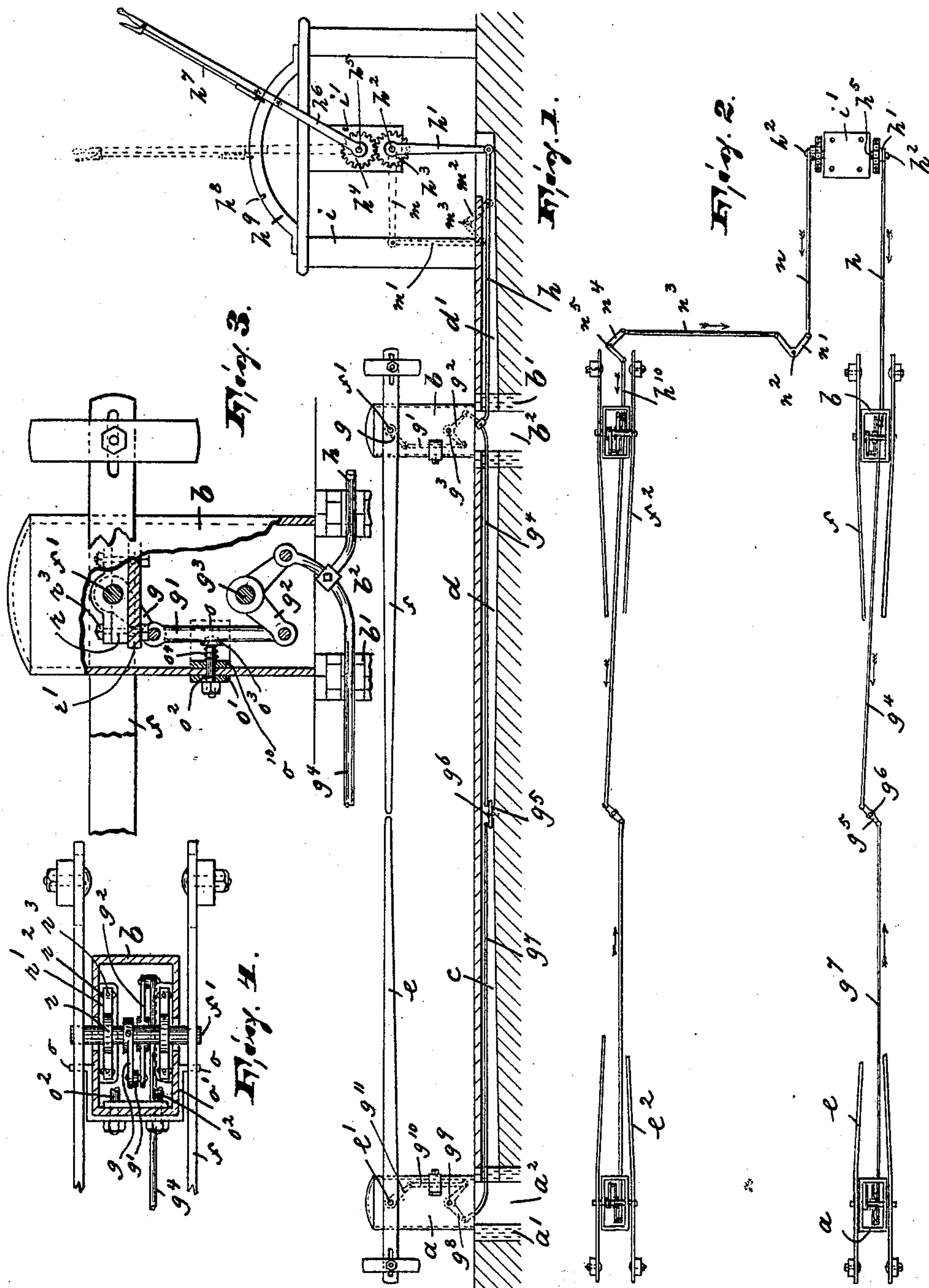


(No Model.)

A. E. GATHERCOLE & W. RILEY.  
RAILWAY GATE.

No. 583,041.

Patented May 25, 1897.



**WITNESSES:**

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# UNITED STATES PATENT OFFICE.

ALFRED E. GATHERCOLE AND WILLIAM RILEY, OF PATERSON, NEW JERSEY.

## RAILWAY-GATE.

SPECIFICATION forming part of Letters Patent No. 583,041, dated May 25, 1897.

Application filed February 11, 1897. Serial No. 622,904. (No model.)

*To all whom it may concern:*

Be it known that we, ALFRED E. GATHERCOLE and WILLIAM RILEY, citizens of the United States, residing in Paterson, county of Passaic, and State of New Jersey, have invented certain new and useful Improvements in Railway-Gates; and we 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in railway-crossing gates; and its object is to provide such gates on each side of the track of simple, strong, and durable construction, and which gates may be readily and quickly operated—that is to say, raised and lowered—simultaneously from one place and by one person.

The invention consists in the various novel details of construction and combination of the several parts, substantially as will be hereinafter more fully described, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a front elevation of a complete gate and its operating mechanism with the pavement and foundation shown in section; Fig. 2, a top plan view of Fig. 1 with certain portions removed and clearly illustrating the connection of the operating mechanism with the gates on each side of the crossing; Fig. 3, an enlarged detail view in elevation of one of the gates and its operating mechanism, certain parts being broken away and others shown in section to better illustrate the nature of our said invention; and Fig. 4, a top plan view of Fig. 3, the cover of the standard being removed.

In said drawings, *a* and *b* represent two standards provided with suitable bearings for the shafts *e'* *f'*, on which the gates *e* and *f*, respectively, are securely mounted. The

said bearings consist of plumber-blocks *r*, resting on the ledges or shelves *r'*, projecting inwardly from the sides of the standard and provided with elongated slots *r<sup>2</sup>*, penetrated by the bolts *r<sup>3</sup>*, by means of which latter the said plumber-blocks are adjustably arranged, and as the said plumber-blocks form the bearings for the shafts carrying the gates the said shafts and gates along with the plumber-blocks can be shifted so that the outer ends of said gates are brought in alinement with each other, should said gates become warped by change of temperature or other climatic exposures, as will be manifest.

The standards are arranged upon suitable foundations *a' b'*, surrounding catch-basins *a<sup>2</sup> b<sup>2</sup>*, communicating with each other through the channels *c* and *d*, connecting about midway between the standards, and having their bottoms inclined toward their respective catch-basins, as clearly shown. On the shaft *f'* is secured a crank-arm *g*, pivotally connected through the vertically-arranged link *g'* with one arm of angle-lever *g<sup>2</sup>*, pivoted, as at *g<sup>3</sup>*, to and within the standard *b*. The other arm of said angle-lever is pivotally connected with the upwardly-projecting portion of the rod *g<sup>4</sup>*, having its free end pivoted to one arm of lever *g<sup>5</sup>*, fulcrumed as at *g<sup>6</sup>*, the other arm of which lever is pivotally connected with rod *g<sup>7</sup>*, which in turn operates the shaft *e'* of the gate *e* through angle-lever *g<sup>8</sup>*, pivoted as at *g<sup>9</sup>*, link *g<sup>10</sup>*, and arm *g<sup>11</sup>*. The mechanism last mentioned in connection with gate *e* is identical with that of gate *f*, except that the various parts are inversely arranged.

To the upwardly-projecting portion of the rod *g<sup>4</sup>* is secured one end of connecting-rod *h*, the other end of which is pivotally connected to the free end of crank *h'*, mounted on shaft *h<sup>2</sup>*, which latter has its bearings in the bracket *i'* of the frame *i*. On said shaft is secured a gear-wheel *h<sup>3</sup>*, meshing into gear-wheel *h<sup>4</sup>* on the parallel shaft *h<sup>5</sup>*, which latter is operated through the crank-handle *h<sup>6</sup>*, carrying the latch *h<sup>7</sup>*, adapted to engage notches *h<sup>8</sup>* of the arc *h<sup>9</sup>* on the frame *i*, as clearly shown. The gates *e<sup>2</sup>* and *f<sup>2</sup>* on the other side of the crossing are operated from the shaft *h<sup>2</sup>*. The de-



pending crank-arm  $h'$  on the other end of said shaft is pivotally connected to one end of the horizontally-arranged rod  $n$ , (parallel to the connecting-rod  $h$ ,) the other end of which rod  
 5 is pivoted to one arm of the angle-lever  $n'$ , fulcrumed as at  $n^2$ . The other arm of said angle-lever is pivotally connected, through rod  $n^3$ , with the angle-lever  $n^4$ , fulcrumed as at  $n^5$ . Said angle-lever  $n^4$  operates the rod  
 10  $h^{10}$ , which latter in turn operates the gates  $f^2$  and  $e^2$  in precisely the same manner as above described in connection with the gates  $f$  and  $e$ . On one side of the standard  $b$  is arranged a plate  $o'$ , adapted, with its outwardly-pro-  
 15 jecting portions  $o$ , (see Figs. 3 and 4,) to limit the upward movement of the gate  $f$ . On the inside of said standard is arranged a plate  $o^{10}$ , furnishing an extra thickness for the bearings of the bolts  $o^2$ , which latter penetrate the said  
 20 plate and also the side of the standard  $b$  and bear with their nuts against the outside of the plate  $o'$ . Said bolts are surrounded by spiral spring  $o^4$ , bearing against the plate  $o^{10}$  and the heads  $o^3$  of the bolts, respectively.

25 It will be understood that similar spring-controlled "striking-plates" are arranged on each of the standards to limit the upward movement of their respective gates. When the gates are to be operated from a tower, the  
 30 frame  $i$ , carrying the operating mechanism, is placed in said tower. The crank-arms  $h'$  are done away with and are substituted by the crank-arms  $m$ , pivotally connected, through the vertical rod  $m'$ , (which may be of any de-  
 35 sired length,) with the angle-lever  $m^2$ , fulcrumed as at  $m^3$ , and pivotally connected with the rod  $h$ , as will be manifest.

In operation when the lever  $h^6$  is moved from right to left the gear-wheels  $h^4$  and  $h^3$   
 40 are operated, thus moving the crank-arm  $h'$  from right to left and through the connecting-rod  $h$ , operating the rod  $g^4$ , which in turn, through the connections heretofore described, moves the gates  $f$  and  $e$  upward. Simulta-  
 45 neously the gates  $f^2$  and  $e^2$  are moved upward through the connection illustrated in Fig. 2, as will be manifest.

We do not intend to limit ourselves to the precise construction shown and described, as  
 50 various alterations can be made without changing the scope of our invention; but

What we claim as new, and desire to secure by Letters Patent, is—

1. The combination with a standard, of a  
 55 shaft in said standard and traversing the same, a plate provided at each end with projecting portions loosely arranged on one side of said standard, and a series of spring-controlled bolts penetrating said plate and the  
 60 side of said standard, substantially as and for the purposes described.

2. The combination with a standard, of plumber-blocks adjustably arranged in said  
 65 standard, a shaft traversing said standard and having its bearings in said plumber-blocks,

a gate mounted on said shaft, a plate provided at each end with projecting portions loosely arranged on one side of said standard, a series of spring-controlled bolts penetrating  
 70 said plate and the side of the standard, and mechanism for operating the shaft, substantially as described.

3. The combination with a standard, of a ledge or shelf projecting inwardly from opposite sides thereof, a plumber-block adjust-  
 75 ably arranged on each of said shelves, a shaft having its bearings in said plumber-blocks, a gate mounted on said shaft, mechanism for operating said shaft, and a spring-controlled striking-plate on said standard and provided  
 80 with outwardly-projecting portions, substantially as described.

4. The combination with a standard, of a ledge or shelf projecting inwardly from opposite sides thereof, a plumber-block adjust-  
 85 ably arranged on each of said shelves, a shaft having its bearings in said plumber-blocks, a gate mounted on said shaft, mechanism for operating said shaft, a plate having out-wardly-projecting portions loosely arranged  
 90 on one side of the standard, and a series of spring-controlled bolts penetrating said plate and the side of the standard, substantially as and for the purposes described.

5. The combination with a standard, of a  
 95 shaft in said standard, a gate mounted on said shaft, a crank-arm also mounted on said shaft, an angle-lever fulcrumed in said standard, a link pivotally connecting the crank-arm with one arm of said angle-lever, a hori-  
 100 zontally-arranged rod pivotally connected with the other arm of said lever, two parallel shafts suitably supported away from said standard, gear-wheels on said shafts meshing with each other, a lever mounted on one of  
 105 said shafts, and a crank-arm secured to the other shaft and pivotally connected with its free end to the free end of the horizontally-arranged rod, substantially as described.

6. The combination with a standard, of  
 110 plumber-blocks adjustably arranged in said standard, a shaft traversing the standard and having its bearings in said plumber-blocks, a gate mounted on said shaft, a crank-arm also mounted on said shaft, an angle-lever  
 115 fulcrumed in said standard, a link pivotally connecting the crank-arm with one arm of said angle-lever, a horizontally-arranged rod pivotally connected with the other arm of said angle-lever, and mechanism for operat-  
 120 ing said rod, substantially as described.

7. The combination with a standard, of a shaft traversing the standard, a gate mounted on said shaft, a crank-arm also mounted on  
 125 said shaft, an angle-lever fulcrumed in said standard, a link pivotally connecting the crank-arm with one arm of said angle-lever, a horizontally-arranged rod pivotally connected with the other arm of said angle-lever, two parallel shafts suitably supported away  
 130

from said standard, gear-wheels on said shafts  
meshing with each other, a lever mounted on  
one of said shafts, and a crank-arm secured  
to the other shaft and pivotally connected  
5 with its free end to the free end of the hori-  
zontally-arranged rod, substantially as de-  
scribed.

we have hereunto set our hands this 9th day  
of February, 1897.

ALFRED E. GATHERCOLE.  
WILLIAM RILEY.

Witnesses:

ALFRED GARTNER,  
DUNCAN M. ROBERTSON.

In testimony that we claim the foregoing