(No Model.)

A. PERKINS.

DUST PROOF CYCLE PEDAL.

No. 500,942. Patented July 4, 1893.

Fig. 1.

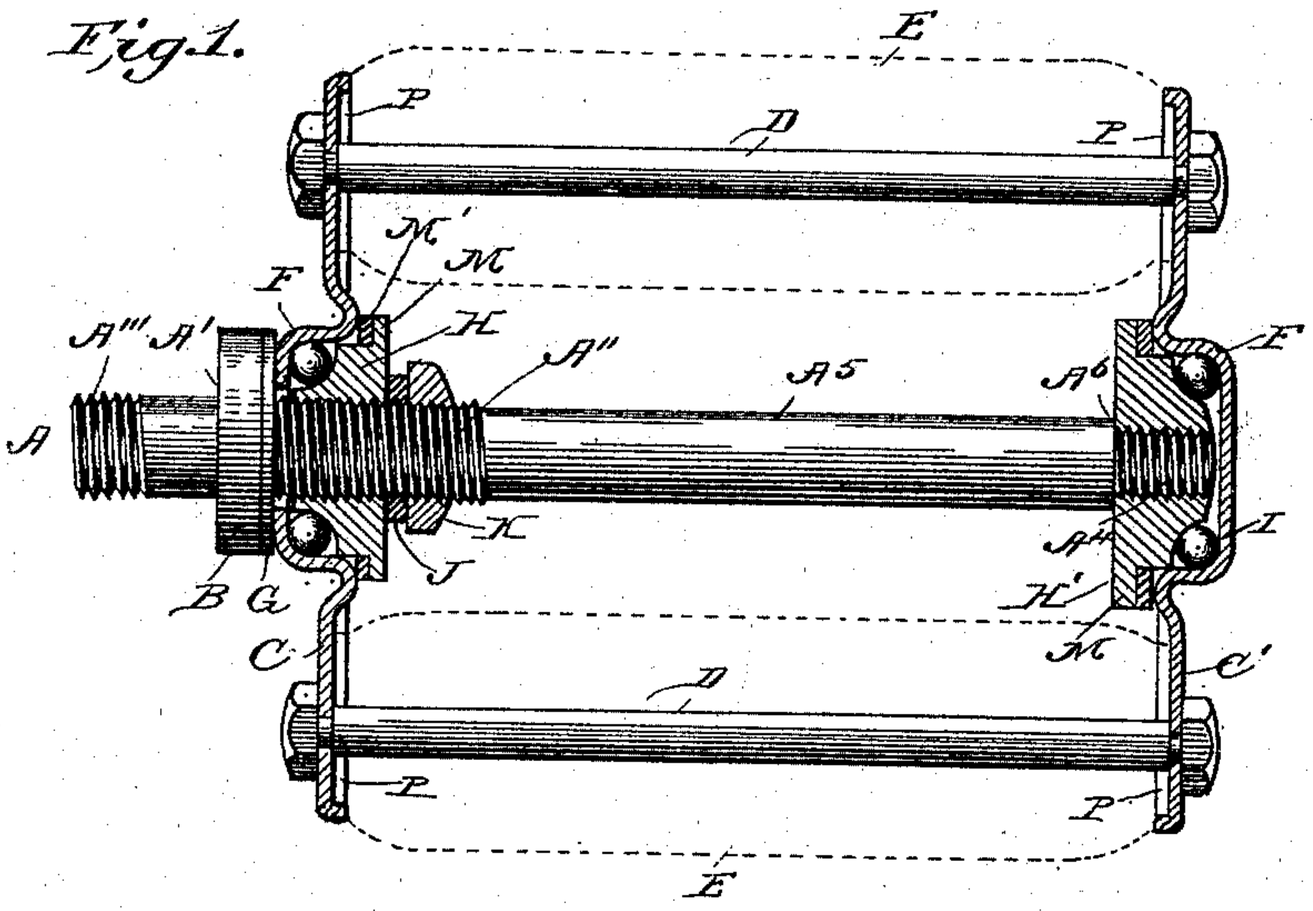


Fig. 2.

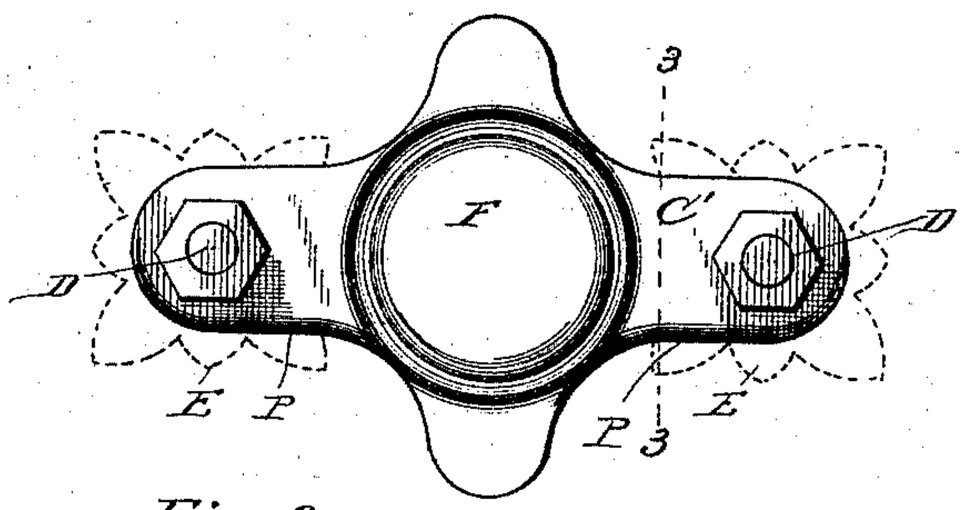
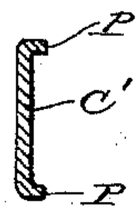


Fig. 3.



Witnesses:
Harry S. Rohrer.
E. H. Brett.

Inventor:
Albert Perkins
By Wilkinson Greene,
Attorneys.

UNITED STATES PATENT OFFICE.

ALBERT PERKINS, OF CHICOPEE, MASSACHUSETTS, ASSIGNOR TO THE A. G. SPALDING & BROTHERS, OF NEW YORK, N. Y., AND THE LAMB KNITTING MACHINE MANUFACTURING COMPANY, OF CHICOPEE FALLS, MASSACHUSETTS.

DUST-PROOF CYCLE-PEDAL.

SPECIFICATION forming part of Letters Patent No. 500,942, dated July 4, 1893.

Application filed September 5, 1892. Serial No. 445,088. (No model.)

To all whom it may concern:

Be it known that I, ALBERT PERKINS, a citizen of the United States, residing at Chicopee, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Dust-Proof Cycle-Pedals; and I 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.

In pedals heretofore in use it has been customary to make the axle and one cone, or ball case, of one piece, and as the one should be soft and tough while the other is extremely hard, the utmost care in manufacture has not always secured satisfactory results. It has also been common to secure the pedal upon the axle by a nut upon the outer end of the latter, the outer cone being also outside the pedal end bar. This common construction offends the eye, is needlessly liable to injury, and practically insures the transfer of oil and dirt to the clothing of one walking beside the machine. In the common form, too, no matter how accurately the parts are fitted, dust and grit gradually enter the joint causing rapid wear and other annoyance.

The object of this invention is to avoid all these evils and at the same time to produce a stronger and lighter pedal with less expenditure of labor and material.

In the drawings, Figure 1 shows the improved pedal partly in plan, partly in section. Fig. 2 is an end view of the pedal. Fig. 3 is a section on the line 3—3, Fig. 2.

The axle A is formed from a plain rod having a diameter equal to the diameter of that part which in the complete pedal is intended to lie in the crank slot. The rod is cut away to form shoulders at A′, A^6, screw-threaded at A″, A‴, A^4, and so diminished that the body A^5 is smaller than the threaded part A″. A collar B is then screwed against the shoulder A′, and the axle is then ready for the rotary portion of the pedal. This consists of two end bars C, C′, connected at their ends by the usual pins D carrying rubbers E, if rubbers be used in the pedal. Both end bars are centrally bent outward to form ball cups or cases F and the inner one is centrally perforated for the passage of the axle. The outer one is left entire to cover and conceal the end of the axle. A washer G, of felt, leather or the like, having been first placed upon the axle, the latter is passed through the inner end bar C and upon it are placed in succession a ball retaining cone H, a washer J, a lock nut K and a second cone H′, the latter being screwed upon the end A^4 and against the shoulder A^6, while the former is caused to engage the thread at A″. Balls I are then placed in the outer cup and the outer cone is unscrewed far enough to prevent their falling out. Balls are then placed in the inner cup and the cones are both screwed home, both end bars advancing along the axle till the inner one reaches the washer G and the outer one bears against the outer set of balls I. When the proper adjustment has been obtained, the lock-nut K is screwed firmly against the inner cone to prevent accidental displacement. Each of the cones has at its larger end a flange M to retain upon the body of the cone, which fits in and closes the cup, an annular washer M′ of soft leather, felt or the like, of such thickness as to be lightly compressed between the flange and the body of the end bar. All strain and wear come upon the balls and the parts that support them and the soft washers while offering practically no frictional resistance to rotation yet fully prevent the entrance of dust. The washer G preferably extends inward between the cup and collar, but as the collar is of greater diameter than the portion of the cup that bears it, the outer part of the washer lies practically in an annular recess, like the others, and excludes dust from the wearing surfaces. It is evident that these soft washers will become saturated with the oil applied to the bearings and that the oil will aid in reducing the slight friction and will materially help to exclude dust.

The end bars of the pedal are struck up from sheet metal, and to permit the use of lighter stock and at the same time to make a stiffer pedal, they are provided with an inwardly bent marginal flange P, preferably ex-

tending around the entire edge of each end of the bar, but not around the central portion, which as in other pedals is widened to form wings that prevent the lateral slipping of the foot.

It is not indispensable that all the parts be precisely as set forth, either in form or arrangement. For example, the flanges M need not be integral with the cones but may be a part of the washers J, the latter being enlarged so as to project to a suitable distance.

What I claim is—

1. A pedal having its two bearing cones oppositely turned and between the end bars, end bars forming the opposing bearings for the balls, balls interposed between said end bars and cones, respectively, and fixing the end bars with reference to longitudinal motion upon the pedal axle, soft washers resting against the faces of the end bars and surrounding the passages to the balls, and the collar and flanges carried by the axle and resting against said washers to hold them against the end bars.

2. The combination with the pedal shaft bearing the pedal, of the collar fixed upon the shaft outside the inner end bar, the threaded cones working upon the shaft between the end bars and provided with the circumferential flanges, and the soft washers interposed, respectively, between the end bars and said flanges and between the end bars and said collar.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT PERKINS.

Witnesses:
HENRY N. LYON,
SIDNEY SANDERS.