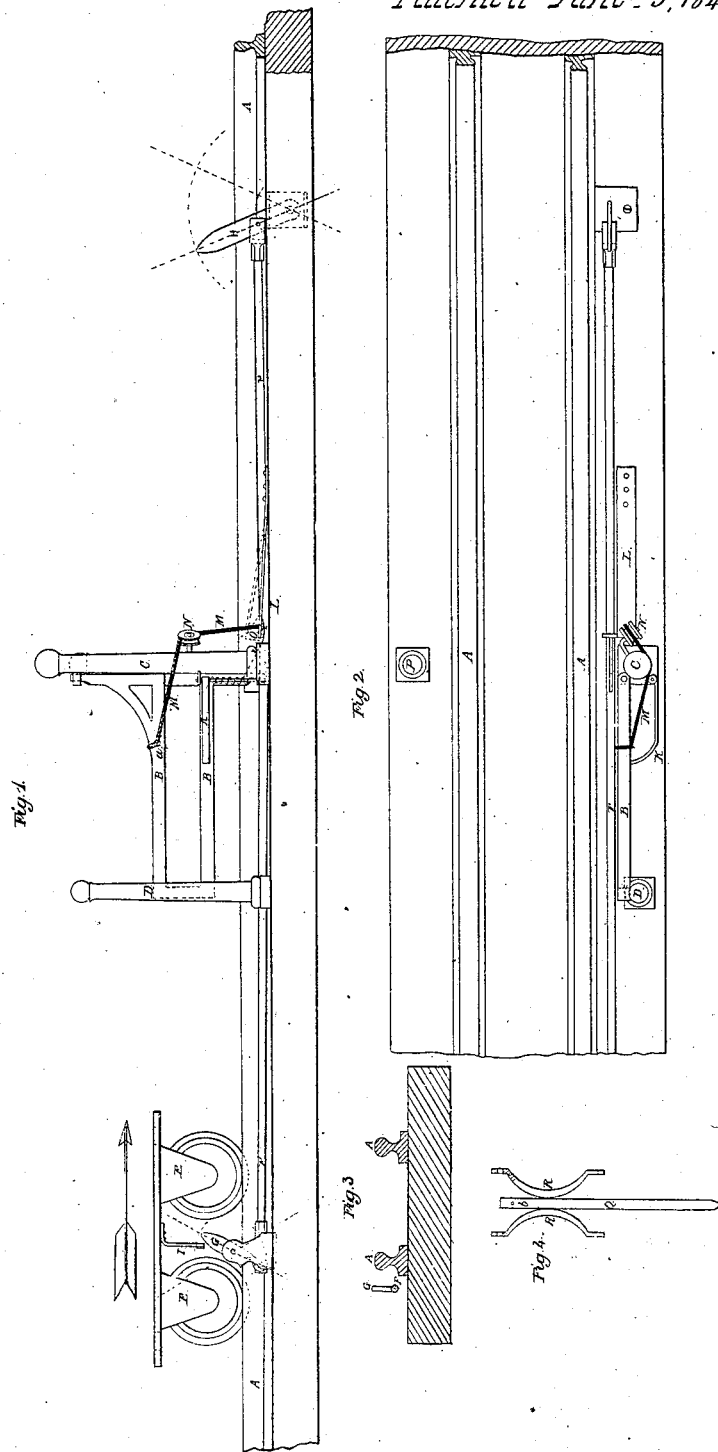


*R. Coffin.*  
*Railroad Gate,*

*N<sup>o</sup> 6,513.*

*Patented June 5, 1849.*



# UNITED STATES PATENT OFFICE.

RICHARD COFFIN, OF WEST HAVERHILL, MASSACHUSETTS.

## MACHINERY FOR OPERATING RAILROAD-GATES BY MEANS OF THE LOCOMOTIVES.

Specification of Letters Patent No. 6,513, dated June 5, 1849.

*To all whom it may concern:*

Be it known that I, RICHARD COFFIN, of West Haverhill, of the county of Essex and State of Massachusetts, have invented a new and Improved Mode of Constructing a Self-Opening and Self-Closing Gate upon Railroads at the Junction of Common Roads to be Operated by the Locomotive When a Train of Cars Pass; and I do hereby declare that the following is a full and accurate description of my invention:

The nature of my invention consists in constructing and arranging a gate and the operating apparatus in connection therewith, designed to close up the common road at the time the engine or train crosses it, and which shall open and shut of itself through the action of the locomotive when it passes by the crossing of a common road where the said gate is erected.

That my invention may be understood and used by others, I refer to the annexed drawings, in which the same letters always indicate the same parts.

A side elevation of the railroad, the gate and its operating apparatus, and the truck or body of a locomotive on the track is exhibited by Figure 1, in which A, A, represents the rail; B, B, the gate, open to permit the passage of a train; C, the post upon which the gate swings; D, the post against which the gate rests when opened; E, E, the truck or body of a locomotive; F, F, a long iron rod or bar lying along the ground on the outer side of the rail A, A, and between it and the gate posts C, D, the sliding of which to and fro opens and shuts the gate B, B; G and H, levers at either end of the bar or rod F, F, which act upon and move it back and forth; I, a projecting bar or spring attached to the under side of the truck or body of the locomotive, which comes in contact with the levers G and H and gives them the movement requisite to slide the bar or rod F, F, back and forth, and open the gate when the train approaches and passes the crossing.

K, is a spring on the gate the pressure of which, when in action, closes it across the track when the train has passed, and keeps it closed until the arrival of another locomotive or train of cars.

L, is a powerful spring at the foot of the gate-post C, which opens the gate on the approach of a train by means of the chain

or rope M, M, which connects the said spring with the gate at a, and passes over the pulley N; the said spring L, being held upon the strain and rendered inoperative while the gate is closed, by means of a cam-block or projection O attached to the rod or bar F, F, which, by the sliding movement it receives from either of the levers G and H when the train arrives, shoves the said cam-block from under the said spring L, thereby enabling it to operate and draw the chain or rope M, M, taught, and open the gate, and which by the same movement when the train has passed pushes the cam-block O underneath the said spring L, and thus rendering the chain or rope M, M, slack, allows the spring K to operate and force the gate to its place across the track.

It will be observed that for the purpose of producing opposite effects upon the sliding bar or rod F, F, the levers G and H at the ends of the same, are arranged differently, the lever G having its fulcrum above the bar, and the lever H having its fulcrum beneath the same, and thus when the train approaches the gate on the side toward the lever G, the spring I, on the body of the truck or locomotive, strikes it, and, driving it forward, slides the bar F, F, backward, by this means releasing the cam-block O from under the spring L and allowing it thereby to come into action and open the gate, in the manner before described; and when the train has passed the gate, the spring I strikes the lever H and drives the bar F, F forward again, thereby bringing the cam-block O under the spring L and allowing the gate to close by slackening the chain or rope N, and permitting the spring K to act, as in the manner before described. When the train approaches on the side toward the lever H, the effect is the same by a reversed operation.

The sliding-bar F, F, may be any required length to allow a train to pass, and should be inclosed in a box or covered trough to protect it from the injurious effects of the weather and accident.

A top view of the track is presented by Fig. 2, exhibiting the rails A, A; and the gate B; and the post C, upon which the gate swings; and the post D, against which the gate rests when open; and the post P, (not visible in Fig. 1,) against which the gate rests when closed; and the sliding bar

F, F; and the spring L; and the spring K; and the chain or rope M; and the pulley N; and the lever H.

5 A transverse cut section is presented by Fig. 3, exhibiting the rails A, A, the sliding-bar F, and the lever G.

10 The projecting bar I, attached to the under side of the locomotive for the purpose of working the levers G and H, may be a simple spring of itself, or it may be made like the bar Q shown in Fig. 4, which is suspended on a pivot *b* between two reacting elliptic springs R, R.

15 The advantage of this arrangement of a self closing and self opening gate, operated by the locomotive as it approaches and passes the crossing of the road, consists in protecting the traveling public from the dangers to which they are constantly ex-  
20 posed from an open road at the time the locomotive and train passes over the com-

mon road, and consequently removing the liability to the loss of life, destruction of engines, cars, animals &c., and also saving the expense of a gate tender who is often 25 required.

Having thus described my invention I claim—

The vibrating cam-levers G and H, attached to the bars F, F, in combination 30 with the cam block O, and the spring L, and the rope or chain M passing over the pulley N, and the spring K, for the purpose of closing and opening the gate by the action of the projecting bar I of the locomotive 35 upon the vibrating levers G and H in the manner substantially as herein described.

RICHARD COFFIN.

Witnesses:

JOSEPH COFFIN,  
GEORGE COFFIN.