(No Model.)

W. STEVENS.

ELEVATOR.

No. 261,881. Patented Aug. 1, 1882.

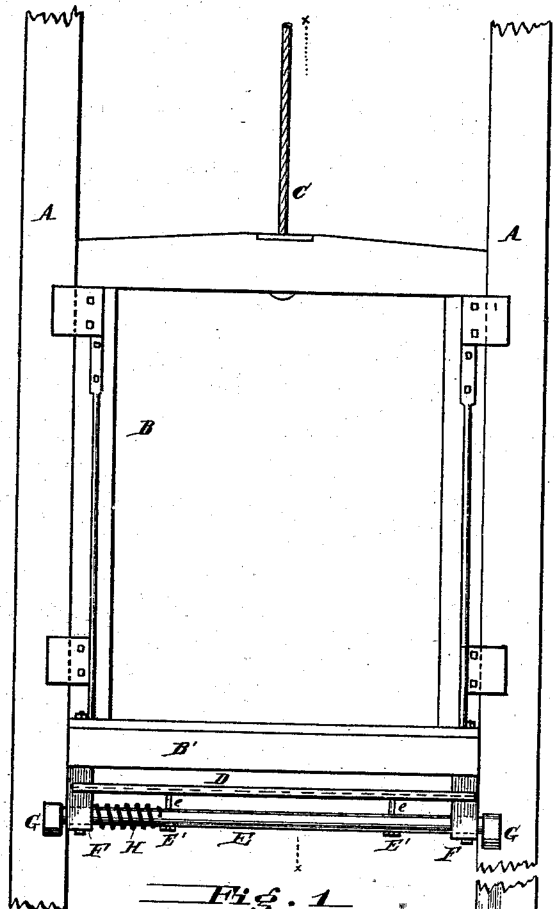

Fig. 1

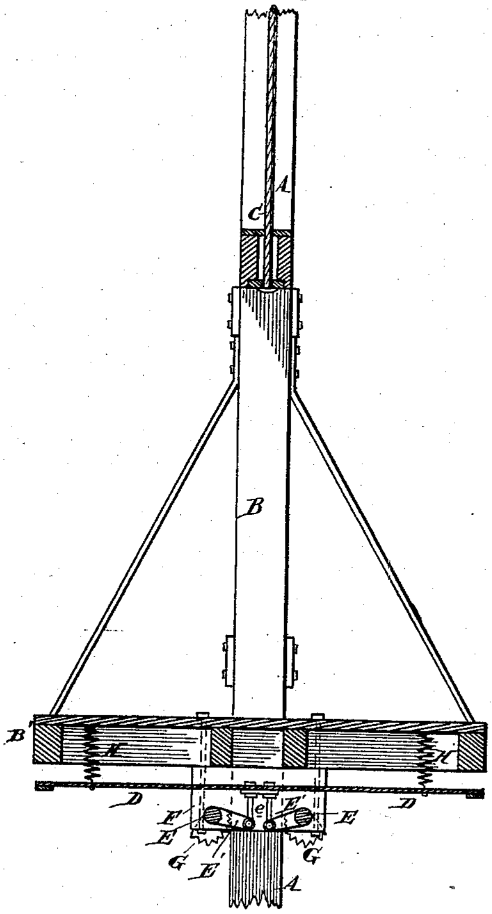

Fig. 2

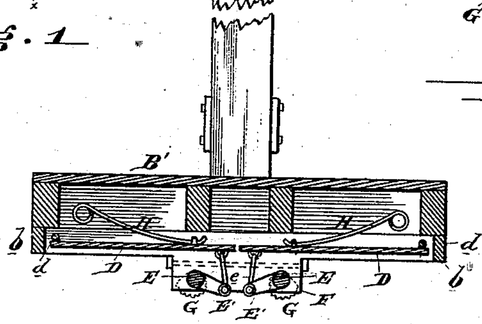

Fig. 3

Attest:
L. J. Matos.
[illegible]

Inventor
William Stevens
By his atty.
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N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM STEVENS, OF PHILADELPHIA, PENNSYLVANIA.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 261,881, dated August 1, 1882.

Application filed May 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM STEVENS, of the city and county of Philadelphia and State of Pennsylvania, have invented an Improvement in Elevators, of which the following is a specification.

My invention has reference to elevators, but more particularly to automatic safety attachments therefor to prevent the fall of the platform or cage upon the breaking of the cable; and it consists in clamps or brakes carried by the platform and combined with a vane or fan, also carried by said platform, and adapted to actuate the clamps or brakes and arrest the descent of the platform should the cable break, said vane or fan being operated by the increasing resistance offered by the air to the descending vane, and in details of construction, all of which are fully set forth in the following specification, and shown in the accompanying drawings, which form part thereof.

A patent was granted to Henricksen, June 6, 1880, in which a vane was actuated by the air to free a latch or latches and allow two weighted levers to oscillate by means of gravity, and thrust outward the arresting mechanism, which is located in the same position as the pawls in the elevators now in use, in which racks are set in the guide-posts.

My invention is an improvement upon the above, in that I make the vane positive and directly actuate the clamping devices and cause them to grip or clamp each of the guide-posts, so that there is no tendency to cause the said post to bend and allow the arresting mechanism to slip.

The object of my invention is to provide elevator-platforms with suitable and positive means to arrest their fall should their cables break.

In the drawings, Figure 1 is a front elevation of the platform and a portion of the guides of an elevator embodying my improvement. Fig. 2 is a sectional elevation of the same on line *x x* of Fig. 1; and Fig. 3 is a similar sectional view, showing a modification of same.

A are the two vertical guide-posts. B B′ is the cage or platform, and is raised or lowered by a cable, C. The bottom of the platform is provided with bearings F, in which the clamp rods or shafts E work. These shafts E are provided on their body with cranks E′ and on their ends with eccentric clamps G, which may have their bearing-surfaces serrated or toothed, as shown, to insure a more ready clamping action upon the upright guides A. These clamps G are arranged upon each side of posts or guides A, and their eccentricity is in opposite directions, so that after they have caught the guides the greater the downward pressure the more securely do they bind upon said guides, and from their location their effect is to crush the guides, and not thrust them apart, as is the case with most other safety attachments for elevators. The cranks E′ are connected by links *e* with a floating or balanced vane, D, supported below the platform-floor B′ by springs H, or otherwise. The springs H, being adjusted so that the said vane D is substantially balanced, the clamps G do not touch the guides A.

The cage or platform may be raised or lowered at a normal speed without operating the clamps; but should the cable break or the cage or platform suddenly fall from any cause the resistance offered to the air by the floating vane D causes the latter to be suddenly forced upward, throwing the clamps G immediately into action. In practice this is found to act instantly, owing to the balanced nature of the vane, and does not allow the falling platform to gain any material amount of momentum.

In place of making the vane D in one piece, as shown in Fig. 2, it may be made in two or more sections, and, if desired, they may be hinged, as at *d* in Fig. 3, and as a protection the edges of the platform may be extended down, as at *b*. Any form of spring may be be used to support the vane, those shown in Fig. 2 and Fig. 3 acting directly upon the vane; but that shown in Fig. 1 acts upon the shafts E, and through it their cranks and links support the said vane or vanes.

It is not necessary that there should be two sets of clamps G, as a simple sliding block may be used on one side of the guide; and, if desired, the vane or air-resistance surface may be attached to any other convenient part of the elevator platform; but I prefer it as shown.

By simple mechanical modifications my in-

vention is equally adapted to that class of platforms which are guided against the wall, and in which the guide-posts A are not used.

I may dispense with the use of springs H; but I prefer to use them, as they make the vane more sensitive to variations in the speed of the platform. In place of springs, I may use counterpoise or balance weights to counterbalance said vane or vanes.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a safety attachment for elevators, one or more vanes attached to and moving with the platform, in combination with clamping devices, also carried by said platform, and connecting mechanism, whereby said vane or vanes positively actuate said clamping devices to cause them to clamp the stationary framing and arrest the descent of the platform.

2. In an elevator, the combination of guide-posts A or their equivalent, platform or cage B B′, vane or vanes D, and oppositely-acting clamping mechanism adapted to be actuated by said vane to clamp each of said posts upon their two opposite faces and arrest the fall of the cage or platform.

3. In an elevator, the combination of a platform and vertical guides therefor with a vane or vanes, D, shafts E, having cranks E′ and clamps G, and links *e*, substantially as set forth.

4. In an elevator, the combination of a platform and vertical guides therefor with a vane or vanes D, springs H, or their equivalent, and clamping mechanism actuated by said vane or vanes to clamp the guides and arrest the fall of the platform.

5. In an elevator, the combination of vertical guide-posts A, platform B B′, vane or vanes D, shafts E, provided with cranks E′ and clamping-surfaces G, links *e*, and springs H, or their equivalent, substantially as and for the purpose specified.

6. In an elevator, the combination of posts or guides A, platform B B′, vanes D, hinged at *d* to said platform, links *e*, and shafts E, having cranks E′ and clamps G, as shown and described.

In testimony of which invention I hereunto set my hand.

WILLIAM STEVENS.

Witnesses:
R. M. HUNTER,
R. S. CHILD, Jr.