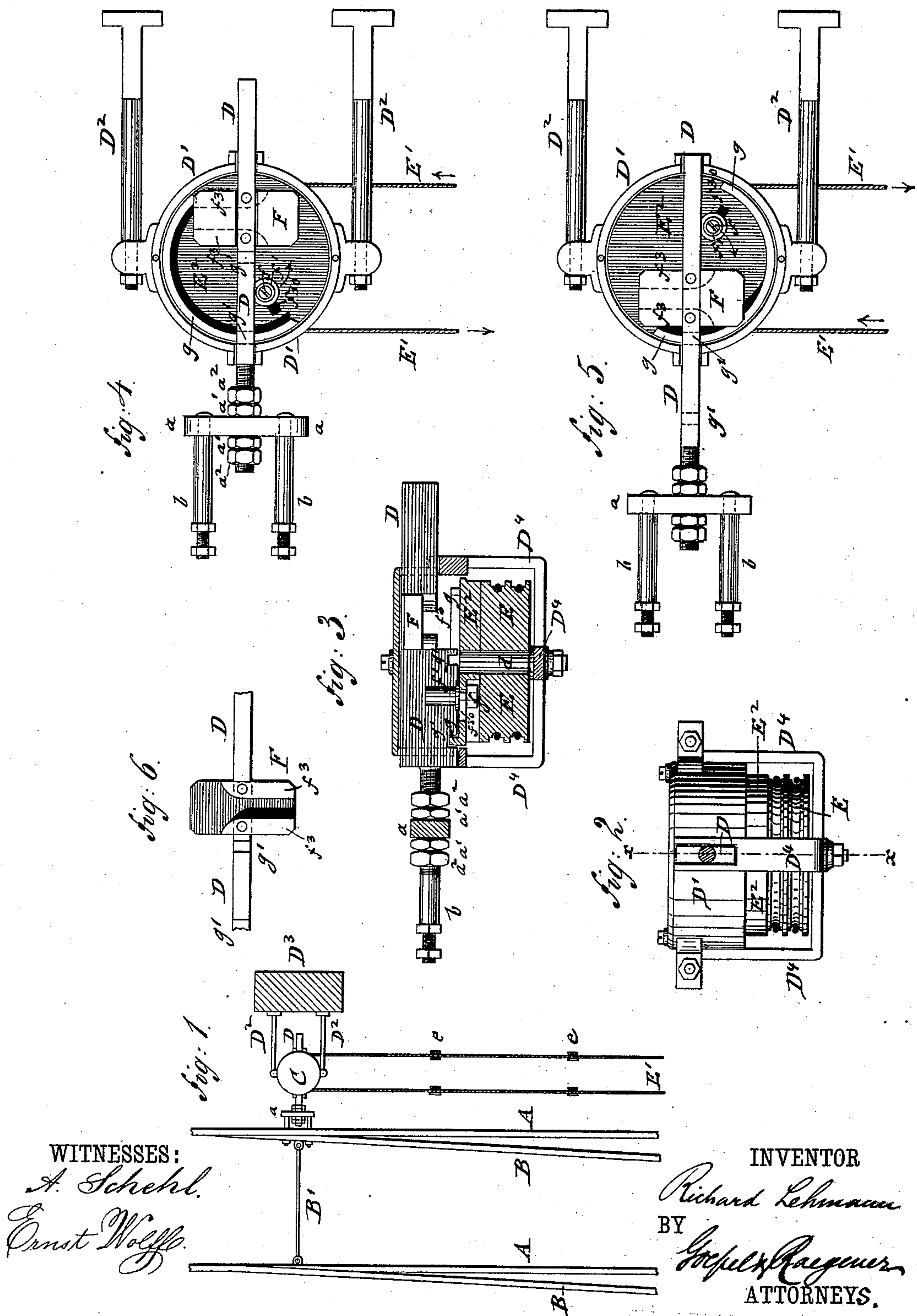


(No Model.)

R. LEHMANN.  
LOCK FOR RAILROAD SWITCHES.

No. 321,040.

Patented June 30, 1885.



WITNESSES:  
*A. Schehl.*  
*Ernst Wolff.*

INVENTOR  
*Richard Lehmann*  
BY  
*Groff & Rayner*  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

RICHARD LEHMANN, OF NEW YORK, N. Y.

## LOCK FOR RAILROAD-SWITCHES.

SPECIFICATION forming part of Letters Patent No. 321,040, dated June 30, 1885.

Application filed December 10, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD LEHMANN, of the city, county, and State of New York, have invented certain new and useful Improve-  
5 ments in Locks for Railroad-Switches, of which the following is a specification.

This invention has reference to an improved automatic lock for railroad-switches of that class which are operated by wire connection  
10 from a distant station, so as to set and lock the switch into the required position.

The invention consists of a railroad-switch lock which is operated by means of pulleys and wire cords from the station, the pulleys  
15 turning a disk having a crank-pin that engages a block having a longitudinal bottom recess. A diametrical slide-rod connected to the switch is attached to the recessed block and guided in recesses of the lock-casing.  
20 The slide-rod has a recess at its lower edge, that is engaged by a circumferential flange of the disk, so that the slide-rod and switch are locked by the flange in either position of the switch.

In the accompanying drawings, Figure 1 represents a plan of a railroad-switch with my improved lock. Fig. 2 is a side view of the lock drawn on a larger scale. Fig. 3 is a vertical central section of the same on line *x x*,  
30 Fig. 2. Figs. 4 and 5 are plans with the top of the casing removed, showing the switch-lock in two different positions, and Fig. 6 is a detail bottom view of the recessed guide-block of the slide-rod of the switch-lock.

Similar letters of reference indicate corresponding parts.

A in the drawings represents the track-rails, and B the switch-rails. The switch-rails are connected near their ends by a transverse rod,  
40 B', one of the switch-rails being attached to a switch-lock, C, by means of a cross-head, *a*, and screw-bolts *b b*, which latter are clamped to the web of one of the switch-rails B and passed through holes in the web of one of the track-rails A.

To the cross-head *a* is applied by nuts and jam-nuts *a' a'* a slide-rod, D, that is extended diametrically through the cylindrical casing  
50 D' of the lock C and guided in recesses of the same. The casing D' is supported by hori-

zontal bracket-arms, D<sup>2</sup>, on a wooden or other suitable support, D<sup>3</sup>. The casing D' incloses the upper part of the lock, while the lower part is left open and provided with intersecting straps D<sup>4</sup>, which support at the intersec-  
55 tions a fixed pivot-pin, *d*, upon which turns a double pulley, E.

Motion is imparted to the pulley E in either direction by means of wire cords E', the ends of which are passed in opposite directions  
60 around and attached, respectively, to the sections of the pulley E. The wire cords are passed from the pulley E over guide-rollers *e e* (shown in Fig. 1) to the station from which the switch is to be operated.

To the top of the double pulley E is attached  
65 a disk, E<sup>2</sup>, which carries at some distance from its center a crank-pin, *f*, provided with an anti-friction sleeve or roller, *f'*. The crank-pin *f* is adjustable in a radial slot, *f*<sup>30</sup>, of the disk  
70 E<sup>2</sup>, so as to set the crank-pin *f* to its proper relative position thereon. A segmental flange, *g*, extends along a part of the circumference of the disk E<sup>2</sup>.

To the diametrical slide-rod D is attached,  
75 inside of the casing D', a transverse block, F, that has at its under side longitudinal guide-pieces *f*<sup>3</sup>, which are of less length than the block F and rounded off at the ends nearer to the crank-pin. By turning the disk E<sup>2</sup> in  
80 either direction by means of the transmitting-cords E' E' the crank-pin *f* will engage one of the side guide-pieces, *f*<sup>3</sup>, at the under side of the block F, and pass along the recess between the guide-pieces, so as to move thereby the  
85 slide-rod D in one or the opposite direction.

The motion imparted to the slide-rod D has to correspond to the distance to which the switch-rails have to be moved, so that they can be set close to the track-rails, or at the  
90 distance from the same required for the passage of the wheels. By the motion of the disk E<sup>2</sup> the flange *g* is moved along one of the recesses *g' g'* at the under side of the slide-rod D until it clears said recess. At the same  
95 time the crank-pin *f* enters into the recess of the block F between the guide-pieces *f*<sup>3</sup>, and moves the block F and the slide-rod D until the latter arrives at the end of its motion, when the flange *g* engages the second recess *g'*, and  
100



locks thereby the slide-rod rigidly in position. The motion of the disk  $E^2$  and crank-pin  $f$  is continued, the latter passing along the recess of the guide-block until it abuts against the slide-rod and is stopped, as shown in Figs. 4 and 5. By turning the disk  $E^2$  in opposite direction the crank-pin  $f$  moves the block  $F$  and slide-rod  $D$  back, while the flange  $g$  locks the slide-rod when the switch-rails have been set.

The switch and lock are operated by means of levers and pulleys or other suitable mechanism (not shown in the drawings) at the station, one wire cord being arranged so that the pulley  $E$  is turned in one direction when the cord is pulled, while the second wire cord is simultaneously wound up. When the switch is to be set into the second position, the second cord is pulled and the first cord wound up, whereby the slide-rod  $D$  is moved, and finally locked again by the flange  $g$ , so that the switch is rigidly locked in the second position. In this manner a reliable switch-actuating mechanism is obtained, which is adapted to move the switch and lock the same at the proper time rigidly in position after it has been set.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the switch-rails, of a slide-rod having recesses attached to the switch-rails, a transverse block attached to the slide-rod and provided with guide-pieces at the under side, a disk having a crank-pin and a segmental flange adapted to engage the recesses of the slide-rod, and means, substantially as described, for turning the disk in either direction for setting and locking the switch, substantially as set forth.

2. The combination of a slide-rod attached to the switch-rails and having bottom recesses, a transverse block attached to the slide-rod and provided with guide-pieces at the under side, a disk having an adjustable crank-pin and a flange extending along a part of the circumference of the disk, a double pulley attached to the disk, and actuating wire cords attached to the pulley and passed in opposite direction around the same, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

RICHARD LEHMANN.

Witnesses:

PAUL GOEPEL,  
CARL KARP.