

E. KEECH.

Elevators for Buildings, &c.

No. 139,896.

Patented June 17, 1873.

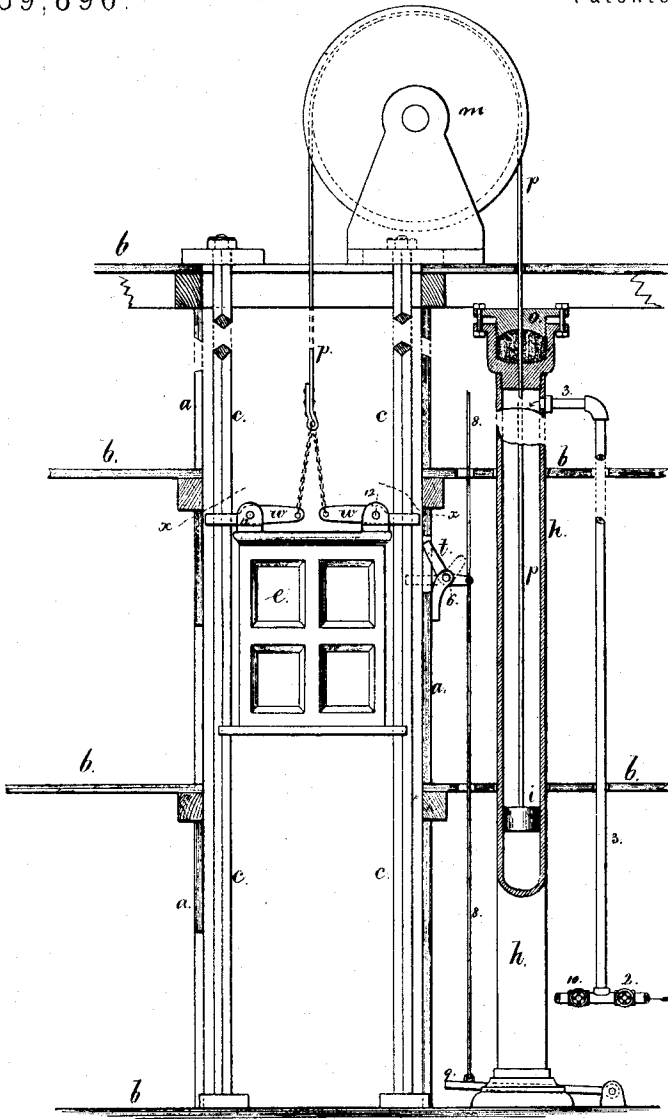
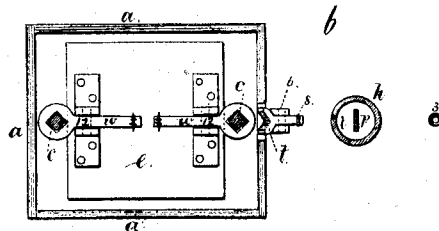


Fig. 1.

Fig. 2.



Witnesses,

Chas. H. Smith
Geo. D. Walker

Inventor

Ephraim Keech
Lemuel W. Terrell
att.

UNITED STATES PATENT OFFICE.

EPHRAIM KEECH, OF POUGHKEEPSIE, NEW YORK.

IMPROVEMENT IN ELEVATORS FOR BUILDINGS, &c.

Specification forming part of Letters Patent No. **139,896**, dated June 17, 1873; application filed March 6, 1873.

To all whom it may concern:

Be it known that I, EPHRAIM KEECH, of Poughkeepsie, in the State of New York, have invented an Improvement in Elevators for Buildings, &c.; and the following is hereby declared to be a correct description of the same.

My improvement is especially adapted for raising and lowering the car or platform used in buildings by which persons or goods are elevated or lowered from floor to floor, but it may be employed upon derricks, or for any use where weights are to be raised and lowered.

I make use of a pipe or tube in which is a piston, and this piston is connected to the car or platform by a flexible metal strap passing over a wheel or drum. Steam is admitted by a pipe and cock and acts upon the top of the piston to force the same down, and raise the car or platform, and said car may be held by the pressure of the steam upon the piston, or latches may be provided at the sides of the well-hole, to hold said car at the desired place. Rods, sectionally of diamond-shape, guide the car in its movement, and levers fulcrumed upon the car, and connected at one end to the flexible strap, are provided with eyes surrounding the guide-rods, so that they gripe said bar and prevent the car falling in case the flexible strap breaks.

In the annexed drawing, Figure 1 is a sectional view illustrating my invention as applied to an elevator for buildings; and Fig. 2 is a cross-section at the line *x x*.

a a represent the sides of the well-hole, and *b b* the floors of a building or other inclosure in which the elevator is placed. *c c* are the guide-rods for the car or platform *e*, and these are preferably of the diamond-shape shown in Fig. 2, and they extend from the bottom of the building to the top floor, and at these points they are securely bolted to suitable supports. *h* is a vertical tube or pipe for a piston, *i*, to move in, and this piston is connected to the car *e* by the flexible metal strap *p*, which passes over the drum *m*, at the top of the elevator. *o* is a gland or packing at the top of the tube *h* for the strap *p* to pass through.

Steam is admitted by the cock 2 and pipe

3, and it acts upon the top of the piston *i* to force the same down the tube *h*, and raise the car *e*; and said car may be held at the desired place in the well-hole by maintaining a uniform pressure of steam upon the piston after the car has been stopped in its movement or in any other manner. I prefer to use latches *f f* to hold the car at the respective floors or landings. These latches are each upon a fulcrum, 6, and connected to the vertical rod 8, so that the latches may be moved by the foot-lever 9, to swing them out of the way when the car is descending. When the car is held by one of these latches it is necessary to admit steam to the tube *h*, so as to slightly raise the car and allow of the latch being moved out of the way before the car can descend. To allow the car to descend, the cock 2 is closed and the cock 10 opened, and according to the rapidity with which the steam escapes so will the descent of the car be more or less rapid. To prevent the car falling in case the strap *p* should break, or from other causes, I provide the gripping levers *w w*. These are fulcrumed at 12 upon the car, and their outer ends surround the guide-bars *c*, and their inner or lever ends are connected to the strap *p*. In their normal position they slide freely upon the bars *c*, but if the strap *p* breaks, their inner ends will drop and their outer ends gripe the bars *c*, and produce sufficient friction to prevent the car descending.

If desired, water under pressure may be employed for moving the piston *i* in the pipe *h*, and a pump actuated by power may be employed to force the liquid in upon the piston *i* and raise the platform.

I claim as my invention—

A flat band or strap passing over a pulley, and connecting the elevator car or platform to a piston moving in a cylinder, in combination with a packing-gland through which such flat band passes so as to allow the liquid or fluid under pressure to act between the piston and gland, as set forth.

Signed by me this 1st day of March, A. D. 1873.

EPHRAIM KEECH.

Witnesses:

J. L. WILLIAMS,
LEANDER J. SMITH.