

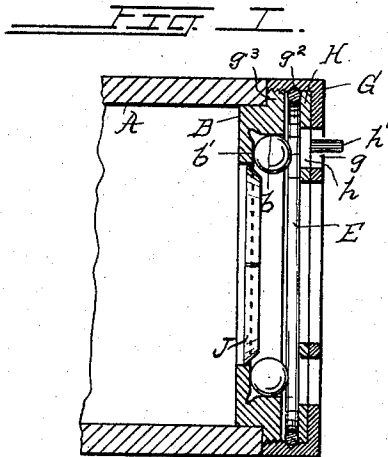
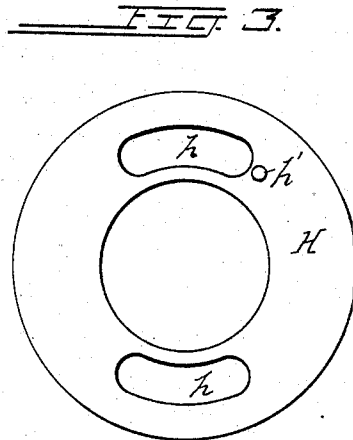
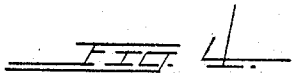
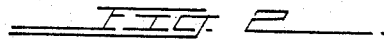
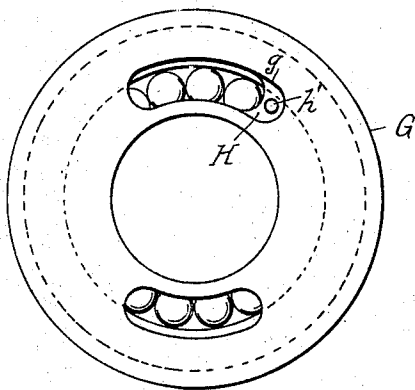
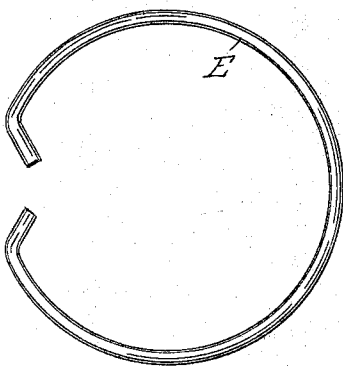
No. 609,186.

Patented Aug. 16, 1898.

W. I. GRUBB.
BOTTOM BRACKET FOR BICYCLES.

(Application filed May 29, 1897.)

(No Model.)



Witnesses
Florence Kelly
Allen C. Mallett

William I. Grubb,
Inventor

By Attorney *E. A. Self*

UNITED STATES PATENT OFFICE.

WILLIAM I. GRUBB, OF POTTSTOWN, PENNSYLVANIA.

BOTTOM BRACKET FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 609,186, dated August 16, 1898.

Application filed May 29, 1897. Serial No. 638,896. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM I. GRUBB, a citizen of the United States, residing at Pottstown, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Bottom Brackets for Bicycles; 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.

This invention relates to improvements in bottom brackets or bearings for bicycles, and is intended as an improvement on a patent granted to me October 8, 1895, No. 547,638.

The object of the present invention is to produce a bracket or bearing in which it is not necessary to remove the cap or any portion of the bracket when it is desired to view the balls and interior of the bearing.

The invention is fully set forth in the following specification and clearly illustrated in the accompanying drawings.

Figure 1 is a sectional view of the end of a bracket embodying my invention. Fig. 2 is an end view of the bearing, showing the shutter open. Fig. 3 is a detail view of the shutter H. Fig. 4 is a detail view of the friction-ring.

The bracket A is of the ordinary form and is provided, as usual, with a cap G. This cap G is provided with an internal revolving shutter H, and both the cap and shutter are formed with registering openings *g* and *h*. A pin *h'* projects from the face of the shutter through one of the openings *g* of the cap, by means of which the shutter is operated. The shutter is held in position in the cap by means of a friction-ring E, which fits in a V-shaped groove *g'* in the inner circumference of the cap G. The ring E serves to retain the shutter in any position desired and prevents it from rattling.

The cup B fits in the bracket A, as usual, and is provided with a screw-threaded ring or projection *g''*, onto which the capscrews. This cup B is grooved at the angle formed by the two inner walls *b* and *b'* thereof. The groove is approximately V-shaped and extends some distance into the body of the cup, the ob-

ject of this groove being to facilitate the finishing of said walls *b* and *b'*, against which the balls bear. Heretofore the corner formed by the angle of these two walls was left slightly rounded, and in finishing the cup internally the stone used for that purpose would not retain its corner and the surfaces could not be satisfactorily finished.

By means of my present construction both the walls can be finished their full width and the corner of the stone used for that purpose will not be affected.

A ring J is arranged in the inner circumference of cup B, and the periphery thereof is flared outwardly or beveled in such manner that when the bracket is held in a vertical position the balls may be dropped into place and prevented from falling through the center opening previous to the insertion of the crank.

When the shutter H is closed, the cap will be practically dust-proof, as the shutter is held securely against the inner surface of the cap by means of the friction-ring E, and when it is desired to examine the balls the shutter is very readily revolved by means of the pin *h'* until the openings *g* and *h* of the shutter and cap, respectively, register, which will reveal the balls in the bearing.

The details of construction may, if desired, be somewhat varied to meet varying circumstances; but

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

1. The herein-described bearing, comprising a cup, a cap having slots or openings therein, and a shutter located between said cup and said cap and having slots or openings adapted to register with said former slots or openings, substantially as set forth.

2. The herein-described bearing, comprising a cup, a cap having slots or openings therein, a shutter located in said cap and having slots or openings adapted to register with said former slots or openings, a pin secured to said shutter and projected through one of the slots of said cap, and a friction-ring also located in said cap and adapted to bear against the inner face of said shutter, substantially as set forth.

3. The herein-described bearing, compris-

ing a cup, a retaining-ring carried thereby, a
cap removably secured to said cup and hav-
ing slots or openings formed therein, a shutter
also having slots or openings therein, a fric-
5 tion-ring adapted to hold said shutter against
said cap, and means for rotating said shutter,
substantially as set forth.

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

WILLIAM I. GRUBB.

Witnesses:

LOUIS ALLGAIER,
ED. A. KELLY.