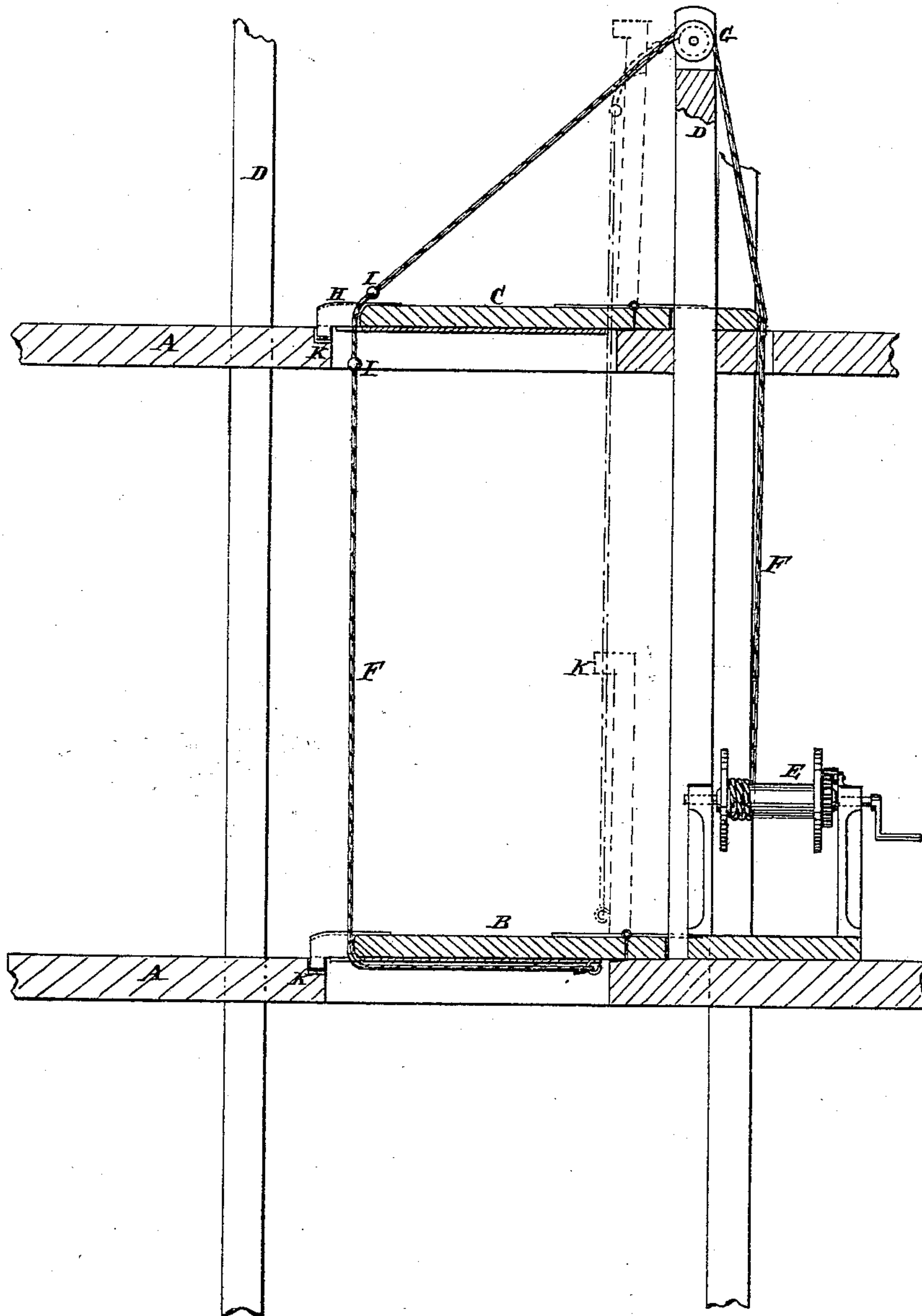


W. S. HARRIS.
Operating Hatches.

No. 148,697.

Patented March 17, 1874.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM S. HARRIS, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN OPERATING HATCHES.

Specification forming part of Letters Patent No. **148,697**, dated March 17, 1874; application filed January 10, 1874.

To all whom it may concern:

Be it known that I, WILLIAM S. HARRIS, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Hatch-Cover-Operating Apparatus, of which the following is a specification:

My invention relates to the hoisting and lowering apparatus employed for simultaneously opening and closing a series of hatch-covers by a windlass or other power; and it consists of the rope, chain, rods, or other device employed for connecting the hatch-covers to the power apparatus, extended directly from one cover to another, from the topmost downward, and passing through a notch or eye in them, of peculiar construction, with a knot or other stop above and below the covers, to prevent the rope or chain from running through the eye or notch without effect, said knots being placed such a distance apart as to allow of such little play of the rope as may be needed to each cover.

The object is to simplify the arrangement and cheapen the cost of such apparatus, which has heretofore been so that the rope passed through a pulley on each cover, then backward under a pulley at the rear of the cover above, then over another pulley on the upper side of the floor, and then to the pulley on the next door again, making nearly double the cost of the plan which I now propose.

The drawing is a sectional elevation of a couple of floors with hatchways and hoisting and lowering apparatus according to my invention.

A represents the floors; B and C, the hatch-covers; D, standards; E, windlass; F, the rope; G, the guide-pulley at the top of the building, over which the rope passes from the windlass down to the hatch-cover. The rope passes through the free side of each door, except the bottom one, by a notch or eye, H, contrived partly in the cover and partly in a flange or lip, K, on the under side, so that the rope will remain straight when the covers are raised up, as represented in dotted lines, and the rope has a knot or other stop, I, above and below, placed as far apart as is necessary to allow for any little differences there may be between the covers in swinging up and down, or that may be demanded by any changes of the rope by slacking or contracting.

The rope may be operated by an independent rope working a windlass at the top floor, and extending down to the bottom, so that the covers can be opened by one on either floor; or a tackle-block and rope may be used.

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

The combination, with hatches B C, having notches H and downward projections K, of a rope fastened at one end under the lower hatch, knotted at I, passing over a pulley, G, and finally around windlass E, as and for the purpose described.

WM. S. HARRIS.

Witnesses:

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