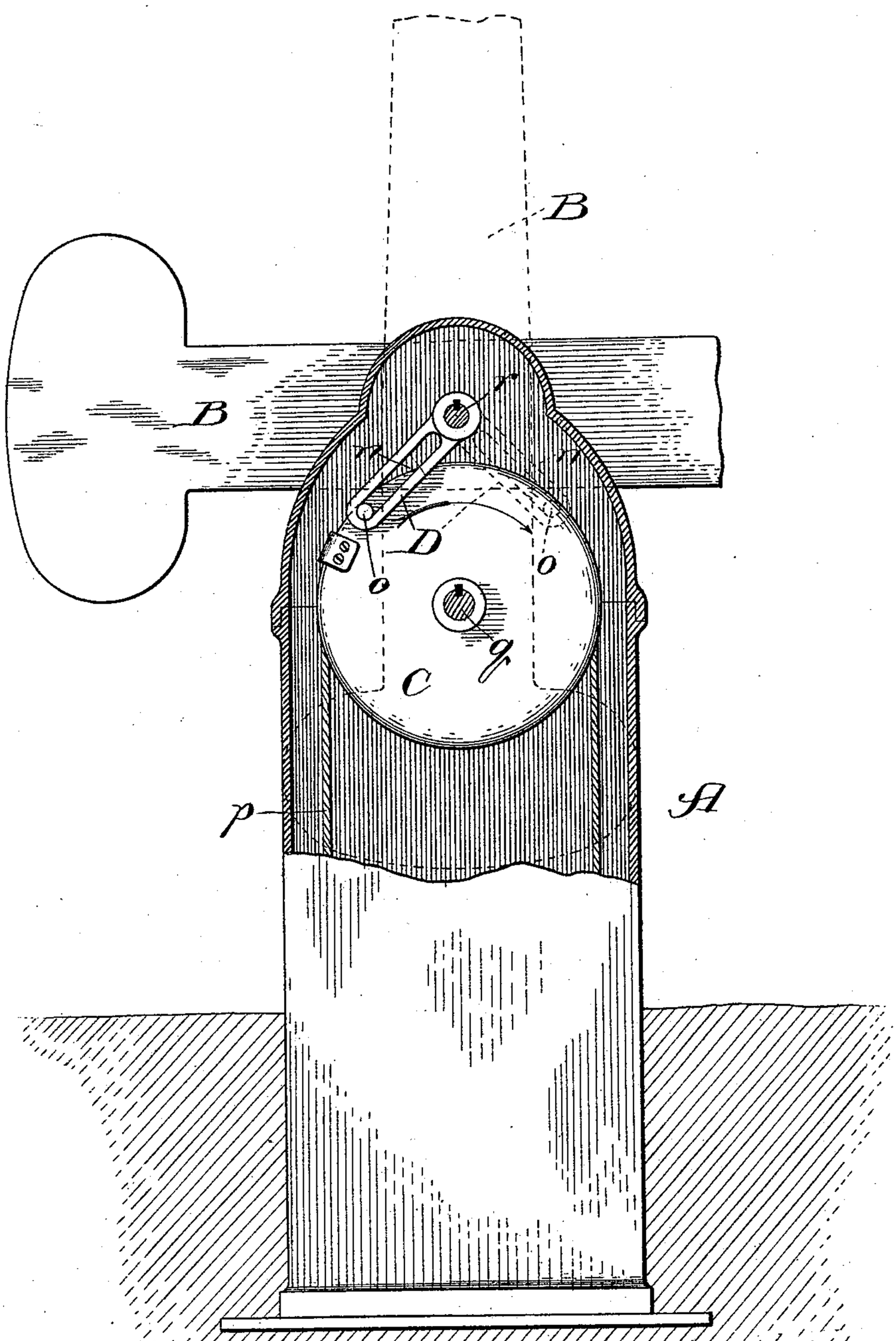
(No Model.)

M. B. MILLS.

LOCK FOR RAILROAD GATES.

No. 454,983. Patented June 30, 1891.



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UNITED STATES PATENT OFFICE.

MORTIMER B. MILLS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE BOGUE & MILLS MANUFACTURING COMPANY, OF SAME PLACE.

LOCK FOR RAILROAD-GATES.

SPECIFICATION forming part of Letters Patent No. 454,983, dated June 30, 1891.

Application filed December 15, 1890. Serial No. 374,792. (No model.)

To all whom it may concern:

Be it known that I, MORTIMER B. MILLS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Locks for Railroad Gates, Signals, and the Like, of which the following is a specification.

The object of my invention is to provide a simple but effective automatically-operating lock which shall, by the mere act of throwing a gate-arm, semaphore-signal, or switch, be set to lock it at the end of its throw against being turned back from the position to which it has been moved.

For the sake of convenience in describing my improvement it is herein set forth as applied to a railroad-crossing gate of the variety having an arm pivotally supported on a post to be swung through a vertical plane for lowering and raising the barrier. I wish it to be understood, however, that my improvement is not limited to use with a gate, since it is applicable, with such mechanical changes as would readily suggest themselves to those skilled in the art, to other devices requiring to be locked in their thrown positions, like railroad signals and switches.

The accompanying drawing shows a railroad-crossing gate in elevation, partly broken and sectional, and provided with my improved automatic lock.

The generally-stated construction of my improvement is that of having the object (as the gate-arm to be thrown) on an axis forming one center, a pulley supported on an axis forming another center and provided eccentrically with a stud, means for turning the pulley, and a link fastened rigidly at one end to the center on which the object to be thrown turns and engaging at its guide with the stud, whereby when the said object is at either end of its throw any attempt to throw it by manipulating the object itself in the opposite direction will be resisted by causing the strain to be exerted, as it were, against a dead-center or that on which the lever is moved. To accomplish, therefore, the locking of the object at either end of its throw, it is necessary, as will more fully hereinafter appear, that the center on which the said object turns, that on which the pulley turns, and the eccentric-stud, at which the link engages the pulley, shall form the apices of a right-angle triangle or of approximately such a triangle.

A is a gate-post, and B is the swinging arm, supported on the post on a pivotal axis *r*, forming the center about which the arm is adapted to be swung.

C is a pulley journaled on the post at the center *q*, and for turning which a rope *p*, fastened to its periphery, is shown and is supposed to extend, as is common in such gates, directly or indirectly to the point of operation. Near the periphery of the pulley is a stud *o*.

D is a link keyed at one end to the axis *r* and having a slot *n* extending toward its opposite end, which slot embraces the stud *o* to afford a guide for the same.

As shown by the full lines, the gate-arm is down and may readily be raised to the upright position indicated by the dotted representation by turning the pulley C in the proper direction, (indicated by the arrow,) since thereby the stud *o* will be caused to bear against the inner side of the link and turn it toward the position in which it is shown by dotted lines, thus turning the gate-arm on its axis. At the same time any attempt to raise the gate-arm by strain exerted for the purpose directly against it would be effectually resisted, since the strain would be exerted from the center *r* to the stud and thence to the center *q* in a straight line at or about at a right angle to the line of the link, thus on a dead-center. It is obvious that the gate-arm may be lowered from its raised position by turning the pulley in the direction opposite that described through the media of the stud and link, and that any attempt to lower it by strain exerted directly against the arm for the purpose would be effectually resisted in the manner described with the gate-arm in its lowered position. It will thus be apparent that the locking of the link and stud device is automatic and effectual, and that the operation thereof is the same whether it be applied to a gate-arm, switch, semaphore-signal, or analogous object adapted to be operated by throwing or turning from one position to another.

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

1. In combination, a gate-arm or the like supported to swing on an axis *r*, forming one center, a pulley C, provided eccentrically with a stud *o* and supported on an axis *q*, forming another center, means for turning the pulley, and a link rigidly secured near one end to the axis *r* and provided with a guide, at which it engages the stud *o*, the said two centers and point of engagement of the link with the stud forming, when the gate-arm or the like is at either end of its throw, the apices of a right-angle triangle or approximately such a triangle, substantially as and for the purpose set forth.

2. In a railroad-gate, the combination, with the arm B, supported on an axis *r* on a post A, of a pulley C, supported on an axis *q* on the post and provided eccentrically with a stud *o*, means for turning the pulley, and a slotted link D, rigidly secured at one end to the gate-arm axis and embracing the stud *o* at its slot, the centers *r* and *q* and the stud *o* forming, when the gate-arm or the like is at either end of its throw, the apices of a right-angle triangle or of approximately such a triangle, substantially as and for the purpose set forth.

MORTIMER B. MILLS.

In presence of—
J. W. DYRENFORTH,
M. J. FROST.