No. 637,821. Patented Nov. 28, 1899.

H. PAULSON.

BICYCLE BRAKE.

(Application filed Jan. 18, 1898.)

(No Model.)

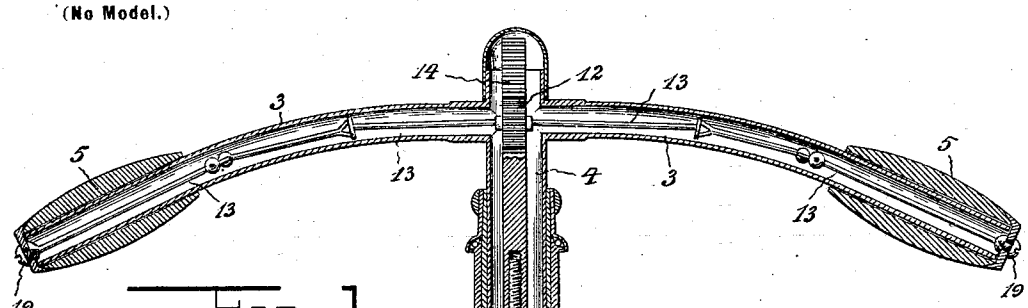


FIG. 1.

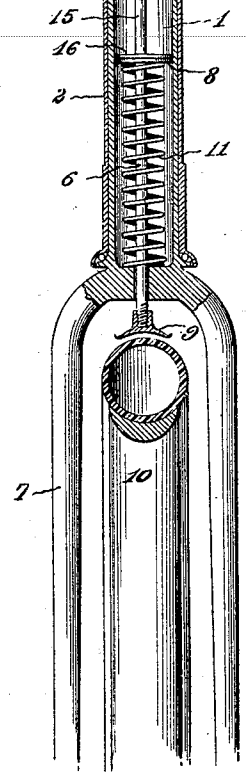


FIG. 2.

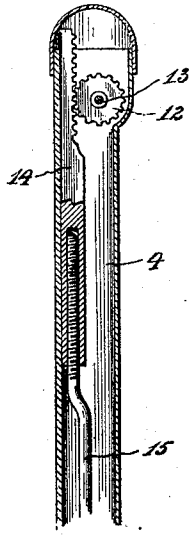
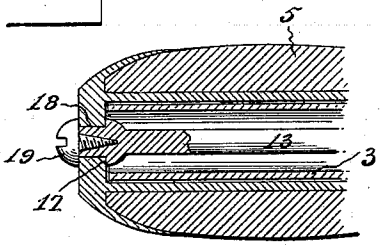


FIG. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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BICYCLE-BRAKE.

SPECIFICATION forming part of Letters Patent No. 637,821, dated November 28, 1899.

Application filed January 18, 1898. Serial No. 667,076. (No model.)

To all whom it may concern:

Be it known that I, HANS PAULSON, a citizen of the United States, residing at Sumner, in the county of Pierce and State of Washington, have invented a new and useful Bicycle-Brake, of which the following is a specification.

This invention relates to brakes for bicycles, velocipedes, and machines of like character, and has for its object to provide for setting the brake by means of the handle-bar grips and concealing the connections by means of which power is transmitted from the grips to the brake.

For a full understanding of the merits and advantages of the invention, reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a sectional elevation of the front fork, head-tube, handle-bar, and grips of a bicycle, showing the application of the invention. Fig. 2 is a detail view in elevation of the upper portion of the fork-stem, showing the relative disposition of the pinion and rack-bar by means of which the brake is set. Fig. 3 is a detail view showing the square portion at the outer end of the tumbler-rod whereby positive connection is had therewith of the grip.

Corresponding and like parts are referred to in the following description and indicated in the several views of the drawings by the same reference characters.

The fork-stem 1 is tubular and is mounted in the head-tube 2 in the usual manner, and the handle-bar 3 has adjustable connection by means of its stem 4 with the fork-stem 1 in any well-known manner, thereby providing for the vertical adjustment of the handle-bar to suit the comfort of the rider. The grips 5 are loosely fitted upon the extremities of the handle-bar, so as to be turned to the right or to the left and may be of any pattern or construction.

A rod 6 is slidingly mounted in the crown of the fork 7 and is provided at its upper end with a head 8 and at its lower end with a brake-shoe 9 of any of the usual varieties best adapted to the character of tire provided on the rim of the wheel 10. A spring 11 encircles the rod 6 and is confined between the head 8 and the fork-crown and serves to normally hold the brake out of action.

A pinion 12 is located midway of the handle-bar and in line with its stem, and the inner ends of tumbler-rods 13 are secured thereto in such a manner as to cause the pinion to rotate upon turning the tumbler-rods in a direction to set the brake. A rack-bar 14 has its toothed portion intermeshing with the teeth of the pinion 12 and is adjustably connected with a bar 15, provided at its lower end with a head or disk 16 corresponding to the head or disk 8. The two rods 14 and 15 have screw-thread connection, whereby provision is had for lengthening and shortening the rack-bar to adapt it to the vertical adjustment of the handle-bar.

The tumbler-rods 13 are composed of sections connected by universal joints, thereby adapting them to follow the curvature of the handle-bar and to enable the tumbler-rods being turned when it is required to set the brake. The outer ends of the tumbler-rods are shouldered, as at 17, and have square or angular portions 18 beyond the shoulders and which are fitted into corresponding recesses in the outer ends of the grips 5, so as to insure a turning of the tumbler-rods when rotating the grips to apply the brake. Screws 19 serve to connect the grips with the tumbler-rods and secure them against accidental displacement.

It will be noticed that the connections and power-transmitting devices are entirely concealed within the handle-bar, its stem, and the fork-stem and are protected and concealed from view, and this disposition of the parts places the brake under the control of the rider at all times, inasmuch as the brake is set by turning the grips, which are easily accessible and most generally in hand when

riding. The brake is held out of action by the spring 11 and is applied by turning one or both of the grips in the proper direction, and when the grips are released the spring compressed when applying the brake returning to a normal position unsets the brake and causes the grips to assume an initial position ready to be operated when it is again required to set the brake.

The arrangement of the disks within the head, disposed loosely one upon the other, permits the ready removal of the handle-bar and its stem for the adjustment of the rod which carries the uppermost disk to adjust the position of the brake-shoe and to compensate for the adjustment of the handle-bar stem in the head.

Having thus described the invention, what is claimed as new is—

In a bicycle-brake, the combination with a head and fork-crown, and a handle-bar having its stem adjustably held within the head, of a brake-rod within said head and projecting through the perforation in the crown, said rod having a brake-shoe upon its projecting end, a disk upon the inner end of the rod and fitting the head, a helical spring encircling the rod and bearing with its opposite ends upon the crown and disk, a shaft within the handle-bar, a pinion on the shaft, a rack within the handle-bar stem engaging in the pinion, a rod adjustably connected with the rack, a disk upon the last-named rod fitting the head, and disposed loosely upon the first-named disk to permit application and removal of the handle-bar and its parts and the effective adjustment of the apparatus, independently of the brake-shoe and its attached parts, and means for operating the shaft in the handle-bar.

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

HANS PAULSON.

Witnesses:
GUSTAV BEUTLICH,
HERMAN KLAB.