

No. 622,947.

Patented Apr. 11, 1899.

R. B. GARCIA.
BICYCLE PEDAL.

(Application filed Sept. 30, 1898.)

(No Model.)

Fig 1

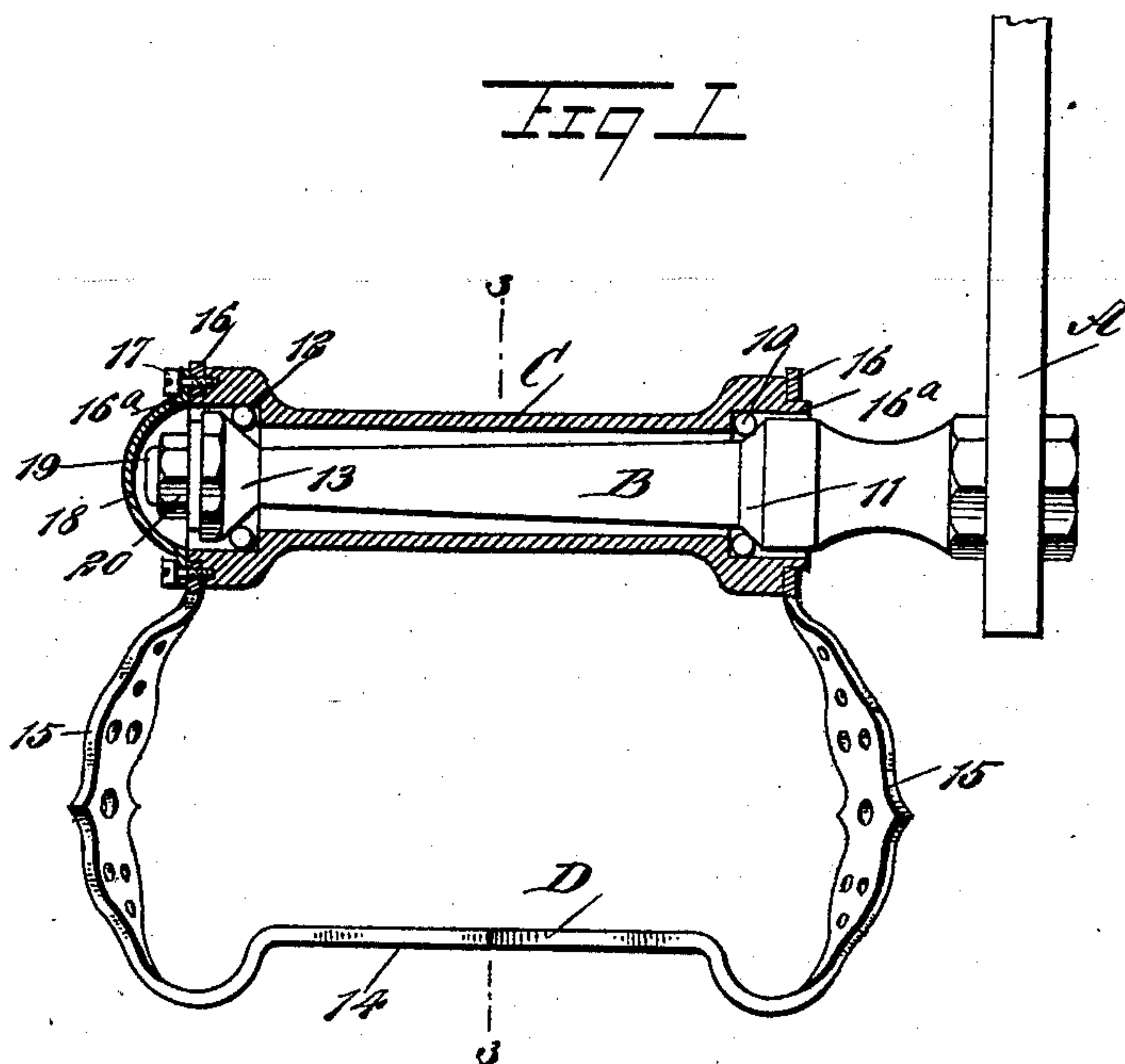


Fig 2

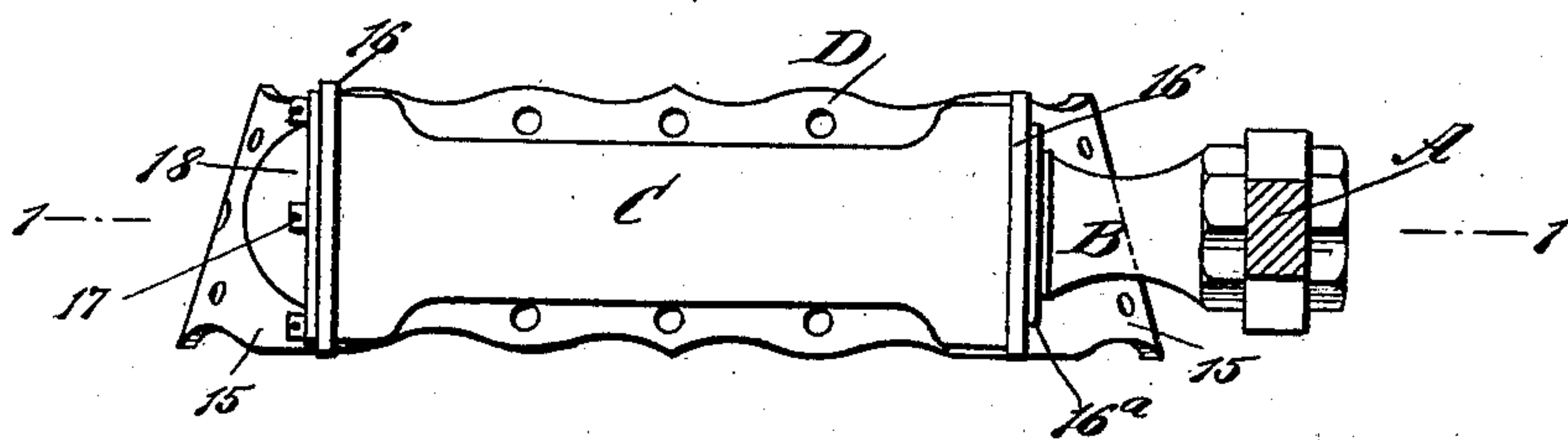
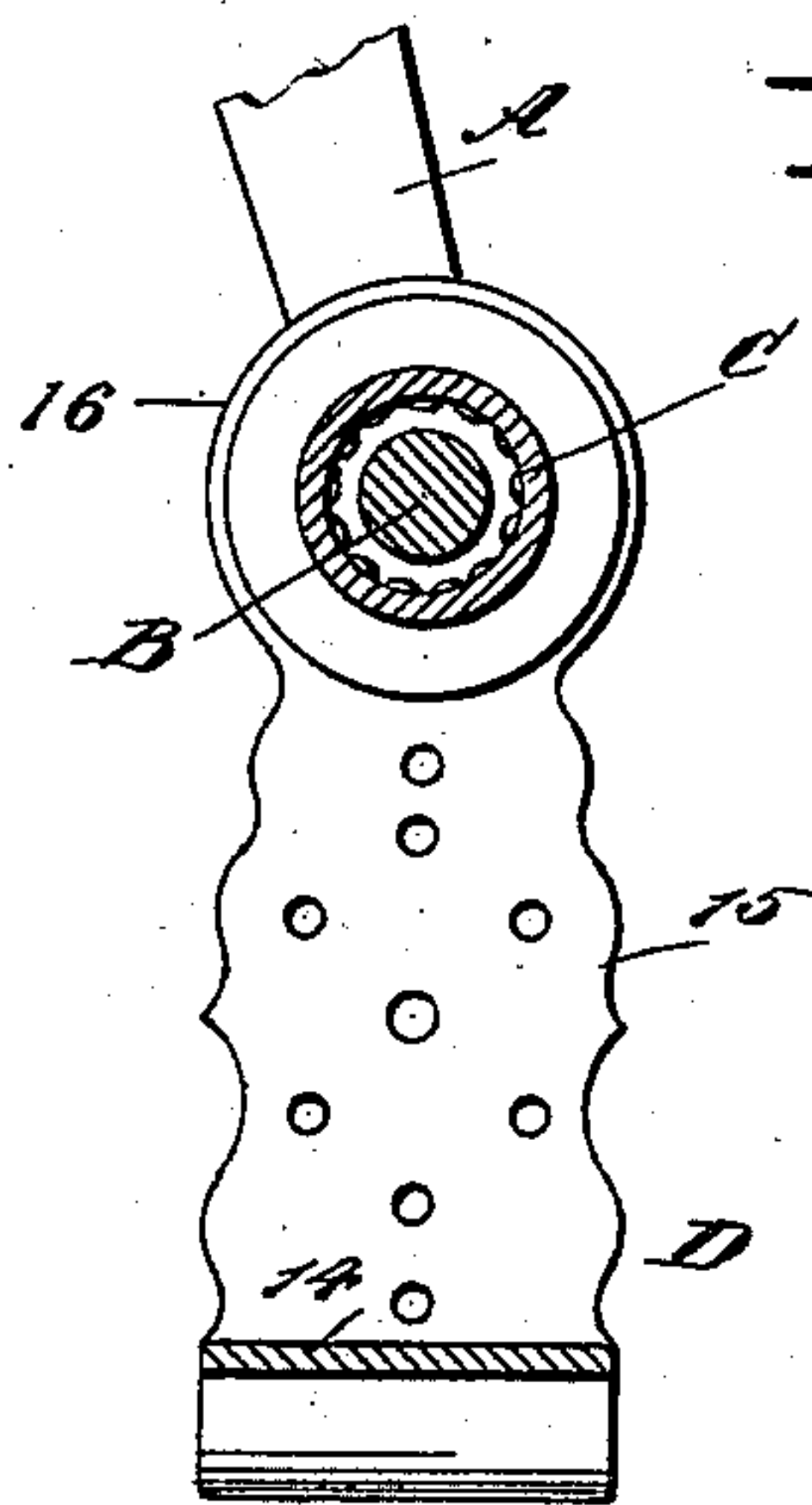


Fig 3



WITNESSES:

H. Walker
J. H. H. H.

INVENTOR
Raphael B. Garcia
BY *M. M. M.*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

RAPHAEL B. GARCIA, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO
CARL F. KABISCH, OF SAME PLACE.

BICYCLE-PEDAL.

SPECIFICATION forming part of Letters Patent No. 622,947, dated April 11, 1899.

Application filed September 30, 1898. Serial No. 692,337. (No model.)

To all whom it may concern:

Be it known that I, RAPHAEL B. GARCIA, a citizen of the United States of Colombia, residing at the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Bicycle-Pedal, of which the following is a full, clear, and exact description.

The object of my invention is to provide a bicycle-pedal so constructed that the foot will be supported by a stirrup pendent from the pedal and will not be brought in engagement with the pedal-arm, the stirrup serving to enable a rider to exert greater power on the downstroke than would be possible if the ordinary form of pedal is employed, since there will be no danger of any lateral slip or movement of the foot, and whereby also a greater control of the pedal may be obtained in back pedaling.

Another object of the invention is to provide a pedal for bicycles in which the toe-clip may be dispensed with, yet all of the advantages of the use of the ordinary toe-clip be retained.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the pedal-arm of a bicycle, a portion of the pedal-arm being in longitudinal vertical section, and Fig. 1 likewise represents an edge view of a stirrup carried by said pedal-arm, the section being taken substantially on the line 1 1 of Fig. 2. Fig. 2 is a plan view of the pedal-arm, the crank-arm connected with the pedal-arm being in horizontal section; and Fig. 3 is a transverse section on the line 3 3 of Fig. 1.

A represents a crank-arm of a bicycle pedal-shaft, and B the pedal-arm that is carried by the crank-arm.

C represents a sleeve which is mounted to turn loosely upon the pedal-arm, and the said sleeve has ball-bearings upon the pedal-arm, and the rear balls 10 are located within the hub attached to the sleeve C, the balls 10

turning upon a cone 11, formed near the inner end of the pedal-arm, and at the opposite or outer end of the sleeve C a second hub is formed, in which balls 12 are located having bearings upon a cone 13 formed at or near the outer end of the pedal-arm, as shown in Fig. 1; but I desire it to be understood that the character of the ball-bearings may be changed if in practice it is found desirable. In connection with the sleeve C a stirrup D is employed. This stirrup is adapted to receive the foot of the rider, as it is not intended that the rider's foot shall be brought in contact with the sleeve C of the pedal-arm B, as under the ordinary construction of pedals.

The stirrup consists of a bottom section 14, upon which the sole of the foot is to rest, side arms or members 15, extended upward from the bottom and which serve to confine the foot and prevent it from having undue lateral movement, and an extension 16 from each side arm or member 15, the said extensions 16 being apertured to receive projections 16^a from the end portions of the sleeve C, and the extensions 16 of the stirrup are secured to the end portions of the sleeve C by means of screws 17 or like fastening devices, so that the stirrup is connected directly with the sleeve, the sleeve being the medium of pivoting the stirrup on the pedal-arm. The outer end of the sleeve C is closed or is protected by a suitable cap 18.

The outer extension 16 of the stirrup is loosely passed around the reduced outer end 19 of the pedal-arm, engaging with the outer end surface of the cone 13, and a lock-nut 20 is screwed upon the outer end of the pedal-arm, the nut engaging with the outer surface of the outer extension 16 of the stirrup.

In practice when a foot is placed in a stirrup upon the downstroke force is brought to bear upon the bottom of the stirrup, while upon the upstroke the upper portion of the foot will bear against the pedal-sleeve C, and power may therefore be exerted upon both the up and the down strokes. By the addition of the stirrup the crank-arm may be made shorter than usual, and the stirrup being pivoted upon the pedal extension of the arm at the ascent of the arm the length of the stroke is that of the length of the arm;

but upon the descent of the arm the length of the stroke is the length of the arm plus the depth of the stirrup. The path of the stirrup, and consequently that of the foot, is elliptical, and the addition of the stirrup, it is evident, prevents cramping the limbs and affords the possibility of the application of much more power to the pedal-shaft than under the ordinary construction of pedals without as much exertion on the part of the rider.

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

In a bicycle-pedal, the combination of the pedal-arm having two oppositely-disposed cones thereon, a sleeve mounted to turn around the pedal-arm and having enlarged

end portions bearing on the cones, the extremities of said end portions being provided with longitudinally-extended annular projections, a stirrup, the side arms of which extend upwardly to the sleeve and are provided with apertures respectively receiving the projections at the ends of the sleeve, whereby to secure the side arms of the pedal to the sleeve, a cap mounted at and covering the outer end of the sleeve, and fastening devices passing through the cap and adjacent stirrup-arm and into the sleeve, whereby to secure both cap and stirrup to the sleeve.

RAPHAEL B. GARCIA.

Witnesses:

B. ARDILOR,

J. FRED. ACKER.