

(No Model.)

F. DOUGLAS.
BICYCLE PEDAL.

No. 469,295.

Patented Feb. 23, 1892.

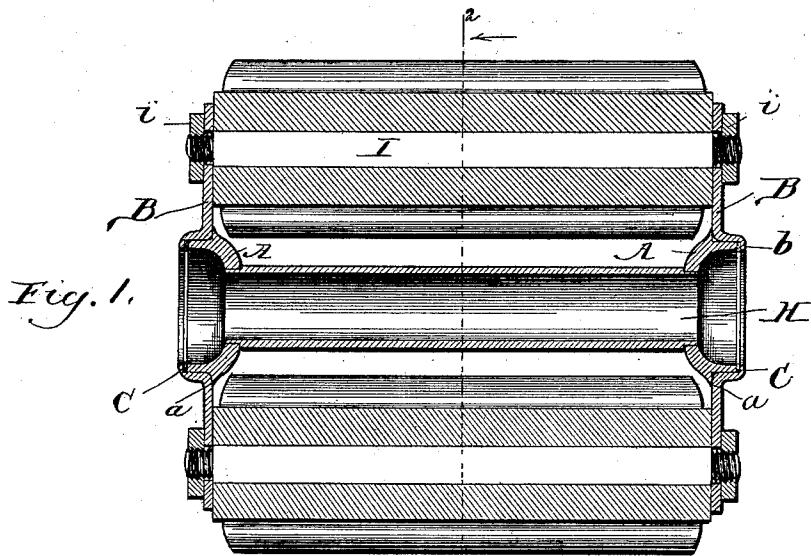


Fig. 2.

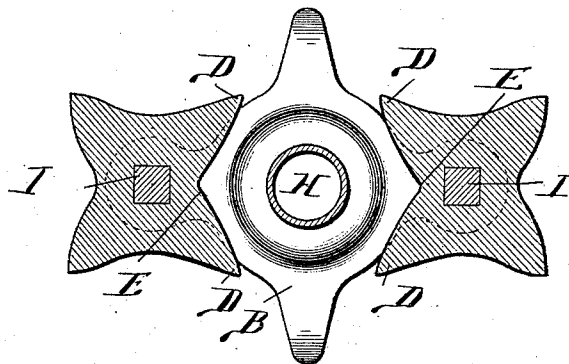
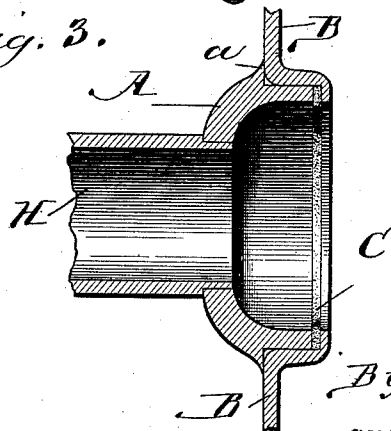


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANK DOUGLAS, OF CHICAGO, ILLINOIS.

BICYCLE-PEDAL.

SPECIFICATION forming part of Letters Patent No. 469,295, dated February 23, 1892.

Application filed August 31, 1891. Serial No. 404,238. (No model.)

To all whom it may concern:

Be it known that I, FRANK DOUGLAS, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful Improvements in Bicycle-Pedals, of which the following is a specification.

In the drawings, Figure 1 is a plan view of a longitudinal section of the pedal, taken through the shaft-bearing and rubber pedal-pieces. Fig. 2 is a transverse section taken in the line 2 of Fig. 1, looking in the direction of the arrow; and Fig. 3 is an enlarged sectional view of one of the ball-bearing cups, showing the arrangement of the various parts.

In making my improvement in bicycle-pedals I make the ball-bearing cup A of a single hardened piece of metal of the proper size and shape to receive the ball-bearings and provide it with a hole through its central portion. I make what I term a "pedal-plate" B, preferably struck out of steel-plate, so as to surround the ball-bearing cup and project over the outer edge of the same by a flange *b*. The ball-bearing cup is also preferably provided with a shoulder *a*, against which the inner edge of the plate rests. The ball-bearing cups and the pedal-plates, when adjusted in position, are held together by a center tube H, which surrounds the pedal-pin and which at its ends fits into the central holes in the ball-bearing cups and by the pins I, preferably square, which are screw-threaded at their ends and held in place by nuts *i* on the outside of the pedal-plates. The edges or flanges *b* of the pedal-plates in projecting over the outer rim or edge of the ball-bearing cup A leave a little space between, in which I insert a washer or protector C, made of cloth, felt, or other suitable material. This protecting-washer, when the ball-bearing cup and the pedal-plate are held in their position for use, is held firmly clamped between them. It serves as a protector to prevent dust, dirt, sand, or other injurious material from entering the ball-bearing. In making the rubber

pedal-pieces I make them, as usual, with four extending corners, as shown in Fig. 2, except that I make the inner corners D more flexible than the outer corners. I secure this by making them more pointed and by molding them with a greater V-shaped depression E at the inner sides. This makes the inner edges D of the rubber pedals more easily conformed or accommodate themselves to the curve of the ball of the foot of the rider in operation.

By making the ball-bearing cup and the pedal-plate of separate pieces adapted to fit each other, as above described, I am enabled when one of the pieces becomes broken or injured to take it out and replace it with another without loss of the part remaining uninjured. By providing a protector or washer at the end of the ball-bearing I prevent the ball-bearing from being injured by dirt or sand getting in, and by making the pedal-rubbers more flexible at their inner sides I am able to secure a more easy and comfortable fit for the foot.

What I regard as new, and desire to secure by Letters Patent, is—

1. In a bicycle-pedal, the combination of a ball-bearing cup and a pedal-plate provided with a flange extending outward and downward over the rim of the ball-bearing cup, substantially as described.

2. In a bicycle-pedal, the combination of a ball-bearing cup, a pedal-plate provided with a flange extending over the rim of the ball-bearing cup, and a protector arranged between the flange and the rim, substantially as described.

3. In a bicycle-pedal, a rubber pedal-piece having its inner corners more flexible or yielding than its outer corners, substantially as described.

FRANK DOUGLAS.

Witnesses:

EPHRAIM BANNING,
SAMUEL E. HIBBEN.