R. W. Lawrence,

Elevator.

No. 57,928. Patented Sep. 11, 1866.

Fig. 2.

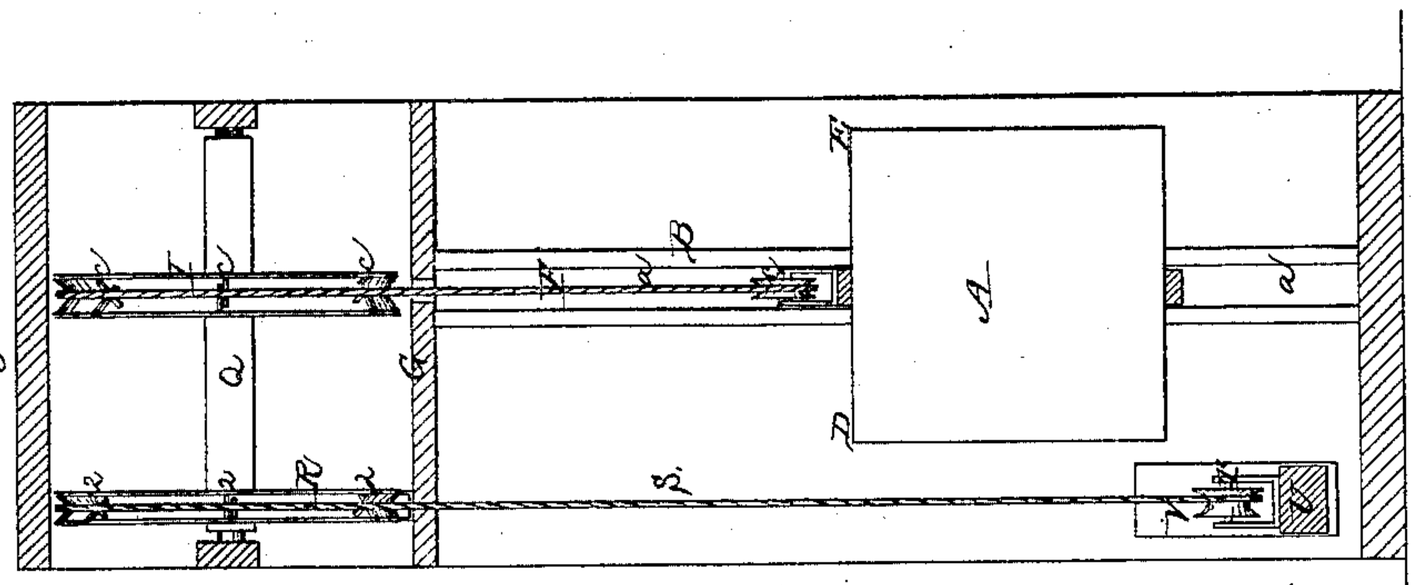
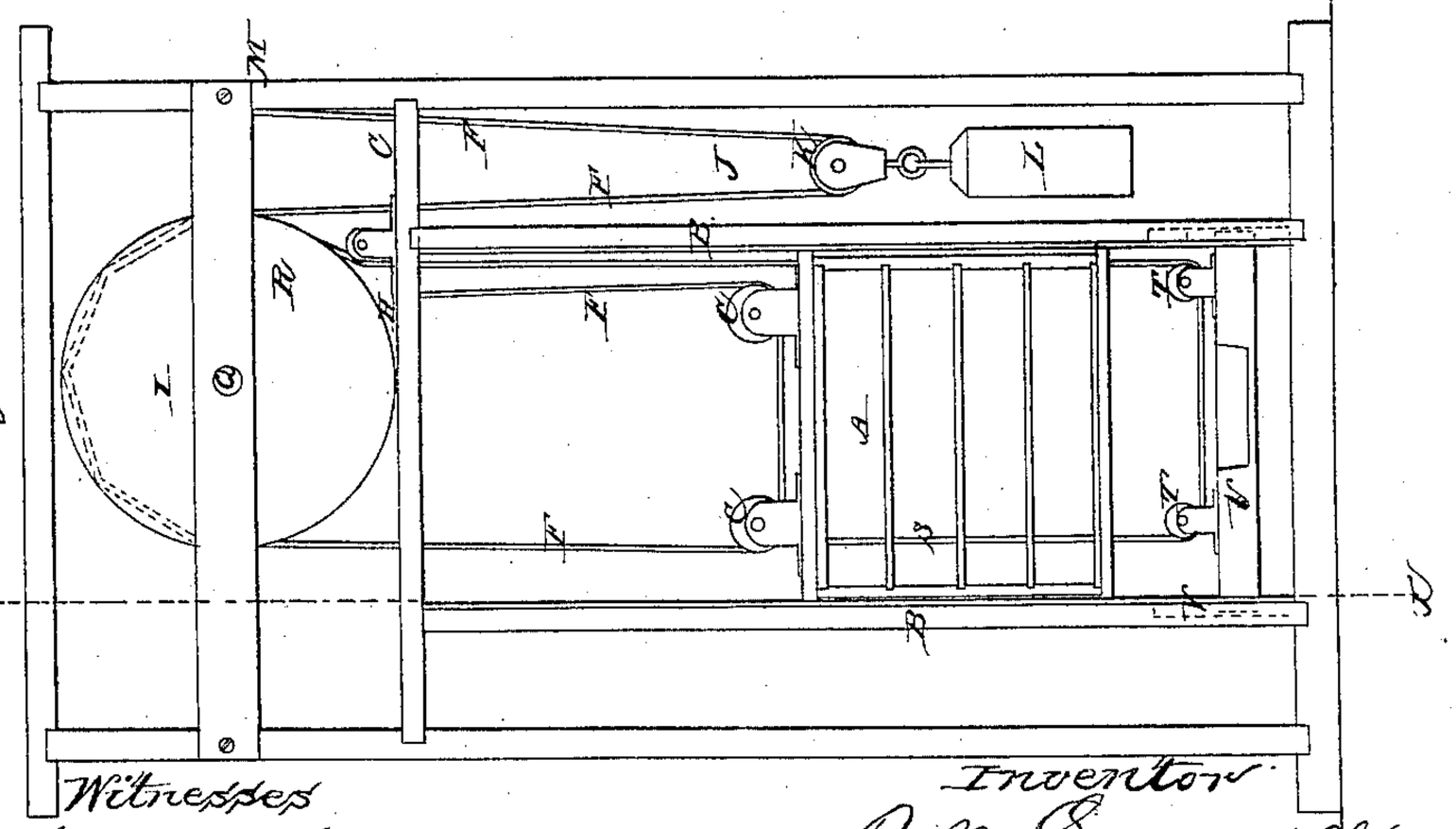


Fig. 1.



Witnesses

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UNITED STATES PATENT OFFICE.

R. WALCOT LAWRENCE, OF NEW YORK, N. Y.

IMPROVED DUMB-WAITER.

Specification forming part of Letters Patent No. **57,928**, dated September 11, 1866.

To all whom it may concern:

Be it known that I, R. WALCOT LAWRENCE, of the city, county, and State of New York, have invented new and useful Improvements in Dumb-Waiters; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying plate of drawings, forming part of this specification.

The present invention consists in a novel manner of arranging or connecting the frame of a dumb-waiter, upon which are placed the articles to be raised or lowered through any desired height—such as, for instance, from one floor to another in dwelling-houses and other buildings—to the weight employed for balancing the same, whereby the ease and facility with which it (the waiter) can be operated, either when raised or lowered, are greatly increased, and the waiter, whether weighted in a greater or less degree, within reasonable limits, can be held or retained at any point of the height or distance through which it is arranged to move, in a stationary position, without the use of a catch or other extra and suitable device therefor, the importance of which is obvious.

In the accompanying plate of drawings my improvements in "dumb-waiters," so called, are illustrated, Figure 1 being a rear view of a frame in which the waiter is hung, and connected to the balancing-weight according thereto; and Fig. 2, a transverse vertical section, taken in the plane of the line *x x*, Fig. 1.

Similar letters of reference indicate like parts.

A in the drawings represents the frame of the "dumb-waiter," so called, made of a square or box shape, and provided with a series of horizontal shelves, of any desired number, and at any distance apart, either more or less, according to its size or the articles for which it is intended to be used. This frame is placed in and between two parallel vertical strips or guides, B B, one upon each side, in a vertical groove, *a*, of each of which it moves, by cleats attached to its sides, or in any other proper manner, so that it can be moved and guided up and down between them with steadiness and without swaying or swinging in any direction.

C C are two similar pulleys secured to the top of the waiter at equal distances from each of its two ends, and in a line with each other, half-way, or nearly so, between the front and rear sides, D and E.

F is a rope, cord, or line, or any suitable equivalent therefor, fastened at one end at the point H in the upper portion of the frame G, in which the waiter is arranged, directly over one of the waiter-pulleys, C, around the lower portion of which it is passed, and thence to and around the under side of the other pulley of the two, and up and around the upper side of the large pulley I, hung in the upper portion of the frame G, but above the fixed end of the cord F, from whence it is passed down the vertical spout or way J, around the small pulley K, hung to the upper end of the weight L, and thence upward to the point M of the frame G, where its end is fixed or fastened in any proper manner, such point M being in the same horizontal plane, or nearly so, with the central axis of the pulley I.

By thus connecting or suspending the dumb-waiter to the weight used for balancing the same, it is plain to be seen that the waiter can be loaded with any articles which it is desired to raise or lower through the height or distance in which the waiter is arranged to move, to a degree either greater or less, within reasonable limits, than the amount of the balancing-weight used, and yet the waiter be sustained or held stationary at any desired point or height without the use of a catch or other fastening suitable therefor, the importance of which is obvious, a dumb-waiter so arranged being capable of sustaining a load or burden without moving or falling, as I have demonstrated by experiments with the same, of an amount nearly equal to twice the weight of the balance-weight used.

With a dumb-waiter arranged and hung to its balance-weight in the manner above explained many important advantages are secured in addition to that above stated, among which may be mentioned that it can be run up or down with the utmost facility and ease, and with perfect safety to the articles placed upon

it, which, with dumb-waiters arranged in dwelling-houses for the raising and lowering of crockery, dishes, &c., from one story to another, is quite an important desideratum, as is well known.

In order to still further increase the amount to which the waiter can be loaded without moving, I form the periphery of the upper pulley, I, around which the cord passes from the waiter to the balance-weight, with a series of cross bridges or ridges, *c c*, at equal distances apart, which bridges, by causing the cord to make an angular circuit of the pulley, increases the amount of force or power necessary to move or pull it around the same, as is obvious without further explanation.

To the axis or shaft O of the upper pulley, I, and upon its front end is fastened another similar pulley, R, the periphery of which has similar bridges or ridges *d d* thereto, at equal distances apart, around the upper portion of which pulley passes a vertical endless brake rope or cord, S, passing around at the lower portion of the dumb-waiter frame G. Two small pulleys, T T, arranged upon the upper side of a horizontal cross-bar, U, inserted at each end in vertical slots V of the upright guides for the dumb-waiter, which cross-bar, in order to hold the said brake-cord at the proper degree of tension about the upper pulley, Q, so that when pulled upon it cannot slip around the same, can be either weighted or held down by springs, or in any other suitable manner which will allow it to yield and adjust itself to the shrinking or extension of the cord from any of the well-known causes which so affect it, the bridging of the upper pulley, as explained, also assisting the binding of the said cord about it.

It is obvious from the above description that by properly pulling the brake-cord the waiter can be raised or lowered, as may be desired, it thus increasing the facility with which the waiter can be operated, while at the same time such cord can be used as a brake upon the downward movement of the waiter, should it be loaded to any degree greatly in excess of the balance-weight, and thus prevent the waiter from falling with such force as to endanger the safety of the articles placed upon it.

I claim as new and desire to secure by Letters Patent—

The brake-cord S, applied, in combination with the pulleys T, on the adjustable cross-bar U, and the pulley R on the shaft Q, substantially as described, for the purpose specified.

The above specification of my invention signed by me this 1st day of February, 1866.

R. W. LAWRENCE.

Witnesses:
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