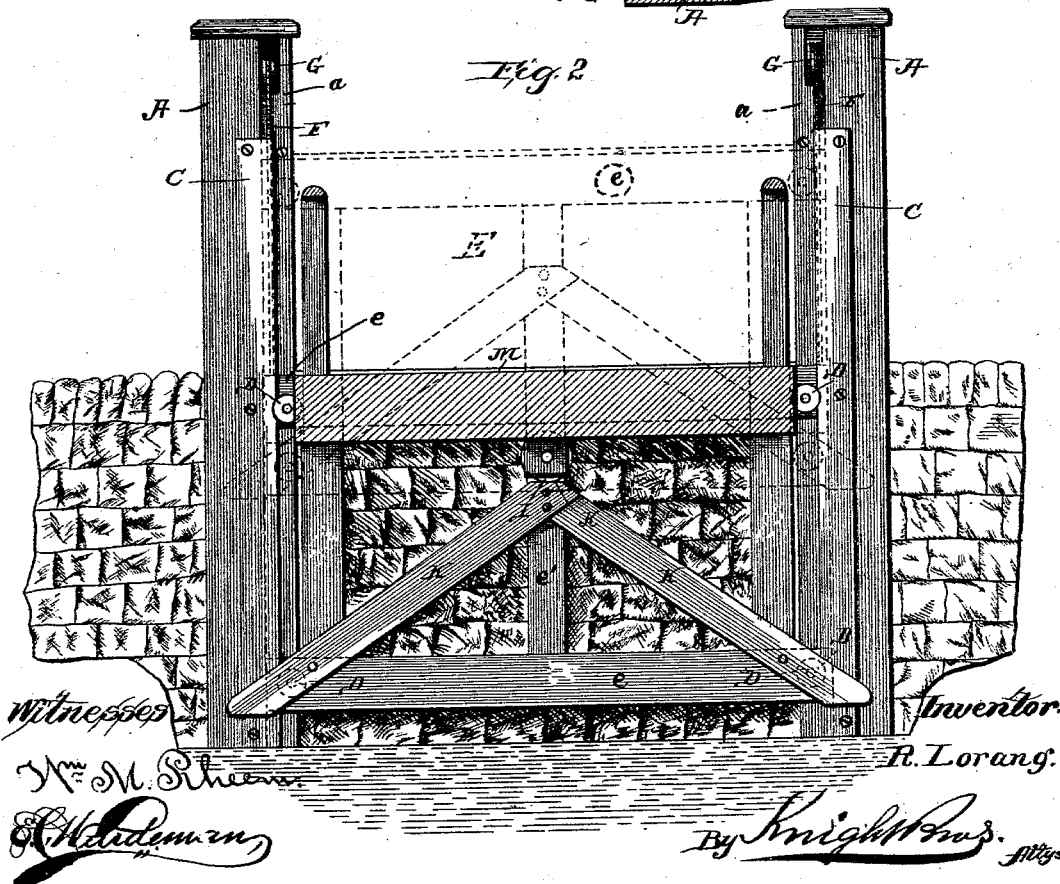
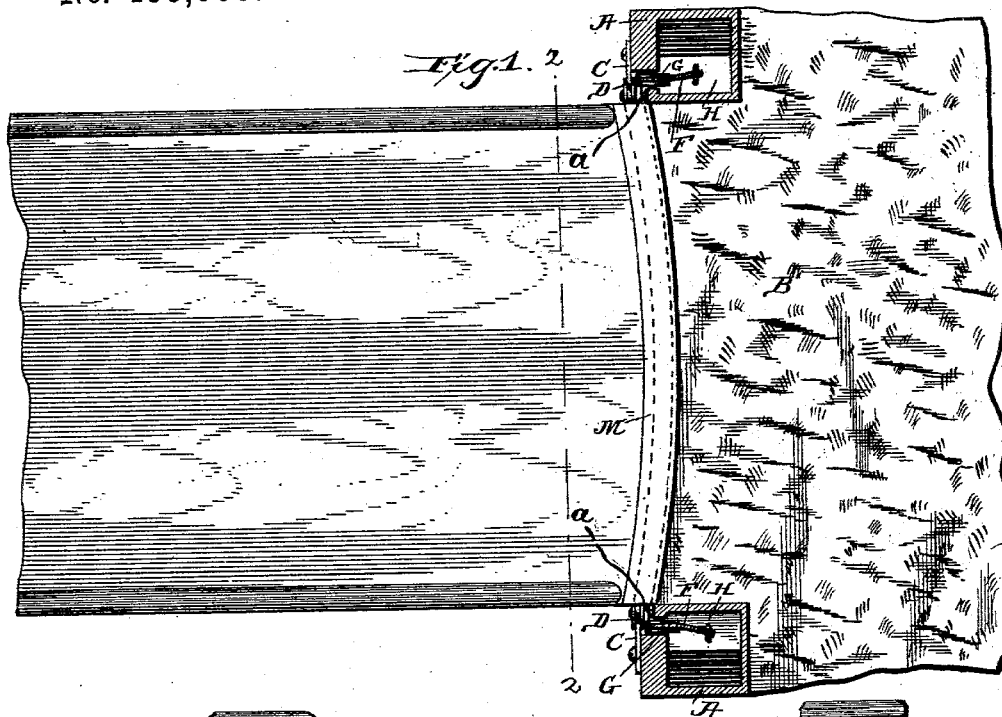


(No Model.)

R. LORANG.
BRIDGE GATE.

No. 455,669.

Patented July 7, 1891.



Witnesses

M. M. Rhein
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Inventor.
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UNITED STATES PATENT OFFICE.

RUDOLPH LORANG, OF CHICAGO, ILLINOIS.

BRIDGE-GATE.

SPECIFICATION forming part of Letters Patent No. 455,669, dated July 7, 1891.

Application filed September 13, 1890. Serial No. 384,809. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH LORANG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bridge-Gates, of which the following is a specification.

The invention consists in certain features of novelty that are particularly pointed out in the claims hereinafter, a gate embodying said invention being first fully described, with reference to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is an elevation of said gate in its depressed position, the bridge being shown in vertical transverse section. Fig. 2 is a plan view thereof, the parts being shown in horizontal section on the line 2 2, Fig. 1.

A represent two hollow posts secured to the abutment B on opposite sides of the roadway and extending some five or six feet both above and below the level of the road's surface. Upon each of these posts is a vertical guide-rail C, which rails are parallel with each other and constitute tracks on which travel four (more or less) anti-friction rollers D, secured to the ends of the gate E. The peripheries of the rollers are grooved for the reception of the guide-rails, the gate being thus held against horizontal movement.

The gate extends clear across the roadway, as is customary, and to its ends are attached chains or cables F F, which pass over pulleys G G, journaled to the posts, and are provided with weights H H sufficiently heavy to lift the gate to the position shown by dotted lines in Fig. 2, this being the position it occupies when the draw is open.

An anti-friction roller I is secured to each end of the bridge centrally beneath it, and to the gate is secured a cam K, consisting of two rails meeting at the middle of the gate and sloping downward toward its opposite ends. This cam lies in the path traveled by the roller I, and its base and summit are so situated with respect to each other and to the gate that as the bridge closes (the gate being in its highest position) the roller will come in contact with the cam near its base, and as the

bridge continues to move the roller will continue to bear upon the cam, thereby causing the gate to be depressed. The gate reaches its lowermost position a trifle before the bridge is quite closed, the cam being provided with a horizontal portion *k* at its summit, upon which the roller travels and bears after this has taken place.

The inner edges of the posts A are rabbeted or cut away, as shown at *a*, so as to form a space between the guide-rails C and the posts, the said guide-rails being so secured to the posts that their inner edges will project over said rabbeted portions. The gate is provided with upper and lower horizontal bars *e e*, which are connected together by the central vertical bar *e'*, and the latter is braced by and in turn supports the bars which constitute the cam K. The flat ends of the horizontal bars *e e* project over the said rabbeted portions *a* and fit between the guide-rails C and the posts, and thus guide the gate in its vertical movement and secure it against displacement under extraordinary circumstances, the rollers D being journaled at a distance from the ends of the bars *e*, so as to allow the latter to project inward under the guide-rails. These rollers, it will be understood, are provided mainly for the purpose of preventing side play.

The gate itself may be of any desired construction, and is surmounted by a curved plate M, which is of sufficient width to rest upon both the bridge and the abutment when the gate is in its lowermost position, thereby closing the crack between them and preventing the weight of vehicles, &c., from falling upon the gate itself.

I am aware that rollers have been provided for reducing the friction of a sliding gate, and do not claim such, broadly, as my invention.

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

1. The combination, with the bridge and the abutment, of the posts arranged at both sides of the abutment, the vertical guide-rails secured to said posts, the gate provided with the horizontal bars *e e*, having their ends fitted

between said guide-rails and posts, rollers secured to said bars at a distance from their ends and engaging said guide-rails, pulleys journaled in said posts, and weighted cables passing over said pulleys and being connected to said gate, substantially as set forth.

2. The combination, with the bridge and the abutment, of the posts arranged at both sides of the abutment and having the rabbeted portions *a*, the vertical guide-rails secured to said posts and projecting over said rabbeted portions, the gate provided with the horizontal bars *ee*, having their ends projecting over the said rabbeted portions and fitting between the said guide-rails and posts, rollers secured to said bars and engaging said guide-rails, pulleys journaled in said posts, and weighted cables passing over said pulleys and being connected to said gate, substantially as set forth.

3. The combination, with the bridge and the abutment, of the posts arranged at both sides of the abutment, vertical guide-rails secured to the posts, the gate provided with the upper and lower horizontal bars *ee*, having their ends fitted between said guide-rails and posts, and the vertical bar *e'*, connecting said bars *ee*, the cam *K*, secured to the lower bar *e* at its lower ends and to the vertical bar *e'* at its summit, whereby said cam *K* and bar *e'* are braced by each other, rollers secured to said horizontal bars near the ends thereof and engaging the guide-rails, pulleys journaled in the posts, and weighted cables secured to the gate and passing over said pulleys, substantially as set forth.

RUDOLPH LORANG.

Witnesses:

L. M. HOPKINS,
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