(No Model.)

E. B. C. WILLISON.

BRAKE LEVER.

No. 323,994. Patented Aug. 11, 1885.

Fig. 1.

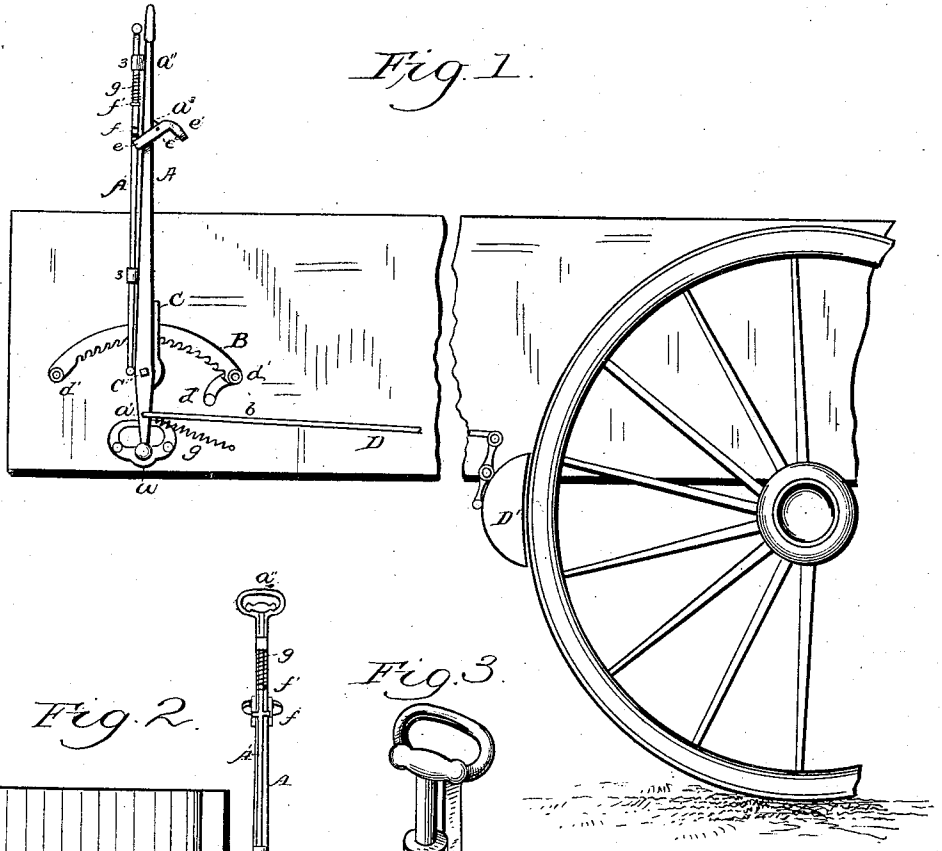


Fig. 2.

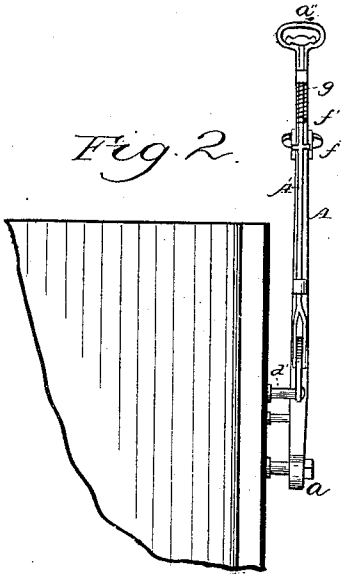


Fig. 3.

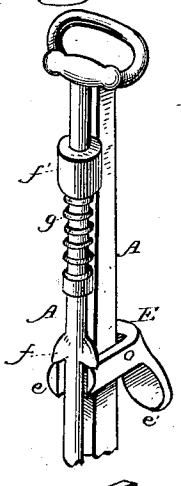


Fig. 5.

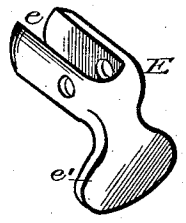
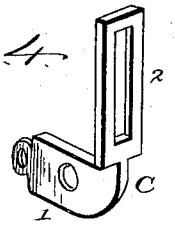


Fig. 4.



WITNESSES

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EDWIN B. C. WILLISON, OF WIND RIDGE, PENNSYLVANIA.

BRAKE-LEVER.

SPECIFICATION forming part of Letters Patent No. 323,994, dated August 11, 1885.

Application filed February 24, 1885. (No model.)

To all whom it may concern:

Be it known that I, EDWIN B. C. WILLISON, of Wind Ridge, in the county of Greene and State of Pennsylvania, have invented certain new and useful Improvements in Brake-Lock Mechanism for Vehicles; 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to mechanism for automatically adjusting the brake-block of wagons and other vehicles to cause them to bear with a greater or less pressure upon the wheels, whereby the speed of such wagons or vehicles, in the descent of inclines and at other times desired, can be checked at will by the operator; and it consists in certain new and useful improvements upon the invention for which United States Letters Patent No. 307,367, bearing date of October 28, 1884, were granted me, as will be hereinafter more fully described and specifically pointed out in the claims.

The object of my invention is to afford means whereby the brake-lever can be operated by the foot of the driver as well as by hand, and whereby the said lever will be automatically operated to lock the brake in its adjusted position when the weight of the driver's foot is removed.

Referring to the annexed drawings, Figure 1 represents, in side elevation, a wagon having my improved brake-lock mechanism embodied in connection therewith. Fig. 2 is a vertical elevation of the device as it appears from an end view of a vehicle. Fig. 3 is a perspective detail view of the upper portion of the two levers. Fig. 4 is a view in detail of the dog or detent C, hereinafter described; and Fig. 5 is a view in detail of the small lever E, which is adapted to be operated by the foot of the driver.

Referring to the several parts by letter, A represents the main operating-lever, which constitutes a lever of the second class or order, its fulcrum at *a*, the resistance taking place at the point *a'*, where the attachment or connection of the brake-rod is made, while the power is applied at the upper end or handle, *a''*. At a distance from the point of resistance equal to about that of the fulcrum the said lever is recessed or slotted out to form an opening by which it can be placed upon and moved back and forth over a curved bar, B. This bar in shape conforms to the arc or segment of a circle, the direction of its curve being upward, and its under edge being notched or serrated, as shown.

The lever A is provided at a point near its upper end with a rearwardly-extending shoulder or projection, a^3, for the purpose here nafter specified.

Turning on a pivot, *c*, in the slot or opening of the lever A, is a dog or detent, C, for locking or holding said lever against movement after the proper force has been applied to the brake. The said detent C consists of a solid portion, 1, through which the pivot *c* passes, and an upwardly-extending portion or branch, 2, that is slotted for nearly the whole of its length to permit it to travel over the bar B in like manner as lever A.

A' represents an auxiliary lever that is bifurcated at its lower end, and pivoted at such end to the outer end of the portion 1 of the dog or detent, as shown, and is held in position by guides 3 on the main lever, its lower bifurcated end embracing the arc-bar B, as shown. This lever is provided, near its upper extremity, with the wings or shoulders *f f* and *f' f'*, the former, *f*, being cast at such a point upon the lever A' as to adapt them to bear or rest upon the free bifurcated end of the small lever E. (Shown in detail in Fig. 5.) This lever E, which is pivotally secured at e^2 upon the projection a^3 of the main lever A, is provided with the broad or flattened end *e'*, upon which the foot of the driver bears in operating the said lever, and has its opposite end bifurcated at *e* to adapt it to straddle the main lever A and move freely over the same. The forward extremities of the said bifurcated portion are extended beyond the forward edge of the main lever, so as to project beneath the lower wings, *f*, of the said lever. A coiled spring, *g*, preferably of brass wire, is placed upon the upper portion of the auxiliary lever *a'*, its lower end resting upon the small wings *f' f'* and its upper end being in close proximity to the under side of the upper guide 3, through which the lever A' passes.

The operation of the lever E and the spring *g* will be hereinafter described. The lever A at its fulcrum is pivoted to a small post or standard, *d*, having a curvilinear base, by which much additional strength is afforded thereto. The bar B is secured to posts or standards *d' d' d'* of the same height as *d*, so as to bring the said bar and the fulcrum of the main lever in the same vertical plane, the bar at one end being formed with a small branch, *b*, for lending strength thereto.

D represents the brake rod, which is connected at one end to the main lever, and at the other end to a small lever which connects it with the brake-block D', such blocks and connection being of ordinary construction.

F represents a spring, secured at one end to the side of the vehicle and at the other to the lever A at the point of resistance. This spring serves, when the brake has been unlocked, to automatically and rapidly draw back the levers, thereby disengaging the blocks from contact with the wheels. The slotted portion 2 of the detent, that embraces the notched bar B, is of oblong shape, and when the main lever has been pushed forward and the auxiliary lever has been depressed to force the detent into engagement with said notched bar, that part of such portion 2 which extends upwardly beyond the bar B will rest against the adjacent side of the main lever. In this manner the strain which tends to back movement of the main lever is not thrown entirely upon the portion of the detent that engages the notches of the bar, but is neutralized by the abutment of the upper portion, 2, of the detent and main lever.

The operation is as follows: When it is desired to cause frictional contact of the blocks with the wheels, the operator pushes forward the lever A, at the same time elevating the auxiliary lever A' to the position shown in dotted lines, Fig. 1. This is most conveniently accomplished, especially when both of the driver's hands are closely occupied with the lines, by pressing with the foot upon the flattened end *e'* of the small lever E, thereby elevating the bifurcated end *e*, and, through the wings *f f*, elevating the auxiliary lever A', and compressing the coiled spring *g* between the wings *f' f'* and the upper guide 3. In thus elevating the lever A' the detent is also elevated at one end, its slotted portion being thrown down upon the upper or smooth edge of the arc-bar B. (See also dotted lines Fig. 1.) When the parts are in these relative positions, the lever A can be pushed forward as desired, when, by removing the foot from the small lever E, the spring *g* will operate to force the auxiliary lever A' down, to depress the detent and bring its slotted portion up against the side of the main lever, as shown in full lines, Fig. 1. This action causes the lower side of the portion 2 of the detent to go up into the notches or serrations of the bar B, and thus, as will be apparent, prevent any back movement.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of my improved vehicle-brake will be readily understood, without requiring further explanation.

It will be seen that the brake lever can be readily and instantly operated by foot, as well as by hand, and will also be automatically locked in its adjusted position.

Having thus described my invention, what I claim is—

1. The combination, in a brake-mechanism for vehicles, consisting of the main lever, the auxiliary clutching-lever provided with lateral projections, and the bifurcated foot-operating lever arranged to operate the auxiliary clutching-lever by contact with the lateral projections of the same.

2. The combination, in a brake mechanism for vehicles, consisting of the main lever, the toothed segment, and clutch, the auxiliary lever provided with lateral projections, the spring for releasing the clutch, and the bifurcated foot-operating lever arranged to operate the auxiliary clutching lever by contact with the lateral projections of the same, as set forth.

3. In a brake mechanism for vehicles, the combination, with the bar B, having portion *b* and the standards by which said bar is secured, of the slotted main lever moving on the bar and having fulcrum with enlarged base, the detent formed of the part 1, and the upwardly-extending oblong portion that embraces the bar, the bifurcated auxiliary lever embracing the bar and pivoted to the portion 1 of the detent, and provided, near its upper end, with the wings *f f f' f'*, and coiled spring *g*, and the foot-lever E, formed of the part *e'* and the bifurcated end *e*, all constructed and arranged to operate substantially as described.

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

E. B. C. WILLISON.

Witnesses:
MARTIN SUPLER,
SAMUEL HOUSTON.