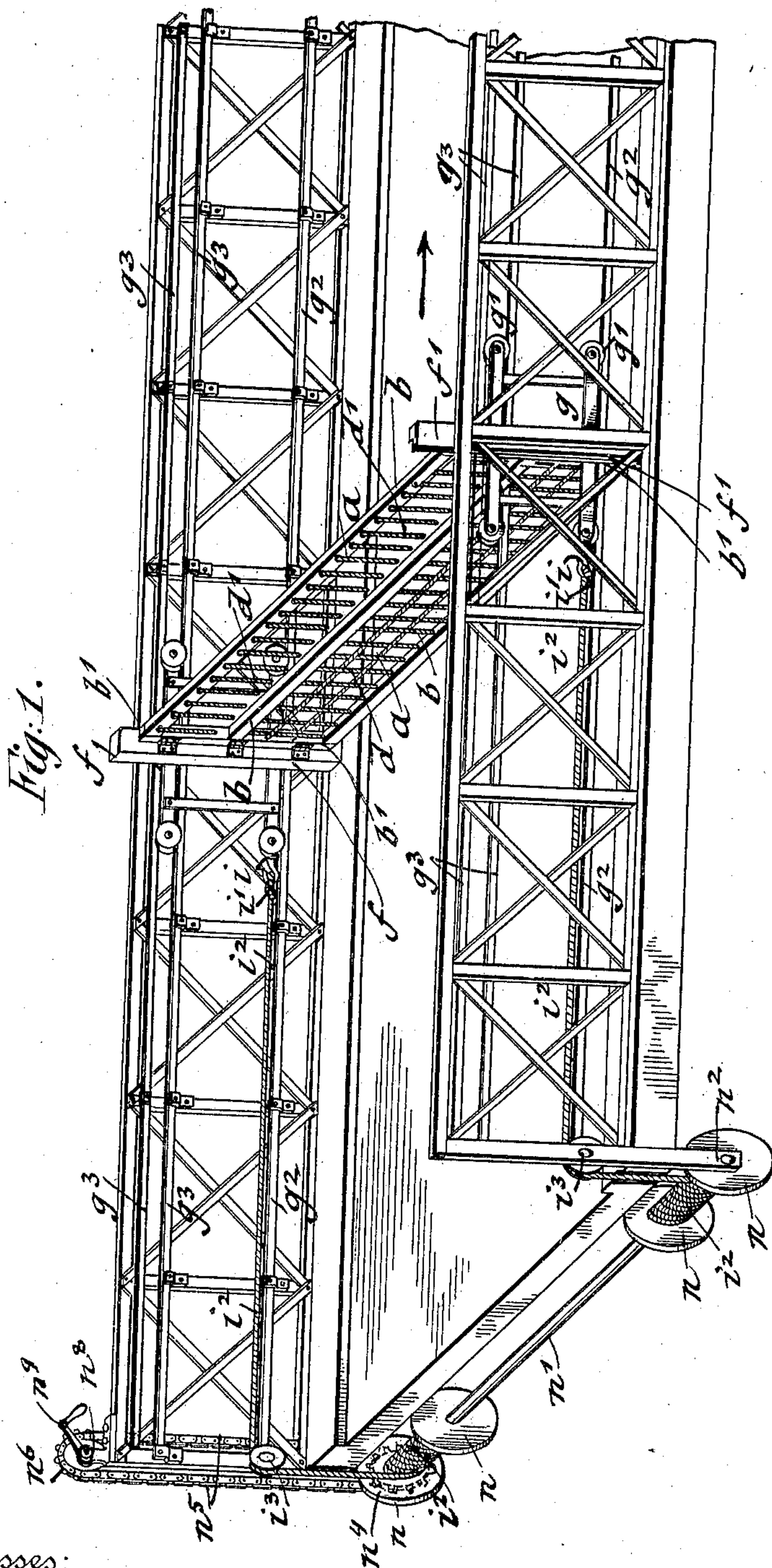


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SAFETY DEVICE FOR PREVENTING RUNAWAY ACCIDENTS ON BRIDGES.
APPLICATION FILED NOV. 8, 1909.

963,433.

Patented July 5, 1910.

2 SHEETS—SHEET 1.



Witnesses:
John Murtagh
J. A. Cook

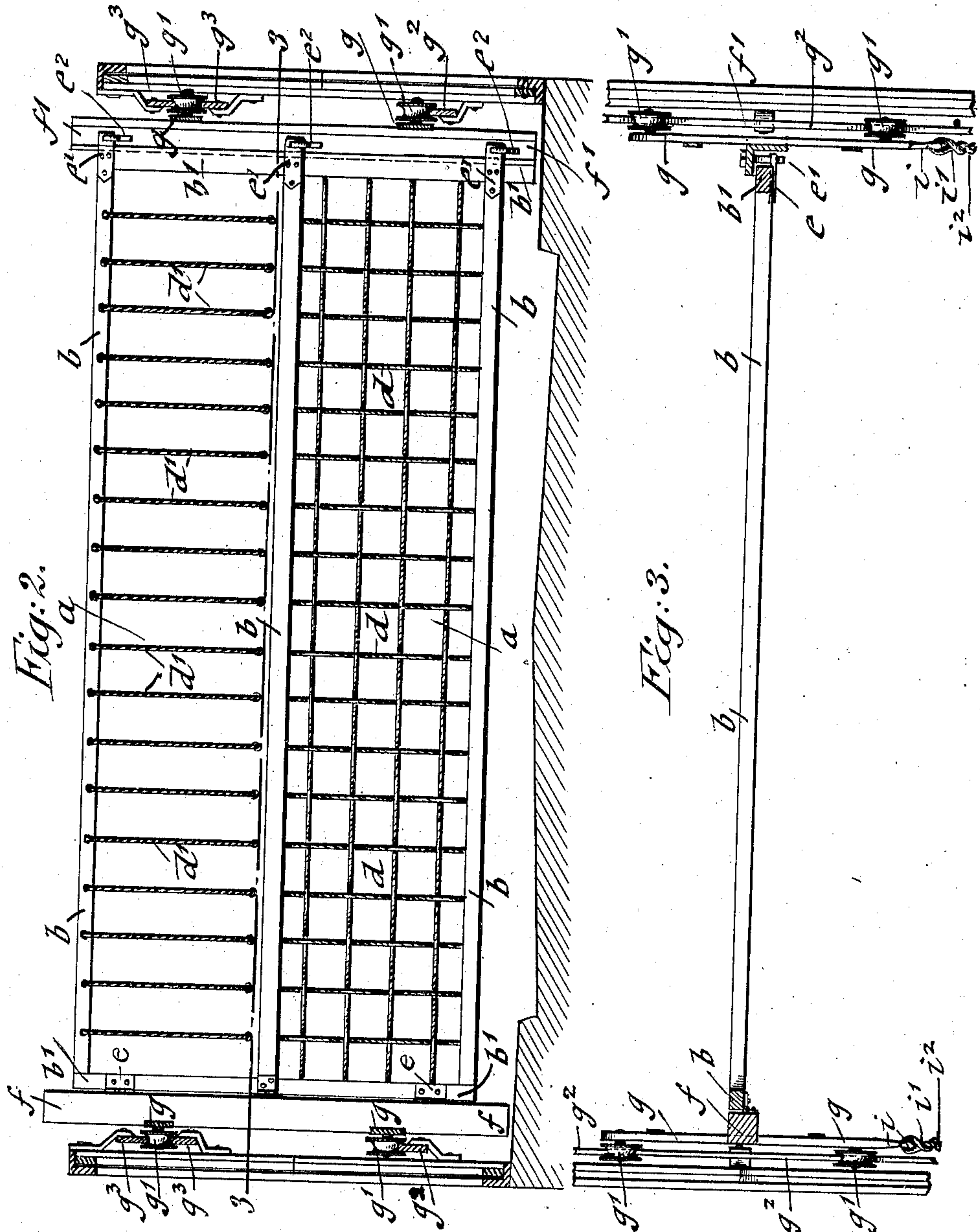
Inventor
Max Goodman
By his Attorneys
James L. Taylor

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UNITED STATES PATENT OFFICE.

MAX GOODMAN, OF NEW YORK, N. Y.

SAFETY DEVICE FOR PREVENTING RUNAWAY ACCIDENTS ON BRIDGES.

963,433.

Specification of Letters Patent.

Patented July 5, 1910.

Application filed November 8, 1909. Serial No. 526,733.

To all whom it may concern:

Be it known that I, MAX GOODMAN, a citizen of the United States of America, residing in New York, in the borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Safety Devices for Preventing Runaway Accidents on Bridges, of which the following is a specification.

This invention relates to an improved safety device for preventing runaway accidents on bridges.

On bridges, and more especially on suspension-bridges, such as those crossing the East River between New York and Brooklyn, many accidents happen by horses getting frightened for some cause or other and running away so as to cause accidents to the horses and to the occupants of the vehicles. Frequently the horses and drivers are maimed or killed by collision with the gates heretofore in use at the ends of the bridges.

The object of this invention is to furnish a device by which the accidents and injury caused by runaway horses on bridges may be to a great extent prevented; and the invention consists of a safety gate the posts of which are supported on carriages guided on ways of the bridge structure, at both sides of the roadway, the gate being hinged to one of the posts and locked to the other post in case of accident, so that the gate intercepts the runaway horse or team and is moved a certain distance by the same until the runaway is arrested.

The invention consists further of the combination, with the gate, gate-posts and carriages for the latter, of ropes, drums and winding-up mechanisms for returning the safety gate to its starting position on the bridge roadway, as will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a perspective view of my improved safety gate for preventing runaway accidents on bridges, showing the safety gate in closed position ready for intercepting the runaway horse or team. Fig. 2 is a vertical transverse section showing the safety device or gate on a larger scale, also in locked position, and Fig. 3 is a horizontal section on line 3, 3, Fig. 2.

Similar letters of reference indicate corresponding parts throughout the views.

Referring to the drawings, *a* represents a

safety gate which is made of transverse bars or rails *b* which are connected at their ends by upright pieces *b*¹, the spaces between the lower and middle bars being filled up by a network of transverse and horizontal ropes *d*, and the space between the middle and upper bars by pendent ropes *d*¹ suspended from the upper bar or rail, so that the horse or horses may strike with their chests and front-haunches against the lower part of the gate and with their heads against the pendent ropes at the upper part of the gate without being injured. The upright piece *b*¹ at one end of the gate *a* is secured by hinges *e* to an upright gate-post *f*, while the upright piece *b*¹ at the opposite end of the gate is provided with projecting lugs *e*¹ which are engaged by stationary hooks *e*² on the opposite gate-post *f*¹, said hooks being preferably made slanting so as to permit engagement when the gate is moved by the attendant into closed position across the roadway of the bridge whenever a runaway approaches the gate. The gate-posts *f*, *f*¹ are each supported on a carriage *g* which is guided by means of rollers *g*¹ at its upper and lower ends on a lower guide-rail *g*² and between two upper guide-rails *g*³ which are attached to the bridge structure, at each side of the roadway, being of sufficient length to permit the striking of the horse or team against the safety gate and carrying it along for a certain distance until the horse or team is exhausted and arrested.

The lower ends of the carriages *g* are connected by means of hooks *i* with eyes *i*¹ on the ends of wire or other ropes *i*² which pass over pulleys *i*³ through openings in the roadway to drums *n*, the transverse shaft *n*¹ of which is supported in suitable bearings *n*² below the roadway, as shown in Fig. 1. To one end of the drum-shaft *n*¹ is applied a sprocket-wheel *n*⁴ which is connected by a sprocket-chain *n*⁵ with a sprocket-wheel *n*⁶ turning in bracket-bearings *n*⁸ on the side-railing of the bridge structure, the shaft of the upper sprocket-wheel being provided with a crank *n*⁹ for turning the sprocket-wheel *n*⁶ and winding up the ropes *i*² on the drums *n* when after an accident it is necessary to return the safety gate to its initial or starting position on the roadway of the bridge structure. Before returning the safety gate it is first opened by the attendant and then returned together with the gate-posts and their supporting carriages into

its former position alongside of the side-railing of the bridge structure, ready for the next closing movement whenever required.

Whenever an accident occurs on the bridge and a runaway horse or team is approaching toward either end of the same, the attendant, who is posted near the safety gate, immediately closes the same by moving it in position transversely across the roadway so as to lock it to the opposite gate-post. The impact of the horse or team with the safety gate moves the same forward and carries it for a certain distance along the ways of the guard-rails, while at the same time the ropes are unwound from the drums until the horse or team is gradually brought to a full stop. By the safety gate, which is comparatively inexpensive and reliable in its function, the danger of accidents and the injury to the horses and the occupants of the vehicles can be effectively prevented.

The safety gate can also be used at railway crossings, and wherever provision for preventing accidents to horse-drawn vehicles is to be made.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A safety gate for preventing runaway accidents on bridges, which comprises a gate corresponding to the width of the roadway of the bridge, gate-posts for the same, a hinge-connection between the safety gate and one of the gate-posts, means for locking the opposite end of the gate to the opposite gate-post, ways on the side-railings of the bridge structure, roller-carriages attached to the gate-posts and guided on said ways, and means connected with said roller-carriages for returning the safety gate to its

initial or starting position after it has been moved forward on the roadway of the bridge.

2. A safety gate for preventing runaway accidents on bridges, comprising two gate-posts, a gate hinged to one of the same, means on the opposite gate-post for locking the gate to the same, said gate being provided with intercrossing ropes at the lower part and pendent ropes at the upper part, stationary guideways on the side guard-rails of the bridge structure, roller-carriages attached to the gate-posts and guided on said ways, and means for returning the safety gate into its initial or starting position after the runaway has been stopped.

3. A safety gate for preventing runaway accidents on bridges, consisting of a gate corresponding to the width of the roadway of the bridge structure, a gate-post to which one end of the gate is hinged, a second gate-post provided with means for locking the gate thereto, roller-carriages to which the gate-posts are attached, ways on the side-railings of the bridge structure for supporting the roller-carriages, ropes attached to the lower part of the roller-carriages, drums supported below the roadway, and a sprocket-wheel and chain mechanism for winding the ropes on the drums and returning the gate to its initial position after a runaway has been stopped.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

MAX GOODMAN.

Witnesses:

PAUL GOEPEL,
J. A. COOK.