

No. 663,478.

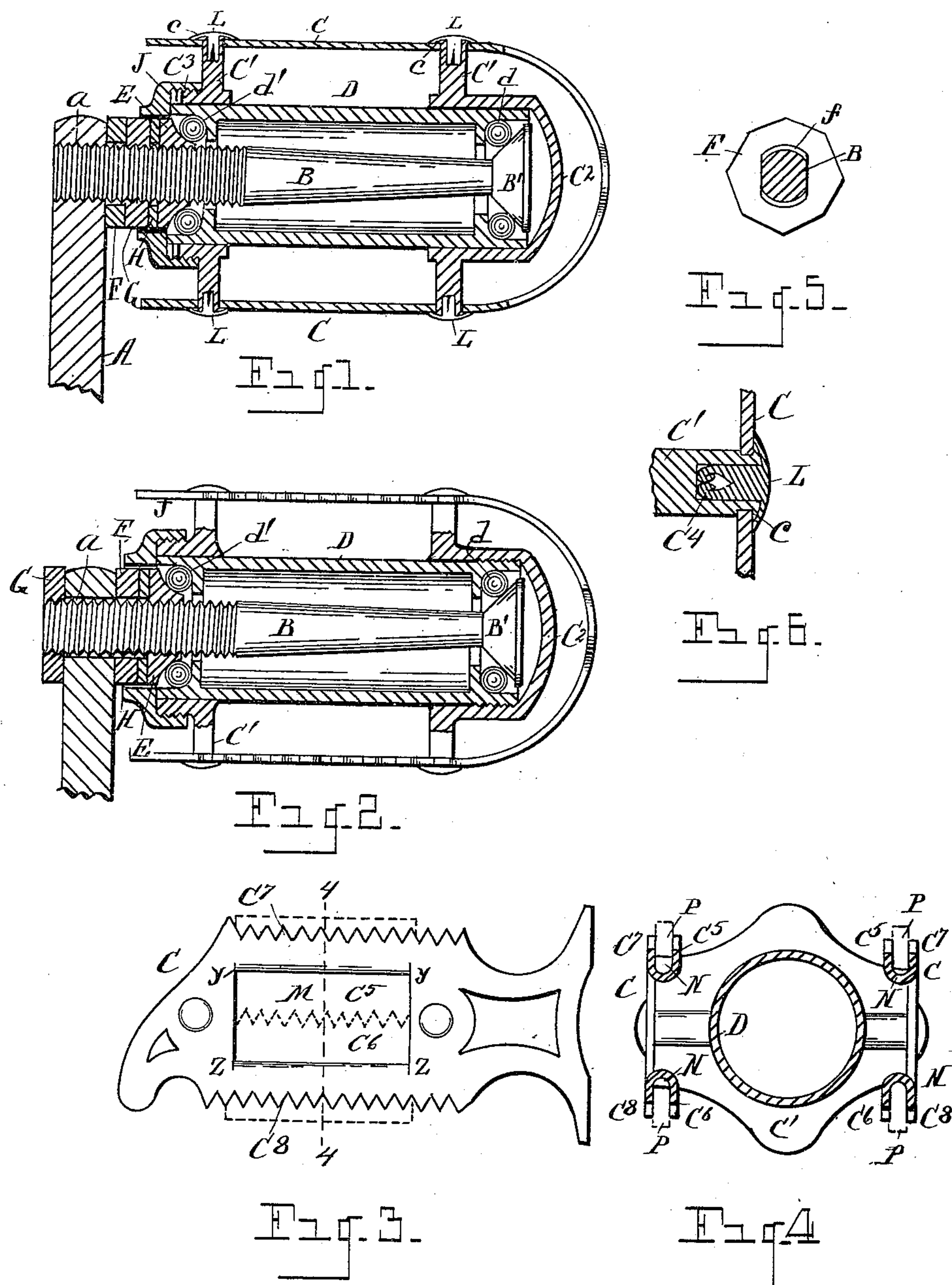
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G. R. VAN SCHOICK & C. E. SAMSON.

BICYCLE PEDAL.

(Application filed Dec. 3, 1898.)

(No Model.)



WITNESSES.

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UNITED STATES PATENT OFFICE.

GEORGE R. VAN SCHOICK AND CHARLES E. SAMSON, OF YPSILANTI,
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BICYCLE-PEDAL.

SPECIFICATION forming part of Letters Patent No. 663,478, dated December 11, 1900.

Application filed December 3, 1898. Serial No. 698,149. (No model.)

To all whom it may concern:

Be it known that we, GEORGE R. VAN SCHOICK and CHARLES E. SAMSON, citizens of the United States, residing at Ypsilanti, county of Washtenaw, State of Michigan, have invented a certain new and useful Improvement in Bicycle-Pedals; and we 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, reference being had to the accompanying drawings, which form a part of this specification.

Our invention relates to certain new and useful improvements in the construction of bicycle-pedals.

As bicycle-pedals have been heretofore commonly constructed there has been great liability for the cones either to tighten or to work loose. Moreover, the means and method of adjusting the cone have been such as to make it difficult to accomplish, as the adjustment has commonly been made in such a way that it has been impracticable to engage a tool of suitable strength with the required parts to accomplish the adjustment in the most efficient and secure manner.

It is the purpose of our invention to construct bicycle-pedals in which these and other difficulties shall be overcome.

Our invention contemplates the general construction, combination, and arrangement of devices hereinafter specified and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section through the pedal, showing a part also of the pedal-crank. Fig. 2 is a similar view of features of our invention, showing a modification. Fig. 3 is a view in elevation, showing one side of the pedal-plates. Fig. 4 is a view in section on the line 4-4, Fig. 3. Fig. 5 is a view showing the pedal-pin in section with the wrench-nut engaged thereupon. Fig. 6 is a view in section, showing the manner of finishing the rivet and the finishing-rivet in engagement with one of the braces of the adjacent pedal.

We carry out our invention as follows:

A represents the crank-arm, and B the pedal-pin.

C C represent the plates, and C' C' the braces uniting the plates.

D is the barrel or quill, which our inven-

tion contemplates making separate and independent of the braces C', so that the barrel or quill may readily be separated therefrom and united thereto. We do not limit our invention to any particular and specific means of engaging the quill with the braces, as the engagement may be made within the scope of our invention in a variety of ways.

C² is an outer cap or housing made integral with or rigidly united to the adjacent brace.

Our invention contemplates forming the pedal-pin B with the outer cone B', made rigid or integral with the pin.

E is an adjustable cone engaged upon the pedal-pin toward its inner end and made adjustable thereupon. The quill D is formed with cups *d d'* at opposite ends thereof. The pedal-pin has, preferably, a threaded engagement with the crank-arm, as shown at *a*. It will be understood that on a right-hand pedal the threads upon the pedal-pin will be right-hand threads and on the left-hand pedal the pin will be provided with left-hand threads, the crank-arm A being threaded in a similar manner. To tighten the crank-pin into the crank-arm, we provide a wrench-nut, (indicated at F.) The pin and the wrench-nut may be formed in any suitable manner, the one relative to the other, so that power applied to the wrench-nut will turn the pin into or out of the crank-arm. As shown in Fig. 5, the inner end of the pedal-pin is flattened on opposite sides, and the wrench-nut is formed with an orifice *f* of corresponding form to be slipped upon the inner end of the pedal-pin, the wrench-nut having no threaded engagement with the pin.

To adapt the device either for a "slab-pin"—*i. e.*, a pin held in place in the crank-arm by a nut on the outer end of the pin—or for a screw-end pin—*i. e.*, a pin held in place in the crank-arm by being threaded thereinto—we prefer to locate upon the pedal-pin a jam-nut G. When the pin constitutes a screw-end pin, the nut G is threaded upon the inner end of the pin, preferably between the wrench-nut F and the adjacent cone E, as shown in Fig. 1, a washer H being preferably located between the jam-nut G and the adjacent cone E. Should the threads of the crank-arm A or upon the inner end of the pedal-pin B be wholly or partially stripped, as pedals have heretofore been constructed it has been

found impracticable to repair them without renewing one or both of the parts; but in such a case our invention contemplates the removal of the nut G from its location, (shown in Fig. 1,) after which the pin may be forced a corresponding distance through the arm A and the jam-nut G be engaged upon the end of the pin outside the arm A, as shown in Fig. 2, making the pin practically a slab-pin, so that by the employment of the jam-nut G the pin may be engaged with the crank-arm in either manner, as illustrated in Figs. 1 and 2, a point of great advantage and utility.

To assemble the parts, the barrel may be sleeved over the pedal-pin, the integral cone being lifted or spaced from the adjacent cup of the barrel sufficiently to permit the balls being placed in the cup. The integral cone may then be dropped down into engagement with the balls. The barrel is then reversed and the balls located in the cup at the opposite end, after which the adjustable cone will be run onto the pedal-pin and into contact with the balls. The washer is then slipped over the pin and the jam-nut is run upon the pin into proper position, and the wrench-nut is also slipped over the pin. The cap-nut J may then be slipped over the jam-nut G and the adjustable cone and against the adjacent end of the barrel. The pin may then be forced into the crank-arm A. The plates C with their braces C', may then be engaged over the barrel or quill D and the cap-nut J run into threaded engagement with the flange C³ to hold the barrel in engagement with the plates and braces. The pin being threaded, as above described, obviously the adjusting-cone E cannot work loose or tighten up. When the pin has been properly tightened in the arm, the wrench-nut will be tightened closely against the adjacent face of the arm, leaving no room whatever for the parts to work loose, and the direction of rotation of the various parts will also prevent any possibility of the adjusting-cone working loose or tightening up, the lock-nut holding the adjusting-cone in a given position of adjustment.

In Fig. 1 the barrel or quill D is shown held in engagement with the braces C' by means of a cap-nut J, having a threaded engagement upon a flange C³, connected with the adjacent brace. This cap-nut J is engaged against the inner end of the quill, as shown, and serves not only to hold the quill in place, but to effectually exclude dust and dirt from the adjacent parts.

As shown in Fig. 2, the outer end of the barrel or quill D has a threaded engagement in the outer brace C', the cap-nut J being also employed. To unite the braces C' with the plates C, we prefer to make the outer ends of the braces hollow and to rivet their outer ends over upon the outer faces of the plates, as indicated at c, the open end of the braces being closed by a finishing-rivet L.

The use of the washer H prevents any

change of adjustment of the cone E in forcing the pin into the crank-arm. Without the washer the operation of the wrench-nut upon the pin will be liable to change the adjustment of the cone E in the operation of tightening the pin in the arm.

Another feature of our invention relates to the construction of the plates C. We prefer to construct the plates with two corrugated edges on each side of the crank-pin, as illustrated more particularly in Fig. 4. This may readily be accomplished by kerfing or punching the body of the plates by means of a shear-cut die, in the form illustrated in dotted lines in Fig. 3 at M. The body of the plates is then cut toward opposite ends thereof along the line from Y to Z, forming two lips C⁵ and C⁶, which are turned inward in opposite directions and bent over alongside the outer corrugated edges, (indicated at C⁷ and C⁸,) the lips being spaced therefrom, forming intermediate pockets N, in which may be located corresponding rubbers P, the lips forming a support for the rubber and serving to hold the rubber in place. The rubber, however, may be omitted, if preferred, the pedal being thus formed with two rows of serrated edges on opposite edges of the plates.

The plates, with the connecting-braces, form a pedal-frame; but we do not limit ourselves to any definite construction of the pedal-frame.

What we claim as our invention is—

1. In a bicycle-pedal, the combination of a crank-arm, a pedal-frame provided with connecting-braces, a barrel removably engaged in said braces, a pedal-pin within said barrel, an adjustable cone upon the inner end of the pedal-pin, a wrench-nut upon said pin adjacent to the crank-arm, a jam-nut normally engaged upon said pin between the wrench-nut and the adjustable cone, and a cap-nut at the inner end of the barrel having a threaded engagement with one of said braces over the adjacent cone, the jam-nut made removable from its normal position and engageable upon the pedal-pin outside the crank-arm at the will of the operator, the wrench-nut being accessible outside the cap-nut, and said pin and barrel being simultaneously removable from said frame upon the removal of the cap-nut, substantially as set forth.

2. In a bicycle-pedal, a bicycle-frame provided with side plates each formed with integral multiple edges upon opposite sides thereof, one of said edges at each side of the plate struck up from the body of the plate intermediate the edges of the body, substantially as set forth.

In testimony whereof we sign this specification in the presence of two witnesses.

GEORGE R. VAN SCHOICK.
CHARLES E. SAMSON.

Witnesses:

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