(No Model.)

J. W. HANSON.

BICYCLE PEDAL ATTACHMENT.

No. 595,388. Patented Dec. 14, 1897.

Fig. 1.

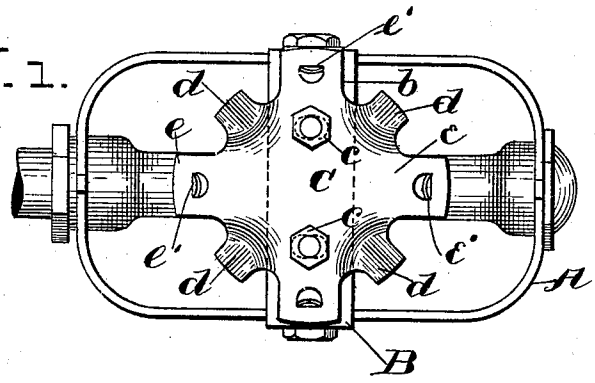


Fig. 4.

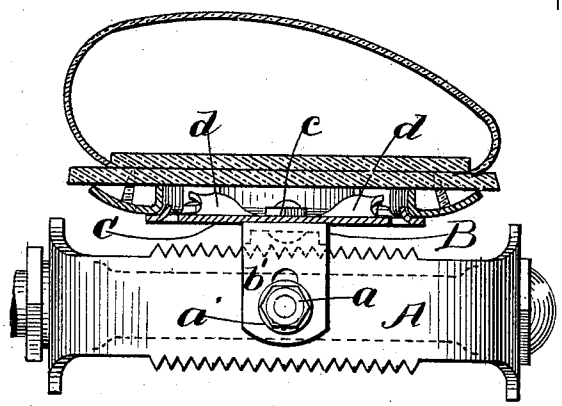


Fig. 2.

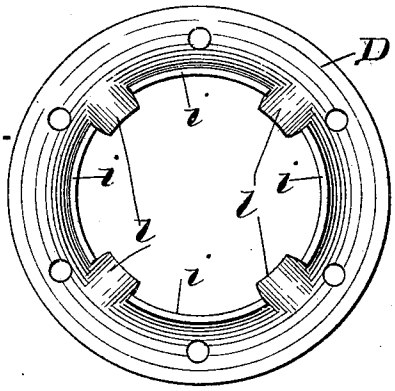
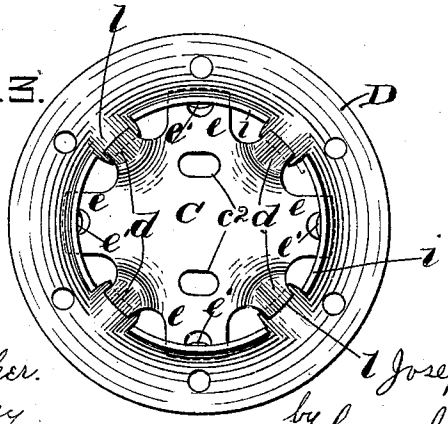


Fig. 3.



Witnesses.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOSEPH W. HANSON, OF BOSTON, MASSACHUSETTS.

BICYCLE-PEDAL ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 595,388, dated December 14, 1897.

Application filed July 29, 1897. Serial No. 646,286. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH W. HANSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Bicycle-Pedal Attachments, of which the following is a description sufficiently full, clear, and exact to enable those skilled in the art to which it appertains or with which it is most nearly connected to make and use the same.

This invention relates to certain new and useful attachments for bicycle-pedals, and has for its object to provide improved means by which the foot of the rider may be made to securely engage the bicycle-pedal, while at the same time permitting the foot to be readily disengaged by a twisting movement in either direction.

In its essential features it comprises three distinct parts—a plate which is secured to the sole of the shoe, a coöperating plate, and a clip by which the latter is secured to the pedal.

In the drawings, Figure 1 is a plan view showing the manner of securing one of the coöperating plates to the pedal. Fig. 2 is a similar plan view of the other coöperating plate, which is secured to the sole of the shoe. Fig. 3 is a plan view showing the two coöperating plates in locking position. Fig. 4 is a vertical sectional view through the shoe and the locking-plates as they are attached to the pedal.

A designates a pedal of the rat-trap type, to which is secured, by means of bolts *a*, in any well-known manner an angular clip B, comprising the horizontal portion *b* and the depending vertical members *b'*, which are slotted to receive the bolts or screws *a*, which secure the clip to the pedal.

To compensate for differences in the size of pedals, washers *a'* may be used either inside or outside of the pedal on the screws *a*.

To the upper face of the clip is fastened the plate C by well-known means, such as the screws *c*, which pass through slots c^2 in said plate and through the top of the clip. This plate C is formed with a number of projecting lugs or ears *d*, which are bent or offset so as to lie above the plane of the rest of the plate C. The plate C is also formed with another series of projecting lugs *e*, which lie in the same plane with the rest of the plate and from which are struck up small ears *e'*, which serve as guides, as will be made clear hereinafter.

The plate D consists of a sheet-metal ring and has portions of its inner edge bent up to form approximately perpendicular flanges *i*. Between these flanges, at regular distances around the ring, are formed inwardly-projecting teeth or lugs *l*, corresponding with the lugs *d* of the plate C.

I may slightly dish or concave the lugs *d* and *l*, so that their opposing faces shall be convex to each other in order that they may interlock more readily. This is illustrated most clearly in Fig. 4.

The ring D is dished sufficiently to bring its outer edge into approximately the same plane as the top edges of the flanges *i*, as clearly shown in Fig. 4.

The plate is secured to the sole of the shoe, as shown in Fig. 4, so that when the axis of the shoe is at right angles with the axis of the pedal the lugs *l* shall register with and engage the lugs *d* in the manner shown in Fig. 3.

In order to interlock the plates, it is necessary for the rider to slightly turn his foot, so that it shall be oblique to the axis of the pedal. The ears *e'* serve to guide the ring D into proper position with reference to the plate C. The twisting of the foot serves to interlock the plates in the manner shown.

Of course the number of projecting lugs may be varied, it being only necessary to have the corresponding lugs of the ring and the plate, respectively, of equal number and similarly disposed.

By the construction shown and described I avoid all necessity of cutting away the sole of the shoe to form pockets therein which are likely to be filled with dirt and foreign matter. The curvature of the opposing lugs enables them to glide into interlocking position very readily. Moreover, the parts can be interlocked or unlocked by a movement of the foot in either direction, a feature that is of much advantage in a case where it is necessary for the rider to disengage his feet suddenly without time to think which way he should turn his foot.

My construction also requires that the in-

terlocking lugs shall project but a very little from the plate or ring, and thus avoids the bending that longer arms are liable to. An additional feature of importance is that owing to the absence of any center pin it is not possible for one of the lugs to form an engagement with the coöperating lug while the others do not, which would result in bringing all the strain on one lug and bending it out of shape. The concaving of the projecting lugs also serves to strengthen them.

By slotting the plate C, I am enabled to slightly vary the angle of the axis of said plate with reference to the axis of the pedal, so that the angle of the foot to the pedal-axis may be varied or to compensate for any slight inaccuracy in securing the plate to the sole of the shoe.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all the forms in which it may be made or all of the modes of its use, it is declared that what is claimed is—

1. The combination of a ring adapted to be secured to the sole of the shoe, said ring having projecting lugs formed on its inner edge; of a plate having corresponding outwardly-projecting radial lugs, whereby the ring and the plate may be interlocked by a twisting movement in either direction.

2. A pedal attachment comprising a ring having a series of upturned flanges on its inner edge and a series of inwardly-projecting lugs; a plate having a series of radial outwardly-projecting lugs adapted to interlock with the lugs of the ring; and an angular clip extending transversely of the pedal, and serving to fasten the said plate to the pedal.

3. A pedal attachment comprising a ring, having inwardly-projecting lugs and upturned flanges formed at its inner edge; a plate, and means for securing said plate to the pedal, said plate having a series of radial lugs offset from the plane of the rest of the plate and adapted to form an interlocking engagement with the lugs of the ring from either side and having also a series of upturned ears adapted to abut against the inner edge of the ring to serve as a guide.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 26th day of July, A. D. 1897.

JOSEPH W. HANSON.

Witnesses:
GEO. N. GODDARD,
ARTHUR W. CROSSLEY.