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D. F. & H. H. GREASER.

EMERGENCY BRAKE FOR VEHICLES.

APPLICATION FILED JUNE 28, 1905.

Fig. 1.

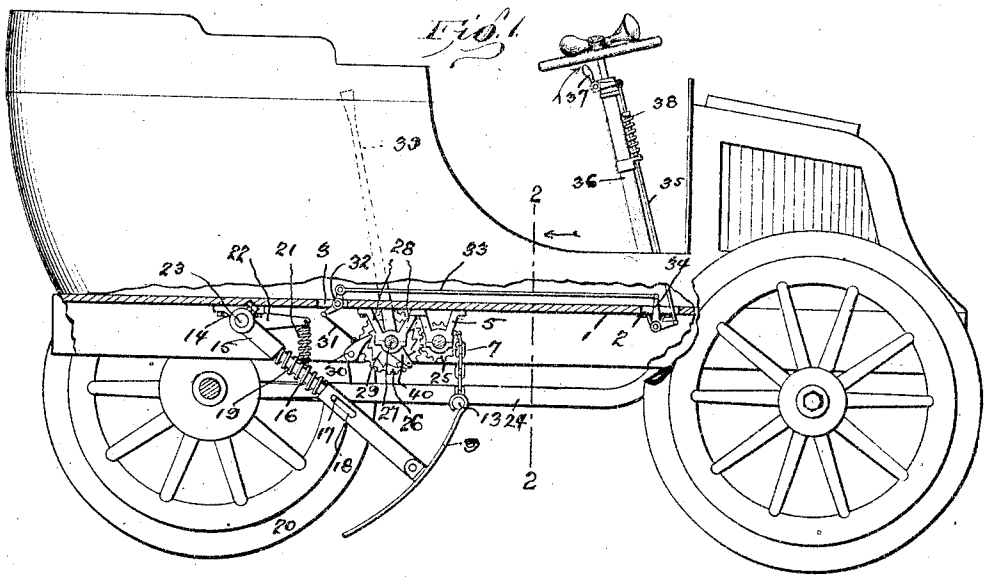


Fig. 2.

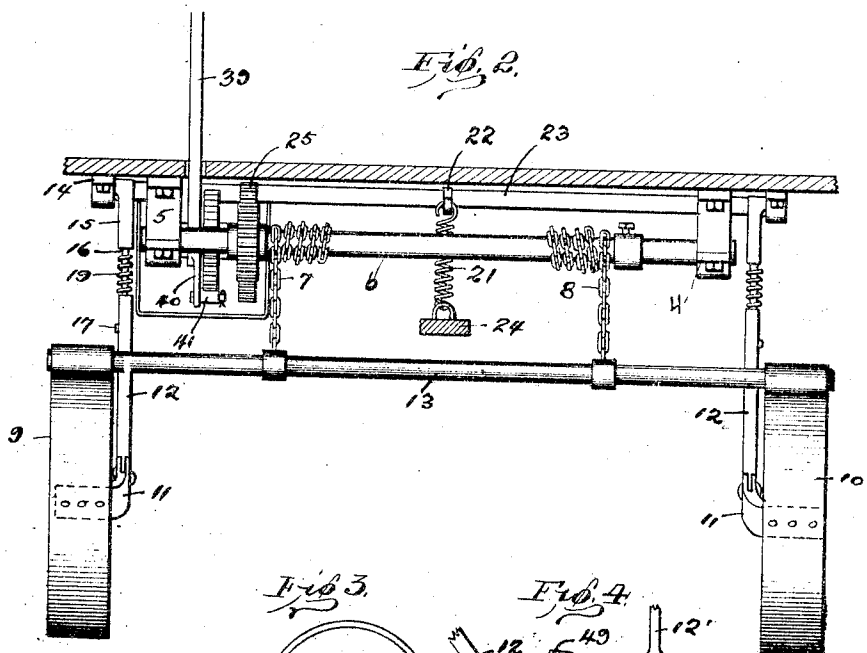


Fig. 3.

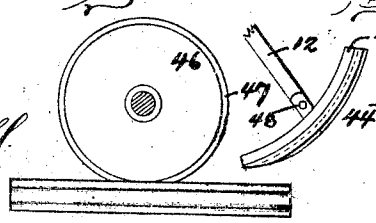
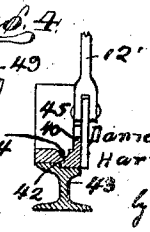


Fig. 4.



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EMERGENCY-BRAKE FOR VEHICLES.

No. 850,302. Specification of Letters Patent. Patented April 16, 1907.

Application filed June 28, 1905. Serial No. 267,440.

To all whom it may concern:

Be it known that we, DANIEL F. GREASER and HARRISON H. GREASER, citizens of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Emergency-Brakes for Vehicles, of which the following is a specification, reference being had therein to the accompanying drawings.

Our present invention relates to improvements in emergency-brakes for vehicles, and the main object of the invention is the provision of an emergency-brake in which a suitable form of brake-shoe or sled is interposed between the tread of the wheel and the roadbed when the momentum of the vehicle is to be stopped in combination with an improved mechanism for operating said shoe or sled, as will presently appear.

In the accompanying drawings, Figure 1 is a side elevation of an automobile or motor-car, with a portion thereof in section to show the invention in the position it assumes when out of use. Fig. 2 is an enlarged cross-sectional view taken on line 2 2 of Fig. 1 looking in the direction of the arrow. Fig. 3 is a modified form as applied to railroad-wheels; and Fig. 4 is a cross-section of the device, showing the shoe or sled in contact with the rail.

Referring to the drawings, the numeral 1 designates the floor of the body of the automobile, which is provided with the openings 2 and 3 therethrough. Secured upon the under surface of the floor and depending therefrom are journal-brackets 4 and 5, in which is journaled a shaft 6, carrying the two chains 7 and 8, which are adapted to be wound thereon to operate the shoes or sleds 9 and 10, pivotally secured by means of the right-angled arm 11 to the sleeves 12, a rod 13 being connected to one end of each sled and to the chains 7 and 8, whereby the shoes or sleds are moved so as to describe substantially an arc of a circle.

Pivotally connected to a plate 14 is an arm 15, whose reduced portion 16 fits slidably within the sleeve 12 and is provided with a pin 17, which passes through the opening or slot 18 in said sleeve, so as to limit the downward movement of the shoe or sled, a coiled spring 19 being interposed upon the reduced portion 16, so as to normally hold the shoe downward.

In order to quicken the downward movement of the shoe or sled, so that they will engage the periphery of the wheels 20 at their point of contact with the ground, we provide the spring 21, which engages a lever 22, carried upon the shaft 23, the other end of the spring being connected to a stationary bar 24, the spring exerting a tension downward, so as to produce the proper effect.

In order to operate the device—that is, rotate the shaft 6 in either direction—we mount thereon a pinion 25, which is adapted to mesh with a pinion 26, carried upon the short shaft 27 and journaled between a pair of brackets 28, the said short shaft also having mounted thereon a ratchet-wheel 29, which is adapted to be engaged by a pawl or detent 30. In order to operate this pawl or detent so as to release the ratchet and allow the shoes to be thrown into operation, we provide a link 31, a bell-crank lever 32, pivoted in the floor of the automobile in the opening 3, and the connecting-rod 33, connected to the bell-crank lever 34, pivoted so as to operate in the opening 2 in the floor of the automobile. To the other member of this bell-crank lever 34 we connect a spring-actuated rod 35, which is operably connected to the steering-post 36 of the automobile, so as to be operated upon by a hand-lever 37, pivoted near the top of the steering-post and readily accessible by the operator of the automobile, a spring 38 being so mounted as to exert a tension as to hold the pawl or detent in engagement with the ratchet-wheel.

In order to operate the shaft so as to wind the shoes or sleds in inoperable position after being in use, we provide a handle or lever 39, which is provided with an offset end 40, carrying a spring-actuated pawl or detent 41, by means of which the lever is rocked or oscillated so as to rotate the ratchet, and consequently the shaft 6, so as to wind the chains 7 and 8 thereupon and raise the shoes or sleds. As shown in Figs. 3 and 4, this form of device is applied for use upon railway-cars, and in this instance we form the shoes, instead of flat segmental pieces in the other views, with a shouldered tread 42 for engagement with the rail 43 and with a depression 44 in its projecting flange 45, which is adapted to engage the periphery of the car-wheel 46 and form a receptacle for the flange 47 thereof, the spring-actuated sliding rod 12′ being pivotally secured at 48 to the pro-

jecting flange 49, which is adapted to be exterior of the car-wheel.

From the foregoing description it will be seen that we provide a means which will prevent vehicles from sliding, which is generally the case when the vehicle has been driven at a high speed.

What we claim as new, and desire to secure by Letters Patent, is—

1. The combination with a vehicle, of an emergency-brake therefor, consisting of means adapted to be wedged between the wheels of the vehicle and the ground, means for holding the same out of engagement with the wheels and ground, means operable from the steering mechanism of the vehicle for releasing the wedging means, and automatic means set in operation by said releasing means whereby the wedging means are placed in contact with the wheels and the ground.

2. The combination with a vehicle, of an emergency-brake therefor, consisting of means adapted to be wedged between the wheels of the vehicle and the ground, means for holding the same out of engagement with the wheels and ground, means operable from the steering mechanism of the vehicle for releasing the wedging means, automatic means set in operation by said releasing means whereby the wedging means are placed in contact with the wheels and the ground, and means for returning the wedging means to inoperative position.

3. The combination with a vehicle, of an emergency-brake therefor, consisting of a pair of shoes adapted to be wedged between the wheels and the ground, means for holding said shoes out of engagement with the wheels and ground, means operable from the steering mechanism of the vehicle for releasing said shoes, and automatic means set in operation by said releasing means whereby the shoes are placed between the wheels and the ground.

4. The combination with a vehicle, of an emergency-brake therefor, consisting of a pair of shoes adapted to be wedged between the wheels and the ground, means for holding said shoes out of engagement with the wheels and ground, means operable from the steering mechanism of the vehicle for releasing said shoes, means for automatically wedging the shoes between the wheels and the ground after said shoes are released, and means for returning the shoes to inoperative position.

5. The combination with a vehicle, of an emergency-brake therefor, consisting of a pair of shoes adapted to be wedged between the wheels and the ground, means for holding the shoes out of engagement with the ground, spring-actuated means for exerting a tension to throw the shoes in operable position, and means operable from the steering mechanism of the vehicle for releasing the holding means and allowing the spring-actuated means to place the shoes in contact with the wheels and ground.

6. The combination with a vehicle, of an emergency-brake therefor, consisting of a pair of shoes adapted to be wedged between the wheels and the ground, means for holding the shoes out of engagement with the ground, spring-actuated means for exerting a tension to throw the shoes in operable position, means operable from the steering mechanism of the vehicle for releasing the holding means and allowing the spring-actuated means to place the shoes in contact with the wheels and ground, and means for returning the shoes to inoperative position.

7. The combination with a vehicle, of an emergency-brake therefor, consisting of a shaft pivoted below the floor thereof, a pair of arms carried by the shaft, a sleeve connected to each of said arms and projecting downwardly, a shoe pivotally connected to each sleeve, means connecting both shoes so that they operate in unison, means for holding the shoes in inoperative position, means for releasing said shoes, and means for automatically placing the shoes in engagement with the wheels and ground after they have been released.

8. The combination with a vehicle, of an emergency-brake therefor, consisting of a shaft pivoted below the floor thereof, a pair of arms carried by the shaft, a pair of shoes carried by said arms adapted to contact the wheels and the ground when in operable position, means for connecting the shoes together, means for holding the shoes in inoperative position, means for releasing said shoes operable from the steering mechanism of the vehicle, and means for automatically placing the shoes in engagement with the wheels and the ground after the shoes have been released.

9. The combination with a vehicle, of an emergency-brake therefor, consisting of a shaft pivoted below the floor thereof, a pair of shoes carried thereby and adapted to swing in an arc of a circle to engage the wheels and the ground simultaneously, means for holding the shoes in inoperative position, means for releasing the shoes operable from the steering mechanism of the vehicle, and means for automatically placing the shoes in engagement with the wheels and ground after the shoes are released.

10. The combination with a vehicle, of an emergency-brake therefor, consisting of a shaft pivoted to the floor thereof, a pair of shoes carried by said shaft and adapted to swing in an arc of a circle to engage the wheels and the ground when in operable position, means for holding the shoes in inoperative position, means for releasing the shoes operable from the steering mechanism of the vehicle, means for automatically plac-

ing the shoes in engagement with the wheels and ground after the shoes are released, and means for returning the shoes to inoperative position.

11. The combination with a vehicle, of an emergency-brake therefor, consisting of a shaft pivoted below the floor thereof, a pair of arms carried by the shaft, a sleeve connected to each of said arms and projecting downwardly, a shoe pivotally connected to each sleeve, means connecting said shoes together, means for holding the shoes in inoperative position, means for releasing said shoes, means for automatically placing the shoes in engagement with the wheels and the ground after the shoes are released, and means for returning the shoes to inoperative position.

12. The combination with a vehicle, of an emergency-brake therefor, consisting of a shaft pivoted below the floor thereof, a pair of arms carried by the shaft, a pair of shoes carried by said arms adapted to contact the wheels and the ground when in operable position, means for connecting the shoes together, means for holding the shoes in inoperative position, means for releasing said shoes operable from the steering mechanism of the vehicle, means for automatically placing the shoes in engagement with the wheels and the ground after the shoes are released, and means for returning the shoes to inoperative position.

13. The combination with a vehicle, of an emergency-brake therefor, consisting of means adapted to be wedged between the wheels and the ground, means for holding the same out of engagement with the wheels and ground, means operable from the steering mechanism of the vehicle for releasing the wedging means, and means set in operation after the wedging means is released, whereby the wedging means is placed in engagement with the wheels and the ground.

14. The combination with a vehicle, of an emergency-brake therefor, consisting of means adapted to be wedged between the wheels and the ground, means for holding the same out of engagement with the wheels and ground, means operable from the steering mechanism of the vehicle for releasing the wedging means, means set in operation after the wedging means is released, whereby the wedging means is placed in engagement with the wheels and ground, and means for returning the wedging means to inoperative position.

15. The combination with a vehicle, of an emergency-brake therefor, consisting of means adapted to be wedged between the wheels and ground, means for holding the same out of engagement with the wheels and ground, means operable from the steering mechanism of the vehicle for releasing the wedging means, means set in operation after the wedging means is released, whereby the wedging means is placed in engagement with the wheels and ground, and manually-operated means for returning the wedging means to inoperative position.

16. The combination with a vehicle of an emergency-brake therefor, consisting of a shaft pivoted below the floor thereof, a pair of arms carried thereby and provided with reduced portions, sleeves for the reception of said arms projecting downwardly, a shoe carried by each sleeve, means for connecting the shoes together, a spring exerting a tension downwardly so as to place the shoes simultaneously in engagement with the wheels and the ground, and means whereby the shoes are raised simultaneously.

17. The combination with a vehicle, of an emergency-brake therefor, consisting of a shaft pivoted below the floor thereof, a pair of arms carried by said shaft, sleeves for the reception of said arms projecting downwardly, a shoe pivotally connected to each sleeve, means for connecting both of said shoes, spring-actuated means for exerting a tension downwardly so as to place the shoes simultaneously in engagement with the wheels and the ground, and means operable from the vehicle for releasing the exerting means, whereby the shoes are placed in contact with the wheels and ground.

In testimony whereof we affix our signatures in presence of two witnesses.

DANIEL F. GREASER.
HARRISON H. GREASER.

Witnesses:
WM. K. GRAY,
D. E. WILSON.