

No. 617,537.

Patented Jan. 10, 1899.

J. MEYER.

SAFETY DEVICE FOR ELEVATORS.

(Application filed Sept. 12, 1898.)

(No Model.)

Fig. 1.

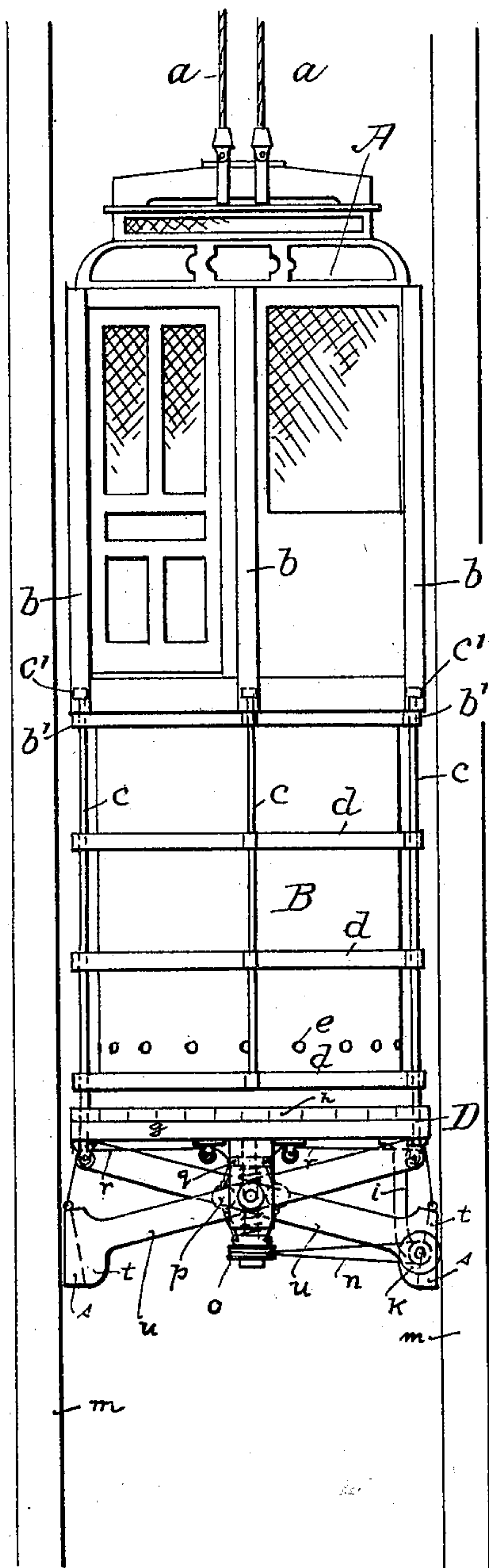


Fig. 2.

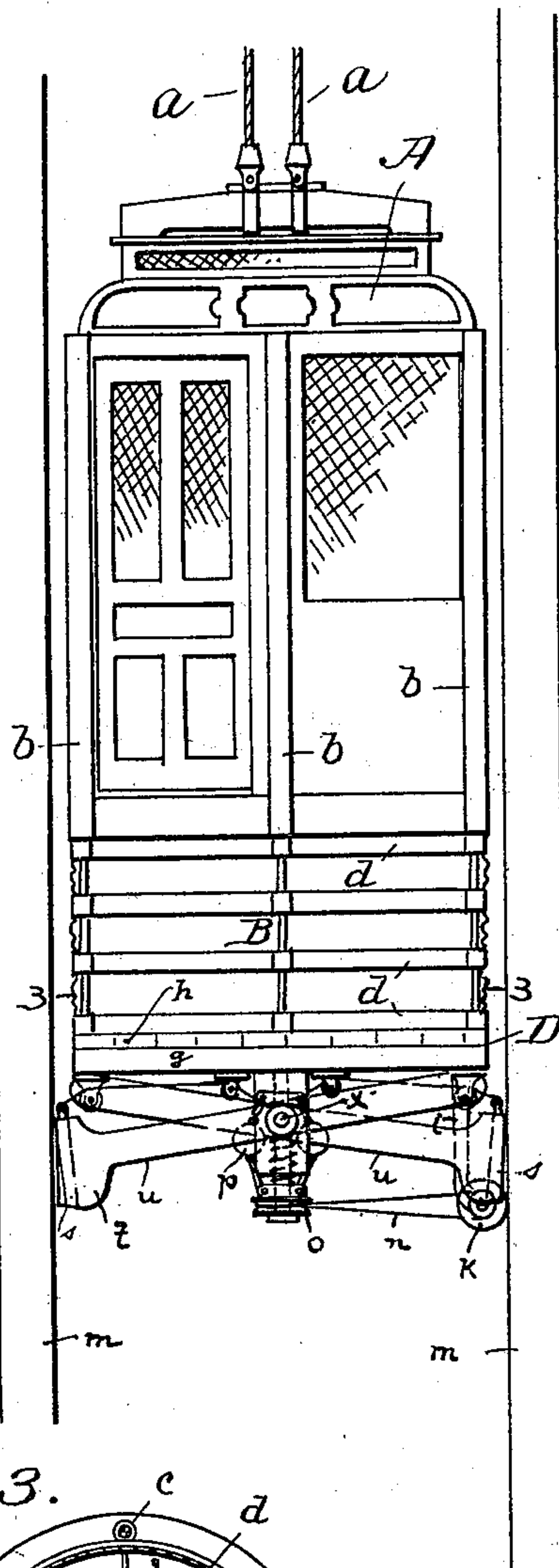
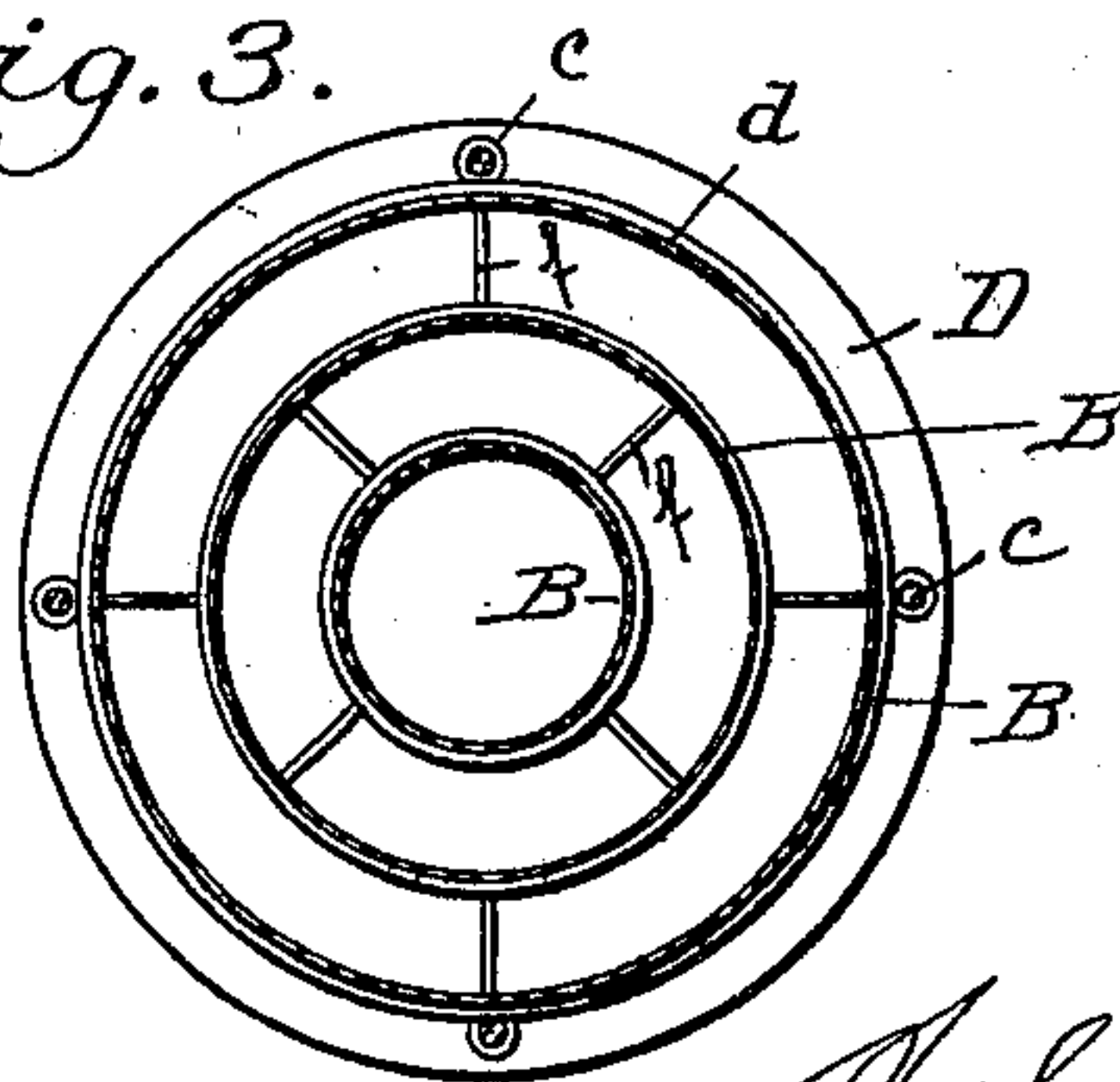


Fig. 3.



WITNESSES:

William E. Keff
W. H. Humphrey

INVENTOR

Julius Meyer.
BY
A. P. K. Smith.
his ATTORNEY

UNITED STATES PATENT OFFICE.

JULIUS MEYER, OF NEW YORK, N. Y.

SAFETY DEVICE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 617,537, dated January 10, 1899.

Application filed September 12, 1898. Serial No. 690,709. (No model.)

To all whom it may concern:

Be it known that I, JULIUS MEYER, a citizen of the United States of America, and a resident of New York, in the county and State of New York, have invented certain new and useful Improvements in Safety Devices for Elevators, of which the following is a specification.

This invention relates to certain improvements in elevators, lifts, or hoists and all other constructions in which a car for the carrying of passengers or freight, or both, is moved up and down in a vertical shaft and between vertical guides.

My improved safety device operates automatically when the speed of the ascending or descending car exceeds a safe limit for any one of various reasons. The said automatic stopping is a compound action, being partly sudden and partly gradual. The combination of parts forming the car is to that end so arranged that the sudden stop and consequent shock is imparted to a part which cannot transfer the shock to the car-body. This part—the clutch-platform—is arranged at a certain fixed distance below the car-body. After having been brought to a sudden stop somewhere in the said vertical shaft the clutch-platform receives the car-body, which continues in its fall after the clutch-platform has already been stopped, and the momentum of the car-body is broken by a cushion arranged between the clutch-platform and the car-body, so that the latter will settle down gradually upon the said platform without receiving, and therefore without imparting a hard shock to its contents. Thus the bottom of the said vertical shaft is, so to speak, moved up and down with the car-body, and the car-body therefore, whatever may be the entire vertical distance traversed by the car at a speed higher than the admitted standard, can never travel relative to the said bottom of the shaft through any greater height than the fixed distance between the car-body and the clutch-platform. This distance can be so fixed that the car-body resting on the clutch-platform may be lifted to the next higher landing wherever in the shaft the said clutch-platform may have been arrested.

In the accompanying drawings, Figure 1 is a front view of an elevator-car, showing my

invention applied to the same free to move up and down in the elevator-shaft. Fig. 2 is a similar view showing the platform clutched and the car settled down on the same. Fig. 3 is a horizontal section on line 3 3 through the cushioning device and suspension-rods and a plan view of the platform.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents an elevator-car with suspension-ropes *a*, which are attached to the car in any approved form. The car is provided in the center of each side with a vertical pipe *b*, which serves as a guide for the suspension-rods *c*, and with holes *b'* in the bottom of the car for said rods *c*, which have a head *c'* at their upper ends. They carry, by means of rings *d*, the concentric bags B, also the platform D. The bags B serve as an air-cushion between the car A and the platform D; but I do not wish to be understood as limiting myself to this particular form of cushioning device, as many other well-known devices may be substituted. The tops of bags B are fastened to the bottom of the car A, the outer bag being provided with holes *e*. The bags are made of a fabric which will permit of the escape of air through the same when the bags are compressed, holes *e* having been provided to prevent the bursting of the outer bag. The rings on the inner bags are held in place by tie-rods *f*. The platform D consists of a frame *g*, having a covering *h* of a shape adapting it to cooperate with the cushioning device B.

The platform D carries the clutching device. I do not wish to be understood as limiting myself to the particular one herein described.

On the bottom of the platform is fastened bracket *i*. It carries wheel K, which rolls on the guide-beam *m*. Its movement is transmitted by belt *n* to the pulley *o* of the speed-governor *p*, to the loose collar *q* of which are fastened cords *r*, which lead to wedges *s*, movable in grooves of the shoes *t* of the brake-levers *u*. If the speed of the platform exceeds the normal, the wedges *s* are moved upward in said grooves of the brake-shoes *t* and effect a contact between the brake-shoes *t* and the guide-beams *m*. The travel of the brake-shoes is thereby checked, and

the platform, continuing in its travel, acts upon the free ends of the brake-levers *u*, which turn on fulcrum *x*, and by its weight increases the pressure of the brake-shoes *t* on the guide-
 5 beams *m*. The travel of the platform being thus stopped while the car still continues its movement the air-cushion is brought into effect and lets the car down easy upon the platform *h g*.

10 I do not claim as my invention the cushioning and clutching devices described above.

What I do claim as my invention, and wish to secure by Letters Patent, is—

1. The combination with an elevator-car
 15 and a platform below said car, and automatic locking devices on said platform, of a series of air-bags interposed between said platform and said car, substantially as described.

2. The combination with an elevator-car
 20 and a platform below said car and automatic locking devices on said platform, of a series of air-bags interposed between said platform and said car, one of said bags being provided with restricted discharge-openings, substan-
 25 tially as described.

3. The combination with an elevator-car of a platform supported from and beneath said car and sliding in the elevator-shaft, a compressible connection between car and plat-

form, locking devices for the platform, an
 30 automatic speed-governor which operates the locking devices, and cushioning means interposed between the car and the platform, substantially as described.

4. In combination with the car or hoist, the
 35 flexible or pliable air-receptacle suspended from said car or hoist and carried thereby, the platform or traveling bottom connected to travel with the car or hoist and suspended below said receptacle, and means for arrest-
 40 ing said platform at several points to receive the car or hoist cushioned by said air-receptacle; substantially as set forth.

5. In combination with the car or hoist, the
 45 flexible or pliable air-receptacle below said car or hoist, the platform or traveling bottom carried by said car or hoist, and below said receptacle, means for arresting said platform to receive the car or hoist cushioned by said
 50 air-receptacle, and means suspending said platform, but permitting said car to approach said platform; substantially as set forth.

Signed by me, at New York, N. Y., this 10th day of September, 1898.

JULIUS MEYER.

Witnesses:

W. H. PUMPHREY,
 A. PARKER SMITH.