(No Model.)

P. E. CRYDER.

SAFETY GATE FOR ELEVATORS.

No. 493,229. Patented Mar. 7, 1893.

Fig. 1.

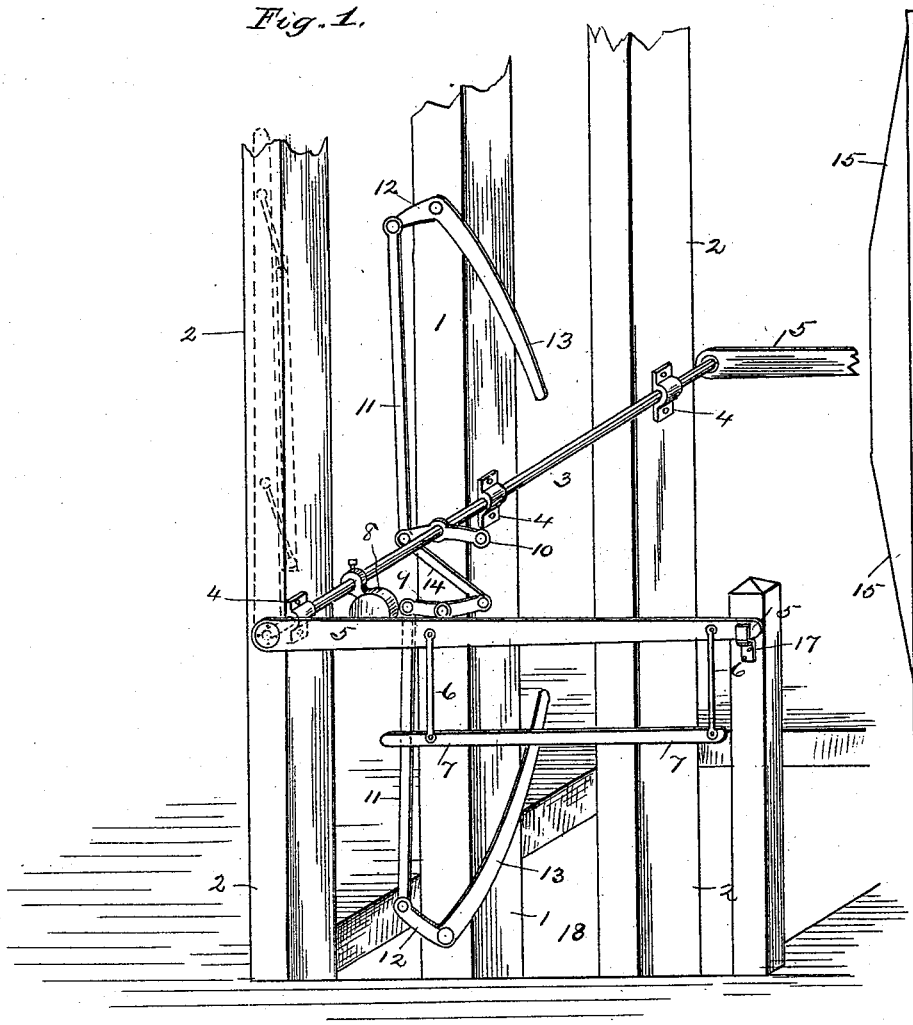


Fig. 2.

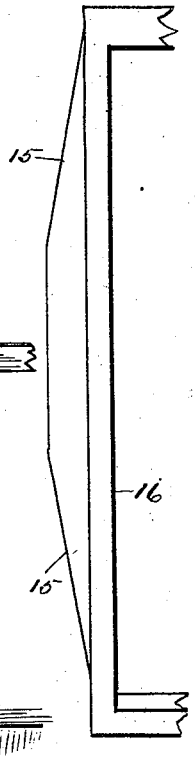
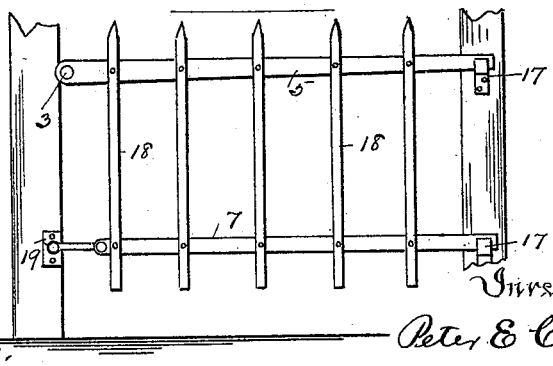


Fig. 3.



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UNITED STATES PATENT OFFICE.

PETER E. CRYDER, OF PITTSBURG, PENNSYLVANIA.

SAFETY-GATE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 493,229, dated March 7, 1893.

Application filed April 12, 1892. Serial No. 428,895. (No model.)

To all whom it may concern:

Be it known that I, PETER E. CRYDER, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Safety-Gates for Elevators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improved safety gate for elevators, and consists in certain details of construction, and combination of parts as will be fully described hereinafter.

In the accompanying drawings, Figure, 1, is a perspective view of a portion of an elevator shaft, having my improved safety gate arranged in position, together with the apparatus for operating the said gate by the vertical movement of the elevator platform. Fig. 2 is a side elevation of a portion of the elevator platform, showing the inclined piece for operating or engaging with the levers of the device for elevating and lowering the gate. Fig. 3 is a side elevation of a modified form of my improved gate, in which pickets are used to form the gate, and so arranged to fold together where the same is in an elevated position.

To construct a safety gate for elevators in accordance with my invention I attach to the guide posts 1—2, in suitable bearings 4 a shaft 3, provided with a counter weight 8, and with rigid outwardly projecting arms 5. These arms 5, are of sufficient length to span the entrance to the elevator platform 16, and their free ends are adapted to rest in clips 17, attached to vertical posts 20, erected for that purpose opposite to the guide posts 2. These arms 5, are operated automatically by the moving platform 16, of the elevator by means of a system of levers pivoted in position at one side of the central guide post 1. The first of these levers 10 is attached rigidly to the shaft 3, and projects at each side of the same. The rear end of this lever 10, is connected to the forward end of a similar lever 9 arranged below, by means of a connecting link or bar 14. Pivotally connected to the rear end of each of these levers 9—10 are two bars 11, each of which is attached to bent levers 12, pivoted to the central post 1. These levers 12, are arranged with their free ends 13, toward each other, in a manner that either will engage with an inclined surface attached to the frame of the elevator platform 16. This piece for operating the levers 13, and 10—9, is attached in a vertical position on one side of the frame of the elevator platform 16, and consists of a strip raised at the middle to form two inclined portions 15, which when either is brought in contact with the levers will move the same inward to slightly rotate the shaft 3, and thereby elevate or lower the arms 5.

In operation the elevator platform 16 moving upward the upper inclined surface 15, will be brought in contact with the lower lever 13, and press the same inward which rotates the shaft 3, and thereby causing the arm 5 to move upward in the arc of a circle â limited distance. The platform still moving up will bring the same inclined surface 15 in contact with the short lever 9, and by its movement about its pivotal point bring the arm 5 to a vertical position, as shown at Fig. 1 on the drawings. Should the elevator platform stop at this floor, the arm will be up to leave a free and unobstructed passage to the same. By a further upward movement of the platform the arms 5, will be brought back to their former position by gravity. This backward movement of the arms 5, will be slow and uniform, as the levers are still engaged with the inclined surface, during the entire movement. When the elevator platform is moving down, the lower inclined surface 15 will engage with the upper lever 13, and operate the shaft 3 to move the arms 5, in the same manner as before described.

This arrangement of safety gates is particularly adapted for use in ware houses, &c., where open framework is used, and may be used with a single arm 5, as above described or a bar 7, may be hinged by means of links 6, to the arms 5 to further close the opening, which bar will fold close to the arm 5, when the same is in a vertical position, as will be seen by reference to Fig. 1 on the drawings.

If desired a folding picket gate may be used, (see Fig. 3) which consists of the same revolving arm 5, as above described, having

pivotally connected thereto a series of vertical pickets 18. These pickets are attached at their lower ends to a bar 7, arranged parallel to the arm 5, above, and the said bar 7, connected to the post 2 by a link 21 pivoted to a bearing 19. This last described gate will fold together when in a vertical position, and also leave an unobstructed passage to the elevator platform 16.

The arm 5, may be used to elevate and lower a sliding gate arranged across the opening of the elevator, by means of a cord (not shown) attached to the free end of the arm 5, and passed over suitably arranged pulleys and connected to the middle of the gate, or slats arranged in the manner of a Venetian blind may be placed across the opening, and the arm 5, used to elevate or lower the same.

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

In a safety gate for elevators, the combination consisting of the shaft 3 arranged in bearings attached to the guide posts, an arm or gate attached to the said shaft, the lever 10 attached to the shaft 3, the lever 9, pivoted to the central guide post, and connected to the lever 10 by means of a bar 14, the bent levers 12—13 pivoted to the said post above and below the shaft 3, and connected to the short levers 9—10, by means of bars 11, and a counter weight 8 attached to the shaft 3, all arranged and combined for service substantially as and for the purpose described.

In testimony that I claim the foregoing I hereunto affix my signature this 9th day of April, A. D. 1892.

PETER E. CRYDER. [L. S.]

In presence of—
ALBERT J. WALKER,
M. E. HARRISON.