No. 622,034. Patented Mar. 28, 1899.

E. A. BARNES.

PEDAL.

(Application filed Jan. 26, 1898.)

(No Model.)

FIG. 1

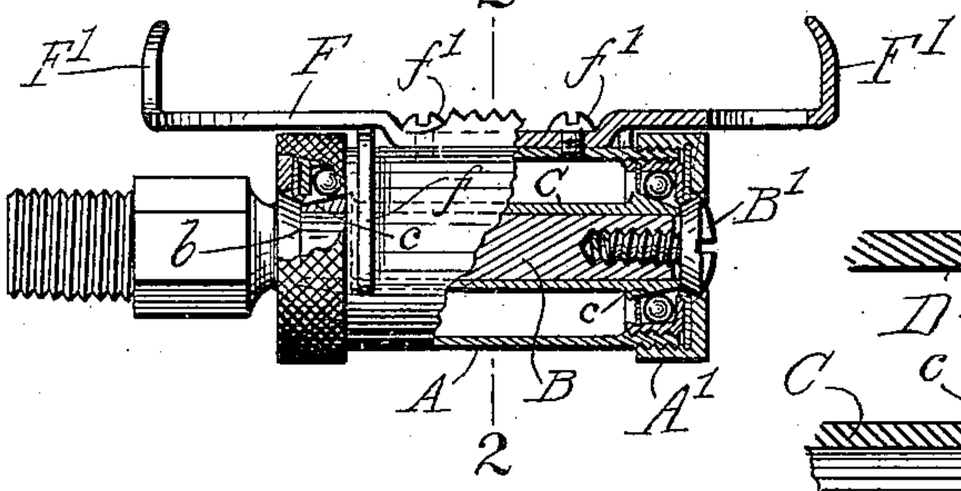


FIG. 5.

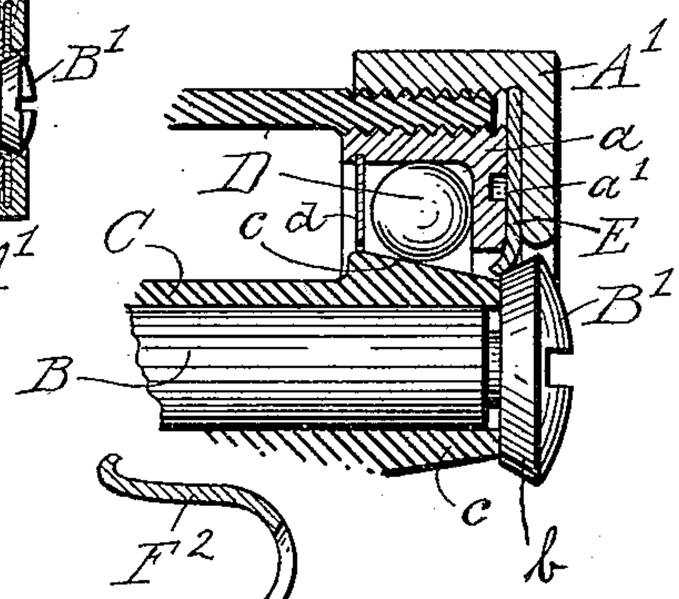


FIG. 2.

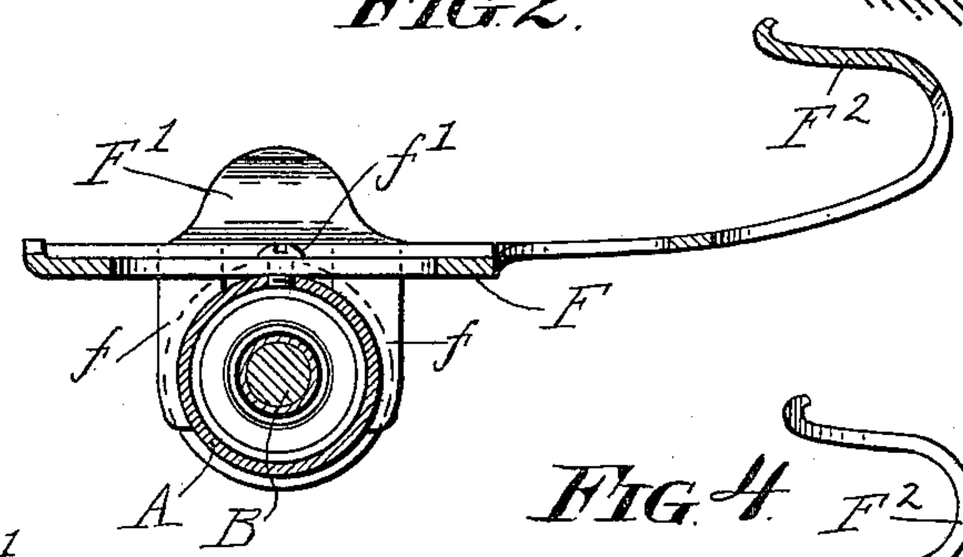


FIG. 6.

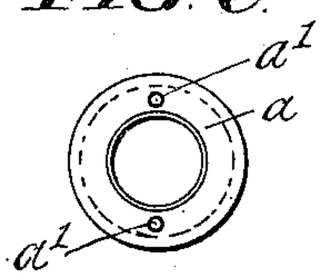
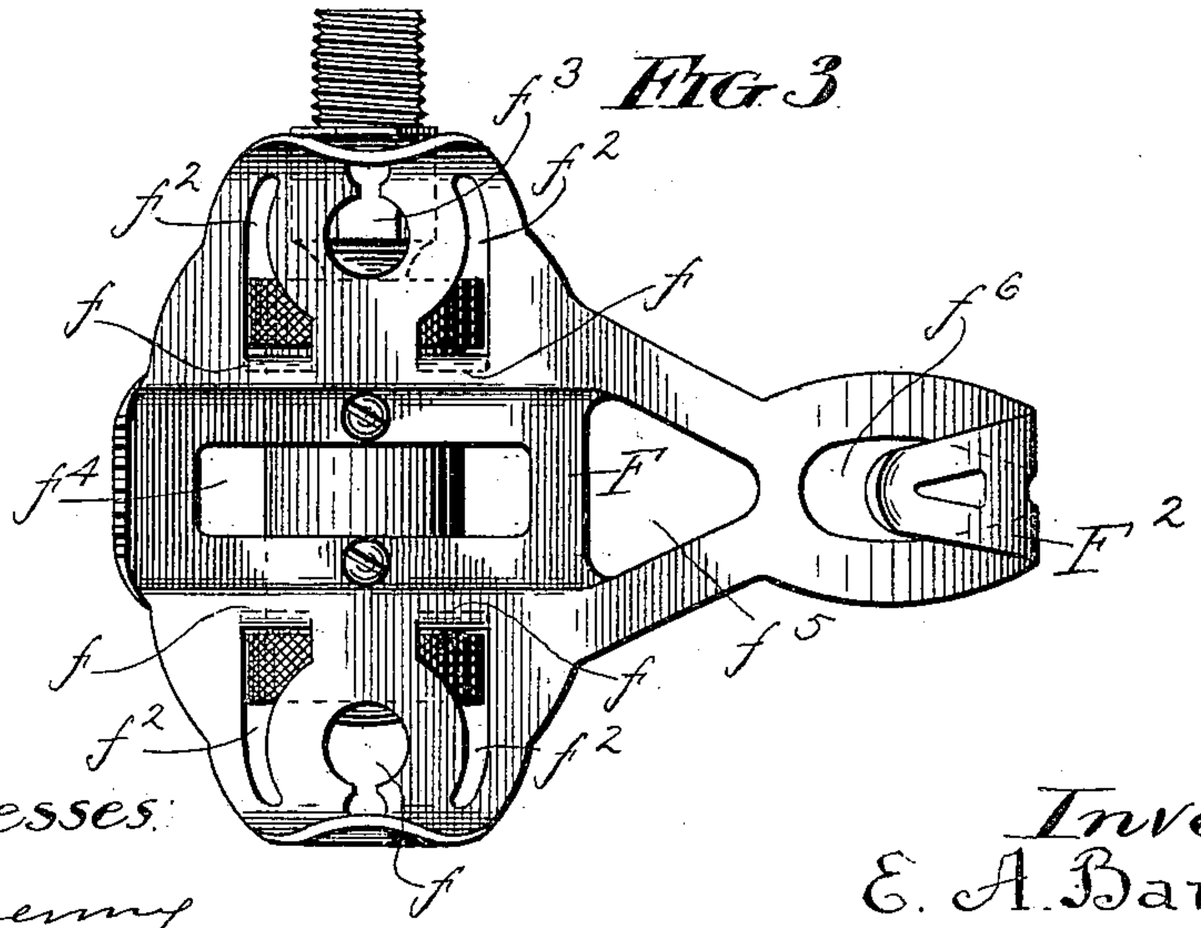


FIG. 4.

FIG 3.



Witnesses:
J. Halpenny
A. W. McArthur

Inventor:
E. A. Barnes.
by Carter & Brewer
Attys

UNITED STATES PATENT OFFICE.

EDWARD A. BARNES, OF FORT WAYNE, INDIANA.

PEDAL.

SPECIFICATION forming part of Letters Patent No. 622,034, dated March 28, 1899.

Application filed January 26, 1898. Serial No. 668,024. (No model.)

To all whom it may concern:

Be it known that I, EDWARD A. BARNES, of Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Pedals, of which the following is a specification.

This invention relates to improvements in pedals for cycles and the like, and has for its object to provide a novel construction in devices of this character which shall possess superior wearing qualities and be practically dust-proof while at the same time simple and economical of manufacture, easy to clean and adjust, and neat and ornamental in appearance, and in which the tread-plate may in itself afford a toe clip or clamp for the boot of the rider without requiring a special attachment for this purpose, as will be fully understood from the following description of the accompanying drawings, in which—

Figure 1 is a front elevation, partially in section, of a pedal constructed in accordance with my invention. Fig. 2 is a transverse section thereof, taken on line 2 2 of Fig. 1. Fig. 3 is a top plan view of the pedal. Fig. 4 is a fragmentary detail showing an adjustable construction of the toe-clip. Fig. 5 is an enlarged sectional detail showing the construction of the bearings. Fig. 6 is an outer end view of one of the adjustable bearing-cups.

Referring first to the construction of the pedal as to its bearings and in which respect the present improvement is applicable to any cycle-pedal, as well as to the peculiar design herein shown, A designates the pedal-barrel, which is simply a short piece of tubing threaded at each end both internally and externally, and B the pedal pin or shaft upon which said barrel is revolubly supported and which is adapted to be screwed in or otherwise secured to the crank of a cycle or other vehicle or machine in a familiar manner. At each end of the pedal-supporting portion of said shaft hardened-steel bearing-cones *c* are provided, and in the approved construction shown are the integral ends of a separate sleeve C, which fits closely over the pin or shaft B and is suitably secured thereon, as by the screw B′, which in this instance clamps it against a shoulder *b* at the inner end of the shaft, said sleeve serving both to reinforce the pedal-pin and to insure the exact alinement of the cone *c*. Opposed to the cone *c* are bearing-cups *a*, which are herein shown as screwed into the end of the pedal-barrel A and within which the bearing-balls D are placed and held, desirably, by an annular ball-retainer *d*, inserted in the inner end of each cup. Adjustment of the bearing is effected by turning the cups *a* in their screw-threaded sockets by means of a suitable wrench or spanner that may be applied to spanner-holes *a′* or otherwise, as found convenient. The cups are locked in their adjusted position by means of check-nuts A′, which screw over the outer ends of the pedal-barrel and reinforce the same and which are desirably knurled, so as to be easily turned by hand. These check-nuts also serve to inclose felt washers E or the like, which are clamped between the cups and check-nuts and the inner margins of which fit closely about the shoulder *b* or head of the screw B′ and prevent the entrance of dust and dirt at these points, which are the only places at which dust can possibly enter. The bearing thus constructed is exceedingly simple both in its design and to manufacture. It is practically dust-proof, but is also easy to clean, if necessary, and is readily adjustable. The forming of integral cones on a common sleeve holds the bearings in alinement, and while the construction as a whole is durable any of the members may be readily renewed without disturbing the remainder of the bearing or other parts of the pedal.

Referring next to the novel construction of the pedal as to the form and mode of the application of the pedal-tread, F designates a tread-plate made of sheet metal and having a depressed center portion which rests directly upon the pedal-barrel between the check-nuts A′, and thus solidly supports the plate without interfering with the application or removal of said nuts. The plate is secured to the barrel by integral jaws or clips *f*, that are punched from the raised lateral portions of the plate and turned down in pairs about their undetached margins to embrace the pedal-barrel between them. These clips *b* are conveniently brazed or otherwise fastened to the barrel and form a substantially integral connection between the barrel and the tread. Additional securing means

in the shape of screws or rivets f' may also be provided between the tread-plate and the barrel, if necessary. The apertures f^2, left by the turning down of the clips f, serve to lighten and ornament the plate, and additional apertures f^3 f^4 f^5 f^6 are also shown as punched out for this purpose. At its side margins above the barrel the plate F is shown as turned up to afford side guards or clamps F′ for the sole of the boot, and a toe-clip F^2 may be furthermore conveniently provided by extending the plate forwardly and turning it up to embrace the toe of the boot in a familiar manner. This clip may be, if desired, made adjustable by making its tip in a separate piece, which is clamped to the plate F in any suitable manner, as by a bolt-and-slot connection f^7. At its rear edge the margin of the tread-plate may conveniently be turned up and serrated, as at F^3, to keep the foot from slipping on the plate.

A pedal provided with a tread-plate constructed and applied in this manner meets all practical requirements and can be manufactured at a minimum cost and when also provided with the improved bearings described offers many advantages to both the manufacturer and user. It will be understood that various changes in the details of its construction may be made without departing from the spirit of the improvement. Obviously also my improvement in bearings may be advantageously employed in other than pedal-bearings and is accordingly independently claimed.

I claim as my invention—

A pedal, comprising the shaft B provided with the beveled shoulder b, the sleeve C fitting over said shaft, and the screw B′ seated in the end of the shaft and having an enlarged beveled head engaging the end of the sleeve to clamp it against the shoulder b, bearing-cones on the ends of the sleeve C, the tubular barrel A inclosing the shaft and sleeve and threaded at its ends both internally and externally, bearing-cups a screwed into the ends of said sleeve, balls inserted between the bearing cups and cones, cup-shaped lock-nuts A′ screwed over the ends of the barrel, flexible washers inclosed within the lock-nuts and clamped between the same and the cups a, the inner ends of said washers fitting closely about the beveled shoulder b and enlarged head of the screw B′, and a tread-plate secured directly to the barrel between the lock-nuts, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature hereto, in the presence of two subscribing witnesses, this 19th day of January, 1898.

EDWARD A. BARNES.

Witnesses:
HOMER V. CARPENTER,
JOHN E. DALTON.