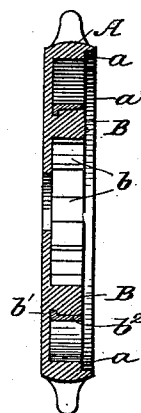
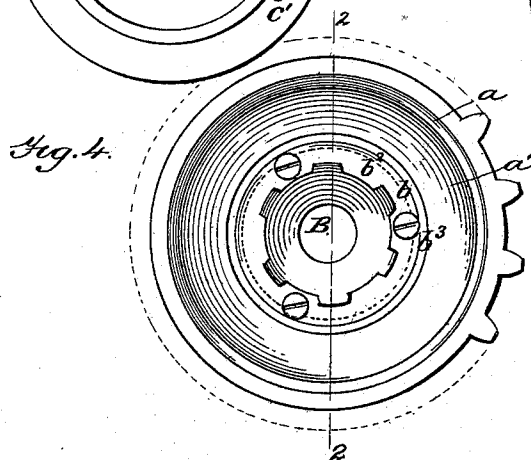
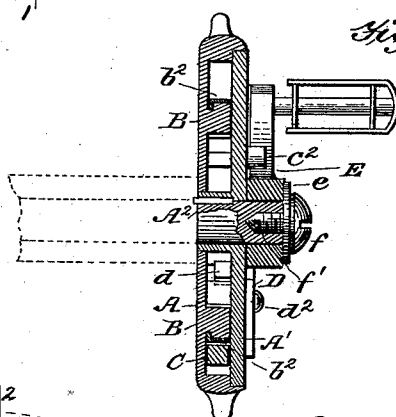
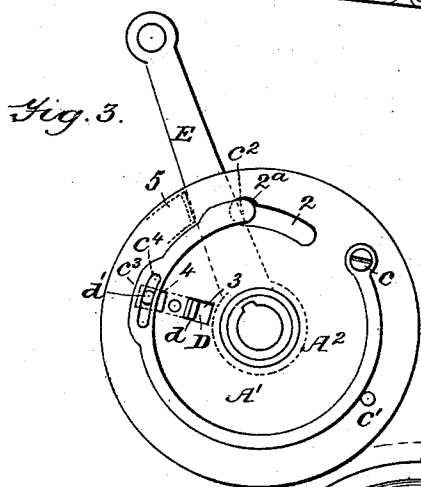


S. FADER.

No. 578,631.

Patented Mar. 9, 1897.



J. E. Lockett
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Silas Fader

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UNITED STATES PATENT OFFICE.

SILAS FADER, OF VANCOUVER, CANADA, ASSIGNOR OF THREE-FOURTHS TO ADOLPHUS WILLIAMS AND JOHN T. CARROLL, OF SAME PLACE, AND THE MASSEY-HARRIS COMPANY, OF TORONTO, CANADA.

STOP-MOTION BRAKE AND FOOT-REST FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 578,631, dated March 9, 1897.

Application filed October 20, 1896. Serial No. 609,426. (No model.) Patented in Canada October 28, 1896, No. 53,910.

To all whom it may concern:

Be it known that I, SILAS FADER, a citizen of the Dominion of Canada, residing at Vancouver, in the Province of British Columbia, Canada, have invented a new and useful Stop-Motion Brake and Foot-Rest for Bicycles, (patented in Canada October 28, 1896, No. 53,910,) of which the following is a specification.

My invention relates to improvements in stop-motion brakes and foot-rests for bicycles; and it has for its object to provide a stop-motion for the pedals that the bicyclist may by a sudden back pressure on one of the pedals release the drive-wheel, so that although the machine continues on at its usual pace the pedals are retained in a horizontal position by the feet of the operator and by an extra back pressure on the said pedal the brake is applied at pleasure. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan of the drive-wheel of a bicycle containing my invention, the internal mechanism being shown in dotted lines. Fig. 2 is a vertical cross-section of Fig. 1 at line 1 1. Fig. 3 is a plan of the fixed disk, exposing the inner side thereof. Fig. 4 is an internal plan of the loosely-mounted sprocket-carrying disk, and Fig. 5 is a cross-section of the last figure at line 2 2.

Similar letters and numerals refer to similar parts throughout the several views.

A and A' indicate disks which lie in close proximity to each other, the disk A' having an extending sleeve A², on which the sprocket-carrying one is loosely fixed, (see Fig. 2,) and the disk A having a slight recess a to receive the rim of the disk A'. (See Fig. 5.)

Within the disk A, around and at a distance from its center, is a circular flange B. This flange B is provided upon its inner side at regular intervals with recesses b, for a purpose to appear, and on the engaging side with the disk A of its periphery is a recess b' to receive a band of leather or other material b², the whole being securely fixed to the said disk by countersunk screws b³, the object of which will presently be seen.

Placed upon the disk A' and at a radius to come just without the band-covered flange B within the disk A is a spring C. This spring

C is secured to the disk A' by a screw c, and at a point some distance from the said screw is a stop-pin c', and about its opposite diameter is an enlarged portion c², having a slot c⁴, and its loose end is provided with a turn at right angles. This provides a projecting lug c², which passes through the opening 2 of the disk A'. When the said spring is in its normal position, the lug c² rests in the recess 2^a of the opening 2.

Placed transverse to the enlarged portion of the spring C at c² and on the opposite side of the disk A' is a slidable lock-plate D. This plate D is provided at one end with a projecting lug or shoulder d, which passes through an aperture 3 of the said disk, and at the opposite end it has a similar projection d', passing through a second aperture 4 of the disk and into the slot c⁴ of the spring C, (see Fig. 3,) and at its center it is arranged to receive a screw d² through the slot d³. By reason of this screw being loosely arranged in the said slot d³ and securely threaded in the disk A, it will be seen that the plate D may be forced toward the axis of the said disk by the spring C being pressed forward by means of the crank E engaging the projecting lug c².

The crank E is loosely mounted upon the shaft F and is held in position thereon by a washer e and the screw f, threaded into the end thereof, as f', (see Fig. 2,) and the arm of the said crank E lies between the projection c² on the spring C and a fixed projecting shoulder 5 on the disk.

In operating a bicycle to which my invention is attached all forward motion on the pedal-crank E is received by the projecting shoulder 5 on the disk A', and any slight back or retarding pressure on such crank causes the lug c² of the brake-band to engage the crank and be pushed back out of the recess 2^a into the recess 2, such movement of the band C being sufficient to cause the portion D of the lock-plate to move out of engagement with the recess b in the flange B and thereby disconnect the sprocket-wheel or disk A and the disk A' and leave the crank-shaft and pedals in an inoperative condition so far as imparting a movement to the sprocket or drive wheel in either direction. Thus when the parts are in this position the rider uses the pedals as foot-rests, the tension of the

spring-band C in the practical construction of the several parts being such as to be held, with its lug c^2 , out of the recess 2^a by the normal weight of the rider's legs. To apply the
 5 brake, additional down pressure on the pedal-crank will force the lug c^2 farther down into the slot 2 and cause the band C to grip the flange B.

By arranging the several parts as described
 10 as soon as the rider moves either pedal in a forward direction the action of the spring C will automatically move the lock devices D d to positively connect the wheel or disk A and disk A'.

15 It is obvious from the foregoing that my invention is simple to operate, and it furnishes a means whereby the bicyclist may rest his feet and legs while passing by gravity along a declivity without the extra exertion of fol-
 20 lowing the pedals with the feet, as is the case with the ordinary machine, and it also furnishes simple and easy means for operating the brake without changing from the resting position, which is the important desideratum.

25 I am aware that prior to my invention a clamp-brake has been applied to the drive-wheel of a bicycle by the back pressure of the pedals, but without stopping the rotary motion thereof. Therefore I do not claim such
 30 a device.

Having now described my invention, what I claim is—

1. In a stop-motion brake and foot-rest for bicycles, the combination with the crank-axle
 35 and the pedal-cranks, and a drive-wheel loosely mounted on such axle having a brake-flange, of a disk fixedly held on the axle, a band-brake carried thereby and arranged to be engaged by the retarding movement of one
 40 of the pedal-cranks, whereby it is moved into engagement with the brake-flange, and a lock mechanism connected with the brake-band, adapted to positively connect the loose wheel and the disk when the said brake-band is re-
 45 lieved from pressure of the pedal-crank and to be moved out of a locked position by back pressure on the pedal-crank as set forth.

2. The combination with the axle and a drive-wheel loosely held thereon, having a
 50 fixed brake-flange, of a disk fixedly secured to the axle, a spring-band held on such disk to encircle the said brake-flange, the free end thereof being projected in the path of one of the pedal-cranks, said disk having a lug, a
 55 crank loosely held on the axle adapted to engage the brake-band by a retarding pressure thereon, and a locking means for connecting the loose and fixed members arranged to be moved to an unlocked position by the brake-
 60 band as it is moved toward the brake-flange, substantially in the manner shown and for the purposes described.

3. In a stop-motion brake and foot-rest for bicycles, the combination of a fixed disk upon
 65 a crank-shaft, having an extending sleeve and a flange B having recesses b , a stout spring secured to and placed at a distance from the

axis of the said disk, a projecting lug on one end of the spring and made to pass through an opening in the fixed disk and engage a
 70 loosely-mounted pedal-crank on the said shaft, a slot in the said spring placed at some distance from its projecting lugged end; of a sliding plate on the opposite side of the said disk, having projections at each end, the one
 75 projecting portion passing through an aperture in the disk and into the slot in the spring, and the other projection passing through a slot to within the said disk at a point toward its center, substantially as specified. 80

4. In a stop-motion brake and foot-rest for bicycles the combination of a fixed disk upon a crank-shaft, a stout spring held on the disk around the shaft and at some distance from its axis, the loose end thereof projecting
 85 through the said disk and being engaged by a loosely-mounted pedal-crank on the said shaft and a projecting shoulder upon the said disk, and made to engage the opposite side of the pedal-crank; of a loosely-mounted
 90 sprocket-carrying disk mounted and arranged to turn in close proximity to the fixed disk; an extending flange having a band on its periphery, and recesses on its inner side secured to the loosely-mounted disk within the arc of
 95 the spring on the fixed disk; a slidable plate arranged upon the outside of the fixed disk having projections on each end which pass through the slotted apertures in the said disk, the projection on the outer end engaging in a
 100 slot in the spring which encircles the band-covered flange on the loosely-mounted disk, and the projection on the opposite end of the slidable plate, when in its normal position is engaged by one of the recesses on the inner
 105 side of the band-covered flange secured to the loose disk, and thereby locking the same substantially as and for the purposes hereinbefore set forth.

5. The combination, with the crank-axle, 110 the pedal-crank loosely held thereon, the disk fixedly held thereon, having a crank-engaging stop member 5, and an opening 2, having a recess a^2 , disposed adjacent the member 5, and a spring brake-band held on the disk, 115 having one end secured thereto and its free end projected through the opening 2, and provided with a pedal-crank-engaging portion, said end being normally held in the recess a^2 of the drive wheel or disk having a
 120 brake-flange provided with a series of internal recesses b , and the plate D, held to slide on the fixed disk, having a member adapted to engage the recesses b , and having its other end connected to the free end of the brake-
 125 band, all being arranged substantially as shown and described.

In testimony whereof I affix my signature in the presence of two witnesses.

SILAS FADER.

Witnesses:

W. G. TRETHEWEY,
 A. R. STEACY.