

(No Model.)

F. B. RAY.
BICYCLE TRAINER.

No. 574,167.

Patented Dec. 29, 1896.

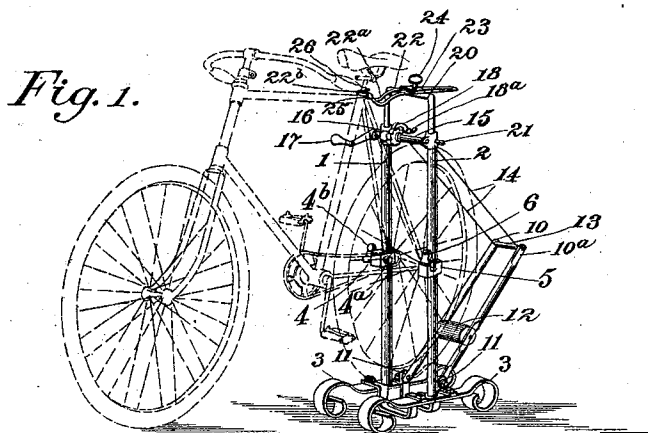


Fig. 3.

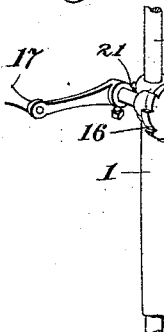


Fig. 2.

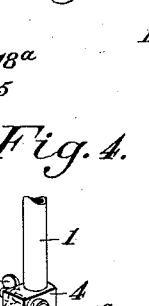


Fig. 4.

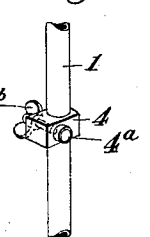
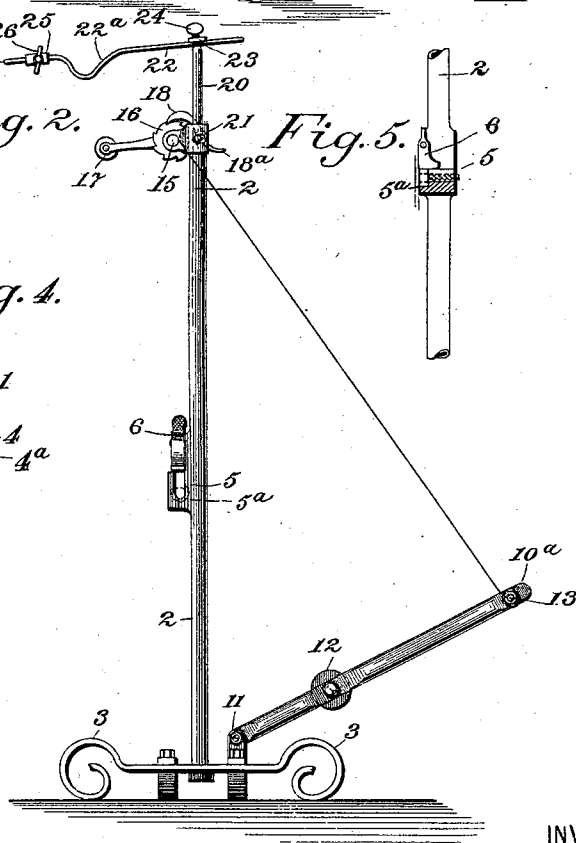


Fig. 5.



WITNESSES:

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Fig. 6.



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FRANCIS B. RAY, OF NEW YORK, N. Y.

BICYCLE-TRAINER.

SPECIFICATION forming part of Letters Patent No. 574,167, dated December 29, 1896.

Application filed January 25, 1896. Serial No. 576,810. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS B. RAY, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Bicycle-Supports, of which the following is a specification.

My invention, which relates to improvements in bicycle-supports, has a twofold object.

The main object of my improvements is to provide means for firmly supporting the rear end of a machine with the rear wheel free to rotate in order that the rider can mount the seat and operate the pedals for exercise or training. In furtherance of this object I preferably provide an adjustable braking mechanism adapted to exert more or less pressure upon the tread of a wheel, and thereby increase or decrease the exertion of the rider.

The second object of my improvements is to provide an effective support into which the bicycle can be placed to be supported in upright position when not in use.

When the support is to be used as a home trainer, it is provided with an adjustable bracket or arm adapted to engage the saddle-post for rigidly supporting the upper part of the machine and bearing-blocks adapted to engage the projecting ends of the rear axle for supporting the wheel free of the ground. The bearing-blocks for the rear-wheel axle are also employed when the support is employed as a bicycle-stand, but the adjustable bracket for engaging the saddle-post may be omitted when the support is employed for this purpose.

In order that my invention may be fully understood, I will first describe the same with reference to the accompanying drawings, and afterward point out the novelty with more particularity in the accompanying claims.

In said drawings, Figure 1 is a front perspective view of my improved bicycle-support, showing a bicycle in position therein in readiness to be used as a home trainer or exerciser. Fig. 2 is a side elevation of the support. Fig. 3 is an enlarged detail perspective view of the ratchet-controlled brake-operating mechanism. Fig. 4 is an enlarged detail view of one of the bearings for the rear-wheel axle. Fig. 5 is an enlarged detail sectional view of the other bearings for the rear-wheel axle. Fig.

6 is an enlarged perspective view of the adjustable bracket or arm which engages the saddle-post.

The support proper comprises two vertical standards or tubes 1 and 2, mounted upon the feet or base 3.

4 and 5 are bearing boxes or blocks mounted upon the standards 1 and 2 a sufficient distance above the base 3 to support the rear wheel of the bicycle free of the ground when the rear-wheel axle is mounted in said boxes. The box 4 is provided with a bearing cap or block 4^a and a thumb-screw 4^b, by means of which the bearing can be adjusted inwardly. The box 5 is cut away above sufficiently to allow the projecting step end of the axle to be slipped in from above, an automatic pivoted gravitating cam 6 being supported above the box in position to be projected into engagement with the axle for holding it in place.

It will be observed that the box 5 has an enlarged inner recess 5^a cut out to receive the nut which is provided on the projecting end of the rear-wheel axle, in order that the axle can be supported thereby in wheels that do not have the projecting step end.

10 and 10^a are rods or bars pivoted at their inner ends to the lugs 11 on the base 3 and carrying between them the friction or braking drum 12, which is mounted upon a suitable axle and provided with ball-bearings to enable it to run freely. The outer ends of the rods 10 and 10^a are united by the rod 13, and extending up from the rod 13 are wire ropes or chains 14, having their upper ends attached to a rotatably-mounted winding bar or drum 15. The bar 15 is journaled in suitable bearings at the upper ends of the standards 1 and 2, and adjacent to the standard 1 it is provided with a ratchet-wheel 16, rigidly keyed to it. The upper projecting end of the bar 15 is provided with an operating-crank 17. Pivoted adjacent to the ratchet-wheel 16 is a ratchet 18, held normally into engagement with the ratchet-wheel by reason of its gravitating enlarged end. The ratchet 18 is provided with a projecting heel 18^a, by means of which it can be disengaged from the ratchet-wheel.

The bars or standards 1 and 2 may be formed of any suitable shape or material, but are preferably made in tubular form.

20 is a vertically-adjustable U-shaped bar

or bracket, the arms of which slide in the vertical sockets of the standards 1 and 2.

21 are set-screws engaging in threaded openings in the standards 1 and 2 and adapted to engage the arms of the U-shaped bar 20 for rigidly securing it in any desired adjusted position.

22 is a spring arm or bracket adjustably mounted upon the top of the U-shaped bar 20 by means of a block or plate 23, engaging the bracket, and a thumb-screw 24, passing through the plate 23 and seated in the threaded opening in the top of the U-shaped bar 20. The bracket 22 is curved slightly at 22^a and is formed with inwardly-bent ends 22^b.

25 is a clamp mounted upon the forward ends of bracket-arm 22 and provided with a thumb-screw 26, which is adapted to clamp the forward ends 22^b into engagement with the saddle-post.

When the machine is employed as a home trainer or exerciser, the rear axle is placed into engagement with bearings on the vertical standards 1 and 2 and secured rigidly in place by means of the adjustable bearing-block 4^a and cam 6. The bracket-arm 22 is then adjusted to the proper position and clamped into engagement with the saddle-post. The machine will then be supported with the rear wheel free of the ground and the front wheel on the ground. Then by means of the crank 17 the braking-drum is brought up into engagement with the tire of the rear wheel with more or less pressure, according to the desired friction. The wheel can then be mounted and the rear wheel will freely rotate under the action of the pedal mechanism and the rider can obtain as much training and exercise as he desires.

When the support is employed for the purpose of a bicycle-stand for holding the bicycle in upright position when not in use, the braking attachment is allowed to remain in inoperative position and the bracket-arm for engaging the saddle-post is removed or thrown back out of the way.

It will be clear that numerous minor changes in the specific construction of the several parts of my bicycle-support can be made without departing from the spirit of my invention.

My improved bicycle-support is very valuable, as it enables the cyclist to exercise on his own wheel in his own apartments, giving

him the same exercise as in cycling, and the exercise can be regularly taken in spite of the weather. The device is also a very valuable adjunct in bicycle sales-rooms, as the customer can try any wheel and decide more accurately upon the one he desires to purchase. In club-rooms the device will prove valuable in training. The brake attachment is so arranged that it will provide a perfectly even pressure in the rotation of the wheel and it will not injure the tire.

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

1. In a bicycle-support, the combination of a base and the vertical rods or standards, extending therefrom, constituting a supporting-frame, rods pivoted to said supporting-frame, the braking-wheel rotatably mounted upon said rods, a winding-drum journaled upon said standards, the rope or chain attached to said rods and adapted to be wound upon said drum, and means for supporting the rear wheel of a bicycle between said standards free of the ground, substantially as set forth.

2. In a bicycle-support, the combination of suitable means for supporting the rear wheel of a bicycle free of the ground, a pivotally-mounted braking-arm, a friction-drum journaled upon said arm, a winding-drum provided with pawl-and-ratchet mechanism mounted on said standards, means for operating the winding-drum, and cords or chains connecting the free end of the pivoted braking-arm with the drum, substantially as set forth.

3. In a bicycle-support, the combination of the upright rods or standards, the braking-rods pivoted thereto, the braking-drum journaled between the pivoted rods, winding-drum journaled in the upper end of the upright rods or standards, an operating-crank keyed to said winding-drum, pawl-and-ratchet mechanism for said drum, means for supporting the rear wheel of a bicycle free of the ground within said standards, and cords or chains connecting the upper ends of the pivoted braking-rods to the winding-drum, substantially as set forth.

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Witnesses:

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