

(No Model.)

2 Sheets—Sheet 1.

C. K. STEARNS.
RAILWAY GATE.

No. 498,452.

Patented May 30, 1893.

FIG. 1-

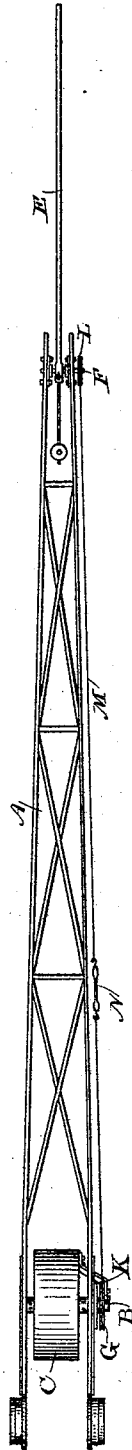


FIG. 2-

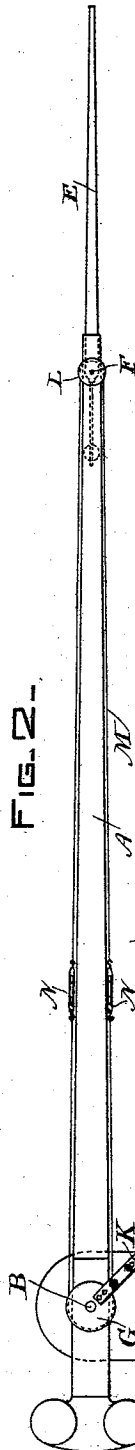
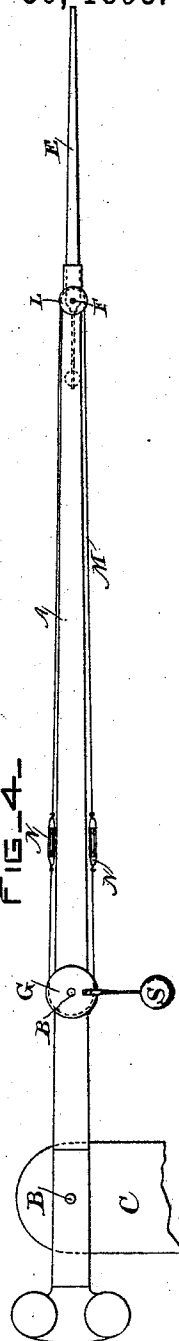


FIG. 3-



WITNESSES:

Attest
E. Rawson

INVENTOR:

Charles K. Stearns

by

Bentley & Knight
ATTYS.

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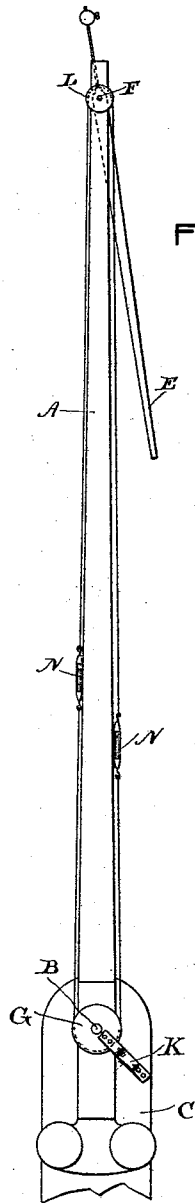


FIG. 3.

WITNESSES:

A. Kline
E. Rawson

INVENTOR:

Charles K. Stearns
by Bentley & Knight
ATTYS.

UNITED STATES PATENT OFFICE.

CHARLES K. STEARNS, OF NEWTON, ASSIGNOR TO THE GENERAL ELECTRIC COMPANY, OF BOSTON, MASSACHUSETTS.

RAILWAY-GATE.

SPECIFICATION forming part of Letters Patent No. 498,452, dated May 30, 1893.

Application filed May 19, 1890. Serial No. 352,320. (No model.)

To all whom it may concern:

Be it known that I, CHARLES K. STEARNS, a citizen of the United States, residing at Newton, county of Middlesex, State of Massachusetts, have invented certain new and useful Improvements in Railway-Gates, of which the following is a specification.

My invention relates to a rail way gate which is provided with a movable end section adapted to be withdrawn as the gate rises, so that it may not interfere with overhead wires or other obstructions.

My invention consists in an arrangement by which a pivoted tip-section serving the above purpose will be moved upon opening or closing the gate by operating mechanism extending therefrom along the gate to a point substantially in line with its axis; and has for its object to secure the transmission of strain coming upon such operative mechanism along the axis of the gate, thus preventing its reacting to press the gate against its bearings and render its operation difficult.

My invention is illustrated in the accompanying drawings in which—

Figure 1 is a plan view of a gate constructed according to my invention. Fig. 2 is a side elevation thereof. Fig. 3 shows a gate in its raised position, and Fig. 4, a modification.

Referring to the drawings A is a railway gate of a type well known at the present time. It is adapted to move about a center B on a post C.

E is a movable end section or tip shown in this instance as a pivoted extension moving about a center F. This tip is moved simultaneously with the opening and closing of the gate by operating mechanism, extending therefrom along the line of the gate, and arranged in the following manner.

G is a stationary operating pulley or wheel which has its center in line with the axis of the gate. It is shown in Figs. 1 and 2 concentric with the pivot around which the gate turns, and held against rotation by a brace K, attached to the post C.

L is a pulley fixed on the shaft of extension or tip E and movable therewith.

M is a rope passing over the two pulleys G and L provided with turn-buckles N by which it may be kept taut.

It will be apparent in the apparatus thus described, that as the gate is moved from the horizontal the rope or belt M will be wound around pulley G and thereby cause the tip E to turn relatively to the main part of the gate A until when fully raised the gate will have the appearance shown in Fig. 3. The strain of the belt will be in a line between the two pulleys along the axis of the gate and will be taken up by the rigidity of the gate itself without causing any disarrangement of the lifting mechanism within post C. The same result would be obtained if the pulley G were placed at an intermediate point along the gate as shown in Fig. 4 and were held by a weight S instead of by the brace K so that when the gate should be lifted the tip would be folded up in the same manner as in the previous arrangement. This however, is not so compact a device as the former having outlying mechanism which is avoided in the first arrangement. It will be seen also that the pulley G being larger than L there will be a multiplication of speed in the transmission from G to the movable tip, so that although the gate itself moves but ninety degrees and only an equal arc on the periphery of the wheel G is utilized to produce movement of the tip, the tip itself may have a greater range, moving in this case over an arc of one hundred and eighty degrees. Any similar device may be employed by which the limited circular movement of the gate and the operating wheel may be so multiplied as to give the desired range of movement to the tip.

In the operation of the gates described above, it will be observed that the operating wheel is not allowed to follow its natural tendency to swing around with the gate, in such a way as to preserve parallelism between the axis of the gate and a single diameter of the wheel. On the contrary its movement is controlled by the brace or weight, so that as the gate is turned the angle between the axis of the gate and any given diameter of the wheel, taken as a standard, is varied an amount sufficient to result in the desired movement of the tip. For example, taking the diameter which is parallel to the axis of the gate as shown in Fig. 2, it is evident that when the gate swings to the left its axis forms a con-

tinually increasing angle with this diameter. Exactly the same holds true with the modification in Fig. 4.

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

1. The combination with a railway gate, of a movable pivoted tip section, an operating wheel concentric with the main pivot of the gate, and an intermediate mechanism between the said wheel and the tip by which the latter is operated.

2. The combination with a railway gate, of a movable pivoted tip section, an operating wheel concentric with the main pivot of the gate, means for holding the said wheel against rotation, and an intermediate mechanism between said wheel and the tip whereby the latter may be operated by the movement of the gate relatively to the said wheel.

3. The combination with a railway gate, a movable pivoted tip section, an operating wheel, means for controlling the movement of the wheel so that the angle between the axis of the gate and a given diameter of the wheel is varied when the gate is turned, and an intermediate mechanism acting in line with the axis of the gate between the said wheel and the tip section whereby the latter is operated upon the gate being raised.

4. The combination with a railway gate, of a pivoted tip section, an operating wheel therefor concentric with the main pivot of the gate, a connection between the said wheel

and the supporting post upon which the gate turns by means of which the said wheel is held against rotation when the gate is raised, and an intermediate connection between the said wheel and the tip whereby the latter is operated by the raising of the gate.

5. The combination with a railway gate, of a movable tip section, an operating wheel, means for controlling the movement of the wheel so that the angle between the axis of the gate and a given diameter of the wheel is varied when the gate is turned, and an intermediate speed multiplying power transmitting mechanism acting in line with the axis of the gate between the said wheel and pivoted tip section whereby the range of movement at the tip is greater than that of the periphery of the said wheel.

6. The combination with a railway gate, of a pivoted tip section, an operating wheel, a similar wheel connected to the tip section and operated in connection with the first named wheel, but having a smaller size whereby the movement of the tip may be greater than that of the periphery of the larger wheel, the wheel mechanism acting in line with the axis of the gate.

In witness of the foregoing I have hereunto set my hand this 14th day of May, 1890.

CHAS. K. STEARNS.

Witnesses:

E. M. BENTLEY,
S. G. CROSWELL.