

J. JONSON & D. JACKSON. Fire-Escape.

No. 222,706.

Patented Dec. 16, 1879.

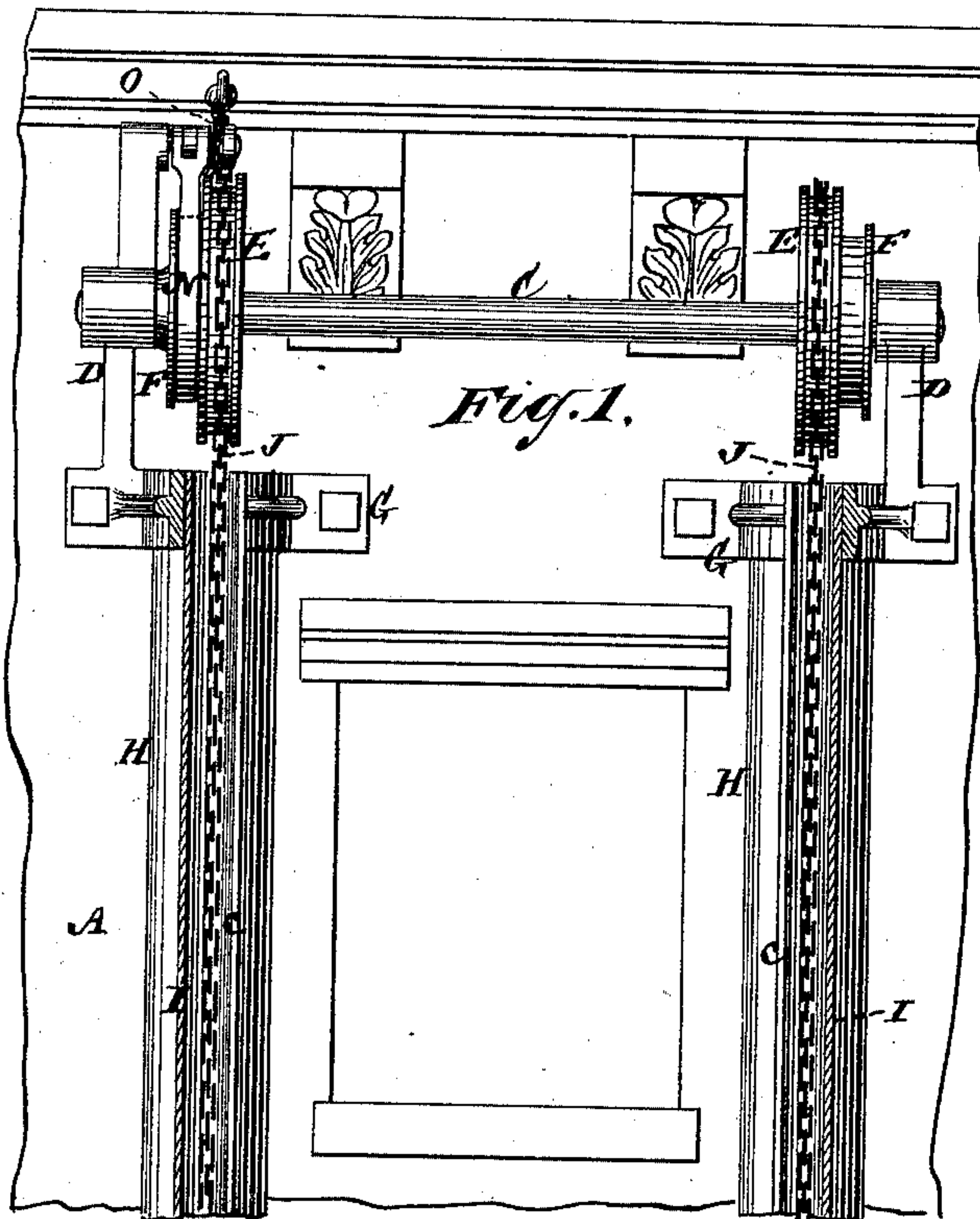


Fig. 1.

Fig. 2.

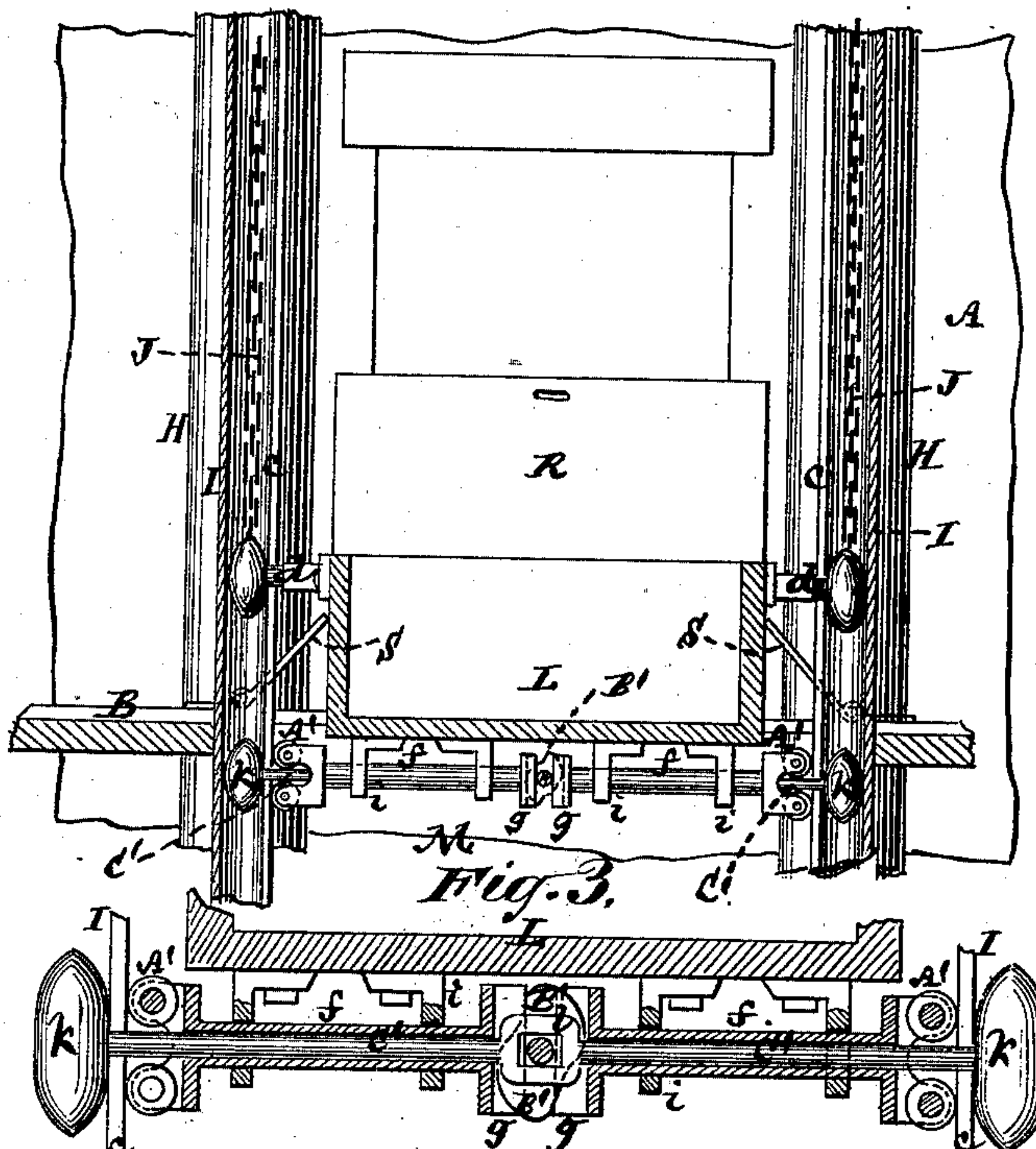
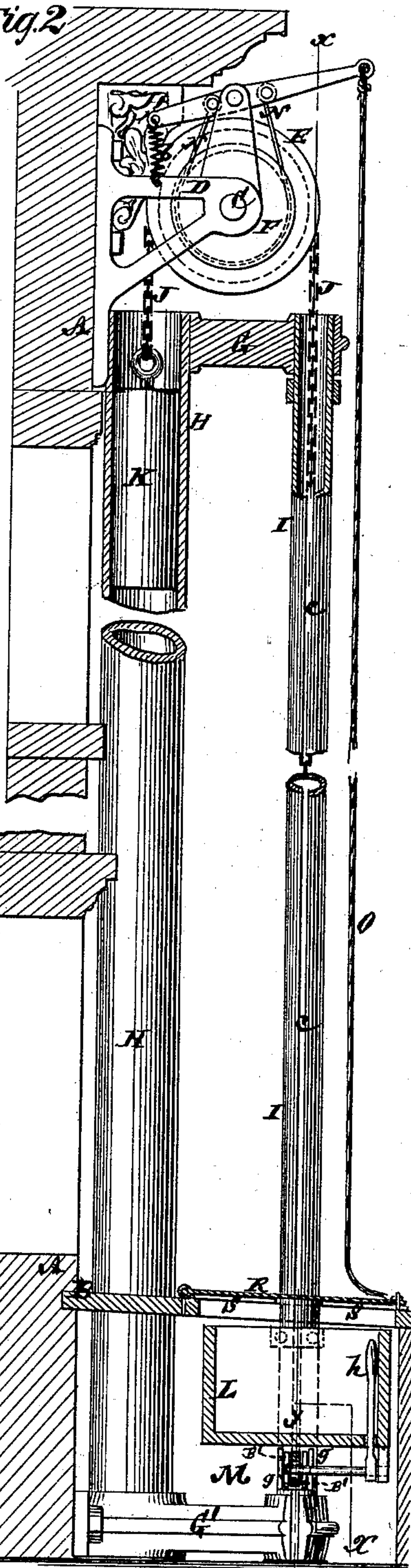


Fig. 3.

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IMPROVEMENT IN FIRE-ESCAPES.

Specification forming part of Letters Patent No. **222,706**, dated December 16, 1879; application filed April 3, 1879.

To all whom it may concern:

Be it known that we, JULIUS JONSON and DANIEL JACKSON, both of the city and State of New York, have invented certain new and useful Improvements in Hoisting and Lowering Apparatus Applicable to Fire-Escapes and other purposes, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

This invention is more especially intended for fire-escapes applicable to public buildings and other structures; but it may also be used to advantage in raising and lowering goods for trading purposes, and also, or certain portions of it, in passenger-elevators. It will, however, be more particularly described as utilized in a fire-escape applied to the outside of a building and subject to the control of the fire-brigade of a city or other community.

The invention consists in various novel constructions and combinations of parts, whereby, when the same are applied to a fire-escape, a car contained within a pit beneath the pavement of the street or thoroughfare in which the building having the fire-escape attached is situated is caused to automatically rise on opening a trap-door in the pavement for the purpose; in automatically operating stops which serve to arrest the motion of the car in its descent when reaching the pavement; and in the car of said or other hoisting or lowering apparatus provided with a brake which has combined with it a brace-rod for preventing the spreading of the uprights by the pressure of the friction blocks or shoes of said brake against said uprights.

In the accompanying drawings, Figure 1 represents a sectional front view on the irregular line *x x* in Fig. 2 of an apparatus constructed in accordance with my invention, and as applied to a building shown only in part. Fig. 2 is a vertical (partly sectional) view of the same at right angles to Fig. 1. Fig. 3 is a vertical section on the line *y y*, Fig. 2, and upon a larger scale, in illustration of a certain brake mechanism applied to a raising and lowering car of the apparatus.

A represents one of the outside walls of a public building, and B the pavement of the

street or thoroughfare in which said building is situated. C is a shaft arranged to work in brackets D D, secured at a suitable distance apart to the outside wall, A, near the top or roof of the building. On this shaft C, near opposite ends of it, are secured chain wheels or pulleys E E and brake pulleys or wheels F, or there may be only one of said brake-pulleys.

G G are additional brackets, also secured to the wall A and arranged below the wheels E E. These brackets serve to receive within them and brace the upper ends of back or inner tubes, H H, and front or outer tubes, I I, arranged in relation with each other to receive on opposite sides of the axis of the wheels E E chains J J, which engage with or pass around the wheels E, and have attached to their one end counterbalance-weights K, arranged to move up and down within the tubes H H, while the other ends of said chains are connected with a car, L, within the outer tubes, I I. These several tubes H and I preferably extend from the brackets G G down to and within a pit, M, beneath the pavement, where said tubes may be braced at their lower ends by corresponding brackets G'.

The weights K are designed to somewhat more than counterbalance the car L, so that the car having a fireman in it will rise under the influence of said weights when a brake, N, applied to either or both of the brake-pulleys F, and controlled either by a spring, b, or weight, is liberated by pulling on a rope or chain, O, which descends down to or near the pavement or below the latter.

The tubes I I have longitudinal slots or slits *cc* in them, to provide for the entry within said tubes of wrists *d d*, which serve to connect opposite sides or ends of the car L, and to guide the latter in its up-and-down movement.

When the car L is not in use it is contained within the pit M, below the pavement, and a trap-door or cover, R, is closed and secured by any suitable lock over the opening in the pavement made by the pit.

In case of a fire, the trap-door R is unlocked and raised, as shown in Fig. 1, and the rope or chain O pulled upon to release the brake N, a fireman in the meantime getting into the car. The weights K will then operate to raise

the car and fireman either to the top of the building, or, by releasing hold of the rope O, to any desired height. Upon the car becoming loaded, however, either with persons or goods which it is required to rescue from the fire, it descends by its superior weight till reaching the pavement, when it is prevented from passing into the pit M by its resting on hinged stops or plates S, arranged so that when down they overlap the ends of the pit in line with the pavement, but which are opened or raised by the car as it passes up out of the pit, and automatically close, either by weight or spring, after the car in its ascent has passed them. These automatically opening and closing stops also serve to reduce shock in case of any accident to the brake causing a too rapid descent of the car, which latter it is desirable should not be wholly dependent for its control upon the main brake N, but should be subject also to control by a brake capable of operation from the interior of the car. This supplementary brake, which may be wholly arranged below the bottom of the car, consists, in part, of opposite friction-blocks, or roller or other shoes A' A', arranged to occupy positions in proximity to the tubes or uprights I I, and having tubular stems *f f*, which terminate at their inner ends in plates or half-boxes *g g*, against which an opposite leafed cam, B', actuated by a lever, *h*, from the inside of the car, bears to force the shoes A', when required, against the uprights or tubes I I, the hollow stems *f f* having a longitudinal sliding movement in supporting-brackets *i i* for the purpose.

Fitted to pass longitudinally and freely through the tubular stems *f f* of the brake-shoes A' A', and extending through the slits *c c* in the tubes I I, or otherwise extending to the backs or sides of the portions of said tubes or uprights which are reverse to the sides against which the shoes bear, is a brace-rod, C', constructed with heads or bent portions *k* at its ends, to stay the uprights or tubes I I and prevent them from being spread apart when power is applied to the brake to force

the shoes in opposite directions against said uprights or tubes. This brace-rod C' is formed with a perforated swell or yoke, *l*, at its center to admit of the shaft of the cam B' passing through it.

We claim—

1. The combination of the chain wheels or pulleys E E on the shaft C, having its bearings near the upper portion of the building, one or more brake-pulleys, F, attached to said shaft, one or more brakes, N, having a self-closing action on said pulleys, the chains J J, having counterbalance-weights K attached to the one end of said chains, the car L, attached to the opposite ends of said chains, the pit M, below the pavement of the street or thoroughfare in which said building is situated, the trap-door R, the tubes H, containing the weights K, and the slotted or split tubes I I, substantially as and for the purposes herein set forth.

2. The combination of the hinged stops S with the pit M in the pavement B and the rising-and-falling car L, essentially as and for the purposes herein set forth.

3. The combination, with the car of a hoisting and lowering apparatus and uprights between which said car moves, of friction blocks or shoes capable of operation in opposite directions from the interior of the car against said uprights, and a brace-rod arranged to move up and down within said shoes, and constructed to resist the strain of the shoes upon the uprights, or tendency of the latter to spread apart, essentially as specified.

4. The combination, with the car L and uprights I I, of the friction blocks or shoes A' A', having tubular stems *f f* and inner end plates or boxes, *g g*, the cam B', and the brace-rod C', having outer bent ends or heads, *k*, on the reverse sides of the portions of the uprights to those against which the shoes bear, substantially as specified.

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