(No Model.)

W. F. MILLER.

AUTOMATIC DRAW BRIDGE GATE.

No. 462,012. Patented Oct. 27, 1891.

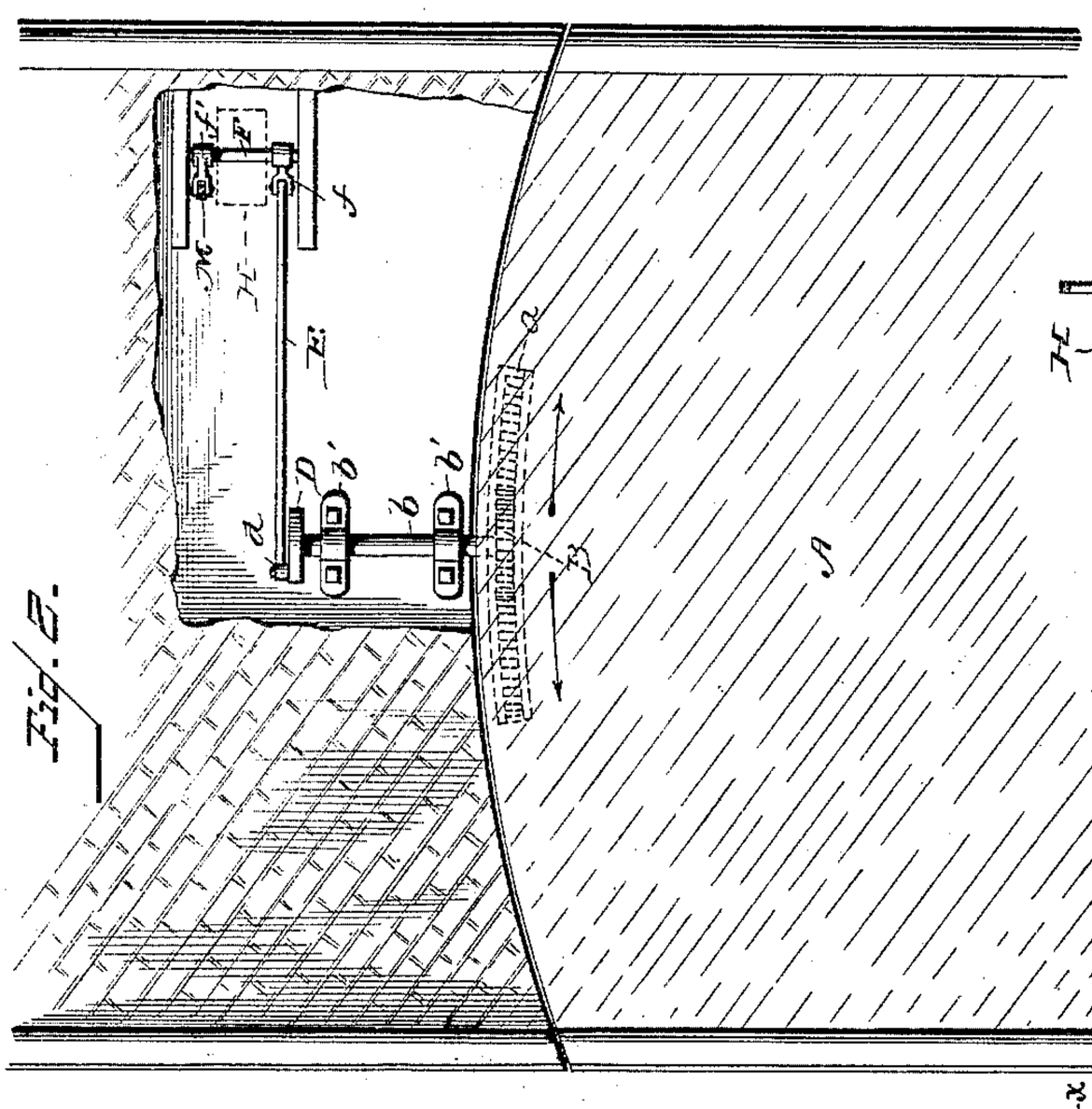

Fig. 2.

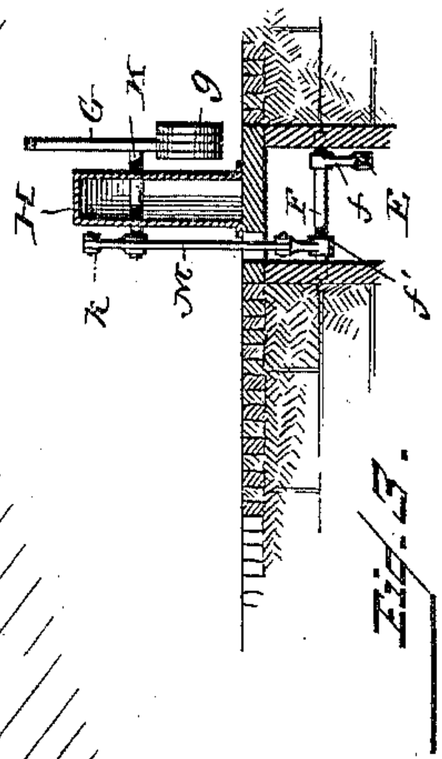

Fig. 5.

Fig. 7.

Witnesses
W. F. Bartlett.

Inventor
William F. Miller

By his Attorneys
Gilson & Benjamin

UNITED STATES PATENT OFFICE.

WILLIAM F. MILLER, OF EVANSTON, ILLINOIS.

AUTOMATIC DRAW-BRIDGE GATE.

SPECIFICATION forming part of Letters Patent No. 462,012, dated October 27, 1891.

Application filed July 17, 1889. Serial No. 317,776. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. MILLER, a citizen of the United States, residing at Evanston, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Automatic Draw-Bridge Gates; and I do 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 the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in automatic draw-bridge gates; and it consists in the application of the sweep-gate commonly used at railway-crossings as a bridge-gate with suitable mechanism for automatically controlling said gate by the movements of the bridge.

In the accompanying drawings, Figure 1 shows an elevation of the abutment and gate, with a transverse section near the end of the bridge. Fig. 2 shows a plan view on line *x x*, Fig. 1, of the operating mechanism for controlling the gate. Fig. 3 is a plan view of the gate and controlling mechanism on line *y y*, Fig. 1.

The drawings show the various parts in the position they occupy when the bridge is closed. Their positions when the bridge is opened will be readily understood. A segment-rack *a* is carried on the under side of the bridge A and engages the pinion B, which is fixed upon the end of the horizontal shaft *b*. This shaft is carried in suitable journals *b' b'* and extends within the abutment, and at its inner end carries the disk D, having the crank-pin *d*.

Attached to and operated by the crank-pin *d*, and extending to either side of the street, is the connecting-rod E, which is pivoted at its outer end to the bell-crank F. For the purpose of securing strength and durability, I prefer to make the bell-cranks F in the form shown, the arms *f f'* being upon opposite ends of a shaft which is carried in a journal-box.

The sweep-gate G is situated at the side of the street, and consists of a single arm pivoted upon the box H, and adapted to stand vertically when not in use and to be brought down across the roadway to stop travel. A counter-weight *g* is carried by this gate to balance its long arm.

The shaft K, upon which the gate G is pivoted, carries the crank-arm *k*, which is united with the arm *f'* of the bell-crank F by the connecting-rod M.

If desired, the parts *k* and M may be housed by simply widening the box H, and this done, the entire operating mechanism of my gate will be under cover, and thus protected from snow, ice, &c.

The efficacy of my device depends upon the relative proportions of the parts. The length of the rack *a* coincides with the circumference of the pinion B. The length of the arm *f* of the bell-crank F is twice the radius of the circle described by the crank-pin *d*. The arm *f'* of the bell-crank and the crank-arm *k* are of equal length. If different proportions are used, change of one part involves corresponding change of the others.

The device having been so adjusted that the gate is vertical when the bridge is closed, the crank-pin *d* being on a level with the center of its shaft, the gate is brought to a horizontal position when the bridge is opened in either direction, and is restored to the vertical position when the bridge returns to the abutment in either direction.

If the street be narrow a single gate will be sufficient; but usually it will be found necessary to place a gate at each side of the street, each gate reaching the middle of the street. In the drawings I have shown but a single gate. A gate on the opposite side of the street may be operated by the same machinery, simple mechanical changes in the construction of the bell-crank or crank-arm *k* being made to give the gate opposite motion to that of the gate shown.

Having described my invention, I claim—

The combination of the draw-bridge having a segment-rack with the sweep-gate composed of the arm G, having counter-weight *g*, the shaft K, crank-arm *k*, connecting-rod M, bell-crank F, rod E, and pinion B, as and for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM F. MILLER.

Witnesses:
GEO. KEARNEY,
JAMES KEARNEY.