No. 627,605. Patented June 27, 1899.

H. C. SWAN.

BRAKE SHOE FOR VEHICLES.

(Application filed Mar. 27, 1899.)

(No Model.) 2 Sheets—Sheet 1.

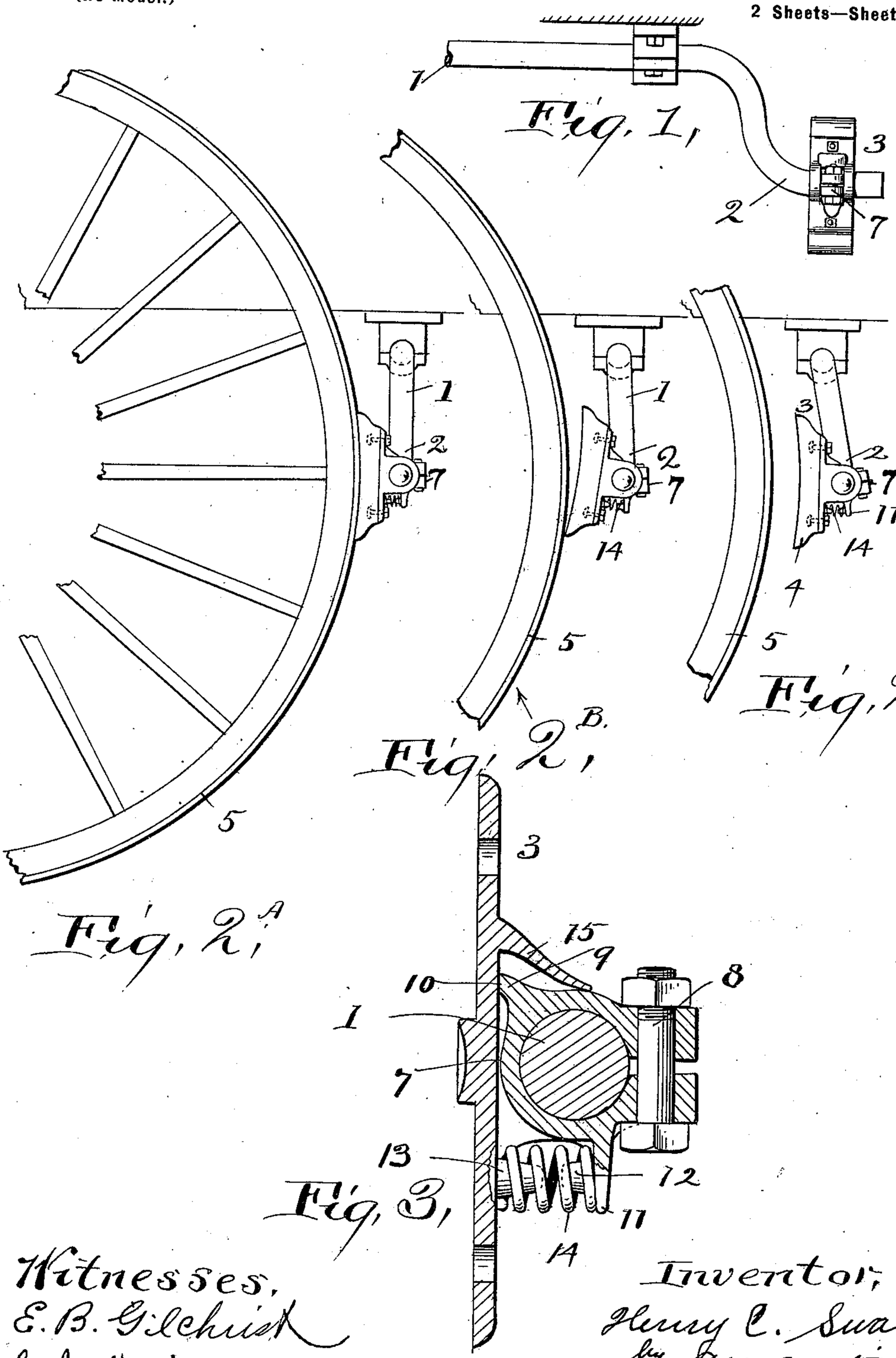

Fig. 1.

Fig. 2.

Fig. 2A.

Fig. 2B.

Fig. 2C.

Fig. 3.

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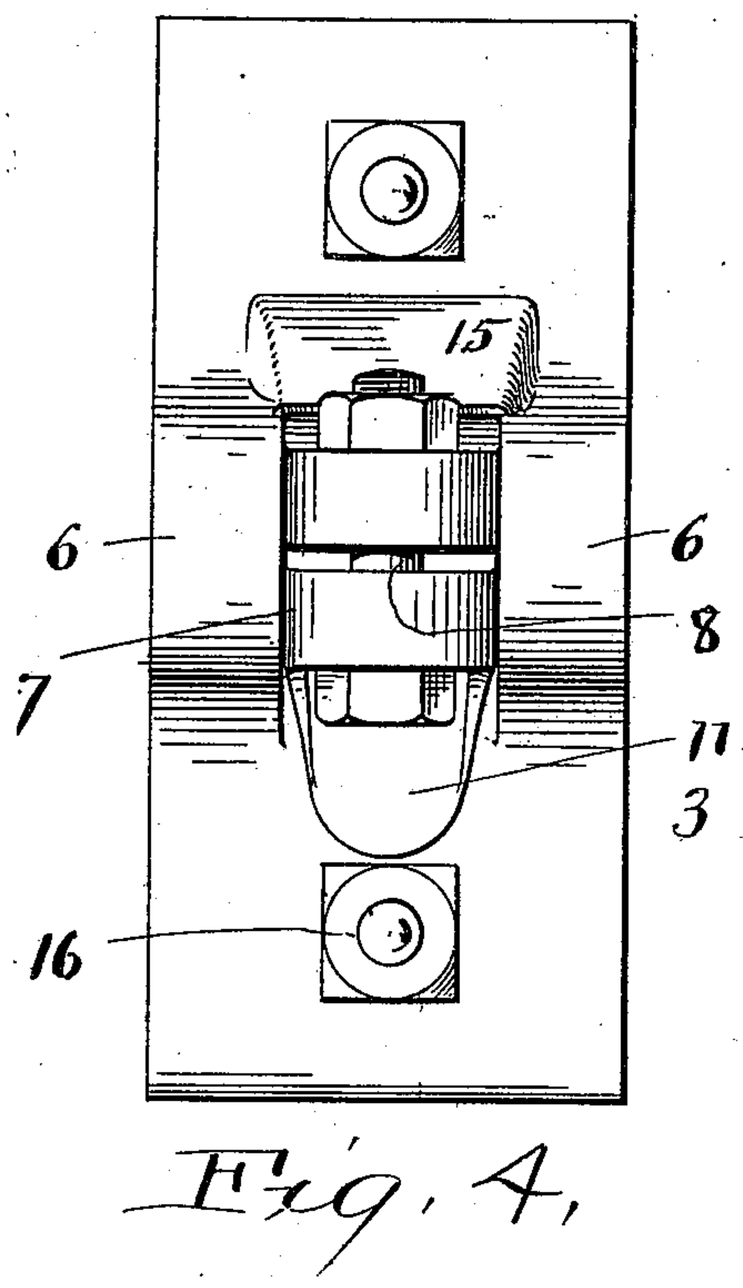


Fig. 4.

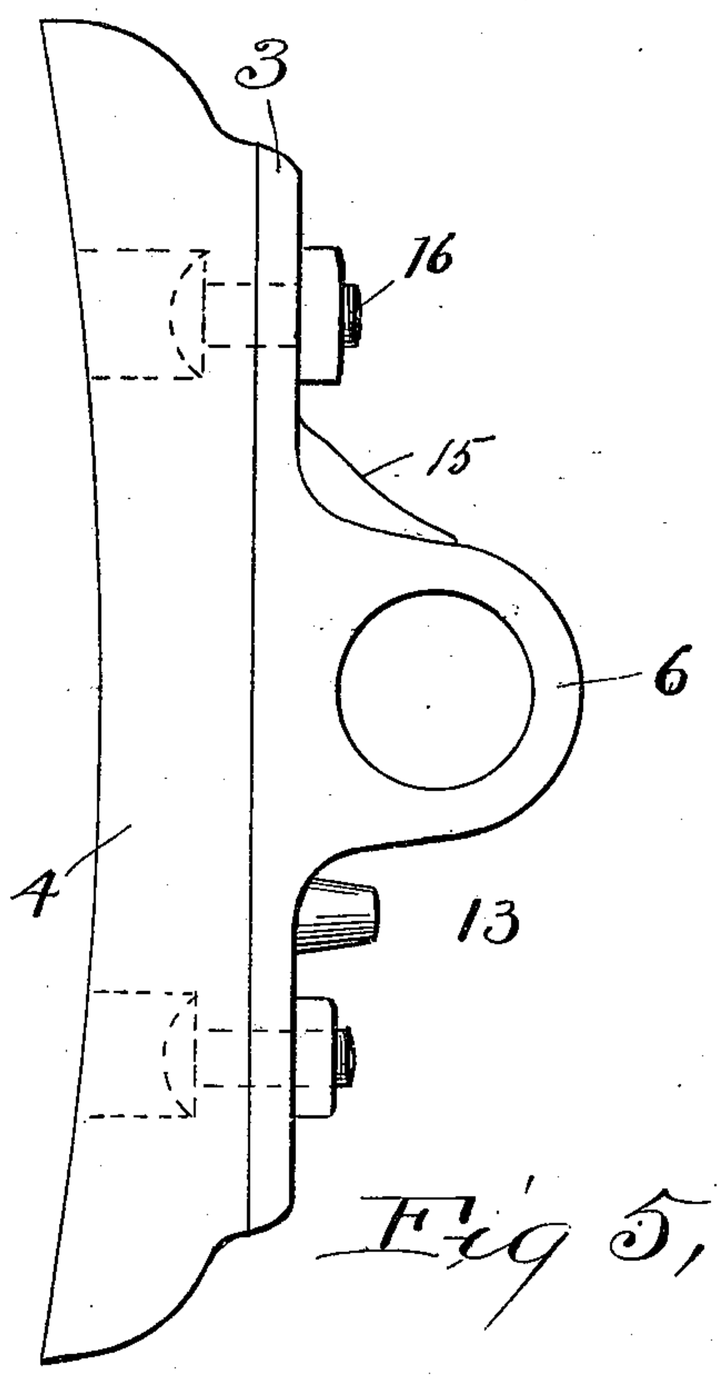
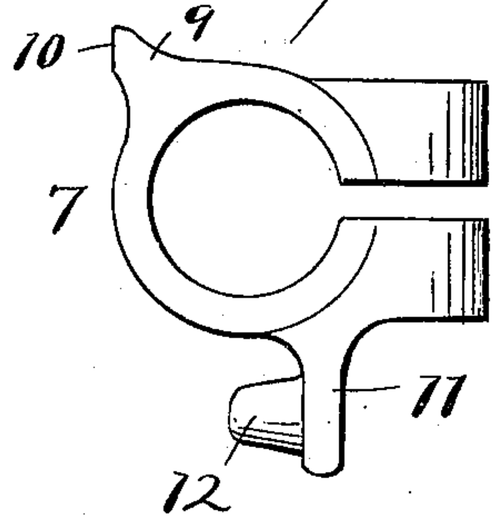


Fig 5.

Fig 6.



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UNITED STATES PATENT OFFICE.

HENRY C. SWAN, OF OSHKOSH, WISCONSIN.

BRAKE-SHOE FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 627,605, dated June 27, 1899.

Application filed March 27, 1899. Serial No. 710,549. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. SWAN, a citizen of the United States of America, residing at Oshkosh, Winnebago county, State of Wisconsin, have invented certain new and useful Improvements in Brake-Shoes for Vehicles, of which the following is a specification.

The annexed drawings and the following description set forth in detail one mechanical form embodying the invention, such detailed construction being but one of various mechanical forms in which the principle of the invention may be used.

In said drawings, Figure I represents a view of my improved brake from the front of the vehicle; Fig. II^a, a side elevation of the brake in its operative position; Figs. II^b and II^c, similar views showing the brake in its semi-operative and its non-operative positions, respectively; Fig. III, a side elevation in section; Fig. IV, a front elevation, enlarged, to more clearly disclose the construction; Fig. V, a side elevation of the brake-shoe, and Fig. VI a side elevation of the clamp.

My invention relates especially to that form of brake known generally as a "roller-brake."

The brake-bar 1 is provided with a curved or crank end 2 and is suitably supported from the bottom of the vehicle and rotated in any well-known manner. The brake-shoe 3 is provided with a suitable friction-surface 4, curved concentrically with the periphery of the wheel 5, and is rotatably secured to the brake-bar, preferably by means of straps 6, formed on the brake-shoe. A clamp 7 encircles the brake-bar and is arranged between the straps formed on the brake-shoe. Said clamp is provided with a bolt and nut 8, whereby same can be rigidly secured to the brake-bar. A lug or stop 9, provided with a bearing 10, is formed on one side of the clamp and a depending lug 11, provided with a spring-seat 12, is formed on the opposite side of the clamp. Said spring-seat is oppositely disposed to a corresponding spring-seat 13, formed on the brake-shoe. A spring 14, engaging both the clamp and the brake-shoe, is arranged so as to hold the brake-shoe against the stop on the clamp and preferably is mounted between said spring-seats. A housing 15 is preferably provided between the upper portions of the straps 6 and is formed integral therewith.

The parts are assembled by placing the clamp in position between the straps formed on the brake-shoe and suitably arranging the spring between the brake-shoe and the clamp. The brake-bar is then inserted through the eye formed by the clamp and straps and is adjusted so that when the brake-bar is rotated to bring the brake-shoe into operative engagement the lower end of the brake-shoe will first engage the periphery of the wheel. The clamp is tightened by means of the nut on the bolt until rigid engagement between the clamp and brake-bar is obtained. When the brake-bar is rotated for the purpose of operating the brake-shoe, the lower end of the brake-shoe first engages the wheel, and as the rotation of the brake-bar is continued the spring is compressed, allowing the entire surface of the brake-shoe to come into operative contact with the periphery of the wheel. When the brake-shoe is released from contact with the wheel, the spring overcomes the gravitational tendency of the brake-shoe, which tends to throw the top of the brake-shoe against the wheel and returns same to its original position.

By this construction the brake-shoe is held firmly and securely in its adjusted position upon the brake-bar by means of the clamp, and it is unnecessary to thread the end of the crank-arm or provide collars on the brake-bar to prevent lateral displacement of the brake-shoe. The brake-shoe is permitted a limited rotary movement upon the brake-bar, thereby obtaining the greatest possible resistance from the friction-surface. When the brake-shoe is rigidly secured to the brake-bar, portions only of the brake-shoe are in contact with the wheel except when the vehicle-body is in its normal position, as varying loads and inequalities of the surface over which the vehicle passes cause the position of the vehicle-body and of the brake to vary continually. In my device the brake-shoe automatically adjusts itself to the wheel-periphery whenever the position of the vehicle-body and the brake changes, either by reason of varying loads or inequalities of the surface. A shorter crank-arm and a longer brake-shoe

can thus be used than is possible with any other construction. The brake-shoe can be secured to the brake-bar after it has been attached to the vehicle and can be adjusted thereon to fit different wheel-treads without changing the brake-bar or removing same from the vehicle. When the brake-shoe is released either partly or entirely, the upper surface disengages first, thereby avoiding the accumulation of mud. Looseness and rattling are also prevented, as the brake-shoe is held against the stop formed on the clamp in the brake's non-operative position.

Other modes of applying the principle of the invention may be employed for the modes herein explained.

The mechanism herein described may be changed provided the principles of construction are employed that are set forth in the following claims.

I claim as my invention—

1. In a brake-shoe for vehicles, the combination with a brake-bar and a brake-shoe on said bar, of a clamp secured to the brake-bar and arranged to permit a limited rotary movement of the brake-shoe while in contact with the wheel, and means for returning said brake-shoe to its non-operative position when out of contact with said wheel, substantially as described.

2. In a brake-shoe for vehicles, the combination with a brake-bar and a brake-shoe on said bar, of a clamp secured to the brake-bar and arranged to prevent lateral displacement of said brake-shoe and permit a limited rotary movement of the same while in contact with the periphery of the wheel, and means for returning said brake-shoe against its gravitational tendency to its non-operative position when out of contact with said wheel, substantially as described.

3. In a brake for vehicles, the combination with a brake-bar, a brake-shoe rotatably mounted thereon, and a clamp secured to said bar and arranged to prevent lateral displacement of the brake-shoe, of a spring arranged between said brake-shoe and clamp, and adapted to hold the lower portions of said brake-shoe and clamp apart, substantially as described.

4. In a brake for vehicles, the combination with a brake-bar, and a brake-shoe rotatably mounted thereon, of a clamp secured to said bar and arranged to prevent lateral displacement of said brake-shoe, said clamp being provided with a stop adapted to limit the rotary movement of said brake-shoe, and means for holding said brake-shoe against said stop in the brake's non-operative position, substantially as described.

5. In a brake for vehicles, the combination with a brake-bar, and a brake-shoe rotatably mounted thereon, of a clamp secured to said brake and arranged to prevent lateral displacement of said brake-shoe, said clamp being provided with a stop and a depending lug, and a spring between said lug and brake-shoe for holding said brake-shoe against the stop in the brake's non-operative position, substantially as described.

6. In combination with a brake-bar, a brake-shoe provided with two straps encircling said bar and a housing between the upper portion of said straps and a spring-seat below the same, a clamp secured upon the brake-bar and arranged between said straps, said clamp being provided with an integral stop adapted to be inserted between the brake-shoe and the housing and provided with a depending lug having a spring-seat formed thereon arranged oppositely to the spring-seat on said brake-shoe, a spring mounted between said spring-seats, and means for tightening said clamp, substantially as described.

In testimony whereof I sign this application, in the presence of two witnesses, this 23d day of March, 1899.

HENRY C. SWAN.

Witnesses:
J. T. WILLMOTT,
C. I. HENDERSON.