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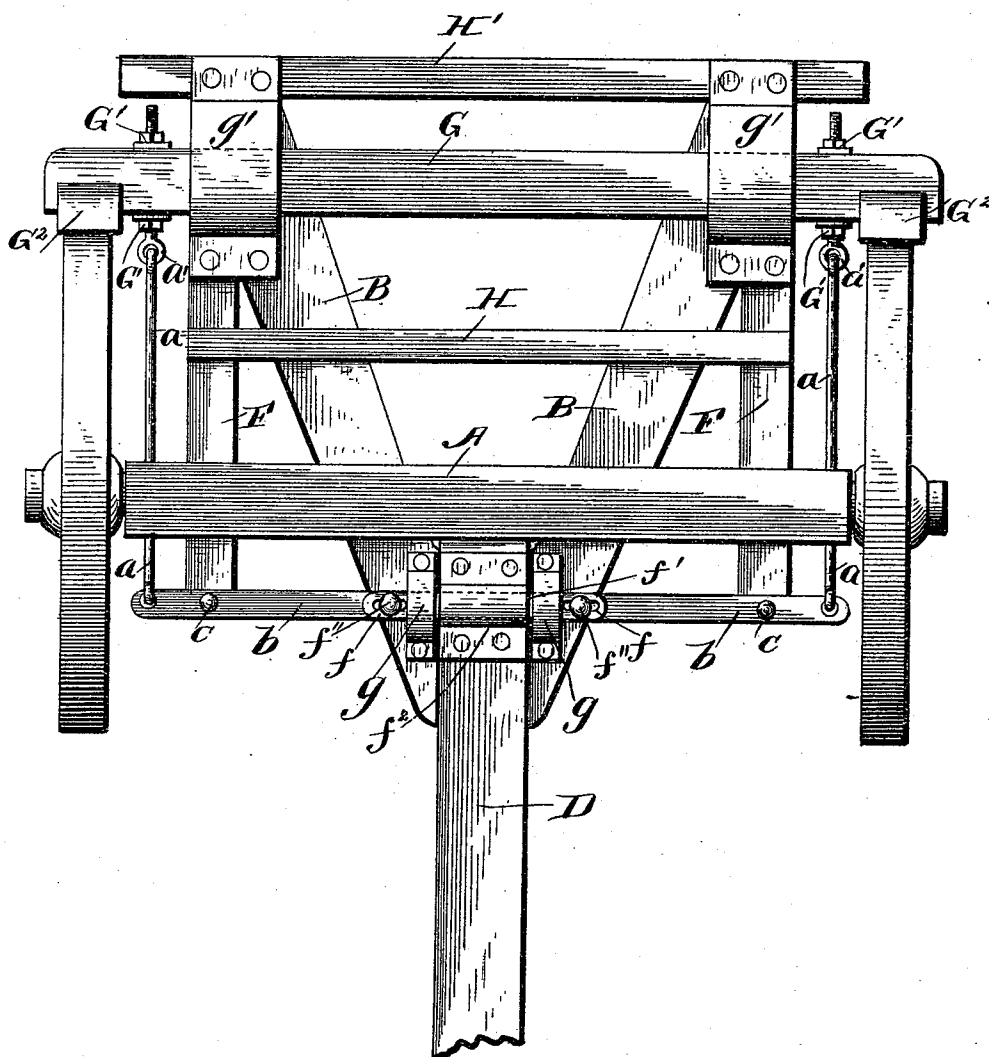
2 Sheets—Sheet 1.

J. N. SCHWALEN.
AUTOMATIC VEHICLE BRAKE.

No. 496,540.

Patented May 2, 1893.

Ex. 1.



Witnesses

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S. W. Foster

Inventor

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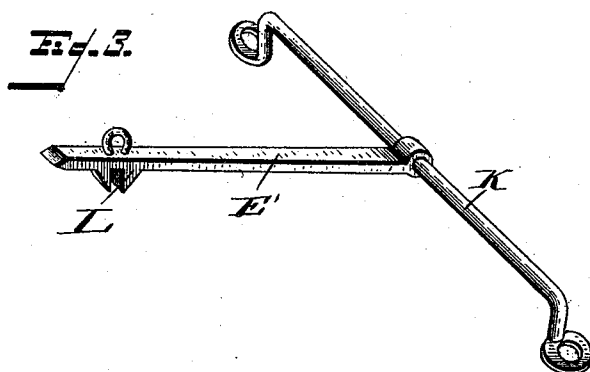
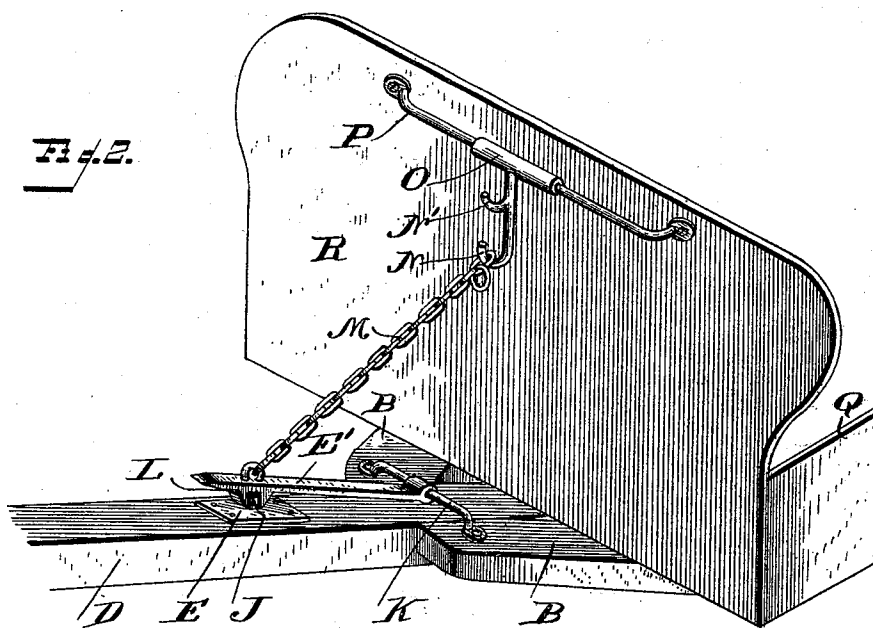
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2 Sheets—Sheet 2.

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AUTOMATIC VEHICLE BRAKE.

No. 496,540.

Patented May 2, 1893.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN N. SCHWALEN, OF HUDSON, WISCONSIN, ASSIGNOR OF ONE-HALF TO
LEO KNOTT, OF SAME PLACE.

AUTOMATIC VEHICLE-BRAKE.

SPECIFICATION forming part of Letters Patent No. 496,540, dated May 2, 1893.

Application filed November 22, 1892. Serial No. 452,779. (No model.)

To all whom it may concern:

Be it known that I, JOHN N. SCHWALEN, a citizen of the United States, residing at Hudson, in the county of St. Croix and State of Wisconsin, have invented certain new and useful Improvements in Automatic Vehicle-Brakes; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to automatic brake-mechanism for vehicles, and is designed as an improvement upon the subject-matter set forth in Patent No. 460,892, for an automatic vehicle brake, granted to me October 6, 1891.

My improvement comprises certain details of construction, arrangement and combination of parts, all of which will be more fully described hereinafter, and particularly pointed out in the appended claims.

Referring to the accompanying drawings:—Figure 1 is an inverted or bottom plan view, with parts broken away, showing my improvement applied to the front wheels of a vehicle. Fig. 2 is a detail perspective view of the front of the vehicle, showing mechanism whereby the automatic action of the brake can be controlled at will by the driver. Fig. 3 is a detail perspective view of the stop-lever and its support.

Like letters of reference indicate the same or corresponding parts in the several views of the drawings.

Before proceeding to a detailed description of the several parts, I desire to state that the provision of means for adjusting and regulating the play of the system of levers controlling the movement of the brake-bar, and certain improved changes in the construction of the device for throwing the brakes into or out of operative position constitute the essential features of my improvement. In other respects the construction and operation of the parts are substantially the same as in the patent above mentioned, and therefore do not need special description herein.

A indicates the front axle, B B the hounds and D the tongue. In this case the tongue D terminates at its rear end between adjacent

guiding faces of the converging outer extremities of the hounds B B, and is secured rigidly to a transverse pivot-bolt passing through a keeper-plate, f^2 , secured to the under side of the tongue and provided with a central eye, f' , through which the bolt f loosely rests. The extremities of the bolt f are flattened, as shown. They slide a prescribed distance backward and forward in the guide brackets, $g g$, to the under sides of the hounds B B. Thus, the tongue is vertically hinged and susceptible of the requisite longitudinal movement.

Respectively on the sides of the hounds B B, are located the parallel longitudinal side bars, F F, having their rear extremities bolted to the outer sides of the hounds. The front portions of the side bars F F are secured to the axle A, the extreme ends thereof terminating a short distance in front of the axle in order to provide a fulcrum point for the transverse brake-levers, $b b$, severally pivoted, at $c c$, upon the ends of the side bars F F. Each lever b is flexibly secured at its end adjacent to the tongue to the contiguous end of the pivot-bolt f by a headed pivot pin, f'' , passing through an elongated aperture in the flattened projecting end of the bolt f to permit corresponding oscillation of the levers $b b$ with the movement of said bolt f and tongue D. The outer end of each lever b is attached to the forward end of a link rod a , the rear extremity of which is hinged in the eye of an adjustable eye-bolt a' , having exterior screw-threads on its rear portion, which portion passes through the brake bar G and is secured thereto by the adjusting nuts, $G' G'$, respectively on the eye bolt on both sides of the brake-bar G, whereby the connection between the brake-bar and brake-lever can be tightened or loosened according to necessity of operation. By this construction, I am enabled to vary the play of the intermediate lever-connection so as to insure positive, certain, and equilateral action of the brake-bar. This adjustability and arrangement constitutes an important feature of my improvements.

The brake-bar G carrying the brake-shoes, $G^2 G^2$ is capable of a limited play or move-

ment in the guide brackets $g' g'$ secured to the under side of the hounds B B over the brake bar G.

H designates a cross-bar intermediate of the brake-bar and axle, and bolted at each end to a side bar F; the hounds B B are centrally bolted to this cross-bar and at their rear extremities are braced by the cross-bar H'. It is a coupling or perch pole of usual construction extending back from the front axle to the rear axle. (Not shown.)

Referring to Figs. 2 and 3, on top of the tongue near its rear end is rigidly fastened a stop plate E having a vertically-projecting stop-pin, J; and E' indicates a stop lever vertically hinged at its rear end to a transverse bracket, K, which, in turn, is secured to the hounds respectively at its ends. This stop lever is provided for the duplex purpose of preventing the application and removal of the brakes as the case may be, and to that end has a bifurcated catch or tooth, L, on its under side so located as to drop over and upon the stop pin J when the tongue is moved to the limit of its backward movement, thus preventing the withdrawal of the tongue and consequently the unlocking of the brake. On the other hand, to prevent the tongue from slipping back and applying the brakes when such application is not desirable, the end of the stop lever serves to drop behind the stop pin J and prevent the backward movement of the tongue.

In order to put the stop lever under the ready control of the driver, a chain, M, is attached at its lower end in an eye in the stop lever and is provided at its upper extremity with a ring adapted to be removably hung upon hooks N N', formed on the movable sleeve, O, capable of a sliding motion on a guide bracket or arm, P, secured at each extremity to the foot or dash-board, R, of the wagon body, Q. By this arrangement of sliding sleeve, the chain is permitted a liberty of movement in accordance with that of the stop lever and running gear.

When the driver desires to lock the tongue

D in any previously set position, he permits the stop lever to drop from its up-raised position by unhooking the lower hook N and hooks on the upper hook N', thus lengthening the chain.

The operation and advantages of my invention will be readily understood by those skilled in the art to which it appertains.

The herein described improvement is simpler in construction, and more effective and satisfactory in use, than that shown in my before mentioned patent.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an automatic vehicle brake, the combination of the movable tongue, a transverse pivot-bolt secured in a keeper plate on the under side of the rear end of the tongue and having flattened ends, guiding brackets on the hounds and bracing the ends of the pivot-bolt and permitting a limited play of said bolt, the two transverse brake levers fulcrumed to the side bars and having their ends adjacent to the tongue connected with the adjacent ends of the pivot-bolt by a pin entering an elongated slot in said pivot-bolt, a movable brake bar, and an adjustable flexible lever connection between each of the brake-levers and the brake-bar, substantially as set forth.

2. The combination, with the tongue movable in its rear supports, and limited in such movement, of the bracket K, the stop-lever pivoted at its rear end to said bracket and provided at its front end with a bifurcated catch on its under side, the stop plate on the tongue adapted to engage said catch, a movable slide on said bracket, and a detachable flexible connection between the slide and stop-lever, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN N. SCHWALEN.

Witnesses:

ALFRED P. GOSS,

MILDRED L. JONES.