

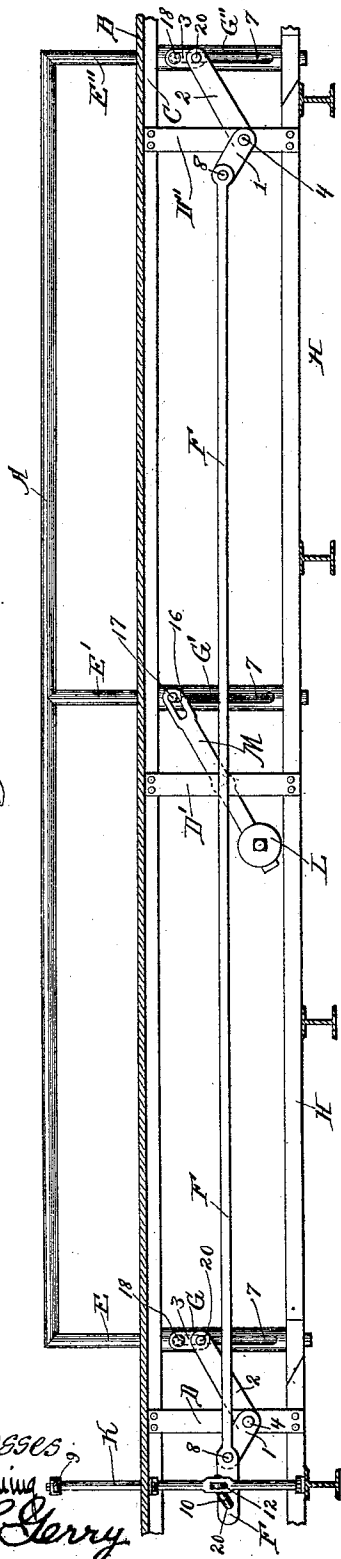
(No Model.)

J. H. SULLIVAN.
GUARD FOR ELEVATED RAILROADS.

No. 495,850.

Patented Apr. 18, 1893.

Fig 1



Witnesses:
Wm. J. Skimming
J. L. Gerry

Fig 3.

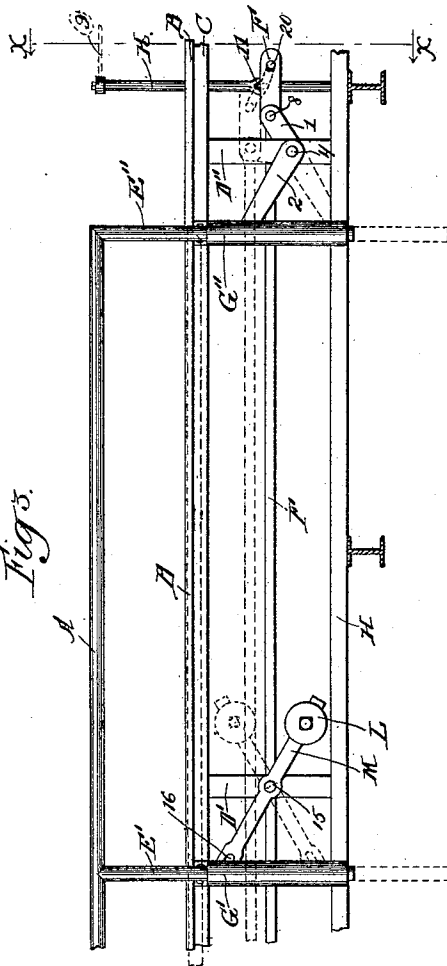
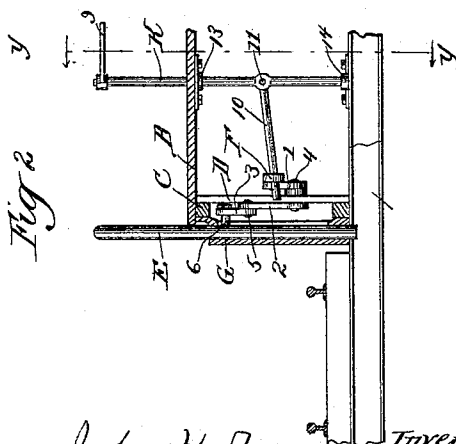


Fig 2



John H. Sullivan Inventor
by Benton P. Hall Att'y

UNITED STATES PATENT OFFICE.

JOHN H. SULLIVAN, OF CHICAGO, ILLINOIS.

GUARD FOR ELEVATED RAILROADS.

SPECIFICATION forming part of Letters Patent No. 495,850, dated April 18, 1893.

Application filed August 9, 1892. Serial No. 442,595. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. SULLIVAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Guards for Elevated Railroads, of which the following is a specification.

My invention relates to improvements in guards for elevated railroad platforms, approaches to swinging bridges and other similar structures where safety to passengers and the public requires that the access to the cars or the way shall be opened and closed at stated intervals.

The object of my invention is to provide a guard or railing that can be opened or closed, or lowered or elevated in such way and at such times as to diminish and practically prevent accidents and injuries to persons attempting to leave or enter the cars of elevated railways and to guard the approaches to bridges. I accomplish these objects by means of the mechanism shown and illustrated in the accompanying drawings, in which like reference letters and numbers refer to similar parts throughout the views.

Figure 1 is a vertical longitudinal view of my invention taken upon the lines $y-y$ Fig.

2. Fig. 2, is a cross sectional view of my invention taken on the line $x-x$ Fig. 3 with part of the guide post G cut away to show the position of the post E in said guide. Fig. 3 is a side elevation of my invention taken from the railroad track side thereof.

Letter A represents the top rail of the guard which is provided with a series of posts E, E', E'', rigidly attached to said rail. No particular form of rail or guard is required only that there shall be a fence or guard capable of excluding persons from passing and which shall be provided with posts capable of being movably held and retained by guides to control them in vertical movement.

Letter B represents the platform upon which passengers pass to and from the cars.

C is one of the sills or beams supporting the platform which is provided on the opposite side with a corresponding sill or beam.

H represents the lower sill or beam upon one side of the general frame work, which is provided upon the opposite side with a corresponding sill or beam the upper sills C and

lower sills H being held together and supported by the vertical posts or supports D, D', and D'' and the corresponding posts or supports on the opposite sides of the frame work. The parts just enumerated constitute the general frame work of the superstructure.

The posts E, E', E'', are supported and held in guides G, G', G''. It is evident that the posts and guides may vary in number, form of construction, and mode of arrangement, depending upon the length and character of the guard. The guides G, G', G'' are rigidly attached to the frame of the structure. The manner of their attachment is immaterial, all that is required being that they shall be permanently stationed so as to support the guard or rail firmly. In the construction shown in the drawings I have illustrated them as cylindrical with vertical longitudinal slots to allow the upward and downward movement of pins 18 which are rigidly attached to the posts E, E'' and by means of which the guard is raised and lowered by the mechanism hereinafter to be described.

To the pins 18, which are respectively attached to the posts E, E'' and are capable of moving up and down in the slots 7, are pivotally attached straps or bars 3, the opposite ends of which are respectively and pivotally connected with arms or levers 2 which are rigidly connected by bolts or journals 4 held in bearings in the upright pieces D, D'' to the arms 1, which are also pivotally connected at 8 with the horizontal bar or rod F. Supported in bearings 13 and 14 in the frame work and platform is a vertical shaft K provided with a lever-arm 9 and capable of rotation on its axis. At 11 this shaft K is provided with a slot and cross opening for the introduction of a pin or bolt. Into the slot an arm or lever 10 is introduced and held in place by a pin at 11 as shown, in such manner that the turning or revolving of the shaft K throws the arm 10 back and forth horizontally around 11 as a center, but allows the outer end of the arm 10 an up and down throw corresponding to the desired movement of the bar or rod F. The arm 10 is loosely inserted in an opening 20 in one end of the bar or rod F.

It is evident that there may be many modifications of the construction of the arms 1, 2 and 3 and their connections with the rod or

bar F and the post E. Thus instead of having the two arms 1 and 2 constructed in separate parts and held together rigidly on opposite sides of the bearing in D by the bolt 4, they may be made in one solid piece and held upon one side of the support D by a pivot and bearing.

It is important that the guard or railing shall have a counterbalance to enable it to be easily moved and avoid friction and wear. The means of accomplishing this are many and well known. It can be readily done by weights connected to pulleys by ropes or chains passing over them, the other ends of such ropes or chains being connected with the guard or the several posts thereof, so that the weights will tend to elevate the guard and vice versa. I have illustrated a simple construction which consists of an arm or lever M pivotally connected to the frame work or superstructure at 15, weighted by a weight L at one end and provided with a longitudinal slot 16 at the other which engages with a pin 17 rigidly attached to the central post E' and capable of moving up and down in the slot 7 of the guide G'. This weight should nearly correspond with the weight of the guard or rail to be lowered and elevated.

It is evident that instead of having a single weight at the central post a similar arrangement of weights can be applied to each post respectively in which case the several weights would be correspondingly reduced.

In the application of my invention to platforms for elevated railways, the guard or rail is only intended to be employed at those points at which the public has access to the cars and permanent rigid rails or guards may be employed elsewhere. In such case my improved guard or rail would operate as a gate between the ends or terminals of the permanent rails. It is also evident that in such case the normal position of the guard is up to prevent access to the track, and it is lowered when the train is in position to receive passengers and raised the moment the train is ready to move.

In case of the approaches to swinging bridges and similar conditions, the guard is down so long as the bridge is in proper position for travel, but is raised at the moment it is ready to swing open.

The mode of operation of my invention is as follows:—By revolving the shaft K, the arm or lever 10 throws the rod or bar F back and forth horizontally. In Fig. 1 the bar F has been thrown to the left and by means of

the arms 1 and 2 and the strap 3, has lifted the guard into its position as shown. By reversing this movement and throwing the bar F to the right the arms 1, force the arms 2, to fall and the posts E, E', E'' to descend in their guides as shown by the dotted lines in Fig. 3. The bar or rod F is necessarily lowered and elevated in the operation and this also is shown by dotted lines in Fig. 3.

It is evident that there may be many modifications and variations in the construction and arrangement of the various parts of my invention and in the details thereof, and I do not limit myself to the exact construction, arrangement and details shown.

Having thus described my invention and its mode of operation, what I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination of a rail or guard provided with two or more posts capable of being held movably in guides; two or more guides permanently attached to the main supporting frame; the horizontal rod or bar F having its pivotal connections as shown; the two armed levers 1 and 2 supported in bearings in the frame work, the arm 1, being pivotally connected with the rod F, and the arm 2 being connected pivotally with the posts of the rail or guard by the straps 3; and means for operating said horizontal rod or bar back and forth whereby said guard or rail may be raised or lowered; all substantially as shown.

2. The combination of a rail or guard provided with two or more posts capable of being held movably in guides; a counterbalance consisting of a lever pivoted in the center to the main supporting frame, provided with a weight the other end being pivotally connected to said rail or guard; two or more guides permanently attached to the main supporting frame; the horizontal rod or bar F having its pivotal connections as shown; the two armed levers 1 and 2 supported in bearings in the frame work, the arm 1, being pivotally connected with the rod F, and the arm 2 being connected pivotally with the posts of the rail or guard by the straps 3; and means for operating said horizontal rod or bar back and forth; whereby said guard or rail may be lowered or raised; all substantially as shown.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

JOHN H. SULLIVAN.

Witnesses:

BENTON J. HALL,
J. LAWRENCE GERRY.