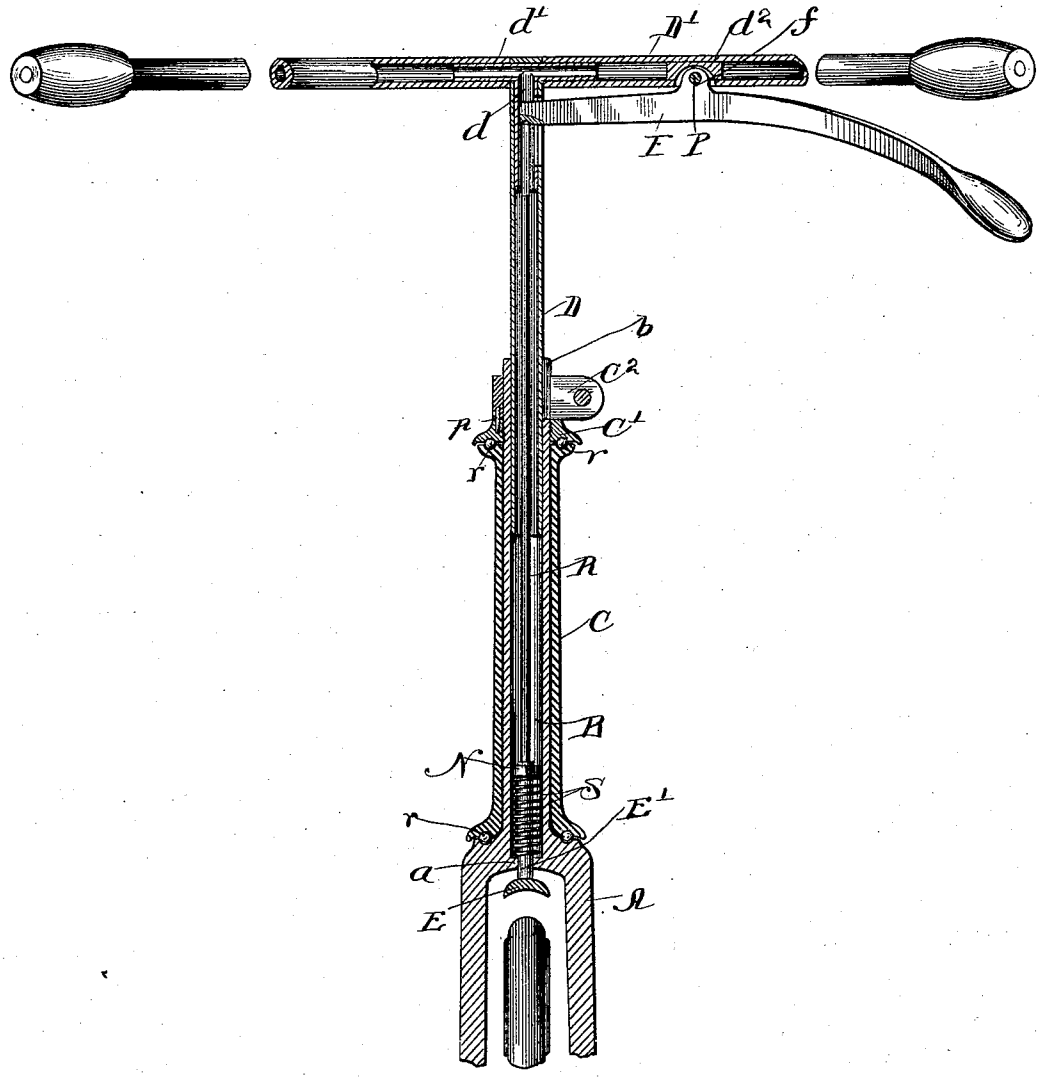
(No Model.)

L. M. DEVORE & C. E. FORRY.

BICYCLE.

No. 488,603. Patented Dec. 27, 1892.



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UNITED STATES PATENT OFFICE.

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BICYCLE.

SPECIFICATION forming part of Letters Patent No. 488,603, dated December 27, 1892.

Application filed October 26, 1891. Serial No. 409,779. (No model.)

To all whom it may concern:

Be it known that we, LEVI M. DEVORE and CHARLES E. FORRY, both citizens of the United States of America, and both residing at Freeport, in the county of Stephenson and State of Illinois, have jointly invented certain new and useful Improvements in Bicycles, of which the following is a specification.

Our invention relates to improvements in bicycles, and particularly in the construction and connection of the handle bars, handle bar heads, and brakes thereof.

The invention is fully described and explained in this specification and shown in the accompanying drawing, which is a view partly in front elevation and partly in vertical section, showing in detail the various parts involved in our improvements. In this view A is the front fork of a bicycle of ordinary and known construction, and B is the neck formed integrally with the fork and supported by it, the neck being vertically slotted at its upper end, as indicated at *b*. Upon the neck, B, turns freely the tubular head, C, of the bicycle, this tubular head being formed integrally with, or rigidly fastened to the backbone of the machine, which is not shown. The head, C, is held in place by means of a nut, C′, which engages a screw-threaded portion of the neck, B, and anti-friction balls or rollers, *r*, are interposed between the ends of the head, C, and the surfaces of the nut, C′, and fork, A. Above the nut, C′, is an annular clamp, C^2, encircling the split portion of the neck, B, and serving as a means for compressing it and clamping within it the lower portion of a tubular handle bar head, D, which supports a horizontal handle bar, D′, which is suitably secured upon its upper end. The vertical position of the handle bar may be varied at will by loosening the clamp, C^2, raising or lowering the handle bar to the desired position, and then tightening the clamp upon the neck, B; and when the clamp, C^2, is loosened, it may be turned in either direction, and by means of a pin, *p*, interposed between the clamp and the nut, C′, the turning of the clamp correspondingly rotates the nut, and raises or lowers it upon the neck, B. The handle bar and handle bar head are of ordinary outward form and operation, but we have greatly improved their construction and increased their strength by reinforcing them at their intersection by means of two tubes, *d*, *d′*, brazed together to form a T, and brazed within the handle bar and head in the position shown in the drawing. These tubes, being quite short, and of small diameter, add scarcely anything to the weight of the parts, but they greatly strengthen them at the point where they are weakest, as ordinarily constructed.

Within the fork, A, lies a brake-spoon, E, of ordinary form, provided with a shank, E′, which extends upward into a tubular cavity of the neck, B, and is provided at its upper end with a nut, N, adjustable upon the shank by turning it in either direction. Between the nut, N, and an annular shoulder, *a*, at the bottom of the cavity in the neck, is interposed a spring, S, encircling the shank, the spring being of such length and construction as to press the brake upward and tend to hold it in the position shown in the drawing. A brake rod, R, screw-threaded at its lower end, extends into a cavity in the shank, E′, and may be adjusted vertically by turning it in either direction, and thereby screwing it up or down. This rod extends upward very nearly to the top of the handle bar head, and is preferably squared at its upper end in order that it may be turned with an ordinary wrench, for the purpose of raising or lowering it. When it is desired to so adjust it, the handle bar head must be removed from the neck, B, and may be replaced when the adjustment of the rod is completed. The upper end of the brake rod is preferably conical, and rests in a corresponding socket in the inner end of a brake lever, F, whose outer end lies just below one of the handles at the end of the handle bar.

At a suitable distance from the handle bar head, a block, d^2, is inserted within the handle bar and suitably secured, by brazing or otherwise, and in the lower face of this block and of the tubular handle bar, is formed a recess, adapted to receive an ear, *f*, formed on the upper edge of the brake lever, the ear being pivoted, and the lever held in place by means of a pin, P, passing through the block, d^2, and through the ear. The slot within which the ear, *f*, is seated, lies in the lower face of the handle bar, and the slot through

which the end of the brake lever enters the handle bar head, is in the side face of the head, both the slots being small and in inconspicuous positions. When it is desired, therefore, to entirely remove the brake and its operating mechanism, from the machine, the parts may be taken away, and the machine shows scarcely any traces of their former presence. Not only this, the form and position of the brake lever are such that it operates easily and positively, and with scarcely any friction or loss of power.

The loose connection of the brake rod and brake lever somewhat simplifies and cheapens the construction of the parts, and makes them easier to assemble and to separate; and since the spring, S, presses the brake rod upward against the brake lever and into the socket formed therein, this loose connection is, in every respect, as satisfactory as the jointed connection heretofore employed.

Having now described and explained our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a bicycle, the combination with the tubular handle bar and handle bar head, of the supplemental tubes fastened together and inserted in the handle bar head and handle bar at their intersection, all of said tubular parts being securely fastened together; substantially as shown and described.

2. The combination with the handle bar head, D, and handle bar, D′, of the supplemental tubes, *d*, *d′*, forming a T, and inserted in the handle bar and head at their junction, the handle bar head, handle bar and tubes, *d*, *d′*, being brazed together; substantially as shown and described.

3. The combination with the handle bar of a bicycle, of a brake lever lying below the handle bar and provided with an ear extending upward into a slot in the handle bar, and a pivot passing through the handle bar and the ear upon the brake lever, and connecting the brake lever and the handle bar; substantially as shown and described.

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