

(No Model.)

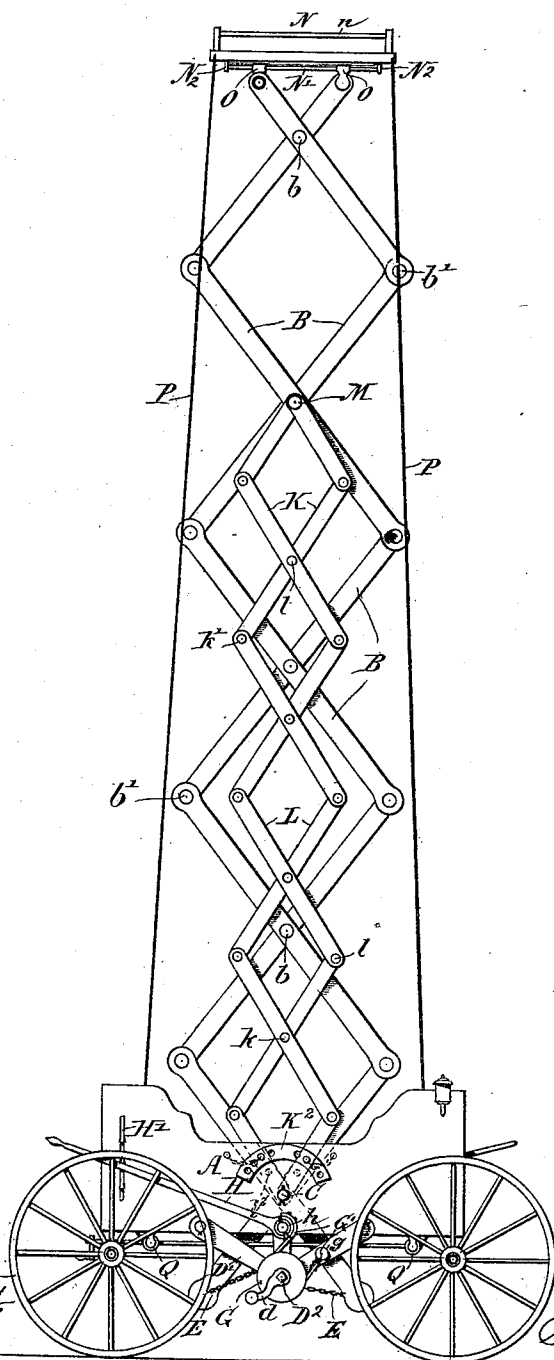
2 Sheets—Sheet 1.

H. A. ST. MARIE.
ELEVATOR OR FIRE ESCAPE.

No. 418,827.

Patented Jan. 7, 1890.

— Fig. 1 —



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(No Model.)

2 Sheets—Sheet 2.

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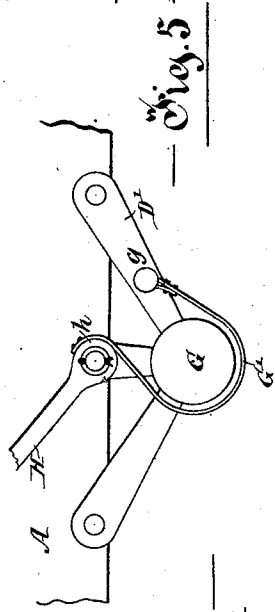


Fig. 5

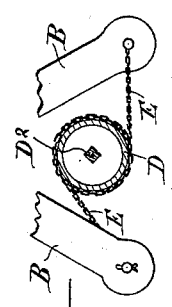


Fig. 4

Fig. 6

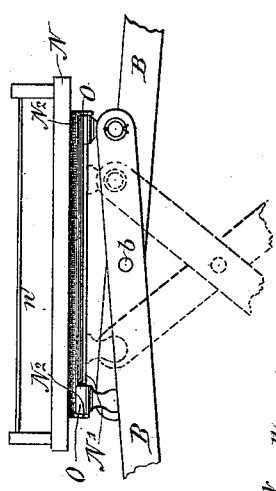


Fig. 3

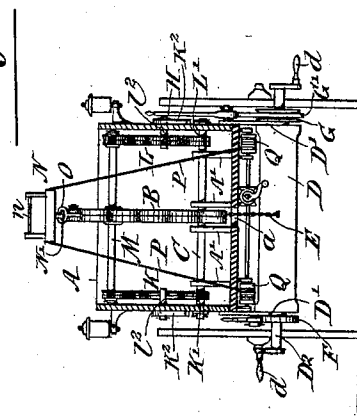
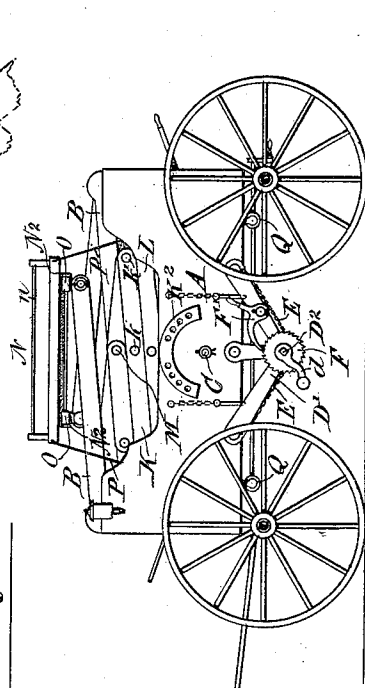


Fig. 2



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UNITED STATES PATENT OFFICE.

HORACE A. ST. MARIE, OF MONTREAL, QUEBEC, CANADA, ASSIGNOR OF ONE-HALF TO LOUIS BOISSEAU, OF SAME PLACE.

ELEVATOR OR FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 418,827, dated January 7, 1890.

Application filed December 10, 1888. Serial No. 293,145. (No model.)

To all whom it may concern:

Be it known that I, HORACE ARISTIDE ST. MARIE, of the city of Montreal, in the district of Montreal and Province of Quebec, Canada, have invented a certain new and useful Elevator or Fire-Escape; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention, which, although primarily intended to be employed as a fire-escape, can be used in any case in which it is desired to raise or lower persons or goods to or from any height outside a building or as a scaffold or an elevated platform for any purpose. It may be thus briefly described.

Upon a suitable carriage adapted to be drawn by one or more horses is set a frame-work composed of bars pivoted together at their ends and intersections and forming a series of toggle-joints, on the uppermost of these being carried the platform. The ends of the lowest of this series of bars are connected by chains to a drum placed under the carriage, the rotation of which in either direction will either extend and raise the frame or contract and lower it. Auxiliary frame-work of like nature secured to the sides of the carriage is arranged in combination with the main frame-work and attached thereto, so as to act as side stays. Chains secured to the platform and to drums placed under the carriage and provided with means for winding them up act as stays in the opposite direction. On one end of the drum is set a pulley, over which passes a metal belt operated by a lever and serving as a brake. On the other end of the cylinder is mounted a ratchet-wheel, with which a pawl pivoted to the side of the carriage intermeshes, thus assisting in locking the drum in place and holding the frame-work at any desired height.

For full comprehension of the invention, reference must be had to the annexed drawings, forming part of this specification, in which—

Figure 1 is a side view of the apparatus with the frame-work elevated; Fig. 2, a similar view with frame-work lowered; Fig. 3, a rear view with the end of carriage removed and the apparatus lowered; Fig. 4, a detail view of the cylinder and connection; Fig. 5,

a detail of brake, and Fig. 6 a detail of platform-connection.

Similar letters of reference indicate like parts.

A is the carriage, of any desired size and construction, on which the elevating frame-work is mounted.

B B are bars forming the frame-work, each and every one being connected to others at their intersections by pivot-pins *b* and at their ends by pins *b'*. The lowermost of these bars, preferably weighted, pass down through a slot *a* in the bottom of the vehicle. They are pivoted at the point of intersection to a double ridge *A'*, projecting upward from the bottom of the car by a bolt *C*, passing clear through them.

D is a cylinder or drum carried transversely of the carriage in suitable bearings *D'*, and E are chains connecting same at opposite points to the ends of the lowermost bars B, so that by the rotation of the cylinder by crank-handles *d d* these chains will be wound upon it, the ends of B B drawn together, and the frame-work elevated, and vice versa.

F is a ratchet-wheel mounted on the axis *D*² of the cylinder, into which meshes the end of a pawl *F'*, pivoted to the side of the carriage.

G is a grooved or flanged pulley mounted on the other end of the axis *D*² of the drum, and *G'* a metal belt secured at one end to a point *g* on the bearing *D'* and at the other to the hub or eye *h* of a brake-lever *H*, pivoted to the carriage and provided with a rack or locking bar *H'*.

Side frames composed of bars K L, of similar construction to the main frame-work, are pivoted, the intersection of the lowest at *K' L'*, to the sides of the carriage. They are secured together in any similar way to those of the main frame-work by pivot-pins *k k' l l'*, extend upward any desired proportion of the height of the main frame-work, and are attached thereto and to each other by a bolt *M*, passing right through them.

*K*² are arcs set in the sides of the carriage, perforated to receive pins *k*², which can project through such sides and apertures *l*² in the lowermost of the bars K L to hold the side stays rigid when extended.

It may be found advantageous to have the

pivot-pins at the intersections of both the main and side frame-work to pass through all three, the same as the bolt M.

5 N is the platform of any desired size, having a rail *n* round it.

N' is a flanged bar secured on the under side of N and carried in sockets O, attached to the ends of the uppermost of the bars B, stops N² preventing the platform from moving too far
10 in either direction.

P P P are chains or ropes taken from the corners of the platform to drums Q Q Q Q, these being provided with any suitable means by which they can be simultaneously rotated
15 so as to wind up the chains upon them. For instance, each pair of drums may be mounted on the same shaft, which may be revolved by miter-gearing, and its motion be imparted to the other shaft by means of belting; or these

drums may be rotated through a longitudinal 20 shaft carrying beveled gears and intermeshing with similar gears on the axis of the drums. A stop device—such as a pawl and ratchet—must be applied to each of the drums, so as to keep the chains taut at any height. 25

What I claim is as follows:

The combination, with the carriage A, of main and auxiliary frame-work composed, respectively, of bars B, K, and L, pivoted together, these several frame-works being also 30 connected, means for locking the auxiliary frame-work when extended, and the drum or cylinder D, with connections for raising and lowering the same, all as herein described.

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