(No Model.)

T. J. MAYALL, Dec'd.

L. A. MAYALL, Executrix.

ELEVATED RAILWAY.

No. 384,921. Patented June 19, 1888.

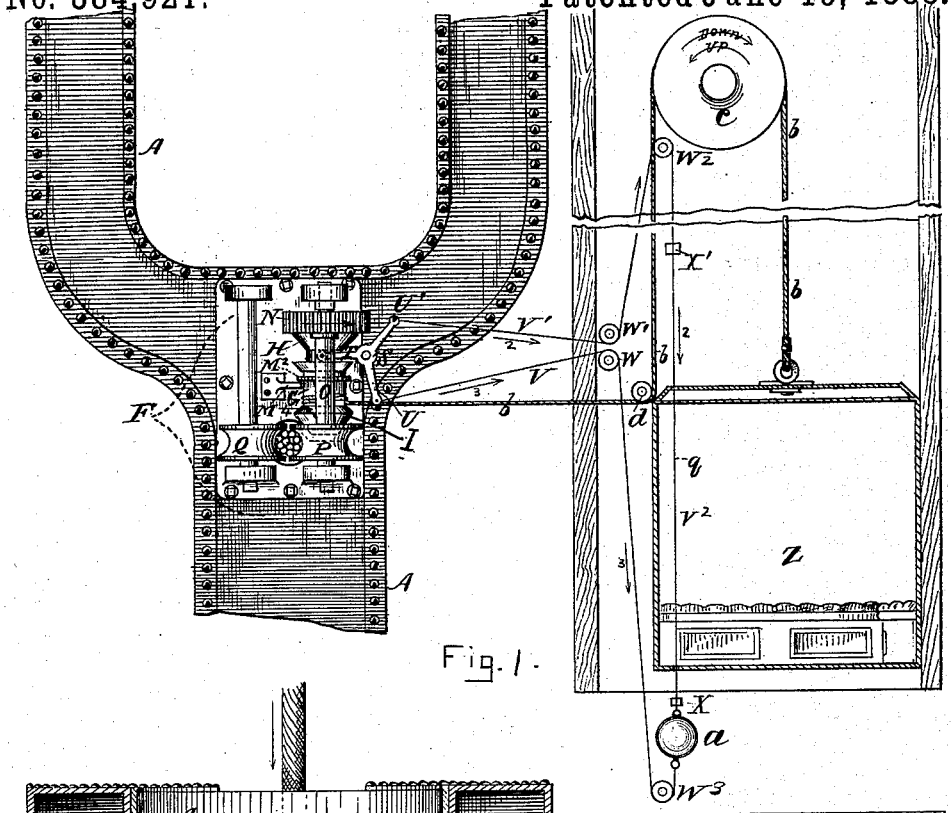

Fig. 1.

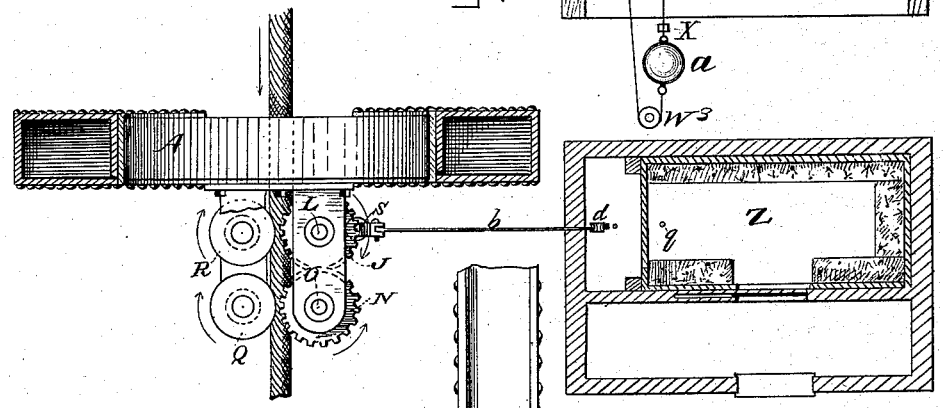

Fig. 2.

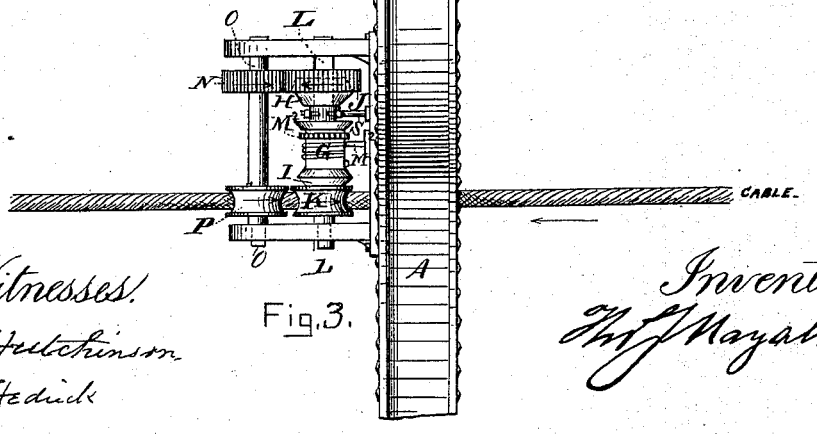

Fig. 3.

Witnesses.
Wm. H. Hutchinson.
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UNITED STATES PATENT OFFICE.

THOMAS J. MAYALL, OF READING, MASSACHUSETTS; LUCY A. MAYALL, OF SAME PLACE, EXECUTRIX OF SAID THOMAS J. MAYALL, DECEASED.

ELEVATED RAILWAY.

SPECIFICATION forming part of Letters Patent No. 384,921, dated June 19, 1888.

Application filed August 26, 1887. Serial No. 247,936. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. MAYALL, a citizen of the United States, and a resident of Reading, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Elevated Railways, of which the following, taken in connection with the accompanying drawings, is a specification.

The present invention relates to systems of elevated cable railways such as described in my application filed June 14, 1887, Serial No. 241,252.

It consists in an arrangement of elevators for conveying passengers from the street to the elevated station, the elevator-cars being actuated by power derived from the constantly-moving traction-cable.

An explicit description of the various parts, their function and operation, will be comprehended by reference to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a front elevation of the rail-bed support with the mechanism operating the elevator-lift thereto attached, with the elevator in longitudinal section, Fig. 2 being a top plan of the same with the elevator in transverse section, and Fig. 3 a side elevation of said mechanism.

I will now refer to my invention, utilizing the power of the cable to raise and lower my elevator compartment or lift, consisting in the mechanism broadly designated as F, the elementary parts comprising a vertically-shifting drum, G, fitted terminally with integral friction-cones H and I. The former, being uppermost, is exhibited as seated within a gear, J, which is keyed to its shaft L, the clamp-roll K revolving freely thereon, said drum, when each of its clutches is disengaged, being held stationary through a stop-motion comprising the spur M and the rack M^2, (shown in Figs. 2 and 4,) consequently suspending the elevator-car at any point of its progress by the manipulation of the working-cords, at the option of the operator, as hereinafter more fully explained. The gear J engages with the adjacent corresponding gear, N, which is also keyed to its shaft O, and to which motion is imparted from the cable through said auxiliary clamping-rolls P Q R, (clearly exhibited in Fig. 3.) The consecutive steps in the operation of the above features of my invention will be presently reviewed.

The triangular rocker-shipper S, Fig. 2, is pivotally attached to the supporting-column A, its shipper-arm T being pivotally secured to the neck of the friction-cone H, while its radial arms U U′ communicate through the ends V V′ of the cord, which passes over and under the friction-rolls W W′, thence around secondary friction-rolls W^2 W^3, where it enters the car longitudinally with its length, from which point it is manipulated by the custodian therein. Said cord is provided with suitable stops, X X′, which limit the movement of said lift Z. These are nicely adjusted and rigidly secured in their respective positions, thus automatically regulating the distance the lift is to travel within safety limits. A counterbalance, *a*, equipoises the drum G, while the lifting-cable *b* will be observed passing over the drum *c*, thence around the friction-roll *d* to the shifting-drum G, which, through the organized mechanism F, operates my elevator as follows:

The car Z, Fig. 2, about to ascend, the custodian thereof, at the point V^2 within the lift, through the length V′ of the cord, rotates the shipper-arm U′ in the direction of arrow 2, and raises the shifting-drum G, engaging the cone H with the gear J, (illustrated in Fig. 4,) thereby rotating said drum in the direction of arrow 4 until the limit of altitude is reached by the car, when the cords are actuated in reverse order, following the direction of arrows 3, through the intervention of the stop X′ to a sufficient degree to disengage said cone H and engage the temporary locking devices M M^2, which hold the disengaged drum motionless upon its shaft and stop the car.

When ready to descend, the pull-cord *q* within the car is pulled by the operator slightly farther in the same direction, disengaging said locking appliance and engaging the cone I within the clamp-roll K, which imparts a reverse motion, unwinding the cable *b* and permitting the car to fall. If desirable, said stops

X X′ may be omitted, and the rise and fall of the car may be governed wholly by the manipulation of the pull-cord, with, if further desired, the assistance of a simple gage secured upon the wall of the car at a convenient height, through which the pull-cord might pass and register, by indicating-rings thereon, the distance the car travels and the points at which the mechanism F should be actuated.

Having described the construction and operation of my improved system of duplex elevated railways, I desire to secure by Letters Patent, and claim—

1. The combination, with the supporting-columns and traction-cable of an elevated railway, of an elevator-car, its hoisting-cable, and mechanism, as set forth, for communicating motion to said car in either direction from said traction-cable, substantially as described.

2. The combination, with the supports and traction-cable, of the grip-rollers carried by said supports, the elevator-car, its hoisting-cable, the shifting-drum upon which said cable is wound, and gearing connecting said grip-rollers with said drum for rotating the latter and raising or lowering said car, substantially as described.

3. In combination with a rail-support, A, the actuating mechanism F, embracing a shifting-drum, G, provided with a stop-motion, M M^2, and having terminal friction-cones H and I integrally connected therewith, a gear, J, to elevate the lift, and a clamp-wheel, K, to lower the same, the auxiliary wheels P Q R, gear N, and shafts L and O, constructed and adapted to receive motion from an elevated horizontal cable to operate an elevator car, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 25th day of August, A. D. 1887.

THOS. J. MAYALL.

Witnesses:
C. J. HEDRICK,
E. L. WHITE.