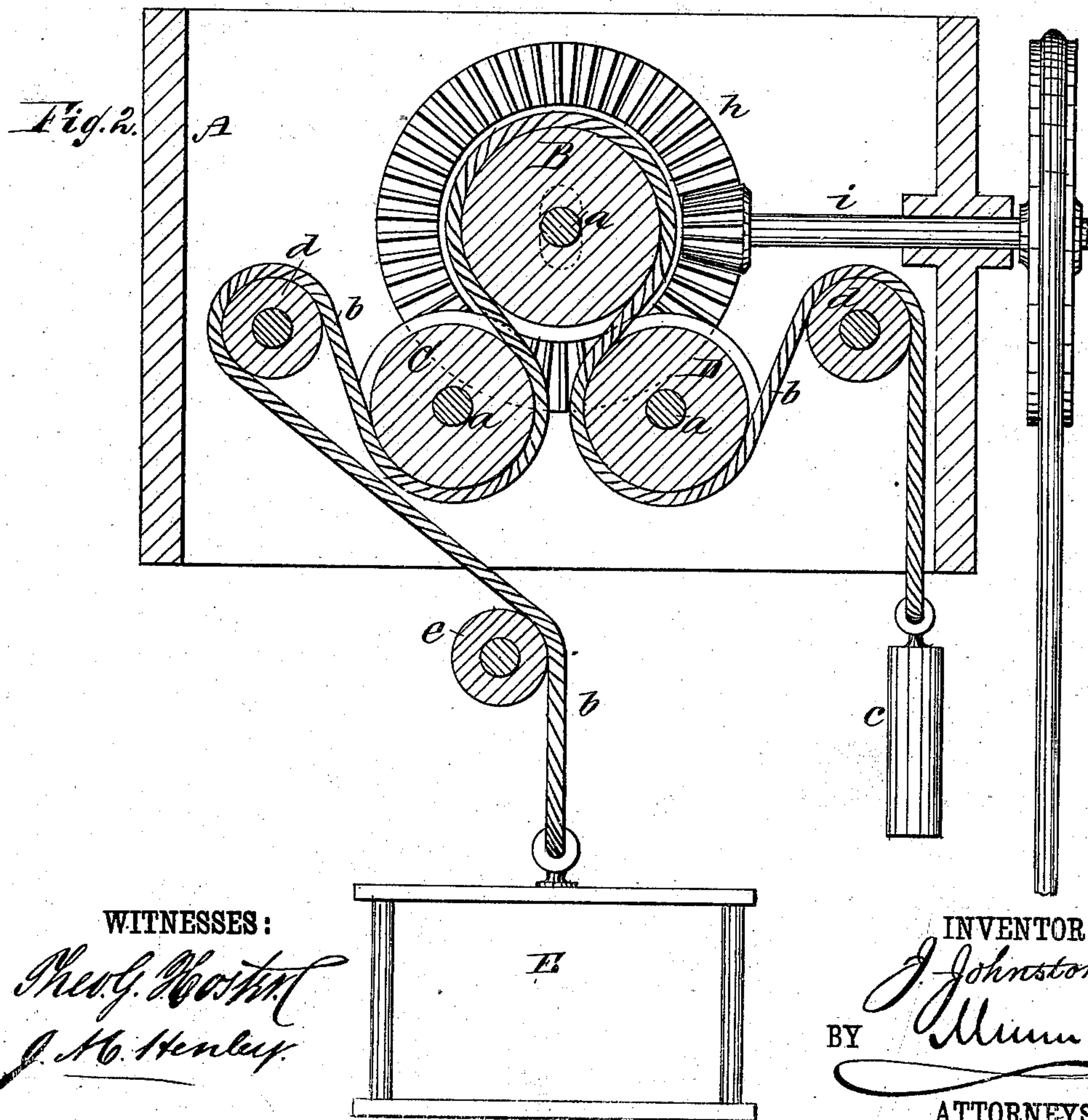
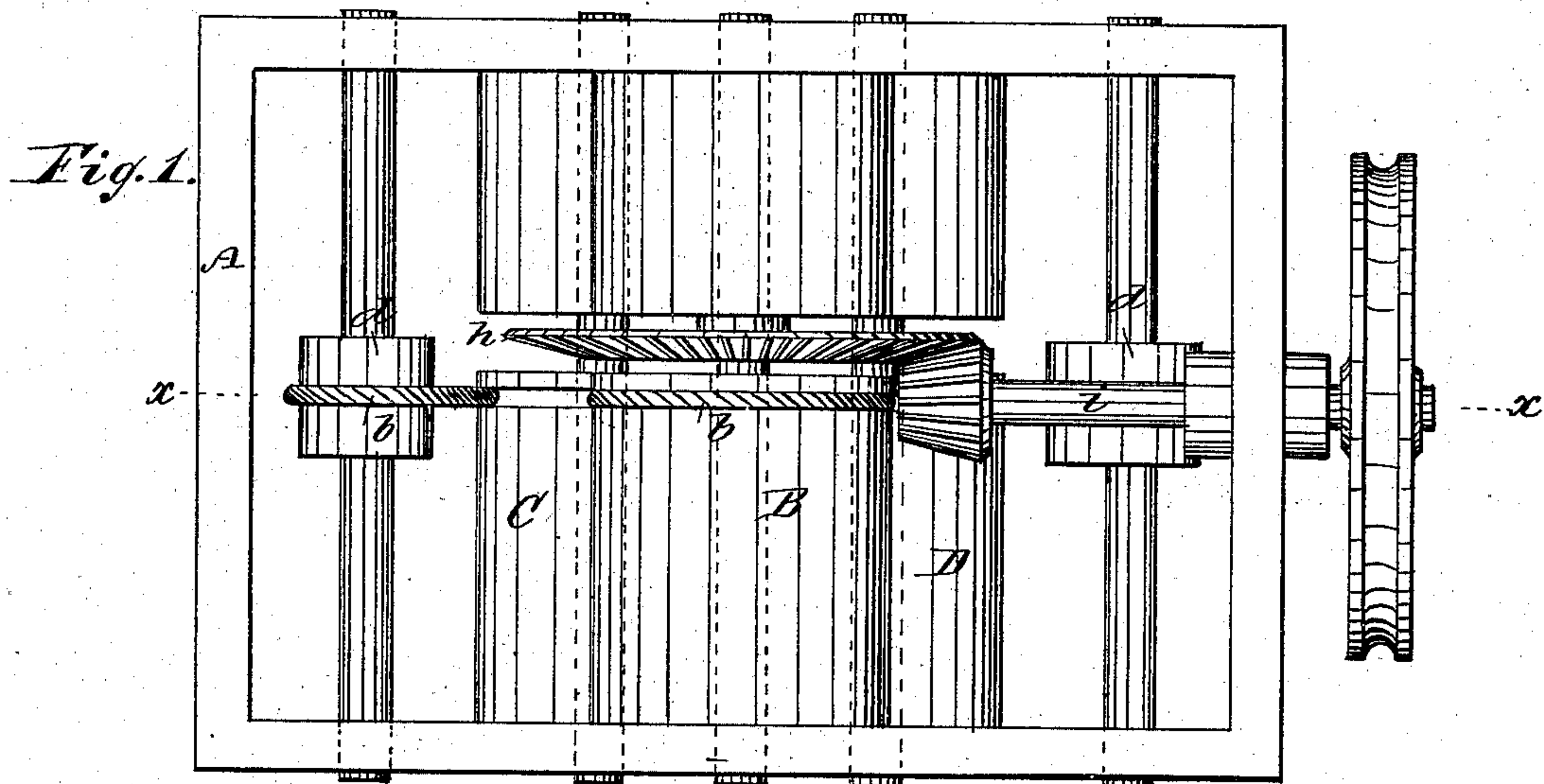


(No Model.)

J. JOHNSTON.
ELEVATOR AND DUMB WAITER.

No. 258,073.

Patented May 16, 1882.



WITNESSES:

Thos. G. Weston
J. M. Henley

INVENTOR:

J. Johnston
BY *Mum & Co*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN JOHNSTON, OF NEW YORK, N. Y.

ELEVATOR AND DUMB-WAITER.

SPECIFICATION forming part of Letters Patent No. 258,073, dated May 16, 1882.

Application filed March 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN JOHNSTON, of the city, county, and State of New York, have invented a new and useful Improvement in Elevators and Dumb-Waiters, of which the following is a full, clear, and exact description.

My improvements relate to elevators and dumb-waiters, and have the object to insure their perfect operation and place them under control at all times, whether lightly or heavily loaded.

The invention consists in a combination of friction-rollers over which the suspension-rope passes, which rollers are grooved for the rope and work in contact with each other, so that there is sufficient holding friction to support the car or waiter, all as hereinafter described and claimed.

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 both the figures.

Figure 1 is a top view of an elevator with my improvements, and Fig. 2 is a sectional side view of the same.

A represents frame-work at the top of the elevator shaft or well.

B, C, and D are rollers on shafts *a*, that have suitable bearings in the frame.

E is the car, suspended by a rope, *b*, that passes around the rollers and carries a balance-weight, *c*.

The rollers B, C, and D are grooved to receive the rope, so that they may be placed in contact with each other. The roller B (the larger of the three) is placed above and between the rollers C D.

d d are grooved guide-rollers at the sides of and above the rollers C D, and *e* is a guide-roller for holding the rope at the middle of the well or shaft. The rope passes over the guide-rollers *d d* at the sides beneath the rollers C D, and upward between those rollers over the roller B. The rope has thus extensive bearing-surface on the rollers, and the contact of the rollers with each other furnishes addi-

tional friction. The rollers are turned by their contact in the same direction as they are turned by the rope, and by making roller B of larger diameter a difference is obtained between the rotation by contact and the rotation by the amount of rope given, which increases the holding friction.

By this construction and arrangement the car or waiter will be securely sustained at any point in its movement, regardless of the weight upon it. Increased weight increases the friction and holding-power.

A gear-wheel, *h*, is shown on the axle of wheel B, and a cross-shaft, *i*, carrying a pinion meshing with wheel *h*, has also a grooved wheel for a hand-rope, by which the wheel B can be turned to raise and lower the car. This arrangement of operating-gear may be varied according to circumstances, and I do not limit myself in that respect.

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

1. In an elevator, the combination, with the frame-work of the well A and the suspension-rope *b*, of the rollers C D, of the same size and journaled in the same horizontal plane, and the large roller B, journaled above and between the rollers C D, the said rollers being grooved to the depth of the thickness of the rope to adapt them to revolve in contact with each other, substantially as herein shown and described, whereby the friction between the rollers is increased in proportion to the weight, and the car sustained at any point, as set forth.

2. In an elevator, the combination, with the frame A, the rope *b*, the weight *c*, and the car E, of the grooved rollers B C D, journaled in the said frame and revolving in contact with each other, the side guide-rollers, *d d*, and central guide-rollers, *e*, substantially as and for the purpose set forth.

JOHN JOHNSTON.

Witnesses:

GEO. D. WALKER,
C. SEDGWICK.