

J. S. & H. J. S. STOVER.
RAILROAD GATE.
APPLICATION FILED DEC. 22, 1910.

994,615.

Patented June 6, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

Witnesses
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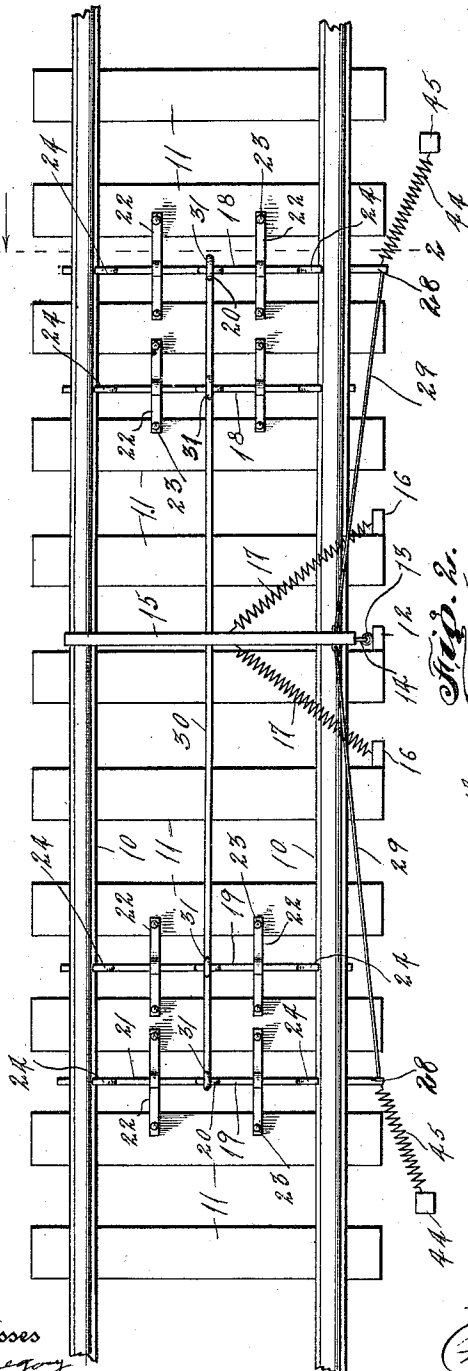
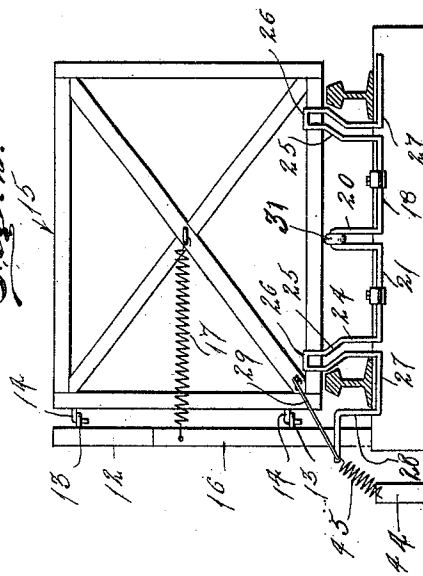


Fig. 2.



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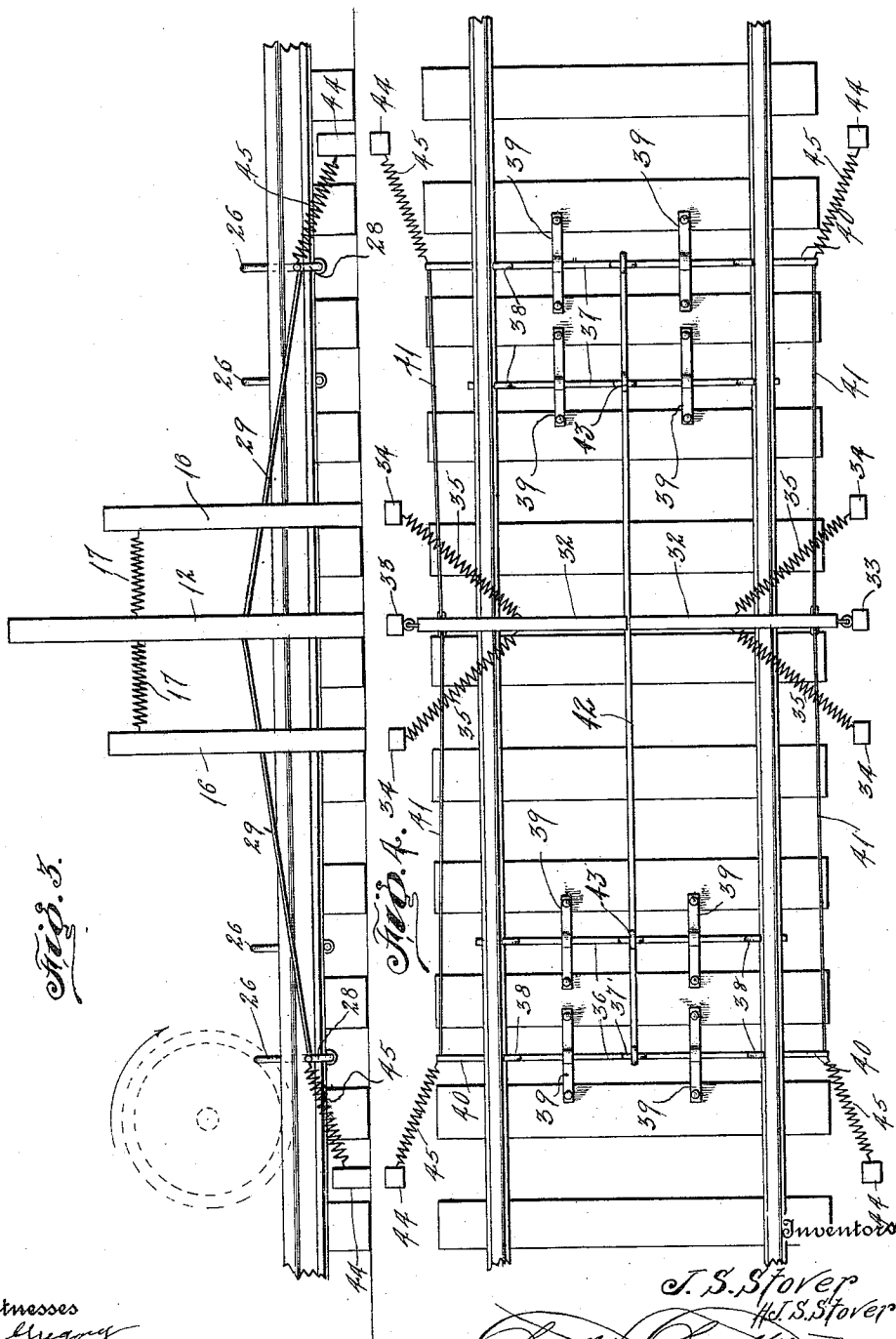
Attorneys

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Francis Boyle

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UNITED STATES PATENT OFFICE.

JASPER S. STOVER AND HENERY J. S. STOVER, OF CADDO GAP, ARKANSAS.

RAILROAD-GATE.

994,615.

Specification of Letters Patent.

Patented June 6, 1911.

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To all whom it may concern:

Be it known that we, JASPER S. STOVER and HENERY J. S. STOVER, citizens of the United States, residing at Caddo Gap, in the county of Montgomery, State of Arkansas, have invented certain new and useful Improvements in Railroad-Gates; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to railroad cattle gates and has for its principal object to provide a gate that will be automatically opened by a train approaching in either direction and will have novel train operated trips that are connected directly to the gate without intervening intricate mechanism as in usual gates of this character.

A further object of the invention is to provide a cattle gate that will be normally held closed by means of novel tension devices.

With the above objects in view the invention consists of the novel details of construction and combination of parts hereinafter fully described and claimed, it being understood that various modifications may be made in the minor details of construction within the scope of the appended claims.

In the accompanying drawing forming part of this specification, Figure 1 is a plan view of a cattle gate constructed in accordance with our invention, Fig. 2 is a cross sectional view taken on the line 2—2 Fig. 1, Fig. 3 is an end elevation of the gate applied, Fig. 4 is a plan view of a double gate constructed in accordance with our invention.

Referring now to the drawing in which like characters of reference designate similar parts in the views shown, 10 designates traffic rails and 11 the supporting ties. Embedded in the road bed and arranged on the outer side of one of the traffic rails is a post 12 having on its rail confronting side hinge lugs 13 which receive hinge pintles 14 carried by a gate 15, this gate preferably being of skeleton construction and normally lying transversely across the treads of the traffic rails. Arranged in the vertical plane of and on either side of the hinge posts 12 are a pair of posts 16, of less height than the hinge posts. A pair of helical springs 17 are fixed to these posts and converge to the approximate center of the gate, these springs being fixedly secured in any preferred manner to

the gate and operating to normally hold the gate in closed position or in other words extending transversely across the rail treads. When the gate is opened in either direction, one of the springs will store up energy to return the gate to closed position.

For opening the gate a pair of trips 18 and 19 are mounted transversely across the traffic rails, on both sides of the gate. Each trip is formed from a single length of round material looped upon itself intermediate its ends to form a crank 20, the extremities of this loop being extended in alinement and forming straight gudgeons 21 which lie in the spaces between adjacent ties and are mounted in strap bearings 22, the ends of these bearings being spiked or otherwise secured to the ties as shown at 23. Each gudgeon of each trip is looped upon itself adjacent to the inner side of the corresponding rail base flange to form a cam loop 24, this loop being provided with an intermediate offset 25 which inclines toward the rail head and disposes the bight 26 of the loop in the path of movement of the car wheel flange so that the latter will impinge against the bight in the cam loop and knock the loop forcibly in the direction of the top faces of the ties. The extremity of one cam loop is directed in a straight portion 27 transversely across the bottom face of the corresponding rail base flange and is thence bent abruptly upwardly near the outer edge of the rail base flange to form a crank 28. A link 29 is connected to the free end portion of the crank and to the lowermost secured corner of the gate. It is now clear that upon the cam loop being knocked downward by the approach of a train, that through the instrumentality of the crank 28 and link 29 the gate will be swung to open position thereby placing the helical spring on the same side of the gate as the knocked down cam loop under tension so that after the advance of the train through the gate the spring will return the gate to closed position. It will be noted that by virtue of the offset in the cam loops that the bights of the loops will be disposed at such a height above the rail treads as to cause the car wheel to engage the bight at a considerable height above the rail head and consequently more forcibly impinge against the bight to knock down the trip than in similar devices of this character. By this novel construction of cam loop, the cranks are rotated

through a greater arc of movement than ordinary and hence are able to open the gate through the instrumentality of a single link thus obviating the usual intricate mechanism employed between the crank and gate.

A connecting rod 30 is arranged longitudinally of the ties between the traffic rails and is preferably formed from a single length of straight material. This connecting rod is provided with spaced eyes 31 adjacent to its opposite extremities which loosely engage the cranks 20 of the trips. The connecting link operates when the pair of trips on either side of the gate is knocked down to simultaneously actuate the pair of trips on the opposite side of the gate in the same direction thus promoting the opening movement of the gate.

The function of providing a pair of trips on each side of the gate is that should the cam loops of one of the trips become accidentally bent, there will still be left a trip to operate the gate until the bent trip may be repaired or replaced with a new one.

In Fig. 4 is shown a modification of our cattle gate, in this instance a pair of opposing gates 32 being arranged transversely across the traffic rails and hingedly connected to posts 33 embedded in the road bed adjacent to the outer sides of the traffic rails. A pair of short posts 34 are arranged on either side of each hinge post and carry helical springs 35 which are fixed at their free extremities to the approximate central portion of each gate. A pair of trips 36 and 37 are arranged on opposite sides of the gates, these trips being identical in construction to the trips above described in so much as each trip is formed from a straight length of material bent to form a central crank 37' and bent adjacent to its outer ends to form spaced cam loops 38 which are arranged adjacent to and extend considerably above the inner edges of the rail treads. The trips are secured in position by strap journals 39 similar to strap journals above described. Each of the outermost trips of each pair of trips is provided on its opposite ends with cranks 40 which carry links 41 that are connected at their free ends to the lower hinge corners of the gates as above described. A connecting rod 42 extends longitudinally to the railway ties and is provided adjacent its opposite ends with eyes 43 which loosely receive the central cranks 37 of the trips and this brace rod operates when the trips on either side of the confronting gates are knocked down to simultaneously actuate the pair of trips on the opposite sides of the gates in the same direction.

In order to assure the gate closing positively after each time it is opened, it will be observed that a post 44 is embedded in the road bed adjacent to each of the outer cranks of the trip members, and a helical

spring 45 is terminally secured to this post and to the crank, the spring normally holding the crank in operative position, and storing up energy as the crank is rotated by a passing car wheel to return the crank to its initial position, thus coöperating with the gate springs in positively returning the gate to closed position. It will be noted that a pair of trip members are arranged on each side of the gate, and in practice the members of each pair are so spaced apart that after the leading wheels on a coach passes over any particular member, and the gate begins to move to closed position under the action of these springs, the rear wheels on the coach will then engage with the mating member of the pair and move the gate back to open position. When the gate is designed to be used on a railroad track where the traffic is almost continuously fast, these trip members may be spaced a great distance apart but where the traffic is slow as in the approaches to cities, a plurality or set of trip members must be arranged on each side of the gate instead of a single pair as illustrated in order that the car wheels may be in engagement with some particular one of the set of trip members at each moment during the passage of the train in the direction of the gate so that the gate will be maintained constantly in open position until the train has passed therethrough.

What is claimed, is:—

1. A gate for railways including a spring controlled swinging gate adapted to extend transversely across traffic rails, trips adapted to be arranged transversely across said rails in the path of movement of a train, each trip having a centrally located crank the terminals of which are bent in opposite directions and form gudgeons, and further having an upstanding cam loop arranged adjacent to the inner edge of one rail base flange and extending considerably above the head of said rail, said trip further having a crank arm arranged adjacent to the outer edge of said rail base flange, and connecting links carried by said crank arms and engaging said gate for moving the gate to open position upon depression of said cam loops by a car wheel.

2. A gate for railways including a swinging spring controlled gate adapted to be arranged transversely across the traffic rails, a plurality of trips arranged on opposite sides of the gate and transversely across the path of movement of an advancing train, each trip having an intermediate crank, and having a cam loop disposed adjacent to the inner edge of a traffic rail base flange, said cam loop having an intermediate offset extending in the direction of said rail head and disposing the bight of said loop considerably above said rail head for engagement with a car wheel, said trip further having

a terminal crank disposed beyond the outer edge of said rail base flange, links connecting the cranks of said trips to said gate and operating to open the gate upon actuation
5 of said cam loop, and a connecting link loosely connected to the intermediate cranks of said trips for actuating all of said trips simultaneously.

In testimony whereof, we affix our signatures, in presence of two witnesses.

JASPER S. STOVER.
HENERY J. S. STOVER.

Witnesses:

L. C. HUEY,
S. J. ROBBINS.

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