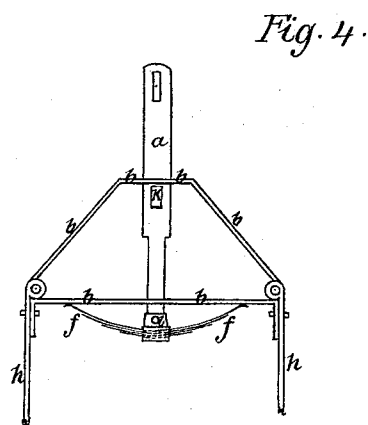
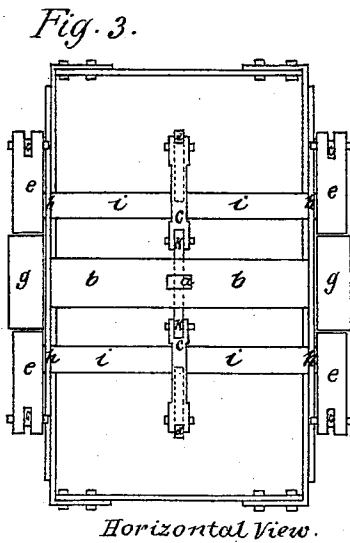
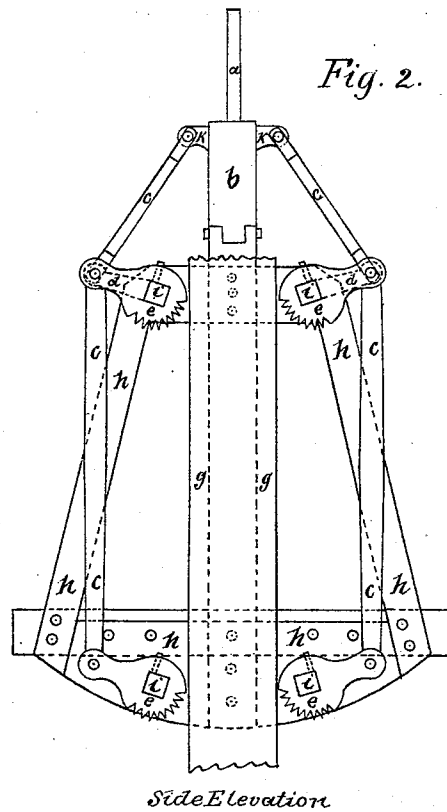
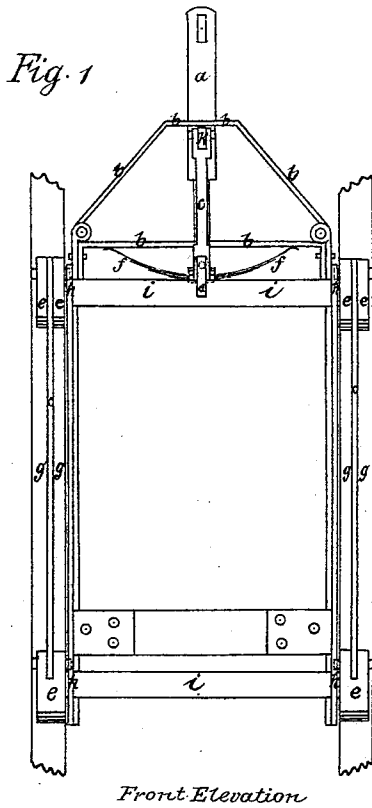


J. BERNHARD.
Elevators.

No. 148,802.

Patented March 24, 1874.



Witnesses;
Horace B. M. Cook
John F. Carroll.

Inventor;
John Bernhard
per Sol. Foster & Co. Attys

UNITED STATES PATENT OFFICE.

JOHN BERNHARD, OF SHENANDOAH, PENNSYLVANIA.

IMPROVEMENT IN ELEVATORS.

Specification forming part of Letters Patent No. **148,802**, dated March 21, 1874; application filed February 20, 1874.

To all whom it may concern:

Be it known that I, JOHN BERNHARD, of Shenandoah, in the county of Schuylkill and State of Pennsylvania, have invented a new and valuable Improvement in Elevator Safety-Cages; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 is a front elevation, showing the working of the lifting-bar *a*, the spring *f*, the connecting-bar *c*, and the arms or cranks *d d*. Fig. 2 is a side elevation, showing the working of the bar *a*, the connecting-bars *c c*, the toothed eccentric wheels *e e*, together with the frames *b h*, and the columns or guides *g*. Fig. 3 is a horizontal view, showing the lifting-bar *a*, the connecting bars *c c*, the arms or cranks *d d*, the pivots or joints at *k* and *d*, the shafts or spindles *i i*, the columns or guides *g g*, the toothed eccentric wheels *e e*, and the frame *h* in part or sectional view. Fig. 4 is a view showing a portion of the working parts in a part of the frame *b* and *h*, and a view of the lifting-bar *a*.

a is a lifting-bar, of iron or other metal, to which is to be attached the rope or chain which is to hoist or lower the cage. *b* is a portion of the frame-work of the cage, and, in connection with *h*, forms the frame or body of the cage. *c c* are connecting-bars, which connect the lifting-bar *a* with the arms or cranks *d d*, and which also connect the toothed eccentric wheels *e e* with each other. *d d* are arms or cranks fastened to the shafts or spindles *i i*. *e e* are toothed eccentric wheels fastened to the shafts or spindles *i i*, and operated by the connecting-bars *c c*. *f* is a spring fastened by the sleeve *l*, and working against the frame *b*. *g g* are columns or guides, of wood or other suitable material, against which the toothed eccentric wheels work. *h h* is a part of the frame, and, with *b b*, forms the frame or body of the cage. *i i* are shafts or spindles, working in

bearings in the frame *h h*, and to which the toothed eccentric wheels *e e* and connecting-bars *c c* are fastened. *k* is a shoulder and pivot or joint connecting the lifting-bar *a* to the connecting-bars *c c*. *l* is a movable sleeve, securing the spring *f* to the lifting-bar *a* by means of a key or pin, and also forming a shoulder.

When a hoisting power is applied by means of a rope or chain, or any other means, to the lifting-bar *a*, the lifting-bar *a* rises as far as the shoulders, (shown at the points *k* and *l*,) when the lifting strain comes on the frame or cage proper *b* and *h*.

Should the rope or chain break by any accident or in any way whatever, the spring *f* will draw down the lifting-bar *a*, and, through the means of the connecting-bars *c c*, as shown in Fig. 2, will force the toothed eccentric wheels *e e* in and against the columns or guides *g g*, as shown in the same figure, thereby holding and fastening the cage in a firm and stationary position, and preventing it from falling or sliding down. As soon as the rope or chain draws the lifting-bar *a* up, the toothed eccentric wheels become released through the working of the connecting-bars *c c*, which are connected by pivoted or jointed connections with the lifting-bar *a*.

So long as this rope or chain remains unbroken, the cage will work up and down with perfect ease and freedom; but if it breaks, then the cage will stop instantaneously, as before described.

Having thus described my invention, I desire to claim—

The lifting-bar *a*, with the connecting-bars *c c*, the arms or cranks *d d*, the toothed eccentric wheels *e e*, the spring *f*, the columns or guides *g g*, the shafts or spindles *i i*, the shoulder *k*, the movable sleeve and shoulder *l*, and the frame *b* and *h*, all combined substantially as and for the purpose hereinbefore set forth.

JOHN BERNHARD.

Witnesses:

J. J. MURPHY,
HORACE B. MCCOOL.