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Patented Dec. 5, 1899.

G. A. WHEELER.  
BICYCLE PEDAL CLIP.  
(Application filed Dec. 16, 1896.)

(No Model.)

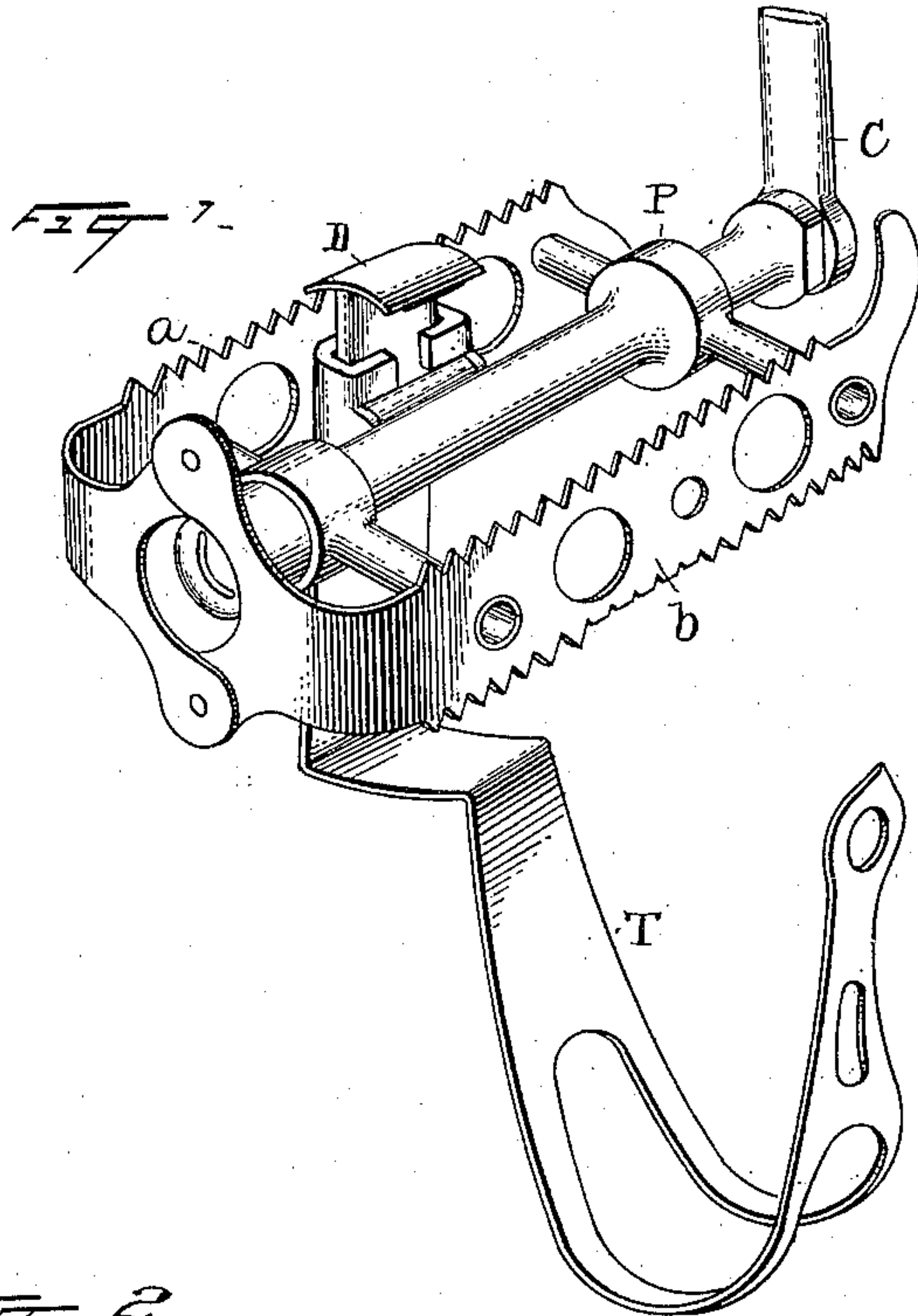
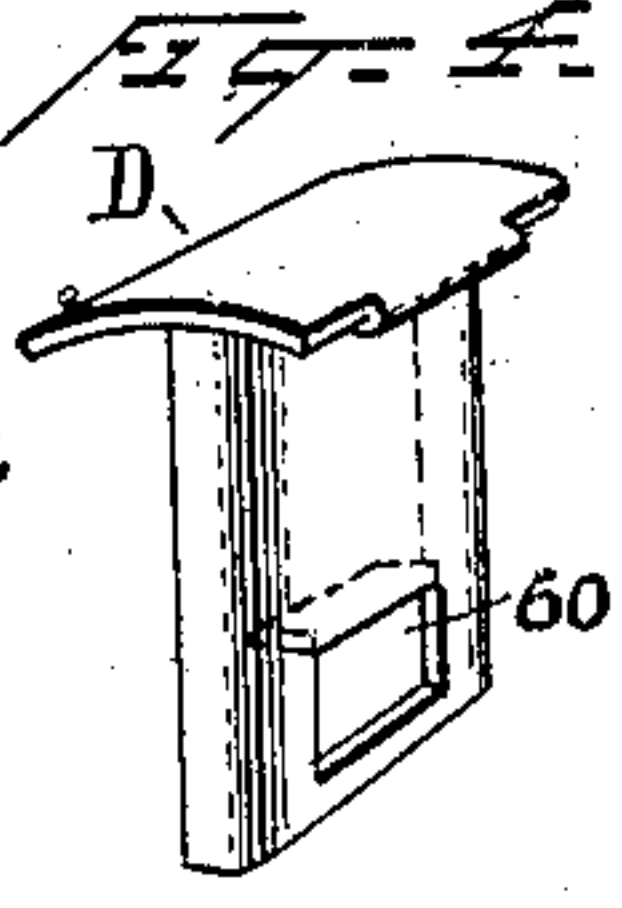
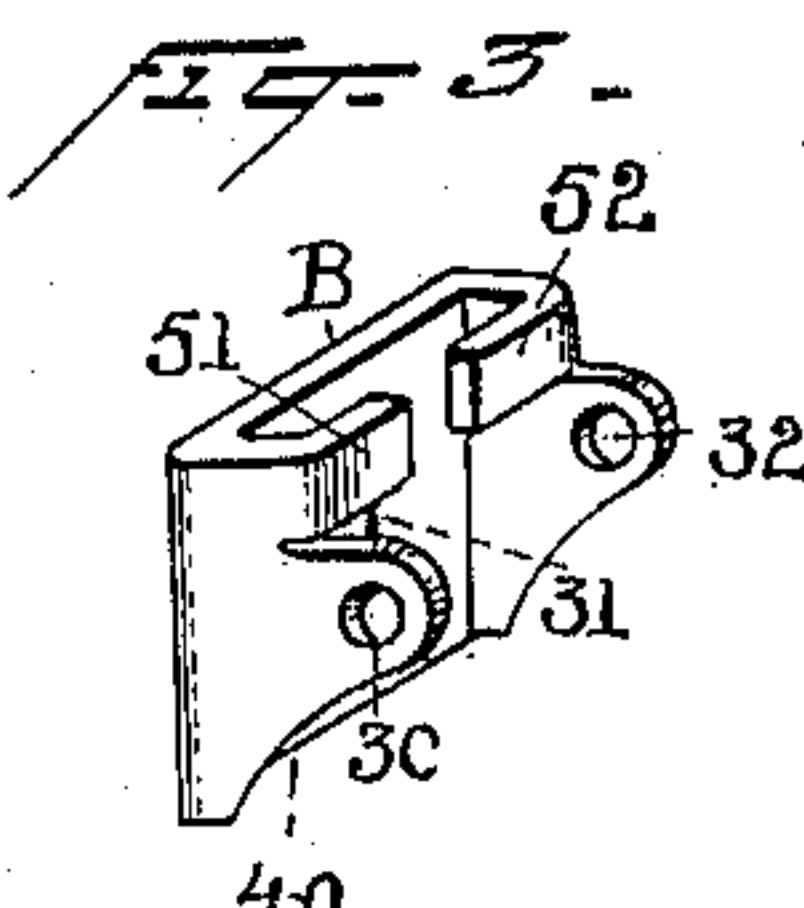
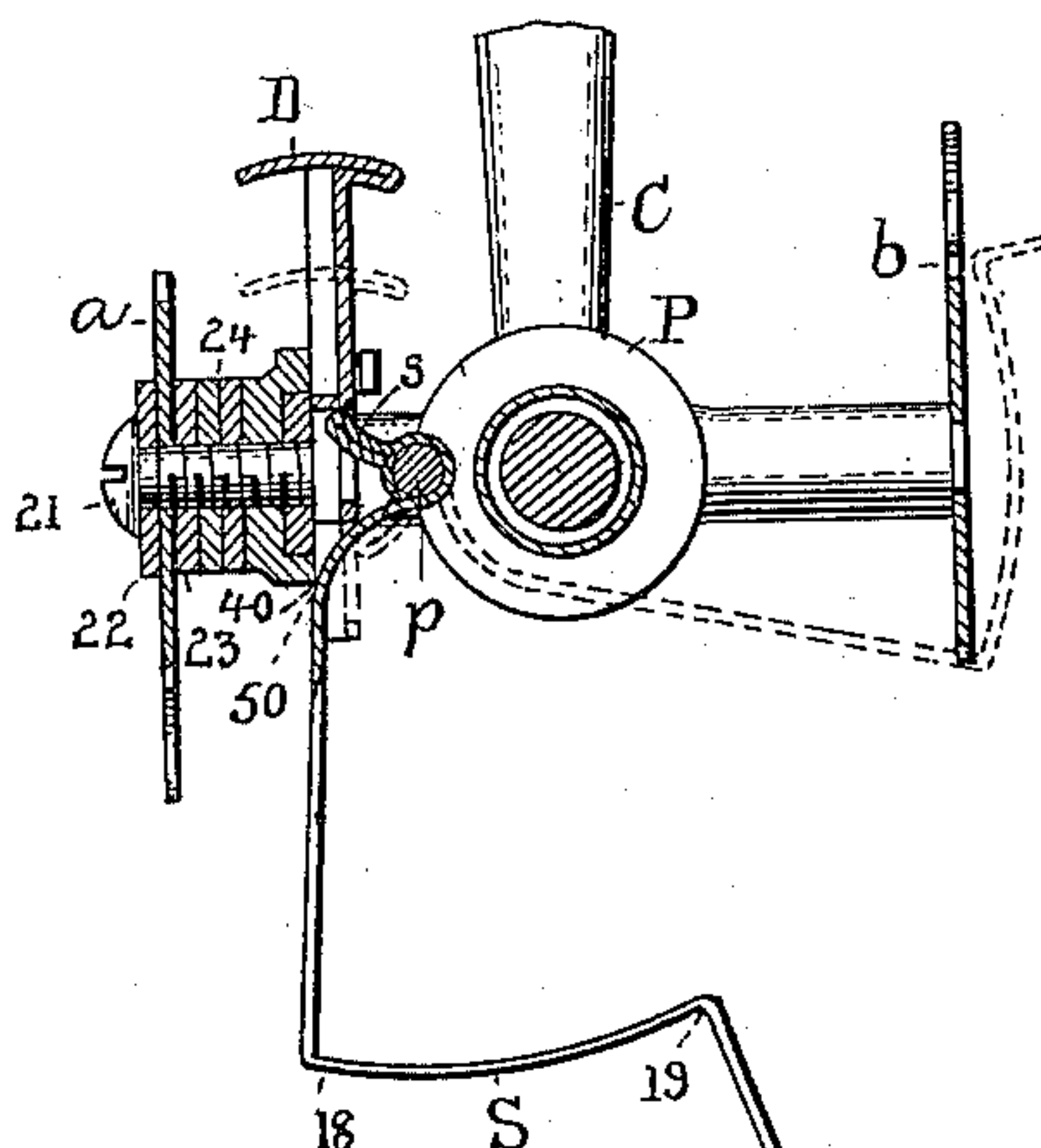


FIG. 2.



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# UNITED STATES PATENT OFFICE.

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## BICYCLE PEDAL-CLIP.

SPECIFICATION forming part of Letters Patent No. 638,407, dated December 5, 1899.

Application filed December 16, 1896. Serial No. 615,900. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE A. WHEELER, a citizen of the United States, and a resident of New York, in the county and State of New York, have made certain new and useful Improvements in Bicycle Pedal-Clips, of which the following is a specification and for which British Patent No. 17,468, dated July 24, 1897, has been obtained.

My invention relates to automatic or self-righting pedals having adjustably-attached clips for use in propelling bicycles.

The object of my invention is to provide a compact arrangement of an automatic or self-righting pedal, combined with a clip having means for adjustable attachment located within the outline of the pedal, so that the clip may be attached to produce the desired self-righting capacity in pedals varying in size and proportion.

I provide a clip having a contact-surface for the foot, which extends a distance in advance of the front side of the pedal-line substantially equal to the width of the pedal. One end of the clip is hinged or pivoted to a bracket located inside the pedal outline. A plunger slides in or is journaled in this bracket. One end of the plunger projects slightly above the contact-surface of the pedal. Its lower end engages the end of the clip, and when the foot is placed upon the pedal the plunger is depressed and the free end of the clip is elevated or carried into a position to receive the foot. There is a stop on the bracket or carried by the bracket, and the pivoted clip engages with it, limiting the drop of the clip to such an angle with respect to the center of gravity of the pedal when the clip and its bracket are attached thereto that the contact plane of the pedal when the pedal is freed will be carried into a position substantially at right angles to the line in which the force of gravity acts. In attaching a clip to pedals varying in width by connecting a bracket to the inside of the side strip or plate and by providing means for varying the distance between the hinge or pivot and such side strip I am enabled to produce the desired balance or any balance in any pedal without varying the angle of drop assumed by the freed clip. This adjustable means of attachment permits the attainment of a neater and more compact

arrangement, as the shoulder on the clip may always be made to lie in close proximity to the front side plate of the pedal.

The accompanying drawings illustrate my invention.

Figure 1 is a perspective view of a pedal with the toe-clip attached. Fig. 2 is a cross-section on the central line of Fig. 1, and Figs. 3 and 4 are detail views of the bracket and plunger.

The pedal P is of any usual construction and has side plates *a* and *b*. It is connected with the pedal-crank C, as usual. I provide a bracket B, having perforated ears 30 and 32. The plunger D is preferably formed of stamped sheet metal, as shown in Fig. 4, and moves in the passage in the bracket B, formed by the projections 51 and 52.

T is a toe-clip, preferably of sheet metal, as steel, and is formed substantially as shown, the pivoted end being turned to form a small cylindrical passage for a pin *p* and terminates in a projection *s*, doubled upon itself to reinforce its strength. The pin *p* unites the clip to the bracket, passing through the hole 30, the described passage in the clip, and the hole 32, while the projection *s* passes into the perforation 60 in the plunger D. The weight of the clip T operates to raise the plunger D to a position such that it projects slightly above the contact-surface of the pedal and at a point between the side plates *a* and *b*. When the clip T is free, a point 50 on the clip engages with a point 40 on the bracket and the curvature or form of the clip at or about the point 50, and the projection of the point 40 from the bracket B is such that the clip when in its lowest position will place the center of gravity of the combined clip and pedal at a predetermined point—that is, a point such that the contact-surface of the pedal will always assume a position substantially at right angles to the line of operation of the force of gravity. This position is the most favorable for the ready application of the foot to the pedal, and the pressure of the foot when applied to the plunger D operates to elevate the free end of the pedal into position to receive and engage the toe of the rider in a well-known manner. The bracket B is attached to the inside of the plate *a* at a point between said plate and the bearing of the pedal. The means



for attachment consists of a screw 21, in length about one-half the distance from the side plate to the pedal-bearing, and for the purpose of varying the location of the hinge or pivot *p* I provide a series of washers 22 23 24, which may be placed on either side of the plate *a* to vary the position of the pivot *p* or, in other words, the suspension-point of the clip *T*. The utility of this means of adjustment is twofold. I am thus enabled to slightly shift the center of gravity of the complete structure to produce any desired poise or balance, and I am thus enabled to secure a neat and compact arrangement and appearance of the clip when applied to pedals varying in width. The distance from the pivot *p* to the angular point 18 being fixed, the shoulder *S* is curved to an arc of which the distance from *p* to 18 is the radius.

This clip is to be placed on pedals of varying dimensions, and by adjustably locating the hinged support within the front and rear blades of a pedal I find it necessary to provide for only half the extent of adjustment that would be necessary in a clip supported on the outside. Therefore the allowance for adjustment between the hinge or pivot *p* of my clip and the point 18 is one-half what would be necessary if the hinge were located outside the pedal—that is, behind the rear blade.

The distance between the angle 19 and the point 20 I call the "contact-surface of the clip," and the distance is at least equal to the distance between the plates *a* and *b*, and it is to be noticed that the attainment of a balance such as described by me for the pedal and clip is much more difficult when the contact-surface is substantially at least equal to the width of the pedal than when such contact-surface is short and insufficient.

Heretofore others have added clips to pedals and secured a balance by adding weight where required or by setting the pedal on an axis out of center or by shortening the clip; but my improvement is for attachment to pedals having a normal balance, and I construct my clip as lightly and compactly as possible, with due regard to necessary strength

and rigidity and of full size, depending on no counterbalance, but upon the location and limit of drop under free movement to secure the desired balance, while the clip in its lowest position is always free of the ground.

What I claim, and desire to secure by Letters Patent, is—

1. In a velocipede, the combination with a pedal, of a toe-clip, a support to which said clip is pivoted having a stop for determining the position of the clip when free, so that the combined pedal and clip will be balanced, said support and stop being located between the rear blade and the axis of the pedal, and means operated by the foot of the rider for raising the clip into position to engage the toe, substantially as described.

2. The combination with a pedal, of a toe-clip, a support to which said clip is pivoted, said support being attached to the pedal between its rear blade and axis, and having a stop which determines the position of the clip when free so that the combined pedal and clip will be balanced, and a plunger slidingly mounted in said support for raising said clip, substantially as described.

3. In a velocipede, the combination with a pedal, of a toe-clip a support to which said clip is pivoted having a stop for determining the position of the clip when free so that the combined pedal and clip will be balanced, said support and stop being located between the rear blade and the axis of the pedal, means operated by the foot of the rider for raising the clip into position to engage the toe, and means for adjusting said support horizontally, substantially as described.

4. The combination with a pedal, of a bracket adjustably attached to the pedal between the blades thereof, a toe-clip pivoted in said bracket, a stop on said bracket to limit the drop of the pedal, and a plunger for raising said clip, sliding in ways of said bracket, substantially as described.

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