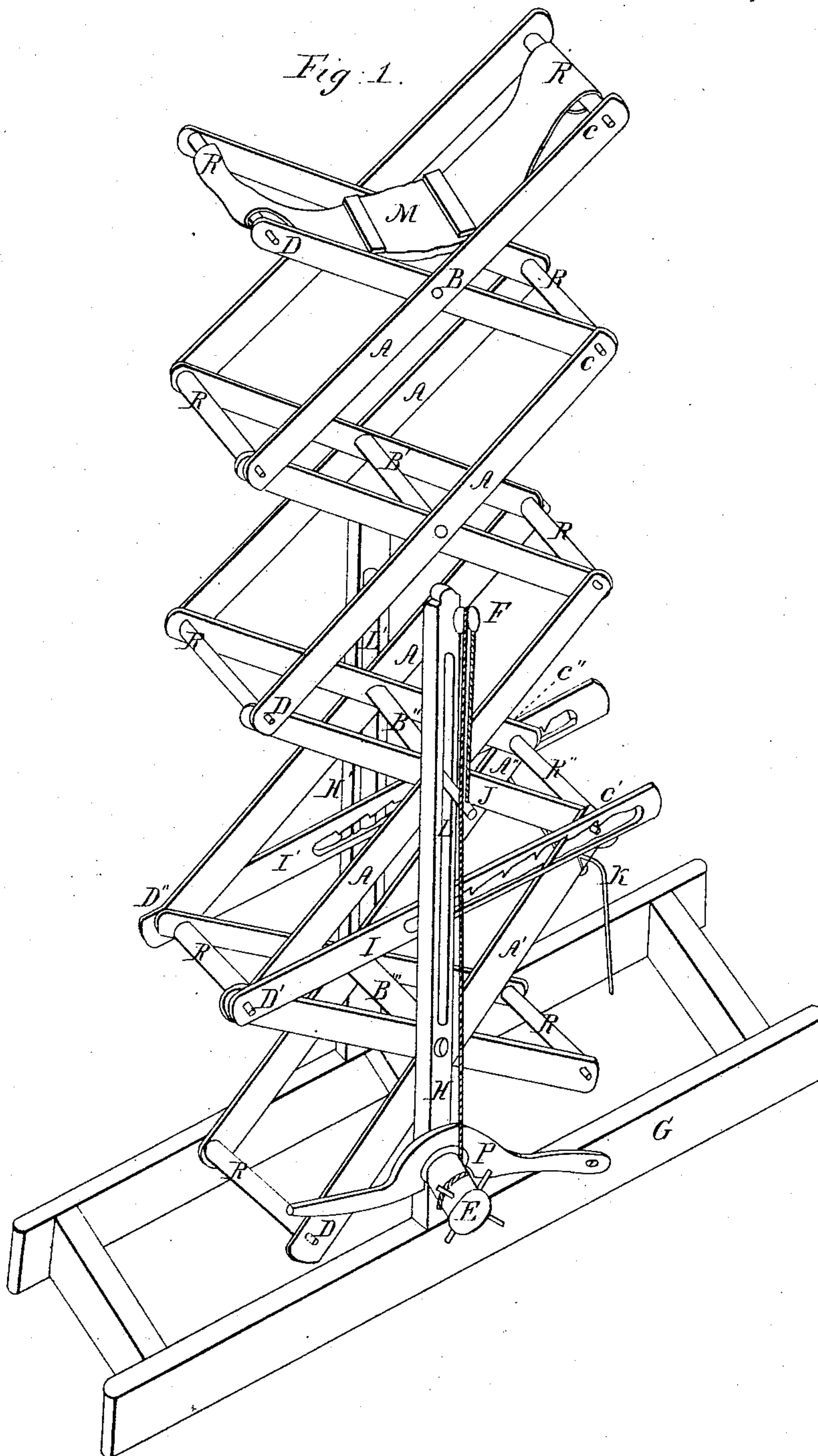


P. Porter.
Fire Escape.

Nº 18,353.

Patented Oct. 6, 1857.

Fig. 1.



UNITED STATES PATENT OFFICE.

P. PORTER, OF HOOKSETT, NEW HAMPSHIRE.

EXTENSION-ELEVATOR.

Specification of Letters Patent No. 18,353, dated October 6, 1857.

To all whom it may concern:

Be it known that I, PIERCE PORTER, of Hooksett, in the county of Merrimac and State of New Hampshire, have invented
5 a new and Improved Combination of Machinery for Raising Persons or Weights Rapidly to a Considerable Height, or Lowering Them from the Same, which I denominate a "Portable Extension-Eleva-
10 tor; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, of which said
15 drawings—

Figure 1 is a perspective view of the machine partially raised.

To enable others skilled in the art to make and use my said invention I will proceed to describe its construction and operation.

G is a strong frame work composed of two end pieces and two side pieces, and from the middle of each of the two side
25 pieces rise the vertical posts H and H', firmly attached thereto and each having slots L and L' cut through them in the direction of the end pieces of the frame G for the greater portion of their length.

30 A, A, &c. are strips of wood made light but strong, of a length varying with the capacity of the machine, but all being of equal length. These strips are arranged in pairs each pair crossing and intersecting
35 at B, B', B'' and B''' and these pairs are connected together by the pins D, D &c. and C, C &c. The opposite side of the machine is composed of equal and similar pairs fastened together in the same manner.
40 These two sides are tied together at the extremities of each strip by the cross ties R, R &c. and at their intersections by the axes B, B', B'', B''', and at all these points of intersection the parts are free to move
45 upon the extremities of the said cross ties and axes or upon any axis, for a certain distance.

To the two upper cross ties R, R, is attached a strong and flexible covering M
50 serving as a support upon which whatever is to be raised is to be placed. This may be constructed of canvas or leather or other suitable material, or in its place may be used a firm platform sliding upon, and confined by the cross ties R, R.

The axis B''' is prolonged after passing

through the intersecting strips so as to pass through the vertical posts H and H' and is there confined. The axis B'' is in like manner prolonged so as to pass through the
60 slots L and L' in the posts H and H', to serve as a guide to compel the machine to move only in a vertical direction, and also to attach to one end of a rope passing over the pulley F. This rope has its other end
65 attached to the windlass E. Upon the opposite post H' is a similar pulley to F, over which passes a rope one end of which is attached to the prolonged end of the axis B'', and the other end to a windlass similar to
70 E upon the same shaft.

P is a brake to govern the windlass E, or a ratchet wheel and catch may be used.

I and I' are strips, one end of each being loosely but strongly attached at D' and
75 D'', and having slots cut through them from side to side for the greater portion of their length, the upper portion of these slots being provided with ratchet teeth. The extremities G' and C'' of the cross tie R''
80 are prolonged so as to pass through the slots in the strips I and I'. K is a bent lever passing through the machine from side to side, attached to the strips, A' and A'', to
85 raise the strips I, I' from the extremities C', C'' and release them from the ratchet teeth.

Having thus described the construction of the machine I will now briefly describe
90 its operation.

Whatever it is wished to raise, is placed upon the covering M. The windlass E is then turned, winding up the rope passing over pulley F, as also the similar rope upon the opposite side, thereby raising the axis
95 B'' to which the rope is attached. As the axis B'' cannot be raised, as it is fastened to the posts H and H', when B'' is raised the whole machine is thrust upward the strips A A &c form a horizontal, assuming
100 nearly a vertical direction, thrusting the platform M upward to height varying according to the number and length of the pairs of strips, and being stiffened and retained in place as well by the strips I and
105 I' as their ratchet teeth catch upon C' and C'' as by the brake P. To lower the machine raise the strips I, I' by means of the bent lever K, thus disengaging them from C' and C'' and releasing the brake
110 P when it will descend of its own weight.

The object of this invention is, combining

lightness with strength to furnish an expeditious means of elevating persons or weights to considerable heights, as for instance to assist firemen in the discharge of
5 their duties, to serve as a fire escape, or to raise workmen when they are employed on the ceilings of lofty buildings or for other kindred purposes. Any necessary power may be applied to windlass E, and the axis
10 B'' may be raised by any other equivalent mechanical means.

I do not claim any of the above described devices separately, but what I do claim and desire to secure by Letters Patent is—

15 The employment of a truss frame extend-

ing in a vertical direction composed of the strips A, A, &c., the cross ties R, R &c., and the axes B, B', B'' and B'''; the axis B''' being confined in the vertical posts H and H', and the axis B'' free to move vertically
20 in the slots L and L', in combination with the pulley F and the windlass E or their mechanical equivalents, the whole constructed and operating substantially in the manner and for the purposes as hereinbefore set
25 forth and described.

PIERCE PORTER.

Witnesses:

JOHN H. MITCHELL,

MARY G. MITCHELL.