

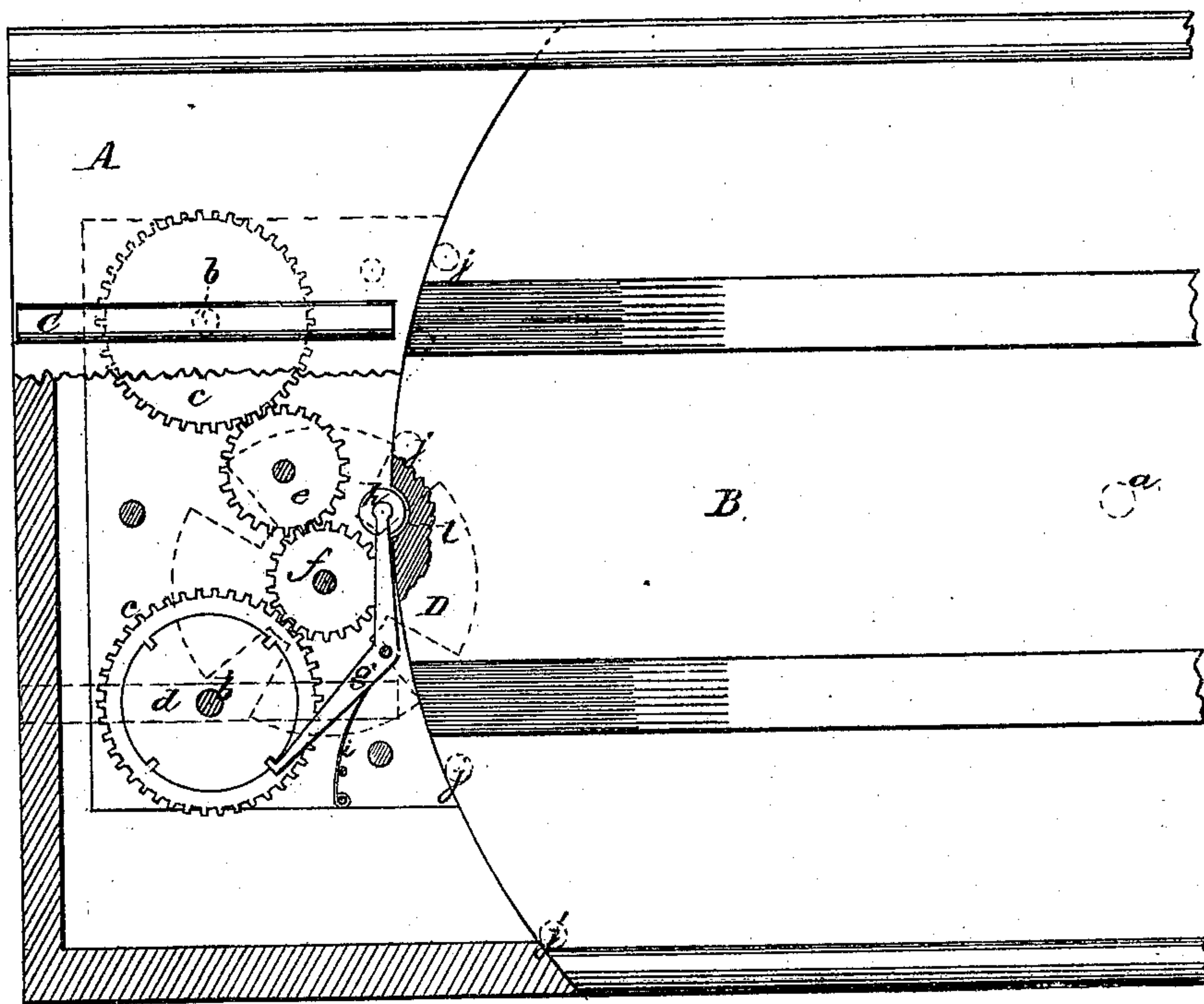
*H. Wermerskirchen,*

*Draw Bridge.*

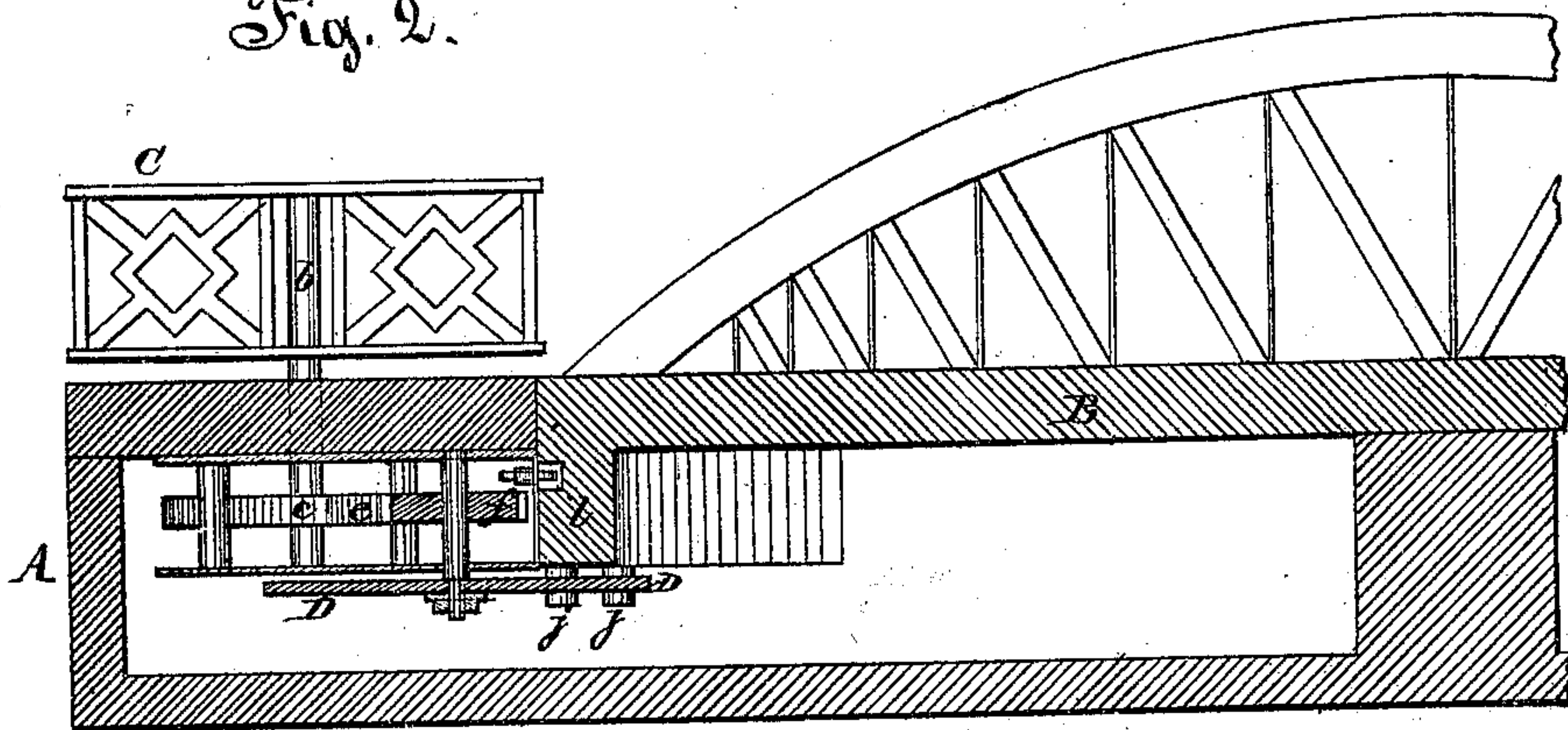
*No. 104,086.*

*Patented June 7. 1870.*

*Fig. 1.*



*Fig. 2.*



*Witnesses;*

*Phil. T. Dodge*  
*S. S. Stroup*

*Inventor;*  
*Hubert Wermerskirchen*  
*by Dodge & Munn*  
*his attys*



# United States Patent Office.

HUBERT WERMERSKIRCHEN, OF CHICAGO, ILLINOIS.

Letters Patent No. 104,086, dated June 7, 1870.

## IMPROVEMENT IN BRIDGE-GATES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HUBERT WERMERSKIRCHEN, of Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Bridge-Gates, of which the following is a specification, reference being had to the accompanying drawing.

My invention relates to automatic gates for swinging bridges, and consists in mounting in each of the piers or abutments two upright shafts, bearing the gate, and in securing to and connecting with these shafts certain gearing, portions of which project through the face of the abutment, so as to be operated by pins on the bridge, when the same swings open and shut.

Figure 1 is a top plan view of one end of a bridge and abutment, having my gate applied, a portion of the abutment being broken away to show the interior mechanism; and

Figure 2 is a longitudinal vertical section of the same, on the line *x x* of fig. 1.

A represents the pier or abutment, and

B, the bridge, turning upon the pivot at *a*, in the usual manner.

In the abutment A, I mount two vertical shafts, *b*, each bearing upon its upper end a gate, C, of one-half the width of the bridge or passage-way to the same, so that, by turning the shafts so as to bring the gates in line, they will close the approach to the bridge, but that, by turning the shafts until the gates are parallel, the approach is opened, the gates serving, at the same time, to divide off the foot-way from the drive-way.

Within the abutment A, I form a chamber, and arrange therein any suitable frame work to support the shafts *b* and their operating-mechanism, hereinafter described; and to the shafts *b* within this chamber I secure large cog-wheels, *c*, and also mount therein two pinions, *e* and *f*, which mesh into each other and into the wheels *c*, as shown in fig. 1, so that the shafts *b* always revolve together.

Upon the same shaft with one of the wheels *c*, I mount a wheel or disk, *d*, having four notches cut in its periphery, and to the frame-work I pivot a bent lever, *g*, actuated by a spring, *i*, and having in one end a roller, *h*, which projects beyond the face of the abutment, and a lip at its other end, which engages in notches in the disk *d*, when they are brought around opposite to it, and thus locks the gates in their proper positions.

Upon the lower end of the shaft of pinion *f* I secure a large disk or plate, D, having four radial slots extending from the periphery inward, and cause one side of this disk to project through and beyond the face of the abutment, as shown in figs. 1 and 2; so that, by turning this wheel from the outside, the interior gearing is operated, and the gates opened or closed.

On the under side of the bridge I secure, near each

side, two pins, *j j*, and in the end of the bridge, at the middle, I form a recess, *l*, as shown in figs. 1 and 2.

The operation of my gate, thus constructed, is as follows:

The bridge being closed and the gates opened, as shown in figs. 1 and 2, the bridge is turned either to the right or left, as desired.

As the end of the bridge moves, the recess *l* is carried from behind the roller, and the latter is pressed back by the end of the bridge, so as to operate the lever *g* and disengage its end from the wheel *d*, and thereby unlock the gates.

The innermost of the pins *j* then enters one of the slots of the wheel D, and causes the latter to revolve, and thereby operate the mechanism and partially close the gates. After the wheel D has made a quarter revolution, the pin *j* will clear the slot, and then the remaining pin will enter the next slots, and turn the wheel another quarter revolution, and finish closing the gates.

As soon as the gates are shut, the bridge will clear the roller, and the arm *g*, will lock into one of the notches of wheel *d*, and fasten the gate shut, so as to prevent their being turned accidentally.

When the bridge is being closed, the end first strikes the roller and unlocks the gearing, and then the pins, successively entering the slots of wheel D, open the gates, the roller dropping into recess *l*, and allowing the lever *g* to lock the parts, when the bridge is entirely closed.

It is obvious that, instead of using two pins to operate the wheel D each time, and turn it half a revolution, the gearing may be so proportioned that a quarter of a revolution of wheel D will serve to open or close the gates, in which case a single pin on each side of the bridge will answer all purposes; and, also, that, instead of two, a single gate may be used of sufficient length to close the way, and this gate be mounted on a single shaft opposite the middle of the bridge.

Having thus described my invention,

What I claim is—

1. One or more gates, mounted on a central shaft opposite the end of a swinging or rotating bridge, and arranged to be opened and closed by the turning of the bridge, substantially as described.

2. The gates C, mounted on upright shafts *b*, having gear-wheels *c* attached, in combination with the pinions *e f* and wheel *d*, with the locking-lever *g*, when arranged to be operated by the bridge, substantially as set forth.

3. The slotted wheel D, arranged in the abutment to operate in combination with the swinging bridge B, and impart motion to the gates, substantially as described.

HUBERT WERMERSKIRCHEN.

Witnesses:

WM. H. LOTZ,  
G. LOTZ.