

J. A. NUNGESSER & G. F. KLEIN.

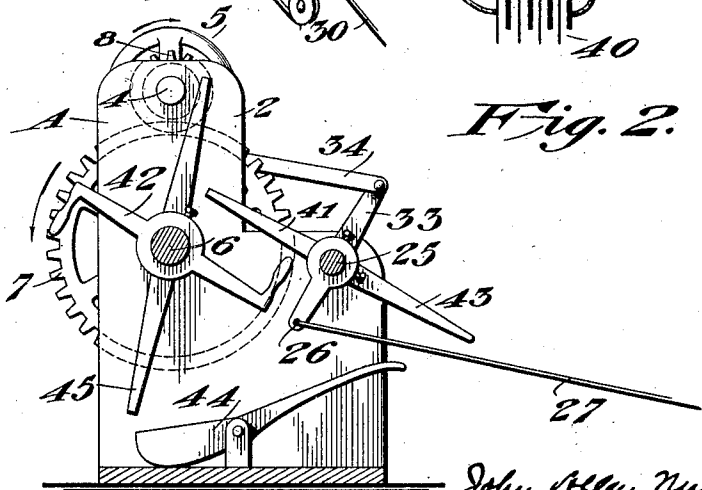
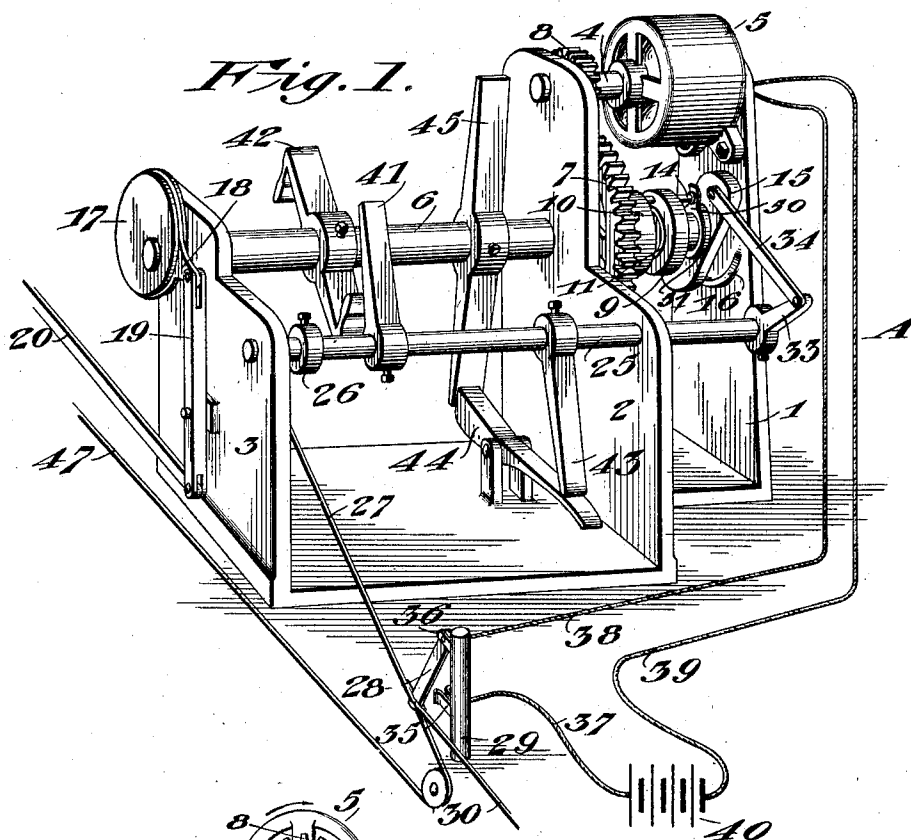
ELECTRIC RAILWAY GATE.

APPLICATION FILED NOV. 8, 1910.

1,002,745.

Patented Sept. 5, 1911.

2 SHEETS-SHEET 1.



Witnesses

Lloyd W. Patch
Chas. Hammond

Inventors

John Klein Nungesser
and George F. Klein

By Vernon E. Hodge
of Louis B. Ruffin, Attorneys

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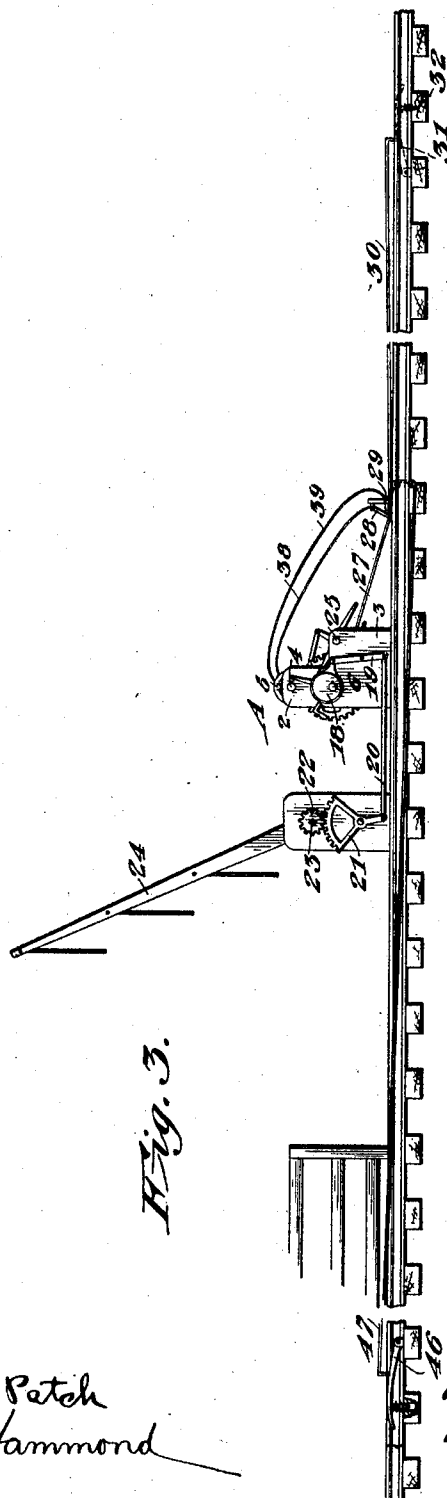


Fig. 3.

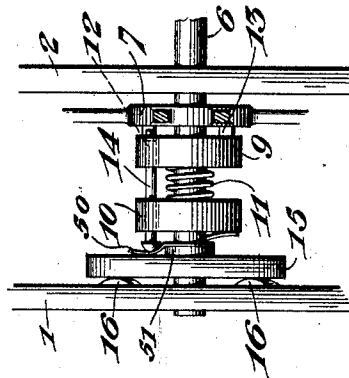


Fig. 4.

Witnesses

Lloyd W. Patch

A. A. Hammond

Inventors

John Allen Nungesser

and George F. Klein

By Vernon E. Hodge
of Louis Ruffet & Co.
Attorneys

UNITED STATES PATENT OFFICE.

JOHN ALLEN NUNGESSER AND GEORGE FREDRICH KLEIN, OF GALION, OHIO.

ELECTRIC RAILWAY-GATE.

1,002,745.

Specification of Letters Patent.

Patented Sept. 5, 1911.

Application filed November 8, 1910. Serial No. 591,382.

To all whom it may concern:

Be it known that we, JOHN ALLEN NUNGESSER and GEORGE FREDRICH KLEIN, citizens of the United States, residing at Galion, in the county of Crawford and State of Ohio, have invented certain new and useful Improvements in Electric Railway-Gates, of which the following is a specification.

Our invention relates to an improvement in electric railway gates, and the object is to provide means whereby the gate will be lowered by the approaching train and raised by the train operating certain mechanisms after the train has passed over the crossing. The invention consists in certain novel features of construction and combinations of parts which will be hereinafter fully described and pointed out in the claims.

In the accompanying drawings: Figure 1 is a perspective view of the apparatus; Fig. 2 is a longitudinal sectional view; Fig. 3 is a view showing the apparatus connected to the mechanism which is placed along the tracks to be operated by the passing trains for raising and lowering the gate; and Fig. 4 is a detail view of the clutch mechanism.

A represents the casing, which consists of standards 1, 2, and 3. Journaled between the standards 1 and 2 is a shaft 4 upon which is mounted the motor 5. A shaft 6 is journaled between the uprights 1 and 3, and loosely mounted upon the shaft 6 is a large gear wheel 7 which meshes with a pinion 8 on the motor shaft 4. A clutch is mounted upon the shaft which consists of a wheel 9 which is fastened to the shaft 6, and a wheel 10 which is loosely mounted upon the shaft. A coiled spring 11 is received upon the shaft intermediate of the two wheels 9 and 10. Holes 12 are formed through the wheel 9, and lugs 13 are formed in the gear wheel 7. A pin 14 is carried by the wheel 10, which is adapted to be forced through an opening 12 in the wheel 9 and into a position to be engaged by a lug on the gear wheel 7 by a block 15, which engages the pin and causes it to be moved toward the gear wheel when the block is forced onto the wedges or lugs 16 formed on the upright 1. A spring 50 is mounted on the shaft 6 and is connected at one end of the wheel 10. A collar 51, loosely mounted on the shaft 6, bears against the block 15, and bearing against the collar is

the spring 50, the upper end of which spring engages one end of the pin 14, the spring 50 causing the pin to always be held in contact with the lug on the wheel 7 when the block 15 is drawn between the wedges 16. The pin 14 is forced into engagement with the lug 13 against the tension of the spring 11, and when the block 15 is drawn off from the wedges 16, the spring 11 will cause the pin to become disengaged from the lug.

Mounted upon one end of the shaft 6 is an eccentric 17, and mounted upon the eccentric is a ring or band 18. A lever 19, pivotally mounted upon the upright 3, is connected to the band 18, and connected to the other terminal of the lever 19 is a rod 20, which is pivotally connected to a segment or quadrant 21, the quadrant 21 meshing with a gear wheel 22 on a shaft 23, upon which shaft a gate 24 is mounted.

A rock shaft 25 is journaled between the uprights 1 and 3. Mounted upon the shaft is an arm 26, to which is connected a rod 27. The rod 27 is connected to a switch lever 28, which is pivotally mounted in a switch post 29. A wire 30 is connected to the switch lever 28, and at its other terminal is connected to a lever 31, which is fulcrumed alongside of the track, a spring 32 being provided for normally holding one end of the lever in an upright or vertical direction. The wire 30 and the rod 27 have suitable insulation between them and the switch lever 28. An arm 33 is mounted upon the rock shaft 25 and is connected to the block 15 by a link 34, whereby upon the operation of the switch lever 31 the shaft 25 will be rocked, causing the block 15 to be forced onto the wedges or lugs 16 for throwing the clutch into engagement with the gear wheel 7.

The contacts 35 and 36 are suitably connected by wires 37 and 38, the wire 38 leading to the motor 5, and a wire 39 leads from the motor to a battery 40, a wire 37 leading from the contact 35 to the motor. Therefore, upon the operation of the lever 31 the switch lever 28 will be brought into contact with the contact 35, creating a circuit, causing the motor to rotate the shaft 4. The rotation of the shaft 4 causes the pinion 8 to rotate, from which rotary movement is transmitted to the gear wheel 7. The operation of switch lever 31 will cause the rock

shaft 25 to be rocked, causing the arm 33 to be moved, forcing the block 15 against the lugs 16, thereby forcing the pin 14 of the clutch into engagement with gear wheel 7, whereby the shaft 6 is rotated, transmitting rotary movement to the eccentric 17, from which motion is transmitted to the segment 21, causing the gate 24 to be lowered. The eccentric is rotated only a half revolution, for the reason that a horizontal arm 41 on the rock shaft is struck by one end of a lever 42. This action withdraws the switch lever 28 from engagement with the contacts 35, thereby breaking the circuit. The rock shaft 6 completes its movement after the motor has been shut off by the breaking of the circuit around to the position at which it is engaged by a fulcrum lever 44, by reason of the inertia or gathered motion caused by the movement under power. Another horizontal arm 43 on the rock shaft 25 is caused to engage one end of a fulcrum lever 44, causing one end to be raised, whereby one end of the lever 45 will be engaged by the lever and act as a stop to retard the rotary movement of the shaft 6.

A lever 46 is pivotally mounted along the track on the opposite side of the railway crossing from the lever 31, and is adapted to be operated by the train in the same manner that the lever 31 is operated. These levers are intended to be operated by a wheel or projection carried by an engine or car, not shown, which will cause the levers to be lowered as the train passes over them, causing a circuit to be made by the drawing of the switch lever 28 into engagement with the contact 35. The lever 46 is connected by a wire 47 to the switch lever 28. The gate having been lowered and the circuit broken, the gate will remain in its lowered position until the train has passed over the crossing and the projection or wheel that is carried by the engine engages the lever 46, causing it to be lowered, whereby the switch lever 28 will again be brought into engagement with the contact 35. This will form a circuit causing the motor shaft 4 to again be rotated and motion transmitted from the pinion 8 on the motor shaft to the gear wheel 7. The operation of the switch lever 28 will cause the operation of the rock shaft 25, and the movement of the shaft 25 will cause the arm 33 to operate the block 15 for causing the clutch to lock the gear wheel 7 to the shaft 6. The shaft 6 will now be caused to revolve, completing the revolution. The eccentric will cause the lever 19 to be operated, whereby the segment 21 will rotate the gear wheel 22, and cause the gate 24 to be raised. The arm 41 will be brought into position whereby it will be engaged by the other terminal of the lever 42, causing the shaft 25 to be rotated for withdrawing the switch lever 28 from engagement with

the contact 35, thereby breaking the circuit. The arm 43 will move downward upon the rotation of the shaft 25 prior to the engagement of the lever 42 with the arm 41, whereby the arm 43 will operate the lever 44, causing it to be brought into position to be engaged by the other terminal of the lever 45, whereby the shaft 6 will be prevented from rotating.

Having fully described our invention, what we claim as new and desire to secure by Letters Patent, is:

1. The combination with a gate arm and a support, a motor shaft journaled upon the support having a motor and a pinion thereon, a secondary shaft, a gear wheel loosely mounted on the shaft and meshing with the pinion on the motor shaft, a clutch on the secondary shaft, an eccentric on the secondary shaft, means connecting the eccentric with the gate arm for operating it upon the rotation of the secondary shaft, of an electric generator, a circuit closer and a mechanical means for throwing the clutch into engagement with the gear wheel for locking the gear wheel to the shaft and to operate the motor for closing the gate, an automatic circuit breaker for said circuit, and means for again closing the circuit for restarting the motor to open the gate.

2. The combination with a gate and a support, a motor shaft on the support, a pinion on the motor shaft, of a secondary shaft, a gear wheel loosely mounted thereon meshing with the pinion of the motor shaft, a clutch on the secondary shaft, means connecting the secondary shaft with the gate, whereby the gate is operated upon the rotation of the motor shaft, a rock shaft, an arm on the rock shaft, means connecting the arm for operating the clutch, an electric generator, a circuit closer operating the rock shaft whereby the clutch is operated for locking the gear wheel to the secondary shaft, a circuit for operating the motor for causing the secondary shaft to be rotated for operating the gate, and an automatic circuit breaker for said circuit.

3. The combination with a gate shaft and a support, a shaft mounted upon the support, a motor driving said shaft, an eccentric on the shaft, of a lever connected to the eccentric, a gear wheel on the gate shaft, a segment meshing with the gear wheel, means connecting the segment with the lever whereby the gate shaft is operated upon the rotation of the motor driven shaft, and a circuit closer and circuit for operating the motor for causing the gate to be operated.

4. The combination with a gate and a support, a motor, a shaft driven by the motor, means connecting the shaft with the gate for operating it, a rock shaft, a switch, means connecting the switch and rock shaft,

a circuit connected to the motor, and means
for operating the switch for closing the cir-
cuit whereby the motor is operated for ro-
tating the shaft for operating the gate,
5 and a stop mechanism operated upon the
movement of the rock shaft for controlling
the rotating of the shaft.

In testimony whereof we affix our signa-
tures, in the presence of two witnesses.

JOHN ALLEN NUNGESSER.

GEORGE FREDRICH KLEIN.

Witnesses:

C. R. MILLER,

DOROTHY SHULS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
