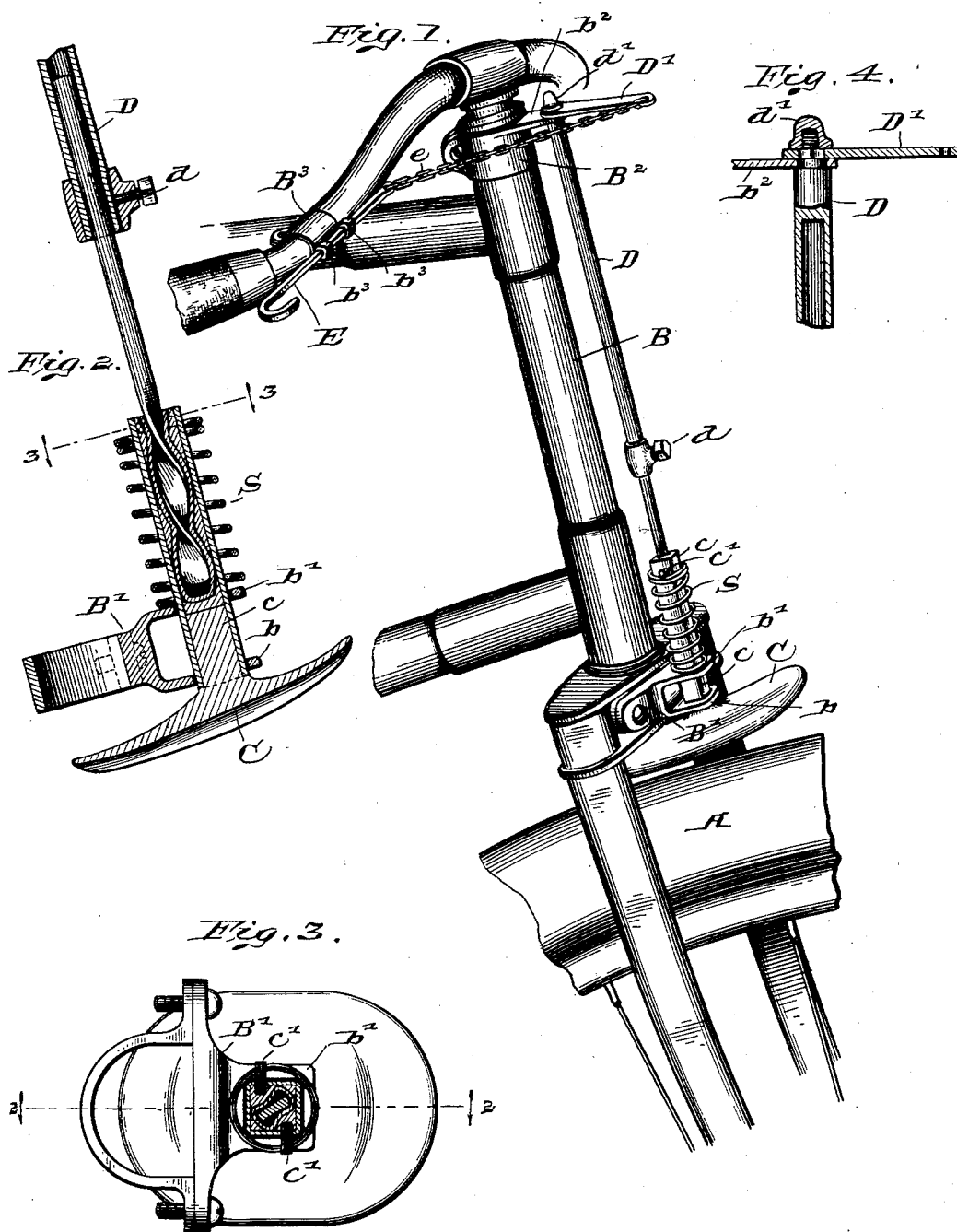


(No Model.)

J. LEES.
BRAKE.

No. 579,991.

Patented Apr. 6, 1897.



WITNESSES:

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BRAKE.

SPECIFICATION forming part of Letters Patent No. 579,991, dated April 6, 1897.

Application filed November 3, 1896. Serial No. 610,921. (No model.)

To all whom it may concern:

Be it known that I, JOHN LEES, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Brakes, of which the following is a specification.

The object of my said invention is to provide a brake for vehicles, more especially bicycles, in which the movement of the brake-shoe shall be effected by means of a screw construction and shall be consequent upon the mere revolving of the brake-rod; and it consists in combining with a suitably-mounted brake-shoe a brake-rod having a suitably screw-formed end and in various details of construction and arrangements of parts which are combined therewith, as will be hereinafter more particularly described and claimed.

Referring to the accompanying drawings, which are made a part hereof and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view of a fragment of a bicycle frame and wheel with a brake embodying my invention mounted on said frame and adapted to operate upon said wheel; Fig. 2, a vertical sectional view on the dotted line 2 2 in Fig. 3 through the brake-shoe and immediately adjacent parts, illustrating more fully the details of construction thereof; Fig. 3, a horizontal sectional view on the dotted line 3 3 in Fig. 2, and Fig. 4 a detail view.

In said drawings the portions marked A represent a fragment of a vehicle-wheel; B, the portions of the vehicle upon which the brake is mounted, being in the illustration shown portions of the bicycle-frame; C, the brake-shoe; D, the operating-rod, and E a handle by which the brake-operating rod is revolved and caused to operate the brake.

The vehicle-wheel A shown is an ordinary bicycle-wheel. The frame B has no peculiarities so far as my invention is concerned and may be any convenient part of the frame of any vehicle to which my invention is applied. An ordinary form of bicycle-frame is illustrated, as that best shows the use to which I have so far applied my said invention, as does also the wheel A.

The brake-shoe C has a preferably square shank *c* and is mounted in suitable ears on

a clip B', secured at a suitable point upon the frame B, adjacent to the wheel. This shank, as stated, is preferably square or of some other form not round, and the perforations in the ears *b b'* of the clip through which it passes are of a corresponding shape, and thus the brake-shoe is held from revolving, while being permitted a free movement through the said perforations in which it is mounted. At the upper end this shank is provided with a transverse pin *c'* or a suitable head or other enlargement, and between this part *c'* and the upper surface of the upper ear *b'* of the clip B' is interposed a spring S, by which the brake-shoe is normally held out of contact with the wheel-tire.

The rod D is mounted in an ear *b²* of a clip B², secured to the upper portion of the frame B, and extends thence down and enters the stem *c* of the brake-shoe, its lower end being flattened and twisted to form a screw having a high pitch. The perforation in the stem *c* is of course of a suitable form to receive this screw-threaded end of the rod D, the form of said perforation in cross-section being shown in Fig. 3. The rod D is prevented from moving longitudinally, as the ear *b²*, which supports it, is held between a shoulder and the arm D', and the latter is held in place by a squared portion on the rod and a nut *d'*, all as shown in Fig. 4. Said rod D is preferably formed in two parts which are united telescopically and are adapted to be secured in rigid relation by a set-screw *d*. This is so both for the purpose of permitting adjustment of its length to fit the situation required and of enabling the upper part carrying the handle or lever-arm to be adjusted to proper relation to the lower part having the screw form. The said lever arm or handle D' is fixedly secured upon the end of the rod D farthest from the brake-shoe or at an intermediate point. Of course in making these brakes to fit a particular situation the telescopic or adjustable feature of the rod may be omitted, but this is an advantage in making them for sale to be fitted to bicycles or such like vehicles generally, and is also an advantage in applying the device to bicycles wherein the stem of the handle-bar is vertically adjustable.

The handle E may be of any suitable con-

struction convenient to be grasped by the operator, and by which he is enabled to operate the brake. It is shown as mounted in ears b^3 on a clip B^3 on the handle of the bicycle and as connected by means of a chain e to the lever-arm D' . Manifestly the brake-handle and its attachment to the brake-rod may be of any form or character required by the particular situation in which the brake is used.

The operation of the invention may be briefly stated as follows: As has already been stated and as will be readily understood, the brake-shoe is normally held out of contact with the wheel-tire T of the wheel A by means of the spring S . When, however, it is desired to throw the brake into operation, it is accomplished by pulling on the handle E or such other handle structure as may be provided, and the rod D is thus rotated and the brake-shoe C forced down into contact with said wheel-tire T . In the construction shown, where the brake is applied to a bicycle, the handle E is hooked in form, so that the rider may operate it by catching said hook with one finger, the hand being otherwise free to rest upon and guide the handle-bar, as is usual.

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

1. The combination, with a vehicle, of a brake composed of a brake-shoe having a stem containing a screw-formed perforation, and a brake-operating rod having a screw-formed end entering said perforation, said parts being suitably mounted upon the vehicle-frame, so that, by rotating said rod, said brake-shoe may be forced into contact with the wheel-tire, substantially as set forth.

2. The combination, in a brake, of the brake-shoe C having a stem c with a longitudinal screw-formed perforation therein, a brake-rod

D having a screw-formed end adapted to enter said perforation, and a spring S interposed between a stationary part on the vehicle-frame and a projection upon the stem of said brake-shoe, said spring operating to normally hold said shoe out of contact with the wheel-tire, and said rod when rotated operating to force said brake-shoe into contact with said wheel-tire, substantially as set forth.

3. The combination, with a vehicle, of clips or other devices having projecting wings, a brake-shoe having a stem the formation whereof prevents its rotation which stem passes through similarly-formed perforations in wings on one of said clips, a brake-rod circular in cross-section and mounted in a similarly-formed perforation in an ear on another one of said clips and entering a perforation in the stem of the brake-shoe, those portions of said rod and said stem which come in contact being of a screw form, and means for rotating said rod and thus operating said brake, substantially as set forth.

4. The combination, in a vehicle-brake, of a brake-shoe provided with a stem mounted to move longitudinally but not to rotate, said stem having a screw-formed perforation running longitudinally thereof, and an operating-rod provided with a screw-formed end entering into said perforation and mounted to revolve in its bearings but not to move longitudinally, and suitable means for revolving said rod, substantially as and for the purposes set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 29th day of October, A. D. 1896.

JOHN LEES. [L. S.]

Witnesses:

CHESTER BRADFORD,
JAMES A. WALSH.