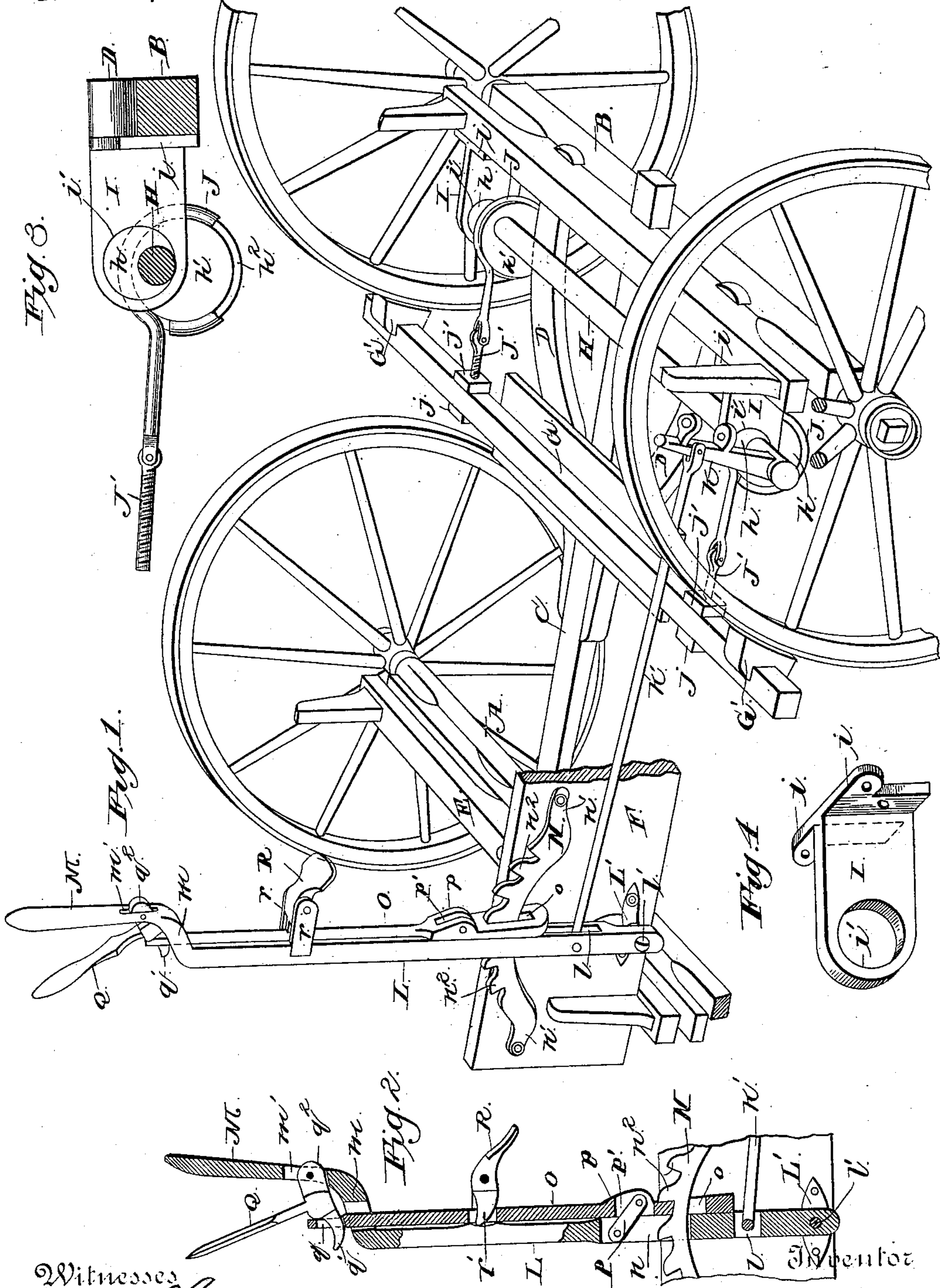


(No Model.)

R. H. SAYRE.  
VEHICLE BRAKE.

No. 342,933.

Patented June 1, 1886.



Witnesses  
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By His Attorneys

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# UNITED STATES PATENT OFFICE.

REUBEN H. SAYRE, OF NEW MARTINSVILLE, WEST VIRGINIA, ASSIGNOR OF ONE-HALF TO FRANK D. YOUNG AND JOHN E. KOONTZ, BOTH OF SAME PLACE.

## VEHICLE-BRAKE.

SPECIFICATION forming part of Letters Patent No. 342,933, dated June 1, 1886.

Application filed January 21, 1886. Serial No. 189,310. (No model.)

*To all whom it may concern:*

Be it known that I, REUBEN H. SAYRE, a citizen of the United States, residing at New Martinsville, in the county of Wetzel and State of West Virginia, have invented a new and useful Improvement in Vehicle-Brakes, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in vehicle-brakes; and it consists of the novel construction and combination of parts, substantially as hereinafter fully set forth, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of my invention. Fig. 2 is a sectional view of the brake-levers. Figs. 3 and 4 are detail perspective views of parts of my invention.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A B designate the front and rear axles of a wagon or other vehicle; C, the reach or perch connecting the axles; D, the hounds connected to the reach and rear axle; E, the bolsters mounted on the axles, and F a portion of one side of the body, the whole of these parts being of the ordinary well-known construction and arrangement.

G designates a brake-bar, that carries shoes G' at its ends, that are adapted to bear on and retard the motion of the wheels of the rear axle of the vehicle, and this brake is supported on a board, g, that is bolted or otherwise rigidly secured to the reach.

H designates a shaft, that is arranged in front of and at a short distance from the rear axle and parallel therewith, and each end of this shaft has two eccentrics or cams,  $h$   $h'$ , that extend on opposite sides of the shaft, the cams  $h$  being of less diameter than the cams  $h'$ .

I designates bearings for the shaft, which are cast with lateral flanges  $i$  at one end to provide for the passage of through-bolts to secure the casting to the inner face of the rear axle of the vehicle, and each casting or bearing is provided with an opening,  $i'$ , of a diameter corresponding to or a little greater than that of the eccentric  $h$ , which fits and is adapted to rotate therein. One of these castings or bearings is provided for each eccentric  $h$ , and the eccentrics  $h'$  are arranged to bear on the inner

adjacent faces of the bearings to prevent longitudinal play or movement of the shaft H, and retain the eccentrics  $h$  in the bearings. Each of the larger eccentrics,  $h'$ , are provided with an annular rim or flange,  $h^2$ , on one edge thereof, and between this flange and the inner face of the bearing is disposed a strap, J, that encompasses the eccentric  $h'$ , and is pivotally connected at its free end to an adjusting-rod, J'. Each of the straps is connected to an adjusting-rod, which is exteriorly threaded and passes through openings in the brake-bar, clamping-nuts  $j$   $j'$  being fitted on the threaded rod and bearing on opposite faces of the brake-bar. By this means the brake-bar is rigidly clamped in the threaded rods, while at the same time the bar can be adjusted toward and away from the pivoted end thereof to vary the distance which the bar has to move to be brought into contact with the tires of the wheels.

One end of the shaft H has an arm,  $k$ , rigidly secured thereon, and to the upper end of this arm is pivotally connected a longitudinal brake-rod,  $k'$ , the other end of said rod being pivoted within a slotted portion,  $l$ , of a main brake-lever, L, that is disposed at the front end of the vehicle on one side thereof and within convenient reach of the driver and operator. The lower end of the brake-lever is pivoted, as at  $l'$ , to a bracket or casting, L', that is bolted or otherwise suitably secured on the outer face of the vehicle-body, and the upper end of this lever has an angular arm,  $m$ , with which is cast or secured a handle, M, the latter being disposed at an angle to the arm, and finished in any preferable manner.

The main brake-lever L is provided near its lower end with a longitudinal slot,  $n$ , and through this slot is arranged a curved bar, N, which is formed in the arc or segment of a circle and provided at its ends with angular feet  $n'$ , that are bolted to the side of the vehicle-body and hold the main portion of said curved bar in alignment with the slot of the main brake-lever to permit the latter to be moved freely over the bar.

O designates an auxiliary lever, that is disposed in a parallel plane with and carried by the main brake-lever. This auxiliary lever is slotted at its lower end, as at  $o$ , and the



slotted portion fits over and is adapted to engage one of a series of spaced teeth or projections,  $n^2$ , formed on the upper surface or edge of the curved bar N. Near its lower end the auxiliary lever has an enlarged portion,  $p$ , that is slotted, as at  $p'$ , and a link, P, is pivoted in this enlarged slotted portion  $p$  of the auxiliary lever and the slot  $n$  of the main brake-lever to permit the auxiliary lever to move a limited distance, whereby the lower slotted portion,  $o$ , can be drawn out of or thrown into engagement with the teeth of the curved bar N. The upper end of the auxiliary lever extends through an opening formed in the angular bent arm  $m$  and is provided with an opening,  $q$ , and in this opening fits one arm,  $q'$ , of a lever, Q, that is adapted to be grasped by hand to elevate or lower the rod O, said lever Q being provided with another arm,  $q^2$ , that extends into and is pivoted in a slot,  $m'$ , of the handle M, as is obvious.

R designates a foot lever or treadle, that is pivoted in integrally-formed lugs  $r$  of the main brake-lever, and these lugs are arranged on the rear edge of said lever and on opposite sides of the auxiliary lever, to which auxiliary lever the projecting arm  $r'$  of the treadle R is pivotally connected.

The operation of my invention is as follows:

If it is desirable to apply the brake-shoes to the wheels of the rear axle to retard the motion thereof in descending declivities, the operator grasps the lever Q and the handle M, and by pressure of his hand draws the upper end of the lever Q toward the handle. When the pivoted lever Q is thus operated, the arm  $q'$  thereof elevates the gravitating auxiliary lever O from engagement with the teeth of the curved bar, or the elevation of the auxiliary lever may also be accomplished by pressing with the foot on the pivoted treadle R. When the auxiliary holding-lever is thus drawn from engagement with the teeth of the curved bar N, the pivoted main brake-lever L is moved forward, which movement draws on the brake-rod  $h'$  and the arm  $h$  and oscillates or turns the shaft H. Simultaneous with the rotation of the shaft the eccentrics  $h$  turn in their bearings and the eccentrics  $h'$  draw upon the straps and the brake-bar, which is thus applied to the wheels. When the brakes are to be released, the reverse of the above-described manipulation of the brake-lever L, the shaft, and brake-bar takes place to force the shoes away from the wheels, as will be readily understood. The auxiliary lever O is carried by the main lever L in its movements, and when the pressure of the hand or foot on the lever Q or treadle R is released the auxiliary lever descends by gravity and engages one of the teeth of the curved bar N, to prevent the main brake-lever from further movement.

From the foregoing description, taken in

connection with the drawings, it will be observed that I provide a powerful brake that can be operated very quickly and with a minimum of power or force; that the devices are very simple, strong, and durable in construction, thoroughly effective for the purposes designed, and are cheap, and can be applied to vehicles of ordinary construction.

The present braking devices are especially designed as an improvement upon the class of brakes shown in Letters Patent to B. G. Steward, No. 150,100, dated April 21, 1874, the title to which and the present invention resides in the same parties.

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

1. The combination of a brake-bar, a shaft provided with eccentrics  $h$   $h'$ , projecting at different sides from the said shaft, bearings in which the eccentrics  $h$  are journaled, and connections between the eccentrics  $h'$  and the brake-bar, substantially as described.
2. The combination of a movable brake-bar, bearings mounted on the rear axle, a shaft having two pairs of eccentrics, one eccentric of each pair being journaled in the bearings, and straps connecting the other remaining eccentrics of the pair with the brake-bar, substantially as described.
3. The combination of a movable brake-bar, bearings secured upon the rear axle, a rotatable shaft provided with two pairs of eccentrics,  $h$   $h'$ , at its ends, which project on opposite sides from the shaft, the eccentrics  $h$  being journaled in the bearings and the eccentrics  $h'$  provided with a circumferential flange,  $h^2$ , and bearing on the inner face of the bearings to prevent longitudinal play of the shaft, and straps intermediate of the brake-bar and eccentrics  $h'$ , substantially as described.
4. The combination of a shaft, bearings therefor, a brake-bar, straps connected with eccentrics of the shaft, and adjustable rods mounted in the brake-bar and connected with the straps, substantially as described.
5. The combination of a pivoted main lever having an angular arm,  $m$ , and a handle, an auxiliary lever carried by the main lever and having its upper end passing through an opening in the angular arm  $m$ , a link, P, pivotally connected to the main and auxiliary lever, a curved bar, N, passing through slots in the main and auxiliary levers, a pivoted treadle, and a pivoted handle-lever, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

REUBEN H. SAYRE.

Witnesses:

FRED. BOWERS,  
EDWARD MAGERS.