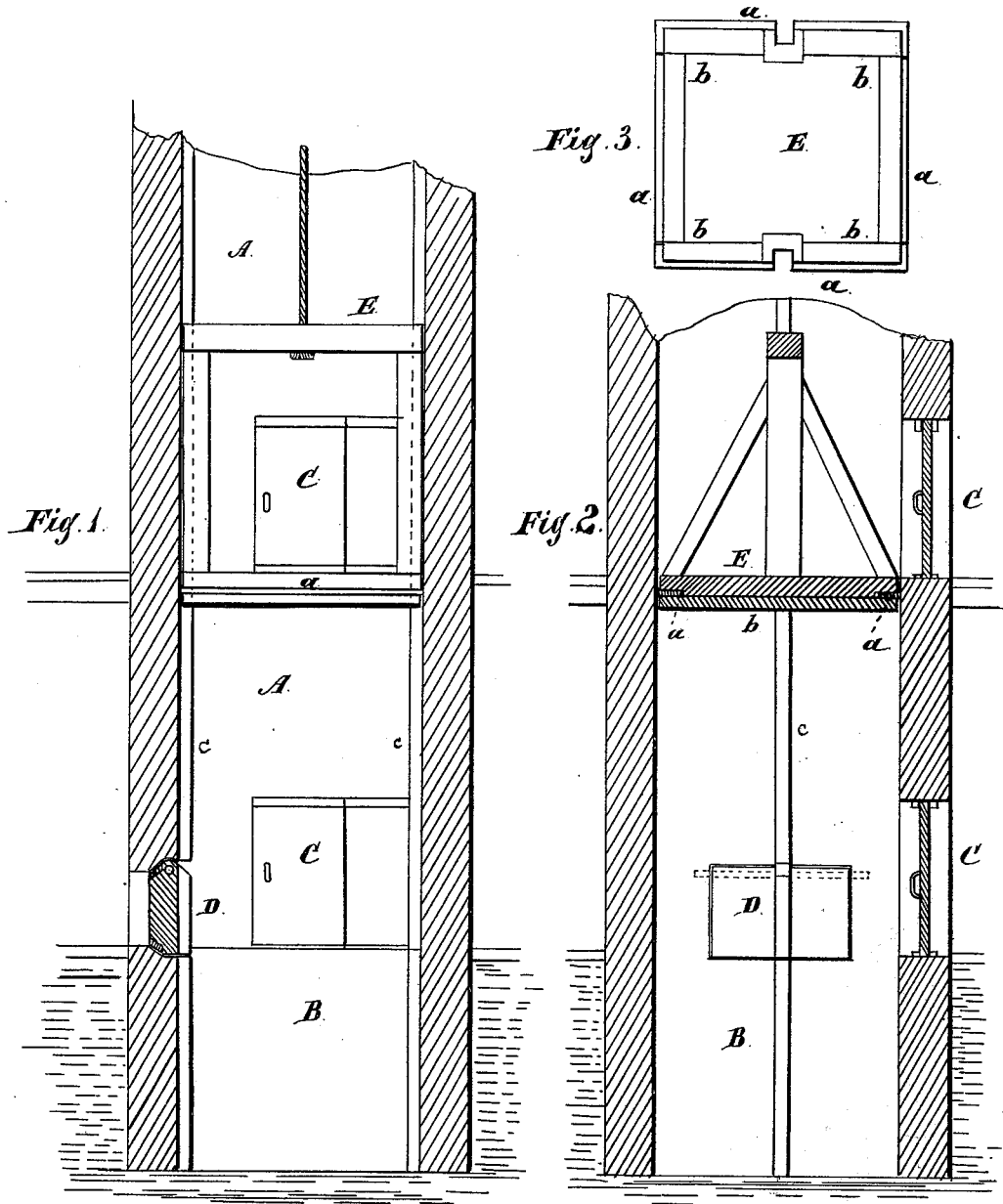


A. C. ELLITHORPE.  
Elevator.

No. 218,119.

Patented Aug. 5, 1879.



Witnesses:

A. S. Bruns.  
O. W. Bond.

Inventor:

Albert C. Ellithorpe

# UNITED STATES PATENT OFFICE.

ALBERT C. ELLITHORPE, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN ELEVATORS.

Specification forming part of Letters Patent No. **218,119**, dated August 5, 1879; application filed June 24, 1878.

### *To all whom it may concern:*

Be it known that I, ALBERT C. ELLITHORPE, of the city of Chicago, Cook county, State of Illinois, have invented new and useful Improvements in Elevators, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of an elevator-shaft extending partly above the second floor; Fig. 2, a similar section taken at a right angle with Fig. 1, and Fig. 3 a bottom view of the cage or platform.

Accidents occasionally happen in consequence of the breaking of the cable of elevators used for conveying passengers or merchandise.

The object of my invention is to prevent injury in case of such breakage, which I accomplish by providing the shaft of the elevator with an air-cushion to receive the falling cage or platform. This air-cushion is located at the bottom of the elevator-shaft, and, in addition to such cushion so located, I propose to make the whole elevator-shaft practically air-tight, as more fully hereinafter set forth, especially for passenger-elevators, so that the whole shaft will operate as an air-cushion.

In the drawings, A represents an elevator-shaft constructed in any suitable manner, having guide-bars c.

B is a chamber, which is air-tight, except that it is open at the top. It will usually be located in the ground, and may be of masonry.

It must be adapted to receive the cage or platform, between which and the walls of the chamber there should be only a small space, say about one-half of an inch on each side. The upper portion of this chamber B may be slightly tapering, and the edge of the platform or cage may be slightly beveled. The platform or the bottom of the cage should be very strong and air-tight.

When it is proposed to use the shaft or any part thereof as an air-cushion, it or that part which is to be so used must be strong and substantially air-tight; and the doors C, through which the cage is entered, should slide, and be as nearly flush as possible with the inside of the shaft, for the most perfect construction, and near the bottom of the shaft proper a valve,

D, should be placed in the wall of the shaft, acting automatically, and arranged so that it will close when the cage descends, and will open when it ascends to admit air beneath it.

For an elevator of the usual size the chamber B should be about eight feet deep, more or less, according to the length of the shaft.

In case the cage or platform falls when the shaft is constructed in the ordinary manner, the descent thereof will be arrested by the confined air in the chamber B, and after the cage enters such chamber it will descend slowly, and only as the air escapes around the edges of the cage or platform E.

It is advisable to use the air-chamber B, even though the shaft itself be made tight. Thus, if any of the doors be left open and the cage falls, the air in the air-chamber will prevent injury.

The edge of the platform or cage is to be provided with a projecting piece of rubber, a, or other suitable material, as shown, which is held in place by means of strips b, in such manner that it can be adjusted as may be necessary in consequence of any variations in the shaft, or to adapt platforms and cages, in case they may be too small, to the shaft with which they are to be used, and to compensate for wear.

This arrangement prevents the cage from striking with any serious concussion in case it drops from any cause, as the elasticity of the air and its slow escape cause the speed to decrease from the top to the bottom of the air-chamber or well.

What I claim as new is as follows:

1. In a safety-elevator, the combination of the shaft A with the cage E or platform, and the elastic bearing or packing a, whereby the too free escape of the confined air is prevented and close fitting avoided, substantially as specified.

2. The hinged door or valve D, in combination with the platform, and adapted to be forcibly closed and held by the uprights of an open platform, substantially as shown and described.

ALBERT C. ELLITHORPE.

Witnesses:

O. W. BOND,  
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