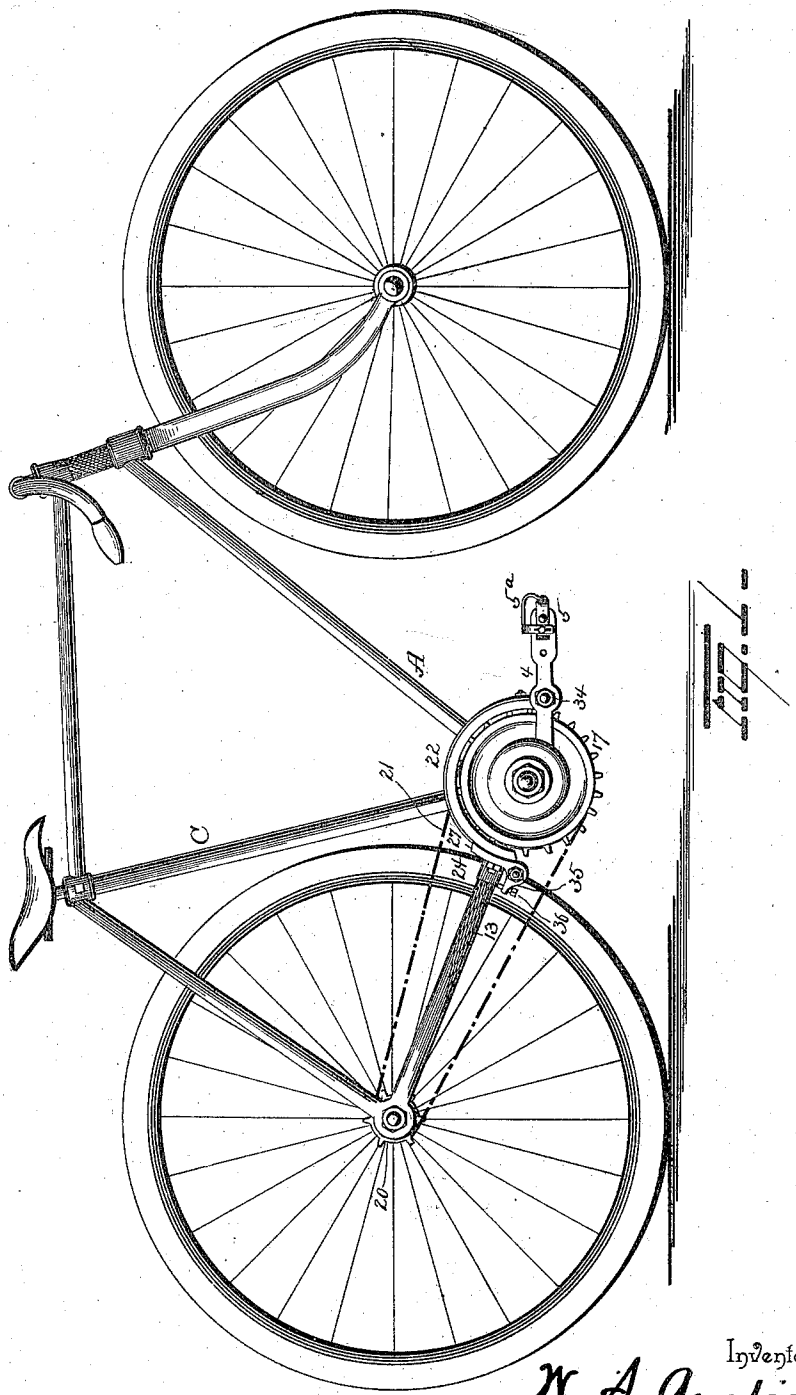
(No Model.) 3 Sheets—Sheet 1.

# W. S. AUSTIN.

## VELOCIPEDE.

No. 576,183. Patented Feb. 2, 1897.

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(No Model.) 3 Sheets—Sheet 2.

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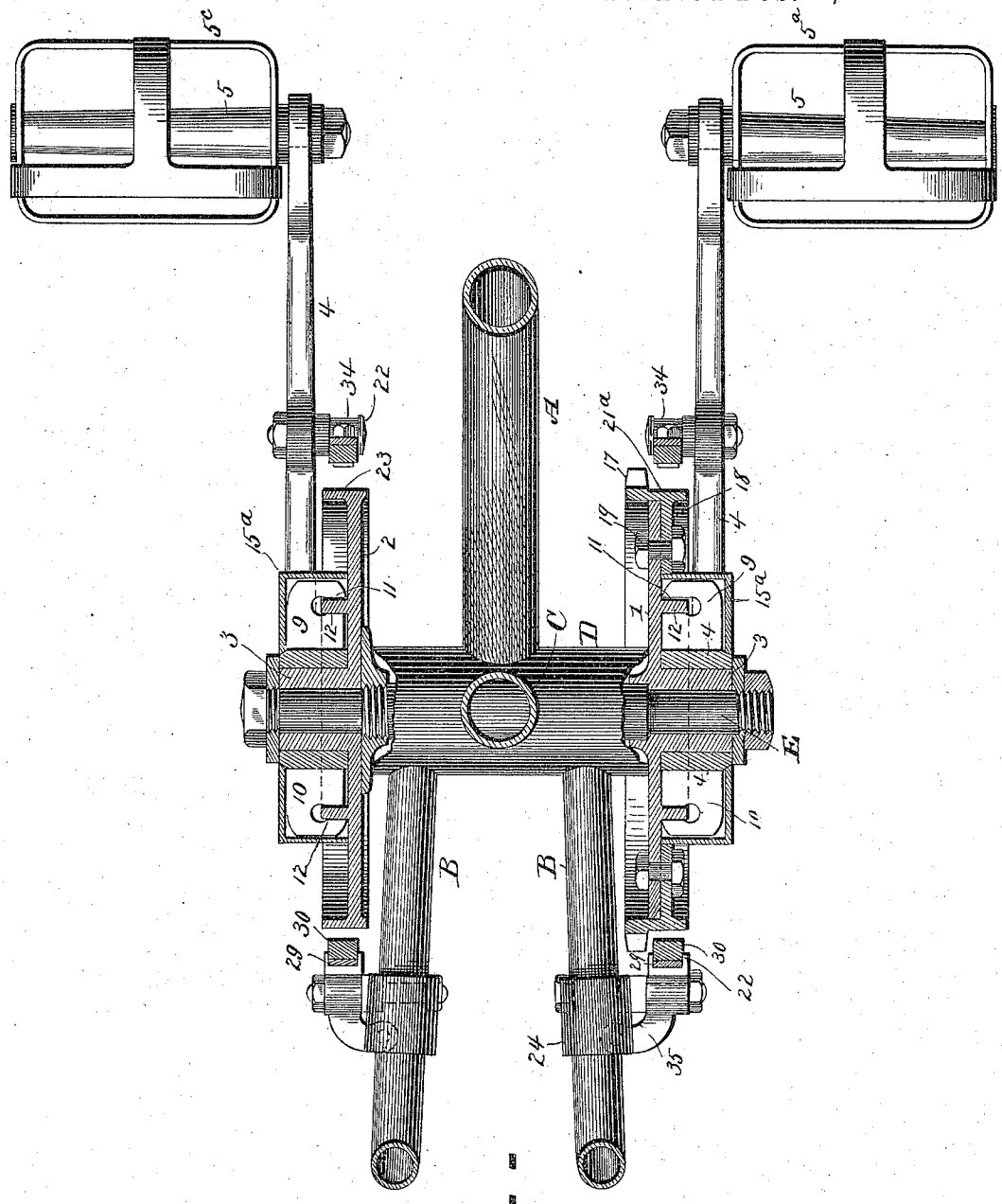


Fig. 2.

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FIG. 4.

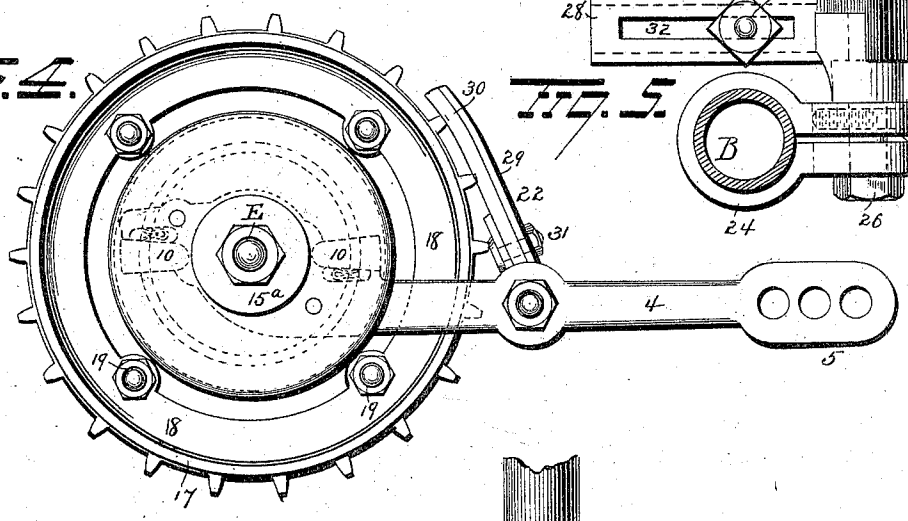



FIG. 5.




FIG. 3.

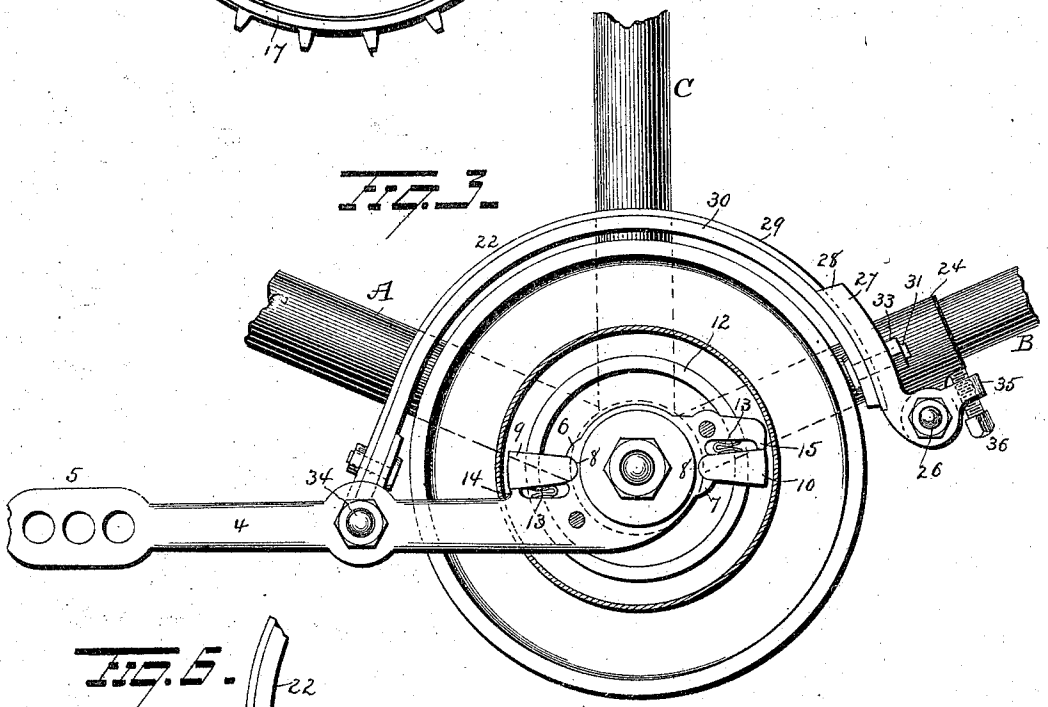
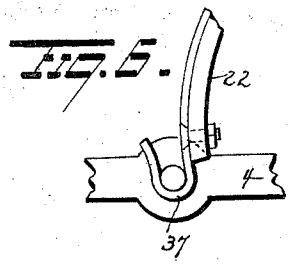



FIG. 6.

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# UNITED STATES PATENT OFFICE.

WALTER S. AUSTIN, OF STANDISH, MICHIGAN.

## VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 576,183, dated February 2, 1897.

Application filed November 19, 1895. Serial No. 569,416. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER S. AUSTIN, a resident of Standish, in the county of Arenac and State of Michigan, have invented certain new and useful Improvements in Velocipedes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in velocipedes, and more particularly to brakes for bicycles, &c., in which the propelling mechanism is operated by means of pedal-levers adapted to have a vertical vibratory motion.

A further object is to produce a velocipede-brake which shall be simple in construction, capable of exerting adequate resistance to the operation of the machine to effectually brake the same promptly, and which shall be effective in all respects in the performance of its functions.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of a bicycle having my improvements applied thereon. Fig. 2 is a sectional view of a portion of a bicycle, showing the propelling mechanism and the relation of my improved brake thereto. Fig. 3 is a view taken at right angles to Fig. 2. Figs. 4 and 5 are detail views. Fig. 6 is a view of a modification.

A represents a portion of the front bar or backbone of a bicycle-frame, B B the rearwardly-projecting bars, and C the seat-post, all of said parts being secured to and projecting from the sleeve D, in which the shaft E of the propelling mechanism is mounted. At respective ends of the shaft E disks 1 2 are located, and each is provided with a hub 3, which latter are secured to the shaft E. A lever 4 is mounted loosely on each hub 3 and provided at their free ends with the usual bicycle-pedals 5, having stirrups $5^a$.

The inner end of each pedal-lever 4 is bent so as to form shoulders 6 7 at diametrically opposite sides of the shaft on which said levers are mounted, and the shoulders 6 7 are made with a socket 8 8, in which dogs or tumblers 9 10 are loosely mounted, so as to be normally in alinement with each other. The dogs or tumblers 9 10 are made with slots 11, into which annular flanges 12 on the respective disks 1 2 enter, so that when the pedal-levers are moved in one direction the dogs or tumblers will be made to clutch said annular flanges 12, assisted by springs 13, and cause said disks 1 2 and the shaft E to move with them. When the pedal-levers are moved in the other direction, the dogs or tumblers will be moved by means of springs 13 so as to cause the slots therein to aline with the annular flanges, and thus permit the said dogs or tumblers to ride freely on the latter. The spring 13 for the rear dog or tumbler might be omitted without affecting the operativeness of the clutch, as the said lower dog or tumbler would become properly disposed to ride backwardly on the annular flange by its own gravity. While the clutch will operate effectually when constructed as above described, still, in order to guard against any possibility of the failure of the dogs or tumblers to ride back freely on the annular flanges on account of dust or from other cause, I prefer to provide lugs 14 15 on the pedal-lever, adapted to engage the respective dogs or tumblers, so as to maintain the slots therein in exact alinement with said annular flanges. To exclude dust from the clutch, covers $15^a$ will be employed.

The disk 1 carries a sprocket-wheel 17, the latter being provided with a flange 18, lying parallel with one face of said disk, and through said flange and disk bolts 19 are passed. A sprocket-wheel 20 is secured to the hub of the rear wheel of the bicycle, and over said sprocket-wheels a sprocket-chain 21 passes, whereby motion is transmitted from the sprocket-wheel 17 to drive the machine.

The sprocket-wheel 17 is made with a peripheral flange or seat $21^a$ with which a friction-brake 22 is adapted to engage, and the disk 2 is made with a similar peripheral flange or seat 23, against which another friction-brake is adapted to bear. Both of these brakes are the same in construction and mode of operation and a specific description of one will suffice for both. A collar 24 is secured

to each rear bar of the frame or to any other desired part of the frame and provided with lugs 25, through which a bolt 26 passes transversely. An arm or bracket 27 is loosely mounted on the transverse bolt 26 and made with a recess 28 in one face for the reception of the curved spring 29 of the friction-brake, a wearing-face 30, of leather or other suitable material, being secured to said spring. The brake-spring and its wearing-face are adjustably secured to the arm or bracket 27 by means of a bolt 31, said bolt being passed through an elongated slot 32 in said arm or bracket and provided with a nut 33. The other end of the brake is secured to a pin 34, projecting from the pedal-lever. From this construction and arrangement of parts it will be seen that when the pedal-levers are depressed beyond the distance necessary to properly operate the propelling mechanism the brake-band attached to them will be made to bear against the peripheral flanges of the respective disks 1 2 and the motion of the propelling mechanism and the wheel, thus effectually braking the latter.

It is apparent that great power for braking the velocipede can be exerted by the devices above described, that the whole weight of the rider can be utilized for this purpose, and that the brake can be applied by the rider without the necessity of removing his feet from the pedals or his hands from the handle-bars.

In order to provide means for regulating the tension of the springs of the brakes and regulating the distance through which the pedal-levers must move before the brakes will be applied, each bracket 27 will be provided with a curved arm 35, through which a screw 36 passes, the screw 36 being adapted to engage the collar 24. By adjusting the screw 36 the relation of the brake-strap to the brake-wheel can be readily adjusted.

It is not essential that the brake-bands be secured to the pedal-levers, but the free ends of said brake-bands may be provided with hooks 37, Fig. 6, to be engaged by the pins on the pedal-levers when the latter shall have moved downwardly a certain predetermined distance.

Other slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope, and hence I do not wish to limit myself to the precise details of construction herein set forth; but,

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

1. In a velocipede, the combination with the frame, and propelling-shaft, of a foot-lever operating in connection with the shaft to propel the latter, and brake connected at one end with the frame and at the other with the lever, whereby the latter is operated to apply the brake to the shaft, substantially as set forth.

2. In a velocipede, the combination with a frame, a propelling-shaft, and drums secured to the shaft, of two independent foot-levers, and brakes connected to the frame and lever, and operating in connection with the drums to apply friction to each drum independently, alternately or simultaneously, substantially as set forth.

3. The combination with the driving-shaft of a velocipede, and a brake-wheel thereon, of a pedal-lever connected with the driving-shaft and a strap-brake secured at one end to the frame of the velocipede and at the other end to said pedal-lever, substantially as set forth.

4. The combination with the driving-shaft of a velocipede and a pedal-lever connected therewith, of a brake wheel or disk secured to the driving-shaft, and a brake-band secured at one end to the velocipede and at the other end to the pedal-lever, substantially as set forth.

5. The combination with the driving-shaft of a velocipede and a pedal-lever connected therewith, of a brake-wheel secured to the driving-shaft, and a brake-band having pivotal adjustable connection at one end with the frame of the velocipede and secured at its other end to the pedal-lever, substantially as set forth.

6. The combination with the driving-shaft of a velocipede and a pedal-lever connected therewith, of a brake-wheel secured to the driving-shaft, a bracket pivoted to the frame of the machine, an arm projecting from said bracket, a screw passing through said arm and engaging the frame, a brake-band secured to said bracket, and a pin on the pedal-lever to which the other end of said brake-band is connected, substantially as set forth.

7. The combination with the driving-shaft of a velocipede and a pedal-lever connected therewith, of a brake-wheel secured to the driving-shaft, a bracket connected to the frame of the machine, said bracket having an elongated slot, a brake-band adjustably secured to said bracket and a pin on the pedal-lever to which the other end of said brake-band is connected, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WALTER S. AUSTIN.

Witnesses:
R. S. FERGUSON,
S. G. NOTTINGHAM.