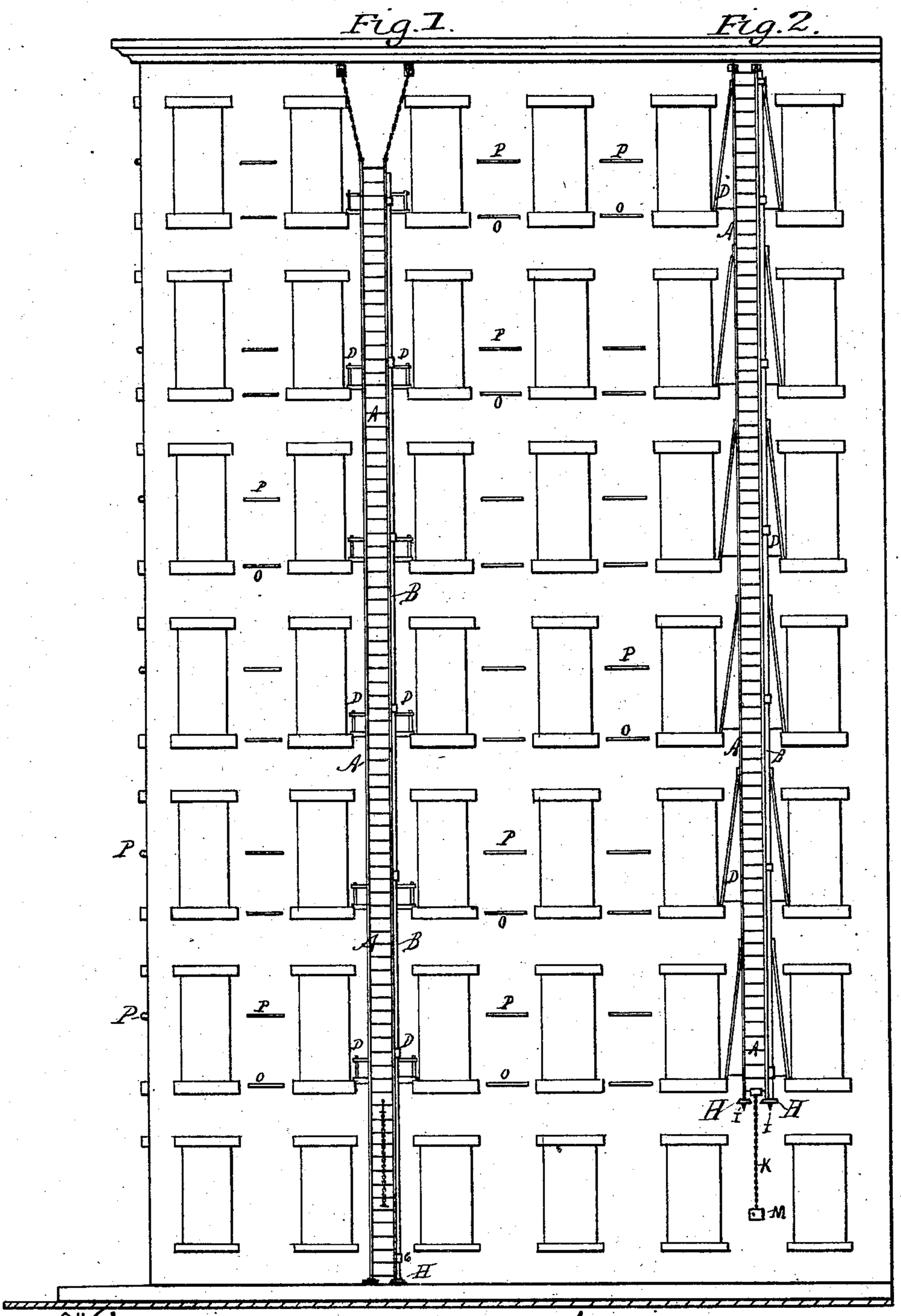
(No Model.) 6 Sheets—Sheet 1.

F. W. HOFELE.

FOLDING FIRE ESCAPE LADDER.

No. 294,319. Patented Feb. 26, 1884.

Fig. 1. Fig. 2.



Witnesses
Samuel Cochrane
J. Bressly Fleming

Inventor
Ferdinand W. Hofele

(No Model.)

6 Sheets—Sheet 2.

F. W. HOFELE.

FOLDING FIRE ESCAPE LADDER.

No. 294,319. Patented Feb. 26, 1884.

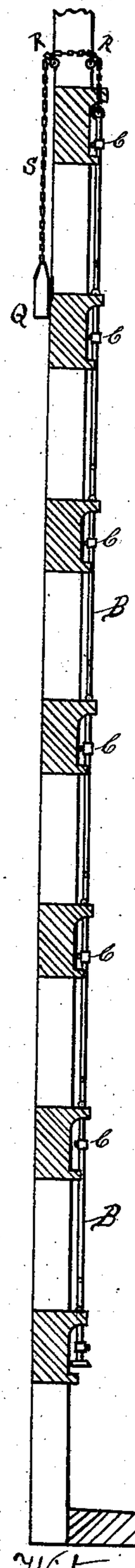


Fig 4

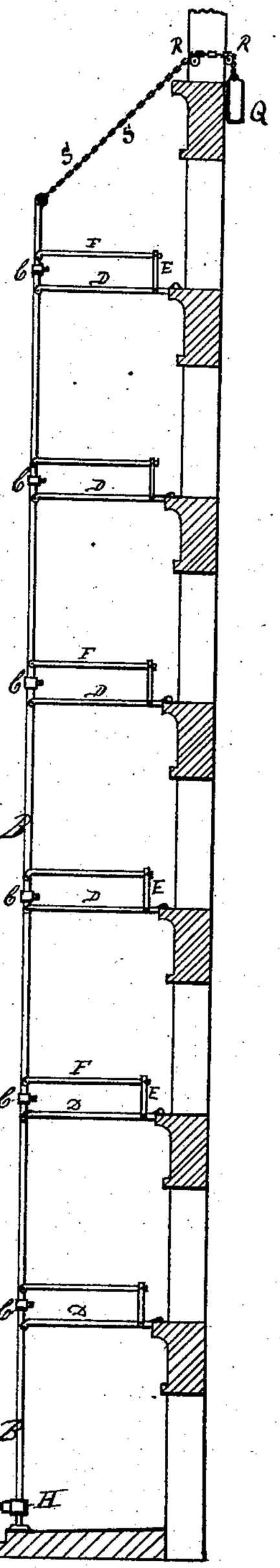


Fig 3

Witnesses
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(No Model.) 6 Sheets—Sheet 3.

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FOLDING FIRE ESCAPE LADDER.

No. 294,319. Patented Feb. 26, 1884.

Fig 5

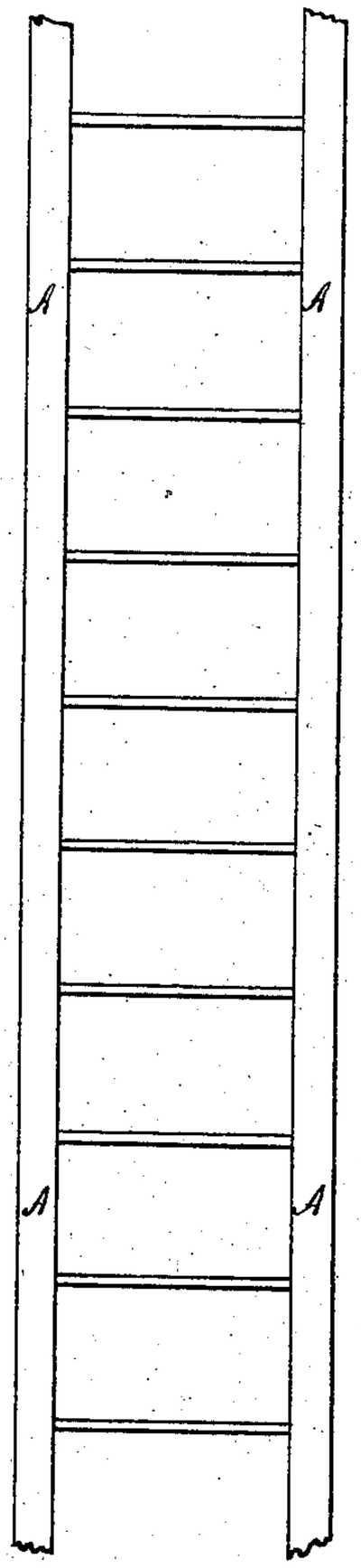


Fig 6

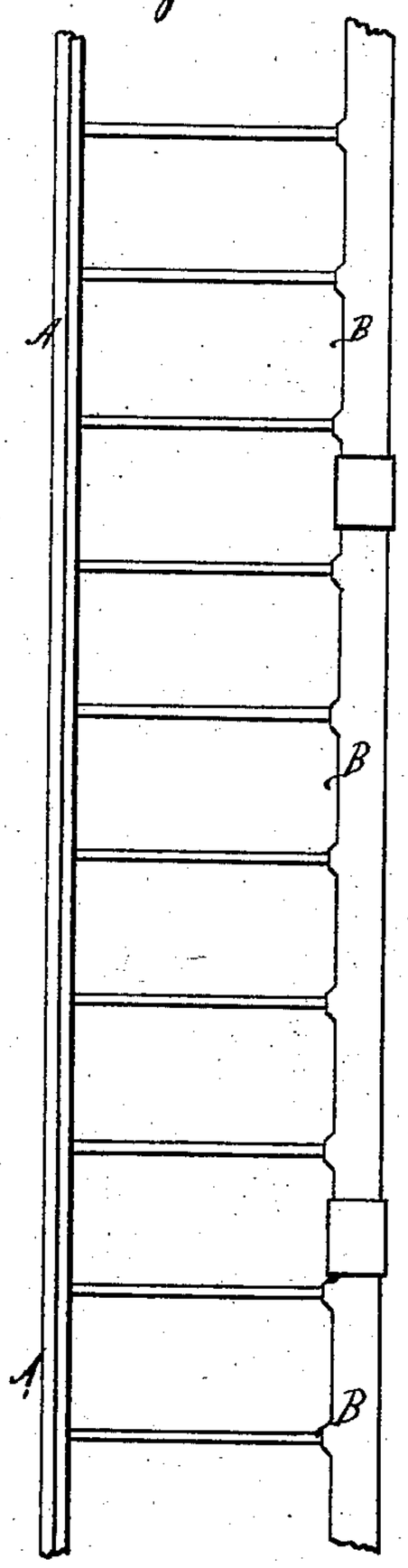


Fig 7

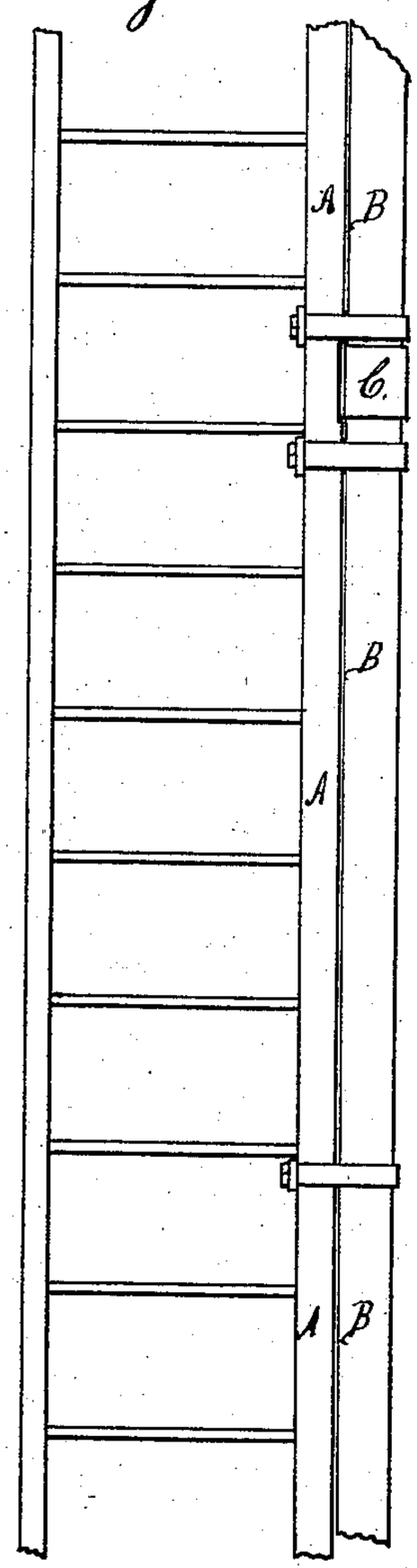


Fig 8

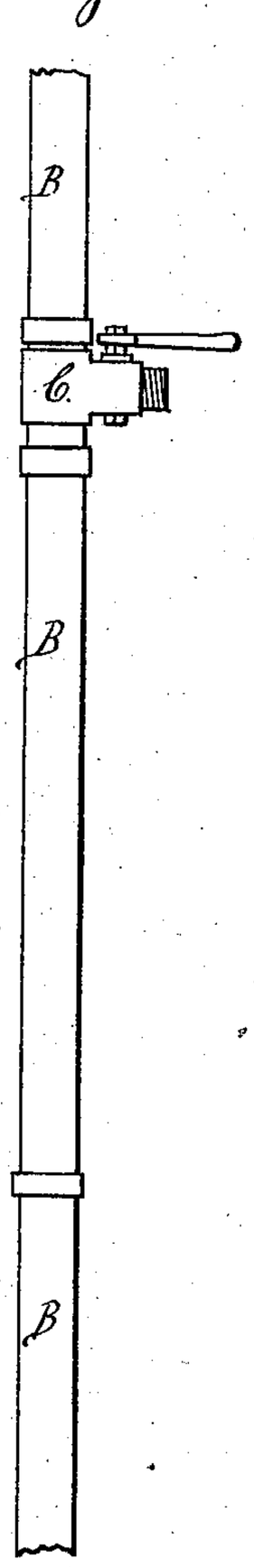


Fig 9

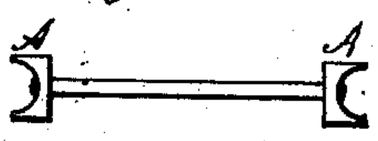


Fig 10

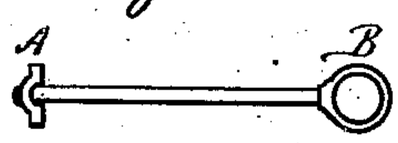
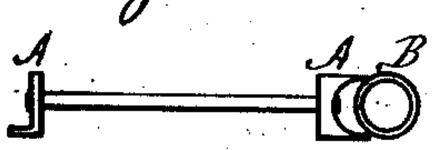


Fig 11



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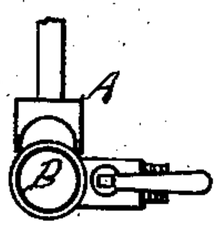

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6 Sheets—Sheet 4.

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FOLDING FIRE ESCAPE LADDER.

No. 294,319. Patented Feb. 26, 1884.

Fig 13

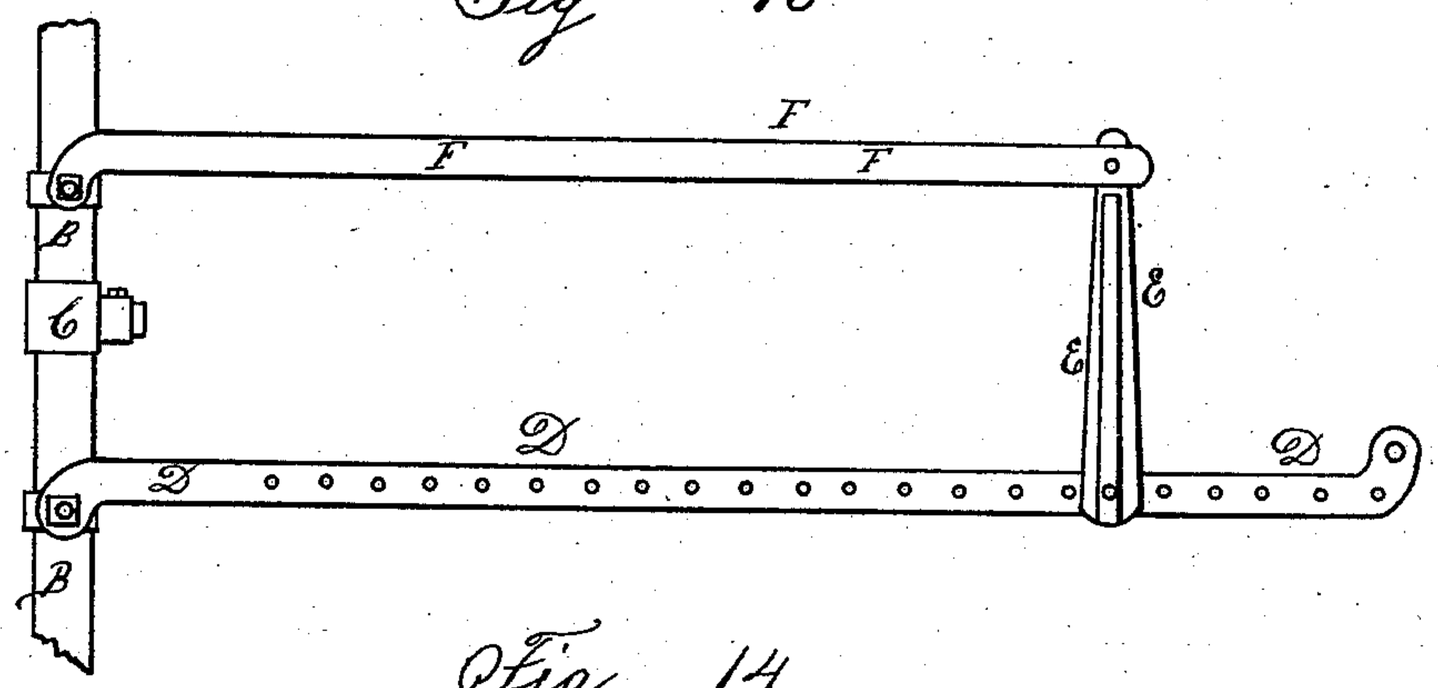


Fig 14

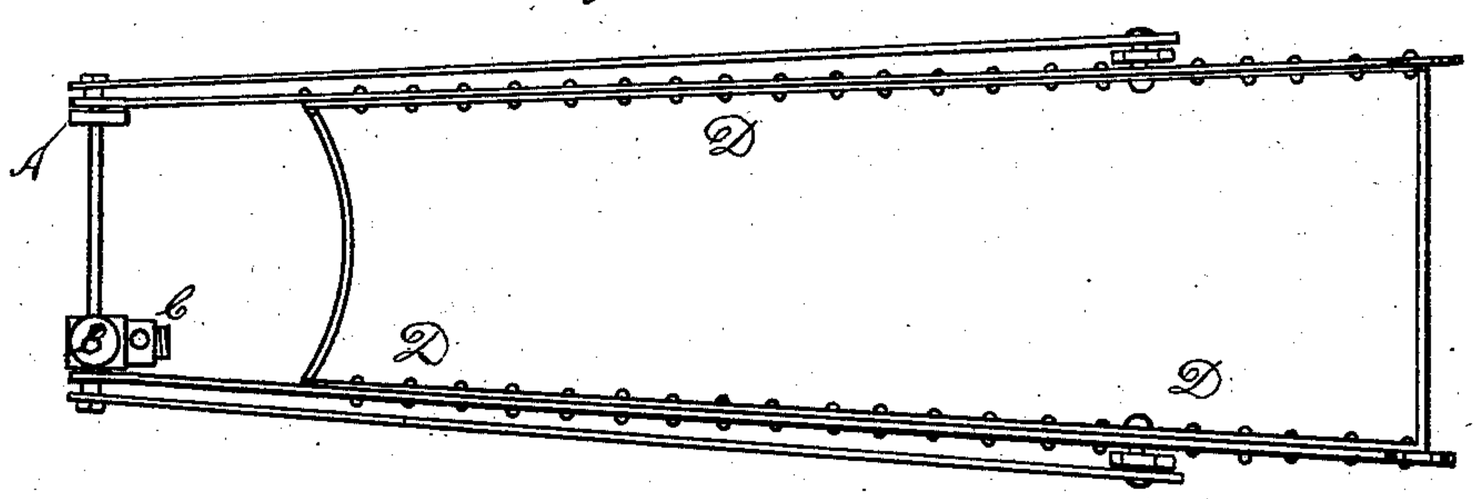


Fig 15

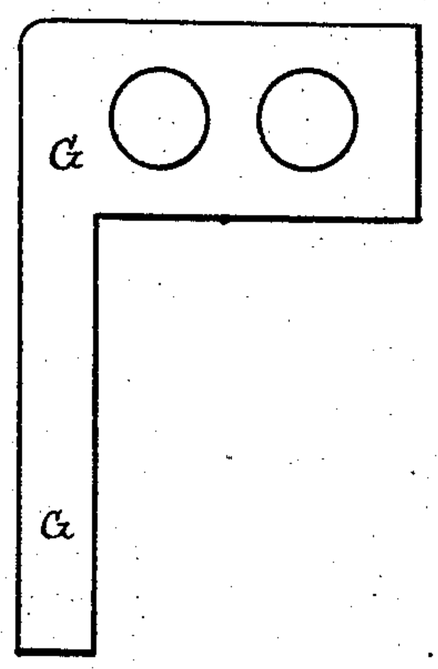


Fig 16

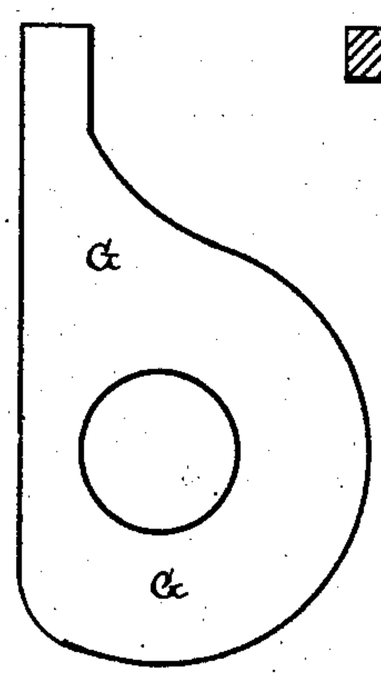


Fig 17

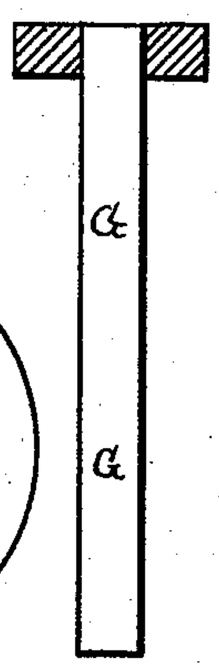
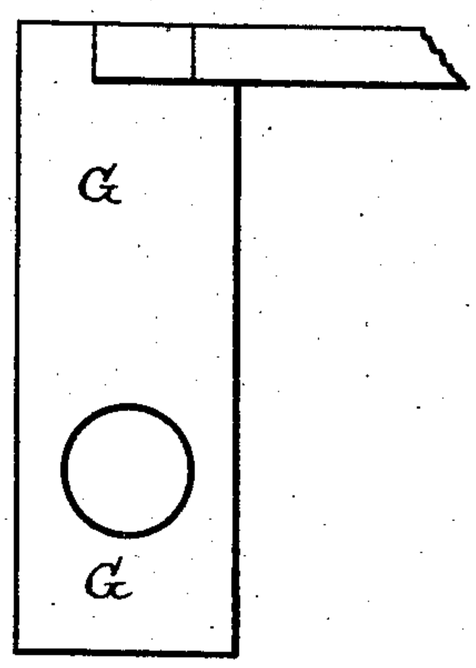


Fig 18



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(No Model.) 6 Sheets—Sheet 5.

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FOLDING FIRE ESCAPE LADDER.

No. 294,319. Patented Feb. 26, 1884.

Fig 19

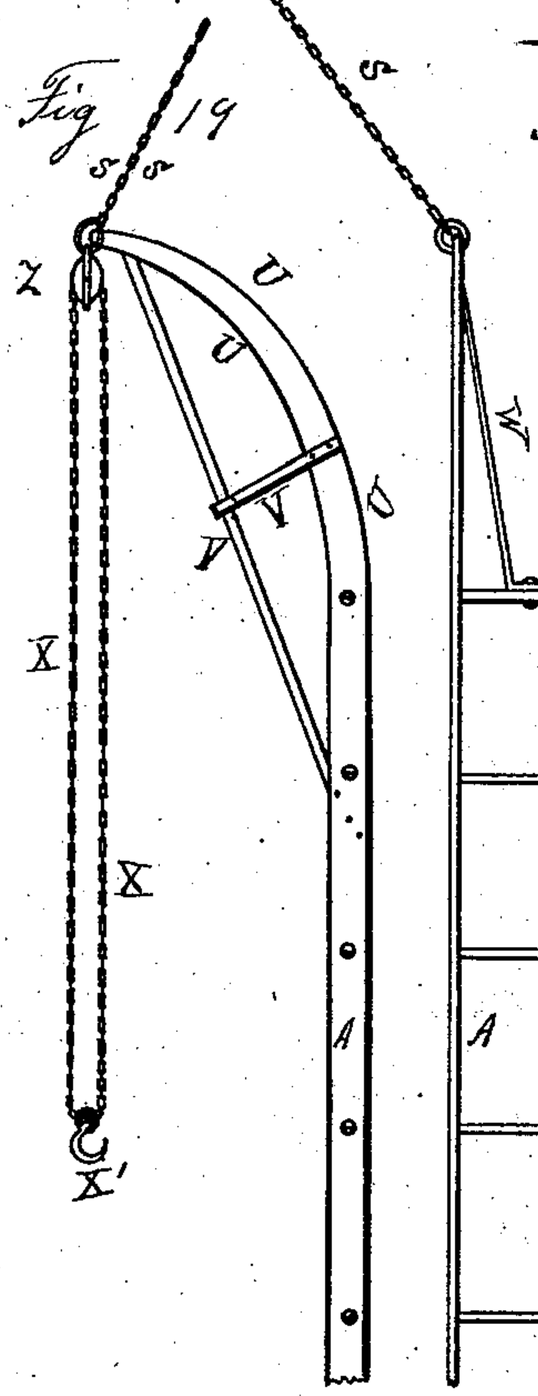


Fig 20

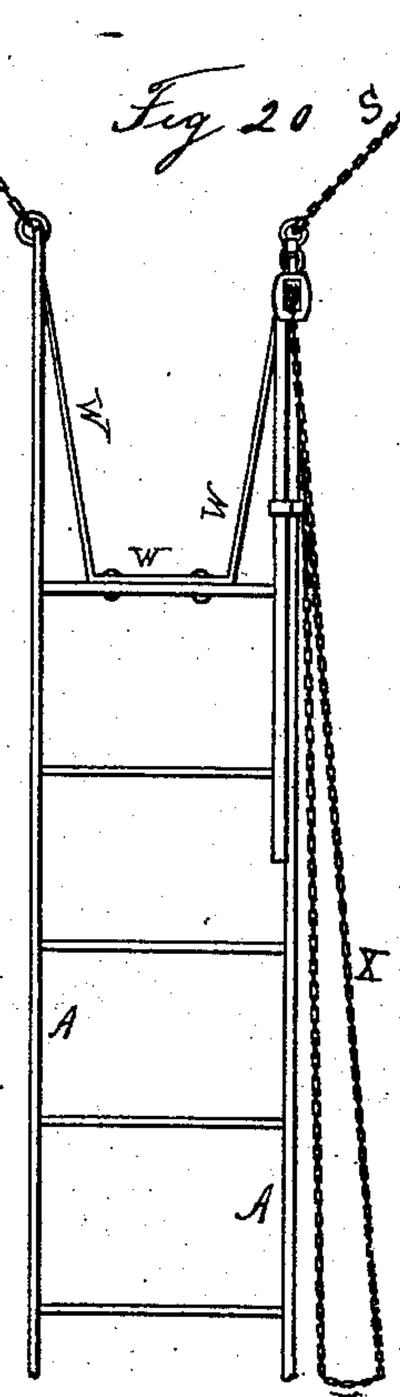


Fig 21

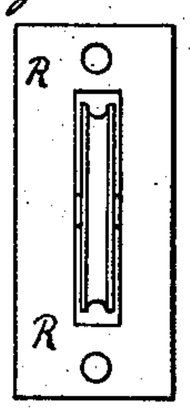


Fig 22

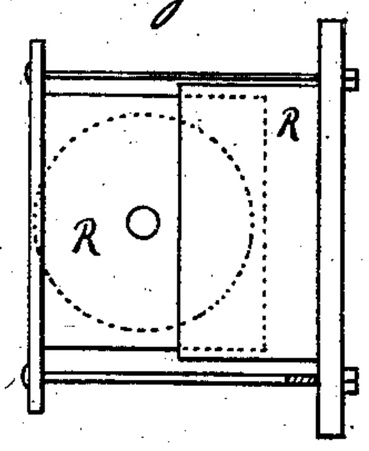


Fig 23

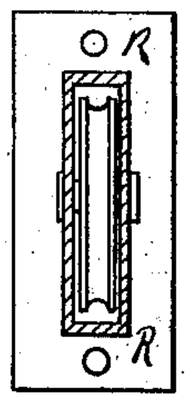


Fig 24

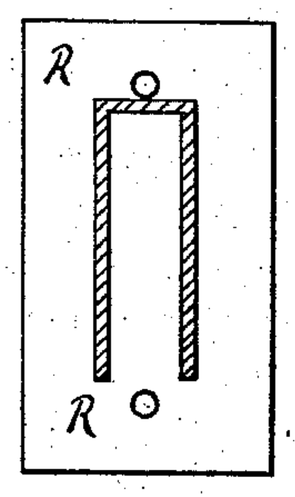


Fig 25

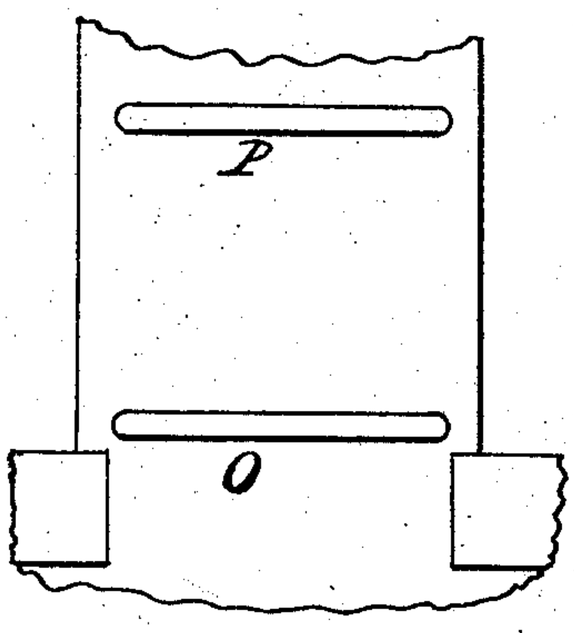


Fig 26

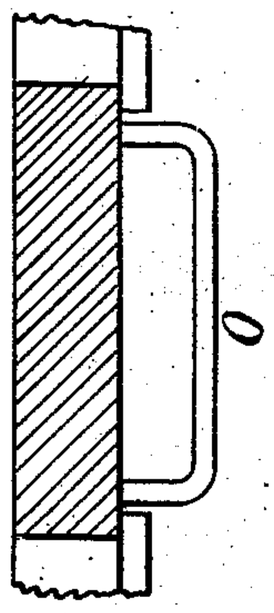
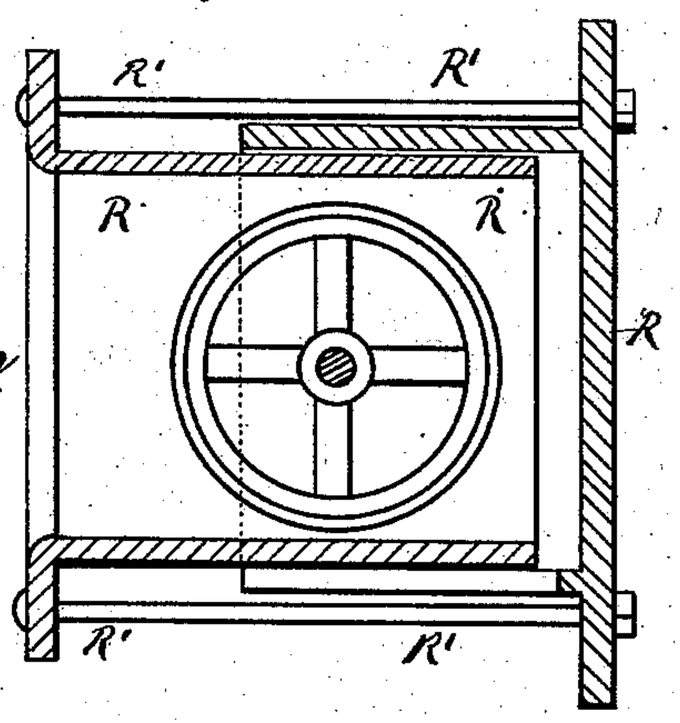


Fig 27



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(No Model.) 6 Sheets—Sheet 6.

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FOLDING FIRE ESCAPE LADDER.

No. 294,319. Patented Feb. 26, 1884.

Fig. 28.

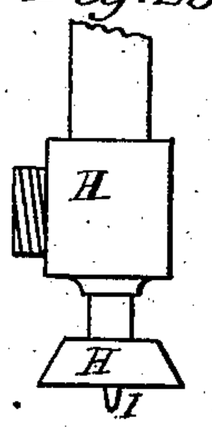


Fig. 29.

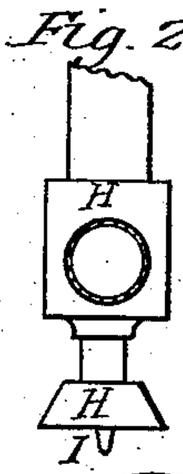


Fig. 30

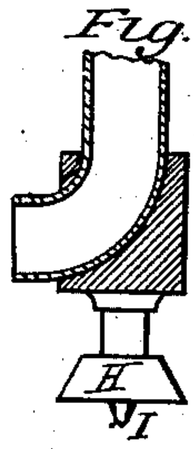


Fig. 31.

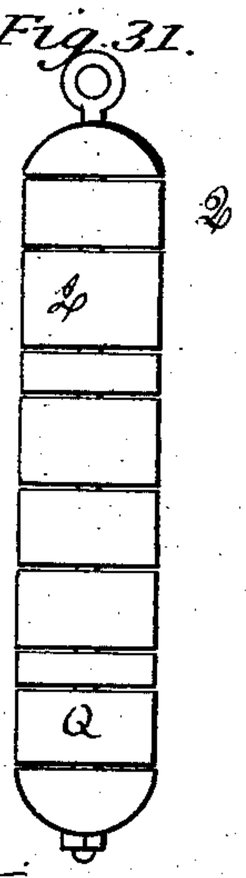


Fig 34

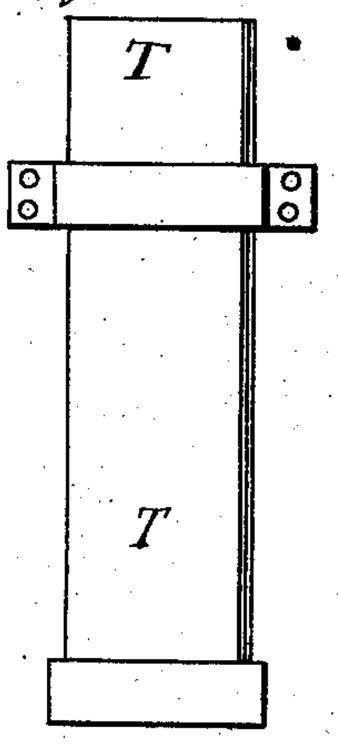


Fig 32

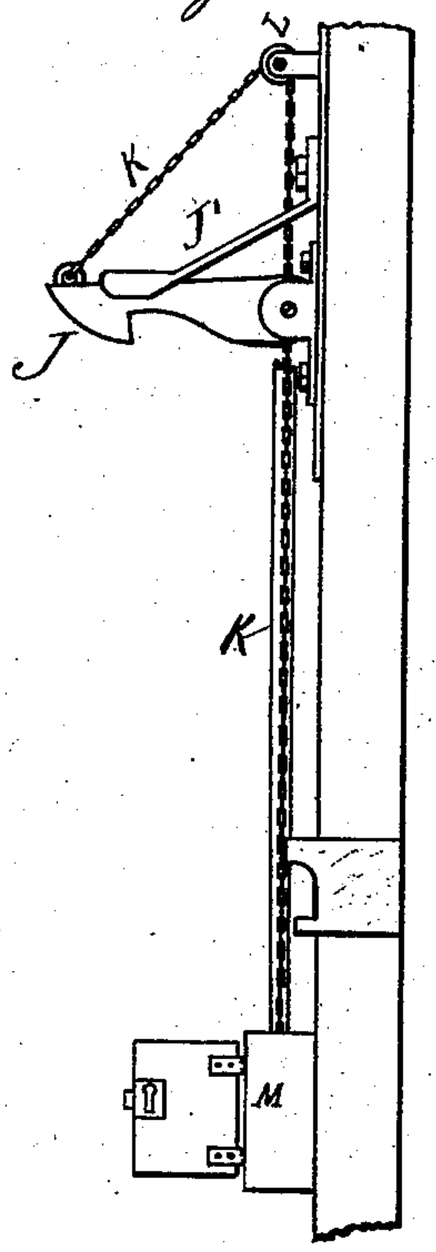


Fig 33

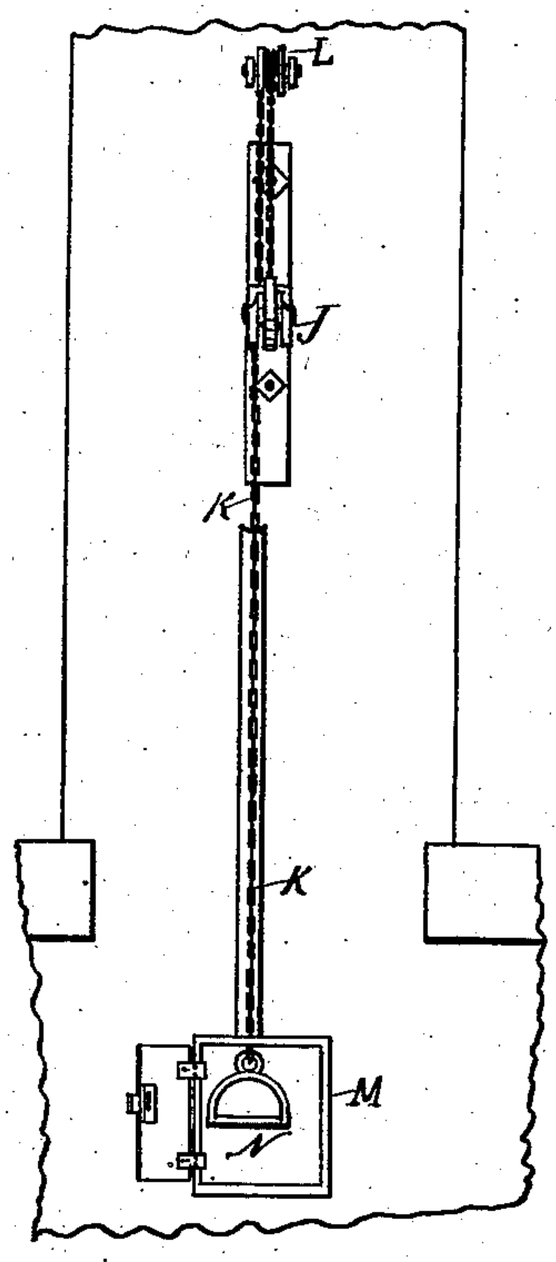
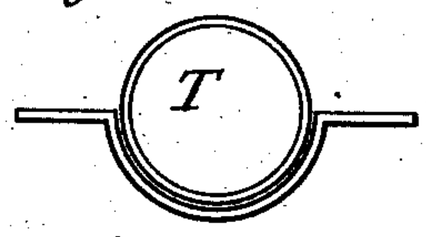


Fig 35



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J. Brusky Fleming

Inventor
Ferdinand W. Hofele

UNITED STATES PATENT OFFICE.

FERDINAND W. HOFELE, OF NEW YORK, ASSIGNOR TO EBEN S. ALLEN, OF LARCHMONT, N. Y.

FOLDING FIRE-ESCAPE LADDER.

SPECIFICATION forming part of Letters Patent No. 294,319, dated February 26, 1884.

Application filed April 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND W. HOFELE, a citizen of the United States, residing at the city of New York, in the county and State of New York, have invented a new and useful Folding-Platform Fire-Escape, of which the following is a specification.

My invention relates to a new and improved fire-escape to be permanently affixed to the outside of any building, and connected with the windows or other outer openings thereof, in which escape a continuous ladder is combined with a series of platforms, with railings, pulleys, chains, and other devices, and with a water-supply pipe having convenient outlets, and which detailed parts, combined in and operated together as the single fire-escape, are capable of being folded up, after use, quickly, securely, and compactly against the building, and thus is provided an abundant, safe, and ready means of escape of many persons at once from fire in a building, together with means of quick supply of water at any or all sections of the fire-escape, and at same time are avoided the practical objections pertaining to all fire-escapes invented or used up to the present time.

In the drawings, Figure 1, Sheet 1, represents a front view of the fire-escape, showing it in position for use, with the counter-weight chains to top of building, and answering as guide-lines also. Fig. 2, Sheet 1, is a front view of the same, showing the escape closed up against the building, and the lowering-chain running from the bottom of the ladder to a small box, where secured. Fig. 3, Sheet 2, is a side view of the same, showing the escape thrown out ready for use, and the counter-weights at the top and the outlets in water-pipe at every story. Fig. 4, Sheet 2, is a side view of the same, showing the escape closed up against the building and the counter-weights in position. Figs. 5, 6, 7, 8, Sheet 3, are face views of the ladder, showing the different ways of constructing the ladder of the fire-escape. Figs. 9, 10, 11, 12, Sheet 3, are plan views of the same, showing the pipe or hose connected with the ladder. Fig. 13, Sheet 4, is a side view of the escape-platform with the rail, showing how platform is connected with the ladder and the side rails and upright post, with the water-coupling to all the floors. Fig. 14, Sheet 4, is a plan view of the same, showing the iron floor (in this drawing of sheet-iron) riveted to the side rails of the platform, and the coupling on ladder-post. Figs. 15, 16, Sheet 4, are views of the eye-plates to fasten the platform to the window-sills and to hold the escape in place. Figs. 17, 18, Sheet 4, are eyebolts to be fastened in the wall of building to hold the platform in place. Fig. 19, Sheet 5, is a side view, showing the curve at top of the ladder, with a pulley-block and endless chain, the cross-brace to give stiffness required, and the counter-weight chains. Fig. 20, Sheet 5, is a front view, showing the counter-weight chains at the top and the bracing at rungs to give extra stiffness where the chains are operated as guide-chains. Figs. 21, 22, Sheet 5, are face and side views of the extension-pulleys, showing how they can be fitted to any thickness of wall by means of one fitting within the other, and how they keep out storm and cold. Figs. 23, 24, Sheet 5, are inside views of the extension-pulleys, showing Fig. 23 to fit in Fig. 24, and showing (Fig. 24) the solid plate to be placed on the inside of the building to keep out storm or cold. Fig. 25, Sheet 5, is a face view of bars or rungs which may be built in connection with the fire-escape, to provide means of escape from all windows. Fig. 26, Sheet 5, is a plan view of the bar or rung, showing how it is put in position, and the space between the wall of building and the bar, to furnish good hold and footing for those using same to reach fire-escape. Fig. 27, Sheet 5, is an enlarged sectional view of the extension-pulley, showing one part to fit in the other, and both held together by two or more bolts. Fig. 28, Sheet 6, is a side view of the bottom of the ladder, showing connecting-coupling for the water, with a point at the under side, to fit in a hole on the sidewalk or ground, to relieve the strain when under pressure of water or otherwise, and to give extra security. Fig. 29, Sheet 6, is a face view of the same. Fig. 30, Sheet 6, is a sectional view of the same, showing the inlet of the water. Fig. 31, Sheet 6, is a view of the counter-weights to be used to counterbalance the escape, so as to let it

up and down with the greatest ease. They are usually at the top of building, but can be put at any part. Fig. 32, Sheet 6, is an enlarged view of the lock-hook used to secure the escape flush with the building when not in use, with the chain fastened to the hook, run over a pulley, and down to its handle in the lock-box on the wall of building. Fig. 33, Sheet 6, is an enlarged front view of the lock-hook, showing the chain running down into the box, the handle by which to pull it, and the small box itself fastened to the building and built light, so as to be easily broken, if necessary. Fig. 34, Sheet 6, is a view of the counter-weight boxing, which is to be of common cast-iron pipe, so that the counter-weight cannot be interfered with by driving nails or other things into the wall. Fig. 35, Sheet 6, is a plan view of the same.

In the case here presented in the folding-platform fire-escape is exhibited a long continous ladder constructed either of side posts made of pipe or of any kind of shaped iron, so as to give good strength to the ladder, and having pipe or hose B B on the sides, with an outlet, C, to each floor, so as to have water when needed, with folding platforms D at each floor, having an upright post, E, bolted to the platform and to the guard-rail F, so as to give safety to persons coming out of the building. The guard-rail is bolted to the ladder or to the pipe, whichever may be required. The platform is bolted to the eyes G, that are secured to the window-sills or to the wall of building, and the platform is floored over with sheet-iron, or with iron in any form required, and riveted to the side rails of the platform. The ladder has at its foot a foot-coupling, H, to make a connection with the hose of engine. On the side of the lowest platform are fastened the ladder-hook J and spring J′, to lock the ladder and escape to the wall of building and keep the fire-escape in place. At the end of the hook is fastened a chain, K, which runs over a pulley, L, then down to the box M, with a handle, N, so that when wanted the handle can be reached from the ground by any person. This ladder-hook may be placed at any section of the escape. The box securing handle and end of chain is made of light material, so that in case of loss of key the box can be broken open to pull chain and quickly lower fire-escape.

At all the windows of building there may be placed wall rungs or bars, as are shown in the drawings and hereinbefore mentioned, to afford sure means of reaching fire-escape, no matter how many windows therefrom persons may be.

At the top of the escape are two counter-weight chains, S S, fastened in the top of the ladder and run over extension wall-pulleys R R, which are bolted together by bolts R′, and at the ends of the chains are heavy weights Q Q, to counterbalance the escape. These weights are inclosed in an iron box or pipe, T, so that no one can interfere with them.

To give stiffness to the ladder, I have the curve U braced from the upper end of ladder with the brace V, so as to give strength, also, in case anything has to be hoisted or lowered.

At the upper end of the ladder I have a pulley, Z, with an endless chain, X, and hook X′.

As there will be considerable side strain from the counter-weights, I give extra stiffness to the upper end of the ladder by putting in the side braces, W W, which are fastened to the upper rungs.

Operation: The platform fire-escape is held up in its place by a spring-hook and wall-catch, and a chain is carried from said spring-hook to any point desired on wall of building below or above where end of chain in a common handle is inclosed in a box. When the fire-escape is to be used, a pull of the chain by the handle raises the spring-hook, and the fire-escape will by its own weight fall outward; but the counter-weights at the top prevent its falling too heavily. When the escape is in position, the ladder-foot resting on the ground or the street surface, persons can come down from any floor, and the firemen can connect their hose, so as to have the water on all floors at one time. When no longer required and not in use, and the building is not destroyed, the fire-escape can be put back in its place by any person by simply raising it and throwing it against the wall, where the spring-hook will spring over the wall-catch provided.

The box in which the handle of the chain is kept should be made of light material, so that in case of loss of key a blow will break it open, and no time will be lost in letting persons down.

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

1. A fire-escape comprising folding platforms D, uprights E and hand-rails F, and a ladder, one upright of which ladder is formed of a water-supply pipe.

2. The combination, with a ladder adapted to fold up against the building, of the platforms D with the upright posts E and rails F, substantially as set forth.

3. In a folding-platform fire-escape, the combination of the extension-pulleys R and bolts R′, substantially as described, and for the purpose set forth.

4. A fire-escape comprising folding platforms and a ladder, one upright of which ladder is formed of a water-supply pipe, as and for the purposes set forth.

FERDINAND W. HOFELE.

Witnesses:
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J. PRESSLY FLEMING.