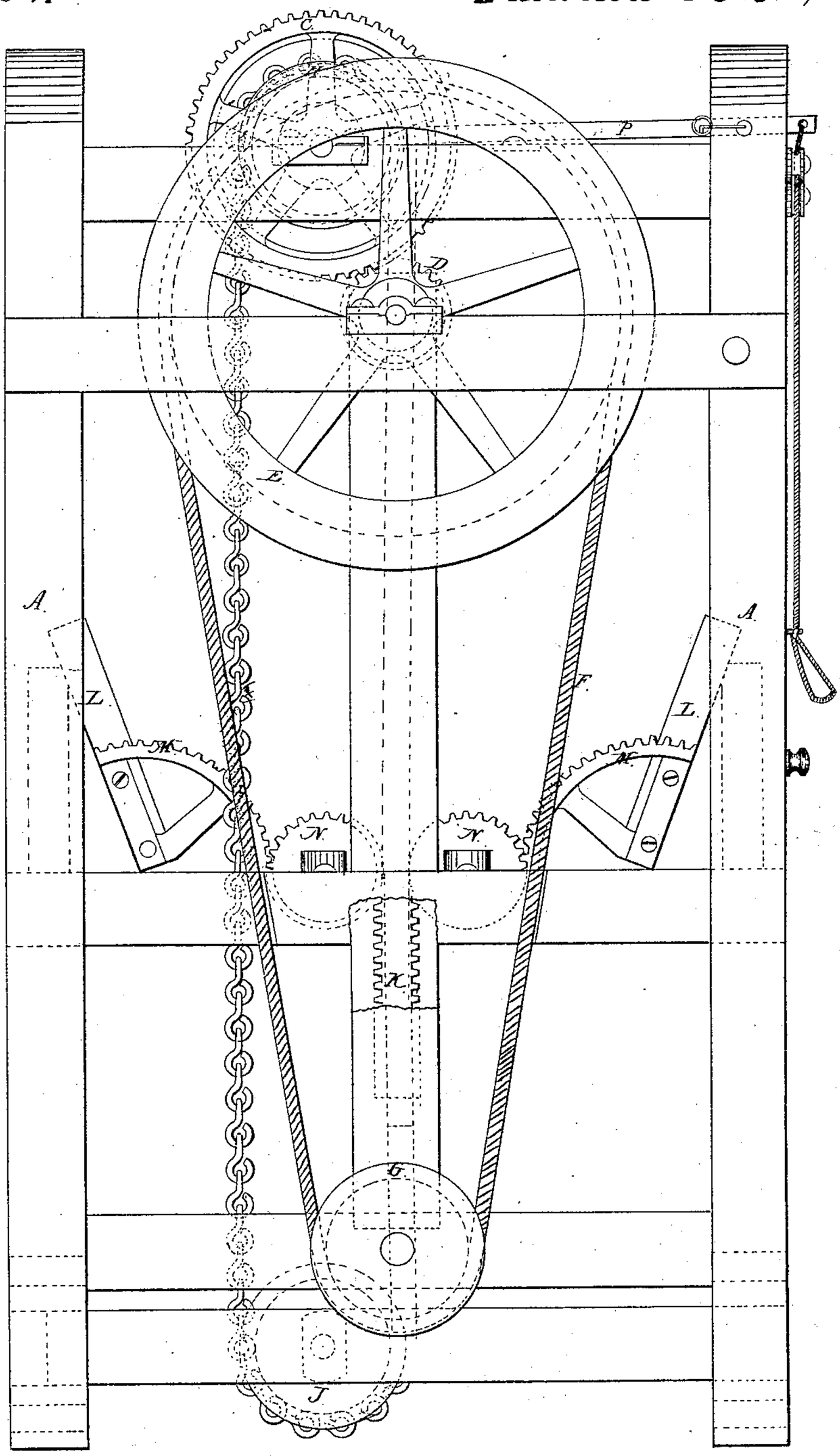
Sheet 1 - 2 Sheets.

Sizer & Stone.

Hatchway.

No. 13,624. Patented Oct. 2, 1855.

Fig. 1.



Sheet 2 - 2 Sheets.

Sizer & Stone,

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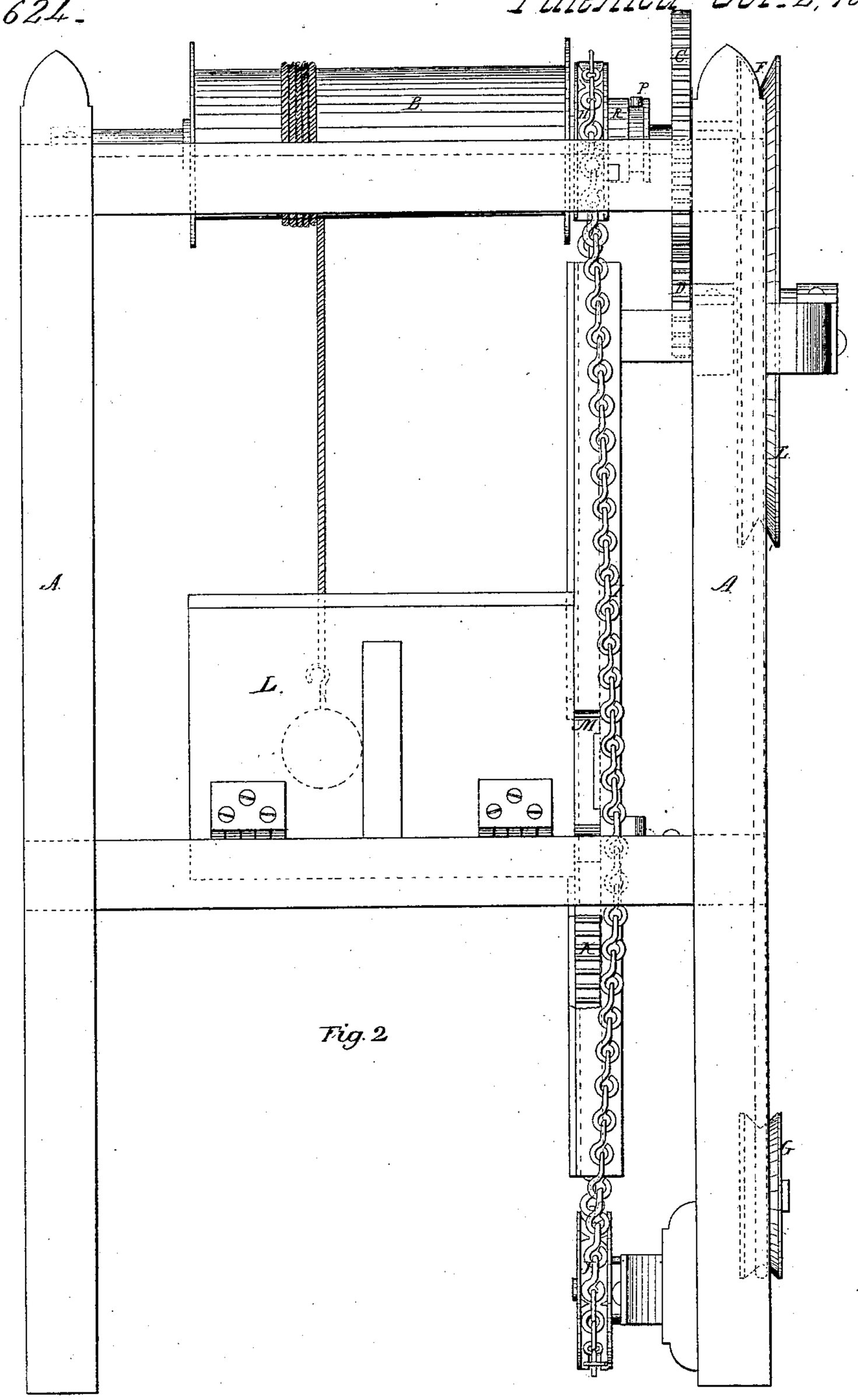

Fig. 2

UNITED STATES PATENT OFFICE.

HENRY SIZER, OF NEW YORK, N. Y., AND ELISHA STONE, OF LOWELL, MASSACHUSETTS.

APPARATUS FOR OPENING AND CLOSING HATCHWAYS.

Specification of Letters Patent No. 13,624, dated October 2, 1855.

To all whom it may concern:

Be it known that we, HENRY SIZER, of the city, county, and State of New York, and ELISHA STONE, of Lowell, county of Middlesex, and State of Massachusetts, have invented a new and useful Elevator and Hatchway or Scuttle Combined; and we hereby declare that the same is faithfully and truly represented in the following specification and the drawings which accompany it, in which—

Figure 1 is a front elevation and Fig. 2 a side elevation of the same.

The nature of our invention consists of a method hereafter fully described for the purpose of opening and closing the doors of scuttles by a person standing on the floor of either story of the building and operating the elevator by pulling the rope as in ordinary elevators, the apparatus for opening and closing the doors being attached to the ordinary elevating cylinder, gearing and rope wheel. The drawings indicate a device for only one story, which can be extended upward as many stories as desired.

To enable persons skilled in the art of making elevators to carry out our invention, we will describe the same as follows.

We construct a frame as seen at A A Figs. 1 and 2, at the top of which we place a cylinder as seen at B Figs. 1 and 2, on strong bearings. Near the end of the cylinder shaft we attach a gear as seen at C Figs. 1 and 2, and under this we place another smaller gear seen at D Figs. 1 and 2, which plays into the gear C as shown in Figs. 1 and 2 of the drawings. This should be well secured to a strong shaft and this properly adjusted in boxes. About the middle of this shaft on which is placed the pinion D we place a rope wheel seen at E Figs. 1 and 2, similar to those generally used in warehouses, and around this wheel we pass a rope seen at F Figs. 1 and 2 which reaches down under the lower floor of the building and around a friction pulley as seen at G Figs. 1 and 2.

The description thus far illustrates the windlass or elevator now in use in warehouses and other places.

Between the end of the cylinder B, and the gear C we place a chain wheel as seen at H Figs. 1 and 2 over which passes the chain I Figs. 1 and 2, which passes down under a friction chain wheel J. The ends of the said chain are attached to the ends of the rack K Figs. 1 and 2. On the end of each of the doors L L Figs. 1 and 2 we place a segment of a gear as seen at M Figs. 1 and 2. We also place a gear as seen at N Figs. 1 and 2, upon the framework near the end of each door so as to gear into the segments M which are attached to the ends of the doors, the said gears N N are so placed that the rack O will pass between and gear into them so as to open or close the doors as the rack passes up and down when the elevator is being operated.

In the hub on the upper chain wheel is turned a groove to receive the end of the shipper P Fig. 2. This is for the purpose of shipping the clutch R of the chain wheel H so as to open and shut the doors every time a package of goods or other article is elevated, or not, as desired, it being understood that by unshipping the said chain wheel clutch outwardly that the cylinder will work independently of the rack and chain.

The friction wheel at the lower part of the rope is not wanted in practical use. It is shown here for the purpose of keeping the rope tight.

The various parts of the device is shown in the drawings as attached to framework, but all of them can be attached to the frame of the building in which they are placed to operate, instead of framework as here shown.

Having thus described the making of our invention we will describe the operation. Suppose the scuttle doors closed and the hook and rope drawn up near to the cylinder B. Then we seize the rope F and pull downward which will also carry the rack and chain downward, so that the teeth of said rack K comes in contact with the teeth of the gears N N which turns them and consequently the segment M by which the doors are opened. Then the rope and hook which is attached to the cylinder B is farther lowered by pulling the rope F farther downward so as to reach whatever is to be raised. Then we pull the rope F the opposite way so as to raise the object desired, which after rising above the doors L will close them by the rack and gears as aforesaid.

By unshipping the clutch R as before described the doors will not open and close as would be the case providing the said clutch was shipped.

Having thus described our invention we claim as follows:

1. The chain wheel H, the chain I, the rack K, the doors L, with segments of gears M or whole gears attached to them, and the gears N or the equivalents of any of these for the purpose of opening and closing hatchway or scuttle doors essentially as set forth.

2. We claim the parts beforementioned, either or all of them in combination with the cylinder B the rope wheel E, and the gears C and D, for the purpose of opening and closing the doors of scuttles and hatchways essentially as set forth.

HENRY SIZER.
ELISHA STONE.

Witnesses:
FREDK. STEIFF,
H. C. BANKS.