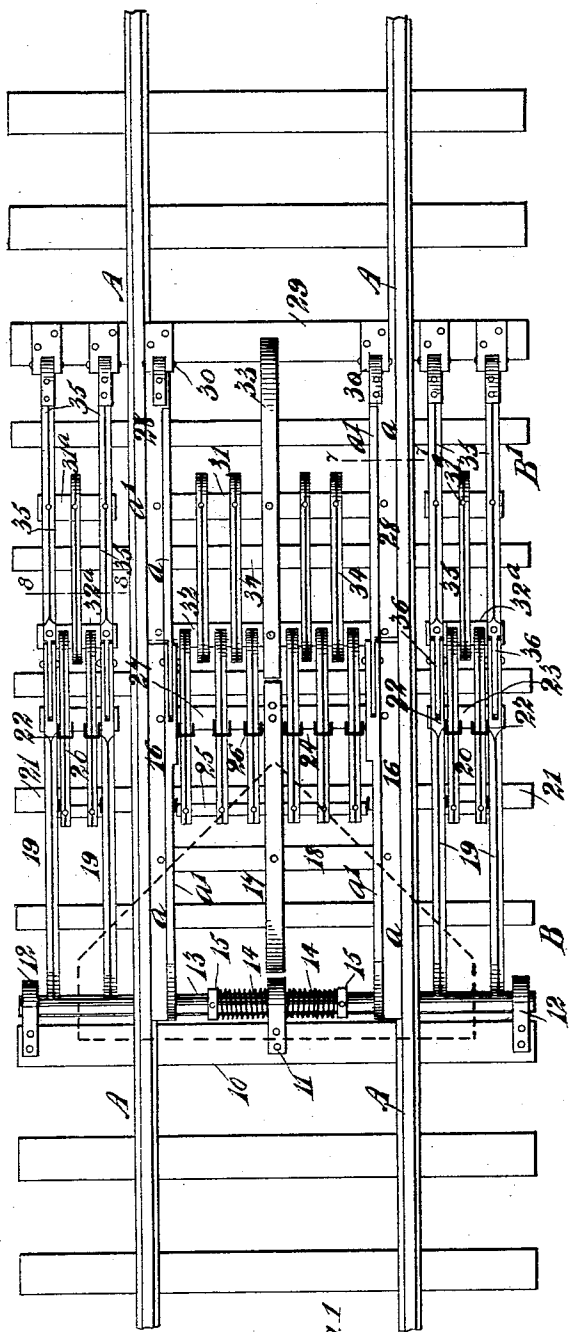


(No Model.)

M. SOBER.
RAILWAY CROSSING GATE.

No. 580,063.

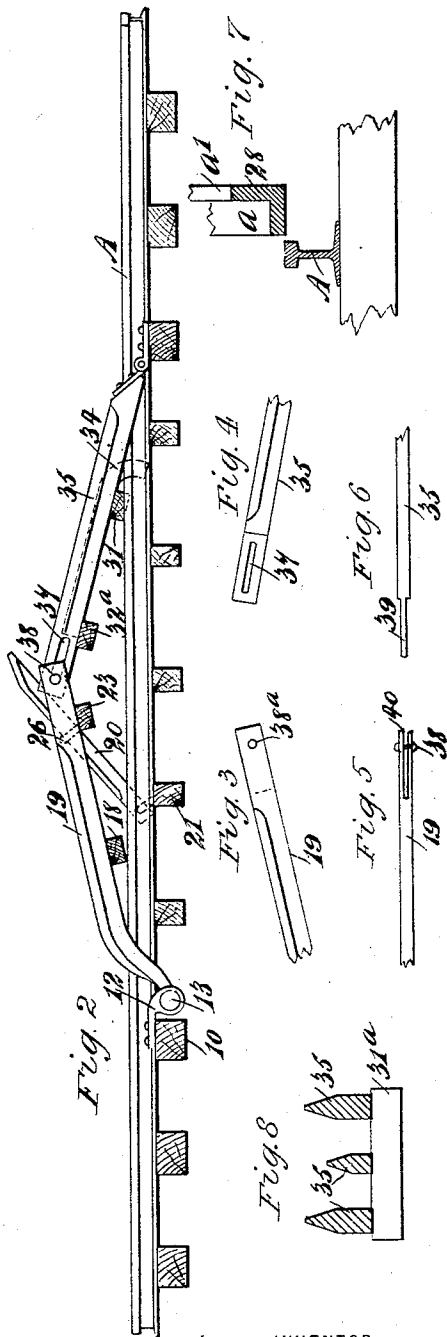
Patented Apr. 6, 1897.



WITNESSES:

J. B. Walker
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Fig. 1



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UNITED STATES PATENT OFFICE.

MORRIS SOBER, OF OKLAHOMA, OKLAHOMA TERRITORY.

RAILWAY-CROSSING GATE.

SPECIFICATION forming part of Letters Patent No. 580,063, dated April 6, 1897.

Application filed December 31, 1895. Serial No. 573,903. (No model.)

To all whom it may concern:

Be it known that I, MORRIS SOBER, of Oklahoma, in the county of Oklahoma, Oklahoma Territory, have invented a new and
5 Improved Railway-Crossing Gate, of which the following is a full, clear, and exact description.

My invention relates to an improvement in railway-crossing gates; and the object of the
10 invention is to construct the device so that it will be simple, durable, and economic.

To these ends the gate comprises two sections to be used in connection, if desired, or singly, if so chosen, or as the character of the
15 crossing may demand.

The invention also comprises a railway-crossing gate which will be automatically carried down out of the way by a passing train, having trip-rails adapted to be engaged
20 by the flanges of the locomotive-wheels, so that in the event the trip-rails should not be pressed downward by the said wheel-flanges the pilot of the engine will operate instead to press said gate downward.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying
30 drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improved gate. Fig. 2 is a side elevation of the gate.
35 Figs. 3 and 4 are detail side views of a portion of the gate-sections adapted to be connected. Figs. 5 and 6 are plan views of the parts shown in Figs. 3 and 4. Fig. 7 is a transverse section taken substantially on the
40 line 7 7 of Fig. 1, and Fig. 8 is a similar section taken substantially on the line 8 8 of Fig. 1.

In carrying out the invention the railway-rails A are laid upon the sleepers in the usual manner, and, as illustrated, the railway-gate
45 is made in two sections B and B', the said sections being connected so as to operate conjointly. The section B, which is that adapted to be approached by the train, is constructed as described below.

50 A center bearing 11 is secured upon the sleeper 10 at the crossing, and bearings 12 are located at the extremities of the said sleeper,

while a shaft 13 is journaled in these bearings. The shaft is provided at each side of its center bearing with a spring 14, the said springs
55 being secured to the aforesaid center bearing at one of their ends and at the other end to two collars 15 or their equivalents, which are secured firmly to the shaft. Two trip-rails 16 are firmly secured to the aforesaid shaft 13,
60 one being located adjacent to the inner face of each track-rail A.

Each trip-rail consists, as shown in Figs. 1 and 7, of a horizontal tread-section *a*, which is adjacent to a track-rail, and an inner flange-
65 section *a'*. Therefore the trip-rails are substantially L-shaped or angular in cross-section. A guide-bar 17 is located between the trip-rails 16, being secured to cross-bars 18 and 27, the cross-bar 18 being ordinarily located about centrally of the trip-rails and the
70 cross-bar 27 near the inner ends thereof. The outer end of the guide-bar 17 is beveled, and the flanges *a'* of the trip-rails 16 also are beveled where they connect with the shaft 13.
75

Outside of the track-rails A guard-bars 19 are secured to the shaft 13, and between these guard-bars auxiliary and shorter bars 20 of like nature are located, and these intermediate guard-bars 20 are hinged or pivoted upon
80 an adjacent sleeper 21 at their outer ends and extend upward through staples 22 or their equivalents secured upon a cross-bar 23, connecting the main outer guard-bars 19, the intermediate and shorter guard-bars hav-
85 ing free movement within the said staples. These intermediate guard-bars, and likewise the main guard-bars, are preferably beveled at their outer side edges, and the intermediate guard-bars are likewise preferably point-
90 ed at their upper or free ends.

The springs 14 serve to hold the trip-rails and the guard and guide bars in an upwardly-inclined position, their inner ends being
95 above the level of the track and presenting an obstacle to cattle crossing the track or traveling thereon at the crossing.

The bars 17 and 33 may have any cross-sectional form, but are preferably rectangular, and these bars, being secured to the same
100 parts which carry the trip-rails 16 and 28, move in unison with said trip-rails and have an elevation equal to that of the bars 19 and 35. (To be seen in Fig. 2.)

Guard-bars 24 of the same character as the said guard-bars 20 are located between the trip-rails 16 and the guide-bar 17, being pivoted or hinged at their lower ends on the aforesaid sleeper 21, and are connected at their pivoted ends by a suitable cross-bar 25. These inner guard-bars 24 extend upward through staples 26 or their equivalents attached to the connecting cross-bar 27 of the inner portion of the gate or that portion contained between the track-rails.

In the operation of a gate comprising the single section above described the flanges of the wheels of the locomotive and the cars of the train will engage with the horizontal or track members *a* of the trip-rails and press the said rails downward substantially flush with the tread of the track-rails, and in so doing the shaft will be rotated against the tension of its springs 14 and the guard and guide bars of the gate will likewise be forced downward to a substantially horizontal position, permitting the engine and train to pass readily, and after the train has entirely passed the crossing the springs 14 will act to restore the gate to its upper inclined position.

Preferably two gate-sections are used, adapted to operate one in front of the other, and in this event the second gate-section B' faces the main section B, and consists of trip-rails 28 of similar construction and similarly located to the trip-rails 16 of the section B. The trip-rails 28 have a hinge connection 30 with a convenient sleeper 29, and the said trip-rails are ordinarily connected by two cross-bars 31 and 32, corresponding to the bars 18 and 27 of the main section B. The gate-section B' is also provided with a guard-bar 33, centrally located between the trip-rails 28, and this guard rail or bar is attached to the cross-bars 31 and 32 and extends over the sleeper with which the trip-rails are connected. The gate-section B' is also provided with guard-bars 34, located between the trip-rails 28 and the guide-bar 33, and these guard-bars 34 are so secured to the cross-bars 31 and 32 as to pass between the inner ends of the corresponding guard-bars 24 of the main gate-section B. Outside guard-bars 35 are likewise employed, the said bars being located outside of the track-rails A, and the outermost of these outside guard-bars are hinged to the aforesaid sleeper 29, and the inner ones are made shorter than the outer bars, and the outer bars are connected by cross-bars 31^a and 32^a, to which the shorter or intermediate bars 35 are attached, being adapted at their free ends to enter the space between the corresponding bars 20 of the main gate-section B.

The uppermost or outside guard-bars 35 and 19 of the two gate-sections are pivotally connected in such manner as to have sliding movement upon one another, and a like connection is made between the trip-rails 16 and 28 of the two gate-sections. This connection is clearly shown in Figs. 2, 3, 4, 5, and 6, in which it will be observed that the guard-bars

35 of the gate-section B' are provided with a tongue 39, adapted to enter a recess 40 in the opposing end of a guard-bar 19 of the main gate-section B. The tongue 39 is provided with a longitudinal slot 37, and at the slotted end of the opposing guard-bar 19 an aperture 38^a is made, adapted to receive a pivot-pin 38, which is likewise passed through the slot 37 of the guard-bar 35. Therefore when one section is pressed downward the other section is compelled to follow, and when one section is released, being carried to its outer position by its springs 14, the other section will be carried instantly in the same direction, and in the event the flanges of the wheel should not properly contact with the trip-rails of the gate-sections the pilot will engage with the central guide-bar 33 or 17 of the sections and will thereby force the sections downward out of the way.

It will be understood that the springs may be used in connection with the section B' as well as in connection with the main section B; but preferably the springs 14 will be made sufficiently strong to control properly the upward movement of both sections of the gate.

It is likewise evident that in the event the track should need repairing at the point where it is covered by the gates the pivot-pins 38 need only be removed from the abutting ends of the trip-rails, and the sections of the gate may then be readily carried backward, one at each side of the crossing, exposing the section of the track previously covered.

The gates may be made to lie flat or occupy a position similar to that of an ordinary stock-guard by reversing the tension of the springs or by placing hooks upon a fixed support beneath the gates for engagement with one or more of the cross-bars of the gate. This low position of the gates may be found desirable in winter in exposed places or where snow-drifts accumulate.

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

1. In a railway-crossing gate, a spring-controlled shaft, trip-rails attached to the said shaft and adapted for engagement with the flanges of the wheels of a passing train, the said trip-rails being located adjacent to the track-rails, and guard-bars operating in conjunction with the trip-rails, the said trip-rails and guard-bars being normally held in an upper inclined position, substantially as shown and described.

2. In a railway-crossing gate, a spring-controlled shaft placed transversely of the track-rails, trip-rails secured to the said shaft, one being located adjacent to the inner face of each track-rail, each trip-rail comprising a flange and a tread-section, adapted for engagement with the flanges of the wheels of a passing train, guard-bars located between the trip-rails, raised and lowered therewith, and a guide-bar likewise located between the said trip-rails, being adapted for engagement with

the pilot of the engine, as is likewise the flange portion of the trip-rails, as and for the purpose specified.

3. A railway-gate, the same comprising a 5 spring-controlled shaft, trip-rails adapted to be engaged by the flanges of the wheels of a passing train, connected with the said shaft and located adjacent to the inner faces of the track-rails, the said trip-rails being normally 10 held in an elevated position, guard-bars pivoted to a fixed support below the trip-rails and independent thereof, and guides carried by the said trip-rails, through which the guard-bars are loosely passed, as and for the purpose 15 specified.

4. In a railway-crossing gate, the combination, with a spring-controlled shaft, and track-rails beneath which the said shaft is journaled, of trip-rails comprising a tread and a 20 flange section, the said trip-rails being controlled by the said shaft and located one adjacent to each track-rail, guard-bars having pivotal connection with a support located beneath the trip-rails, staple-like guides connected 25 with the trip-rails through which the said guard-bars have movement, outside guard-bars attached to the shaft, located at the outer sides of the track-rails, and intermediate pivoted guard-bars located between the outer 30 corresponding bars attached to the said shaft and having movement therewith, as and for the purpose specified.

5. A railway-crossing gate constructed in two sections, the said sections being pivotally 35 connected at their opposing ends and having sliding movement at their point of connection,

whereby both sections may be carried down flatly between the rails of a track, tension devices normally holding both sections of the gate at an upper inclined position, their 40 inner ends being higher than their outer ends, and each section being provided with trip-rails and guard-bars, the trip-rails being located adjacent to the track-rails at the crossing, and adapted to be acted upon and de- 45 pressed by a passing train, substantially as shown and described.

6. In a railway-gate, the combination of two pivotally-mounted trip-bars, the free ends of which have sliding connection with each 50 other, pivotally-mounted guard-rails and means giving said guard-rails sliding connection with one of the trip-bars, substantially as described.

7. In a railway-gate, the combination of 55 two pivotally-mounted trip-bars, the free ends of which have sliding connection with each other, springs actuating the trip-bars, pivotally-mounted guard-rails, and means giving said guard-rails sliding connection 60 with one of the trip-bars, substantially as described.

8. In a railway-gate, two pivotally-mounted trip-bars having their free ends slidably connected, a transverse cross-bar moving with 65 one trip-bar, a staple on said cross-bar, and a pivotally-mounted guard-rail slidable in said staple, substantially as described.

MORRIS SOBER.

Witnesses:

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JOHN WAND.