(No Model.)

C. L. LINCOLN.

DUMB WAITER.

No. 383,958. Patented June 5, 1888.

Fig: 1.

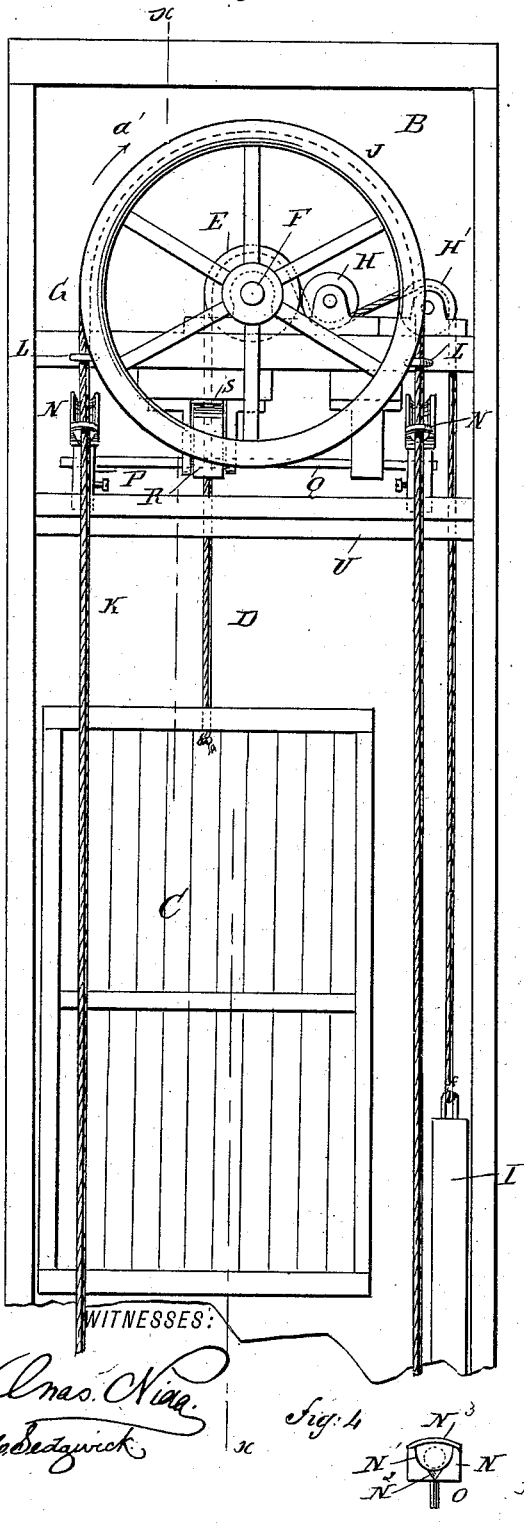

Fig: 2.

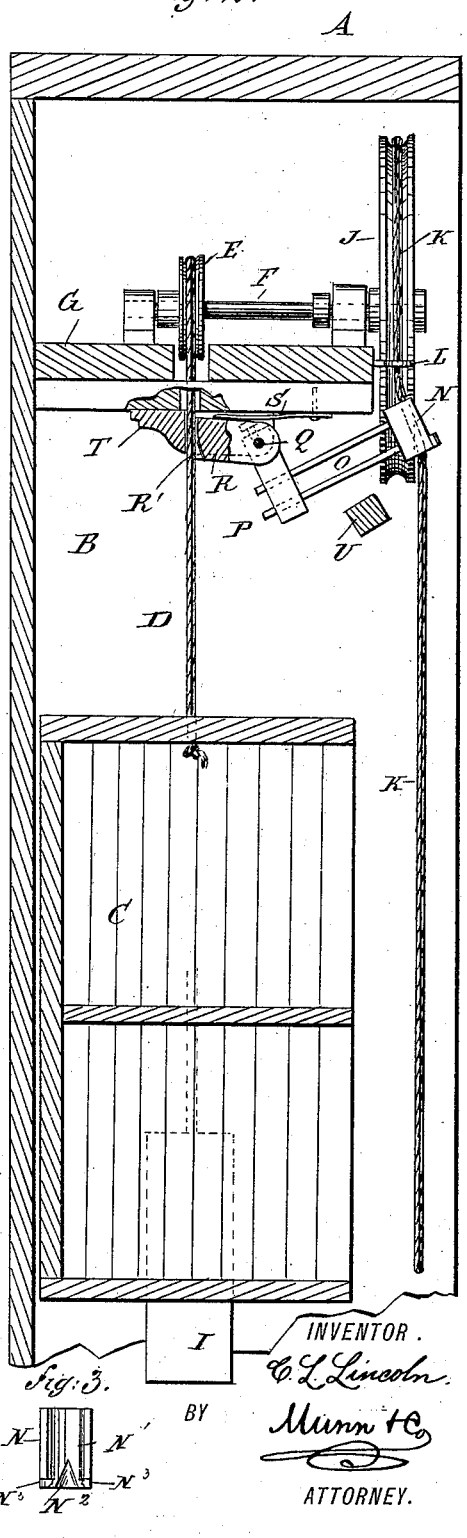

Fig: 3.

WITNESSES:

Chas. Niag.

Bedgwick

INVENTOR.

C. L. Lincoln.

BY

Munn & Co.

ATTORNEY.

UNITED STATES PATENT OFFICE.

CHARLES L. LINCOLN, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF TO ANDREW P. VAN TUYL, JR., OF SAME PLACE.

DUMB-WAITER.

SPECIFICATION forming part of Letters Patent No. 383,958, dated June 5, 1888.

Application filed February 25, 1888. Serial No. 265,281. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. LINCOLN, of the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Dumb-Waiters, of which the following is a full, clear, and exact description.

The invention relates to that class of elevators commonly known as "dumb-waiters."

The object of the invention is to provide certain new and useful improvements in dumb-waiters, whereby the elevator-carriage, with its load, is securely held in place at any point in the elevator-shaft whenever the operator releases his grip on the hoisting-rope.

The invention consists of a clamp adapted to engage the carriage-supporting rope and controlled by the hoisting-rope.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of the improvement. Fig. 2 is a sectional side elevation of the same on the line *x x* of Fig. 1. Fig. 3 is a face view of one of the hoisting-rope's shoes, and Fig. 4 is an end view of the same.

The improved dumb-waiter is provided with the usual shaft, B, in which is held to slide vertically in any suitable manner the carriage C, supported at one end of a rope, D, extending upward and passing over a pulley, E, fastened on the shaft F, mounted in suitable bearings secured to the transverse platform G, held in the upper end of the elevator-shaft B. The rope D, after passing over the pulley E, passes under a pulley, H, then again over a pulley, H′, both pulleys H and H′ being mounted to rotate in suitable bearings on the transverse platform G. The rope D then extends downward from the pulley H′, and carries on its lower end a counter-weight, I, which serves to counterbalance the carriage C.

The shaft F carries at its front end a large rope-pulley, J, over which passes the hoisting-rope K, extending downward on both sides of the pulley J and passing through eyes L, secured to the front end of the transverse platform G. The parts of the rope K, after passing through the eyes L, pass over the shoes N, secured to the arms O, extending downward and rearward, being attached to the front ends of arm P, secured to a shaft, Q, mounted to rotate in suitable bearings held on the under side of the platform G. On the shaft Q is fastened a clamping-arm, R, extending rearwardly, and having a slightly inclined or curved outer edge, R′, adapted to engage the carriage-rope D, so as to press the latter rearwardly against a fixed clamping-arm, T, secured to the under side of the platform G, and directly in the rear of the clamping-arm R. On the free end of the latter presses one end of a spring, S, secured to the under side of the platform G, and serving to hold said arm R, with its inclined edge R′, in contact with the carriage-rope D.

Each of the clamping-shoes N is provided on top with a semicircular opening, N′, and in the front edge of each shoe is formed a triangular notch, N^2, through which passes the hoisting-rope K when moving upward or downward. Across the semicircular opening N′ may be stretched a band, N^3, to prevent the rope from passing out of the semicircular opening N′. The semicircular opening of the shoe N extends in an angular position in relation to the shaft F, and also projects a short distance in front of the eyes L, so that the rope K is diverted from a straight line after leaving the pulley J, so that when a downward pull is exerted on the rope K it passes over the entire semicircular groove N′ and the notch N^2. The downward movement of the arms O is limited by a crosswise-extending arm, U, held in the front of the shaft B.

The operation is as follows: When the carriage C is at rest, either with or without a load, the spring S presses the clamping-arm R downward, so that the beveled edge R′ firmly clamps the rope D against the fixed clamping-arm T, whereby the carriage C is held suspended at any point in the shaft B. Now when the operator desires to move the elevator-carriage C upward, he pulls on the rope K, hanging downward from the shaft on the side of the

pulley J. The downward pull on the rope K presses the latter firmly in contact with the shoe N, so that the latter moves downward with the rope K, whereby the arm P, connected with the shoe N, is swung rearwardly, and the shaft Q, on which the said arm P is fastened, is turned, and the clamping-arm R is swung upward, so as to disengage the beveled edge R′ of the arm R from the elevator-rope D. This movement of the clamping-arm R takes place just at the beginning of the downward pull of the operator on the rope K, so that the movement of the pulley J, imparted by the downward pull of the rope K, turns the shaft F and its pulley E in the direction of the arrow *a′*, so that the rope D is moved upward, lifting the elevator-carriage C. The moment the operator releases the rope K on the downward pull the spring S, which was compressed by the upward movement of the arm R, exerts a downward pressure on the said clamping-arm R, and again forces the latter into contact with the rope D and clamps the same to the fixed arm T. Thus the elevator-carriage C is held suspended in the shaft B the moment the operator releases his grip on the rope K, and the shoe N returns to its former position by the downward movement of the arm R, acting on the shaft Q, carrying the arm P, connected by the rods O with the shoe N. When the operator desires to move the elevator-carriage C downward, he takes hold of the rope K at the left-hand side of the pulley J and pulls downward, whereby the said rope K, acting on the shoe N on the left-hand side of the shaft B, moves the said shoe N downward, whereby the arm P is swung rearwardly, the shaft Q is turned, and the clamping-arm R is again swung out of contact with the elevator-rope D. The further downward movement of the rope K rotates the pulley J in the inverse direction of the arrow *a′*, so that the pulley E causes the rope D to descend, and with it the elevator-carriage. The upward movement of the clamping-arm R, as above described, compresses the spring S, so that when the operator releases his grip on the rope K said spring S again forces the clamping-arm R downward, whereby the beveled or inclined edge of the said clamping-arm R presses the rope D tightly in contact with the fixed clamping-arm T and the carriage C is suspended at any point in the shaft B. Thus it will be seen that when the operator releases his grip on the rope K, after having made a downward pull, the elevator-carriage C is held, consequently, in place at whatever point it may be until the operator has again taken a fresh hold on the rope K and exerted another pull downward.

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

1. In a dumb-waiter, the combination, with a carriage-supporting rope, of a hoisting-rope adapted to operate said carriage-supporting rope, and a clamp engaging said carriage-supporting rope and controlled by the said hoisting-rope, substantially as shown and described.

2. In a dumb-waiter, the combination, with a rope supporting the elevator-carriage, of a clamp adapted to engage the said rope, a hoisting-rope operating the said carriage-supporting rope, and shoes over which passes said hoisting-rope, said shoes being connected with the said clamp, substantially as shown and described.

3. In a dumb-waiter, the combination, with a carriage-supporting rope, of a spring-arm adapted to engage said rope, a fixed arm, against which the said rope is pressed by the said arm, a shaft carrying the said spring-arm, and shoes secured to arms on said shaft and operated by the said hoisting-rope, substantially as shown and described.

4. In a dumb-waiter, the combination, with a carriage-supporting rope, of a spring-arm adapted to engage the said rope, a fixed arm, against which the said rope is pressed by the said arm, a shaft carrying the said spring-arm, and shoes secured to arms of the said shaft, and a hoisting-rope operating the said carriage-supporting rope and passing over the said shoes, substantially as shown and described.

CHARLES L. LINCOLN.

Witnesses:
THEO. G. HOSTER,
C. SEDGWICK.