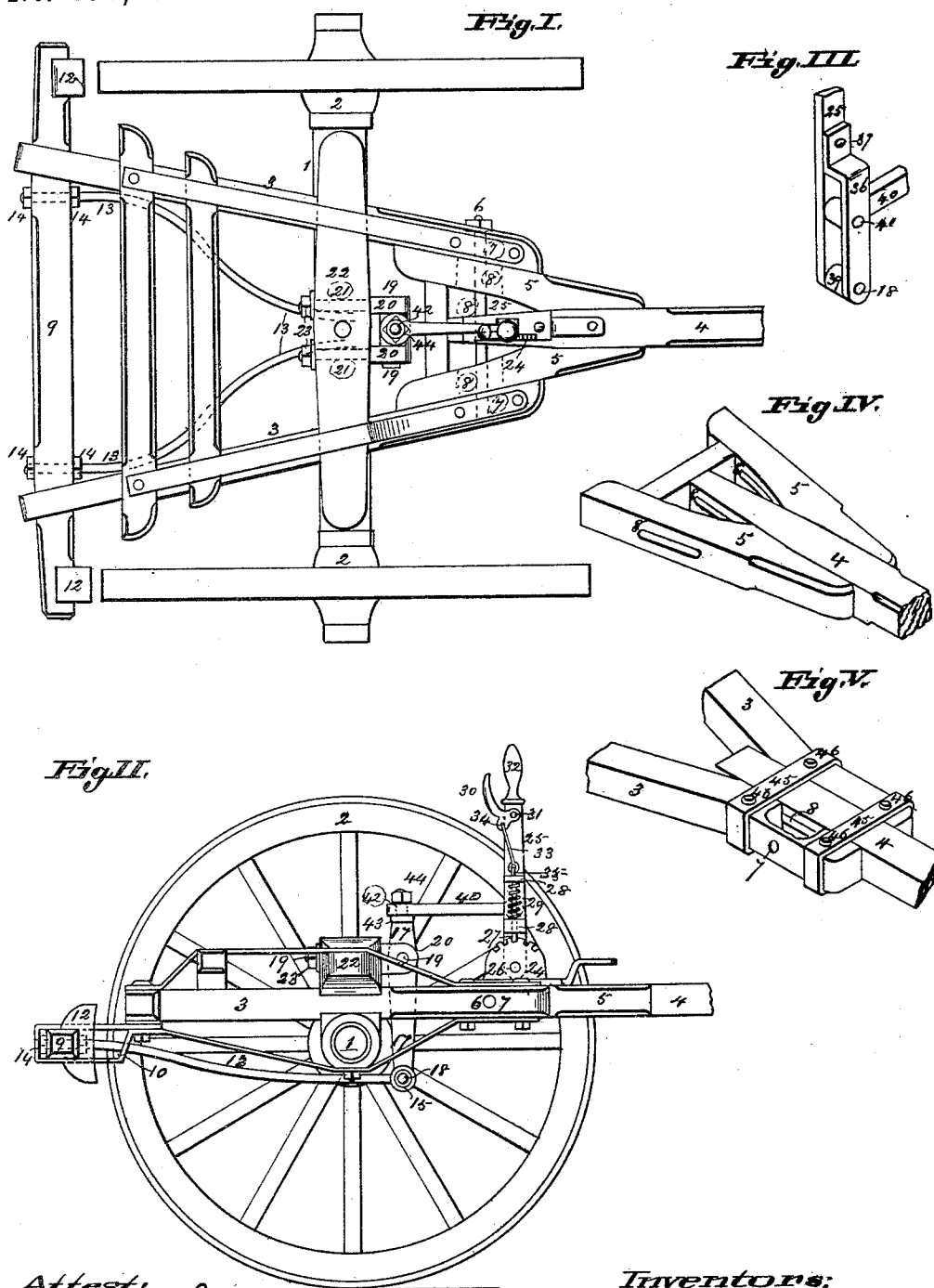


(No Model.)

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VEHICLE BRAKE.

No. 460,890.

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UNITED STATES PATENT OFFICE.

JOHN T. SCHUETZ AND GEORGE SCHUETZ, JR., OF BELLEVILLE, ILLINOIS.

VEHICLE-BRAKE.

SPECIFICATION forming part of Letters Patent No. 460,890, dated October 6, 1891.

Application filed April 28, 1891. Serial No. 390,732. (No model.)

To all whom it may concern:

Be it known that we, JOHN T. SCHUETZ and GEORGE SCHUETZ, JR., both of Belleville, in the county of St. Clair and State of Illinois, have
5 invented a certain new and useful Improvement in Vehicle-Brakes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

10 This invention relates to an adjustable brake with a rack-and-pawl set-lever that locks the adjustment respectively to an automatic brake on the one hand and a hand-brake on the other; and the invention consists in features of novelty hereinafter fully
15 described, and pointed out in the claims.

Figure I is a top view, and shows the sliding draft-bolt and brake in their intermediate position, in which the brake-shoe is brought
20 automatically in contact with the wheels when the vehicle is running on a steep downgrade and requires locking. Fig. II is a side view, and shows the brake adjusted to the same intermediate automatic position. Fig. III is an
25 enlarged detail perspective of the brake-lever. Fig. IV is a detail perspective view of the vehicle-tongue and tongue hounds and shoes, the slotway through tongue and hounds in which the sliding draft-bolt is adjusted;
30 and Fig. V shows a modification in which a sliding tongue is automatically adjustable in the hounds to the limit of the play of the draft-bolt in the slotway of the tongue, with part of one of the hounds broken away to show said
35 slotway in the tongue.

Referring to the drawings, 1 represents the front axle; 2, the wheels mounted on said axle; 3, the main hounds; 4, the tongue, and 5 the tongue-hounds.

40 6 represents the draft-bolt that secures the tongue and tongue-hounds to the main hounds, and which draft-bolt is seated in the draft-holes 7 in the main hounds and in the straps that bind said hounds, and said bolt has an intermediate sliding seat in the elongated slots 8, through the tongue and its
45 hounds.

9 represents the brake-bar, which has a sliding carriage within the loop-strap frames 10, which loop-frames, with their attachment-

straps, are secured beneath the hounds and axle by the screw-bolts 11.

12 represents the rubber shoes that are secured to the brake-bar, and 13 are the duplex brake-rods, which are secured to the brake-bars by the screw-nuts 14. The perforate forward ends 15 of said duplex rods are coupled to the perforate end 16 of the pendent fulcrum-bar 17 by the pivot-bolt 18. The said pendent fulcrum-bar is secured by the fulcrum-bolt 19 to the perforate lugs 20, in which and in said pendent bar said fulcrum-bolt is seated, and said lugs are firmly secured by their bolts 21 to the front bolster 22 of the vehicle (through which bolster said bolts pass) by the screw-nuts 23, which engage on the screw-tips of said bolts.

24 represents a segment-rack, which is bolted to near the rear end of the tongue just forward of the horizontal draft-bolt 6, that
70 secures said tongue to the hounds.

25 represents the adjusting lock-lever, which is pivotally secured to the side of the segment-rack by the pivot-bolt 26. A drop-dog 27 is seated and works with keepers 28, that
75 are secured to and project from the side of the lever 25, and 29 is a push-spring, which is mounted on and secured to said drop-dog.

30 represents a trigger that is secured to and works on said lever by the pivot-pin 31, adjacent to the handle 32 of the lever. A double hook-link 33 hooks above into the perforate lug 34 of said trigger and below into the eyelet-head 35 of said drop-dog. Thus when the trigger is pressed so as to come
85 about in line with the handle of the lever, the dog is elevated out from between the teeth or cogs in the segment-rack to allow the movement of the lever on its pivot-bolt.

36 represents a strap-hanger, which is secured to the reverse side of the lever than that next the rack to which it is riveted. The said strap is secured at top to said lever by the rivet or bolt 37. Beneath the bolt 37 the said strap is bent out for a short distance at nearly a right angle 38 from the side of the lever, and then is bent downward again on a parallel line with said lever until at near its lower end it is connected with said lever and beyond it with the segment-rack by the afore-
90 95 100

said pivot-bolt 26 on which the lever works. A thick filling-washer 39 is mounted on said pivot-bolt and keeps said hanger-strap at its lower end at a parallel distance from the lever.

40 represents a draw-bar whose perforate forward end is seated within said hanger-strap and the lever and is pivotally secured to both by the bolt 41. The perforate rear end of said draw-bar is mounted on the round pin-head 42 of the aforesaid fulcrum-bar 17 and rests on the shoulder-collar 43 of said bar. A nut 44 engages on the screw tip of said pin-head and secures said draw-bar in its connection with the fulcrum-bar 17.

It will be seen that when the adjusting lock-lever 25 is placed in its vertical position (shown in Figs. I and II) the horizontal draft-bolt that connects the tongue and tongue-hounds to the main hounds is adjusted in its sliding slot-bed in the tongue-hounds and tongue to its intermediate position. (Shown in broken lines in Fig. I.) At the same time by the action of the draw-bar on the head of the fulcrum-bar the duplex brake-rods and the brake-bar and its rubber shoes are drawn or driven, as the case may be, in accordance with the previous respective forward or rear tilt of the lever into their intermediate position, and the drop-dog 27, falling into engagement between the center teeth or cogs of the segment-rack, holds said parts in said position, in which, when the vehicle is on either a level or upward incline, the rubber shoes remain at a short distance from the tires of the wheels; but when the vehicle is running on a downgrade and the load pushes on the team the said tongue slides back on its draft-bolt, (the aforesaid elongated slots in the tongue and tongue-hounds enabling it to do so,) while simultaneously and consequently the action of the draw-bar 40 is also automatically reversed, and pushes the top of the fulcrum-bar back, and in consequence throws the bottom of said bar forward, which action, by means of the duplex brake-rods 13, automatically draws the brake-bar forward and presses its rubber shoes against the wheels. When the vehicle again is running on the level or ascending an upgrade the action is reversed, the tongue draws forward on its draft-bolt, the draw-bar 40 again draws the upper end of the fulcrum-lever forward, which throws its lower end back and through its above-described connections, throws back and thus automatically releases the brake from the wheels. Thus it will be seen that when the lever is locked in its vertical position to the center of segment-rack the action of the brake is entirely self-adjusting, as it always automatically sets the brake to rub or brake the wheels when the vehicle is running on a sufficiently downgrade for it to run forward and press against the team, and, on the contrary, when said vehicle runs on sufficiently near a level

for the draft from the team to be again exerted in drawing the load the movement of the above-described automatic device immediately releases the brake, so as not to add to the draft of the load. It will also be seen that the steeper the downgrade on which the vehicle is running, and consequently the more severe the push on the team, the tighter (in self-adjusting consequence) do the brake-shoes press against the wheels.

When it is required to permanently release the brake the lever is pressed down forward and its drop-dog made to engage in one of the forward intervening apertures between the teeth or cogs of the segment-rack, in which position the draw-bar 40 works the fulcrum-lever to throw back the brake to its most open position. When, on the other hand, it is required to permanently or for a time to enforce the brake, such as on the long continued descents of mountain sides and to effect a stringent continuous lock the said adjusting lock-lever is then thrown back to its extreme rear tilt and its locking-dog dropped into one of the intervening spaces between the rear teeth, in which position it forces the fulcrum-bar to draw and hold the brake-bar to effectively lock the brake.

In Fig. V is shown a modification, in which the tongue has no hounds framed to it. Therefore said tongue connects direct with the main hounds, in which case the main hounds are firmly secured together by the heavy strap-bands 45, that are secured by bolts 46 to said hounds. The tongue itself in this modification is provided with a similar elongated slot 8 to that shown in Fig. IV, and the tongue slides within said straps and between said hounds to the limit that its draft-bolt that works in said slot will allow.

We claim as our invention--

1. In a vehicle-brake, the combination of the brake-bar 9, the brake-shoes 12, the loop-strap frame 10, in which said brake-bar works, the duplex brake-rods 13, the fulcrum-bar 17, pivotally secured to said brake-rods, the bolster 22 and its projecting perforate lugs 20, to which said fulcrum-bar is journaled, the draw-bar 40, the adjusting brake-lever 25, coupled to said fulcrum-bar by said bar 40, the segment-rack 24, to which said lever is pivoted, the drop-dog 27, the push-spring mounted on said dog, the trigger 30, pivotally mounted on the brake-lever, and the double hook-link that connects said trigger to said spring-dog, substantially as and for the purpose set forth.

2. In a vehicle-brake, the combination of the axle 1, the wheels 2, mounted on said axle, the main hounds, the tongue and its hounds provided with the elongated slots 8, the draft-bolt 6, that secures said tongue and hounds within said main hounds and allows limited longitudinal play for the tongue and hounds within the main hounds, the

brake-bar 9, the rubber shoes 12 on said bar, the duplex brake-rods 13, the fulcrum-bar 17, the perforate lugs 20, in which said fulcrum-bar is pivoted, the draw-bar 40, the adjustable brake-lever 25, the segment-rack 24, to which said lever is pivoted, the spring-dog, and the trigger and hook link that operate

said dog, substantially as and for the purpose set forth.

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In presence of—

HENRY C. SINK,

I. S. SCHAADT.