

R. D. VALENTINE & H. S. BATTEE.  
BEARING ADJUSTING MEANS.  
APPLICATION FILED OCT. 5, 1911.

1,024,871.

Patented Apr. 30, 1912.

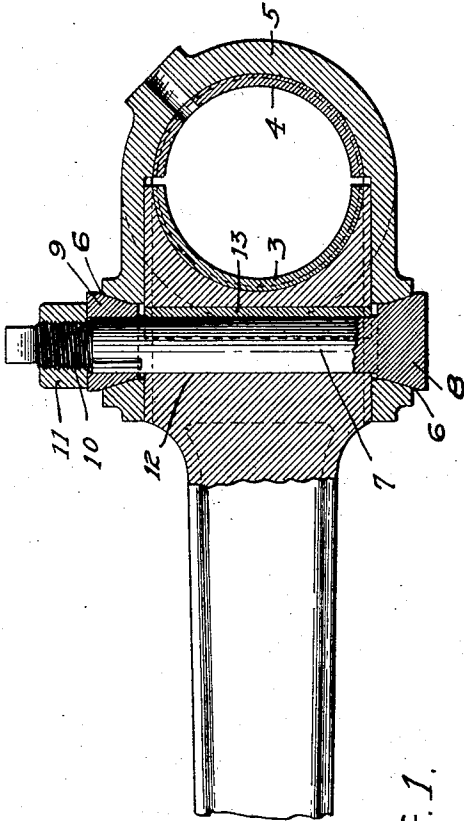


FIG. 1.

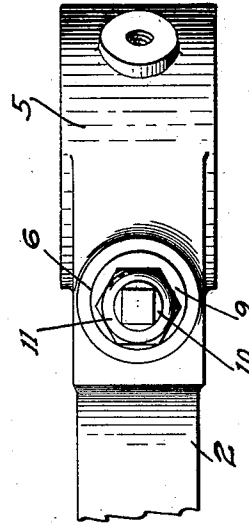


FIG. 2.

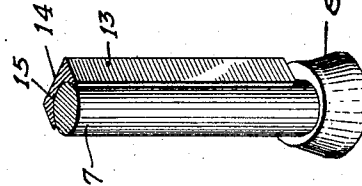


FIG. 3.

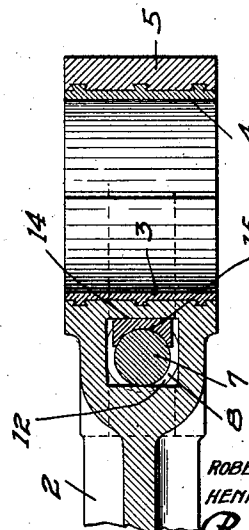


FIG. 4.

WITNESSES  
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# UNITED STATES PATENT OFFICE.

ROBERT D. VALENTINE AND HENRY S. BATTEE, OF MINNEAPOLIS, MINNESOTA, ASSIGNORS TO IMPERIAL MACHINERY COMPANY, OF MINNEAPOLIS, MINNESOTA, A CORPORATION.

## BEARING-ADJUSTING MEANS.

1,024,871.

Specification of Letters Patent.

Patented Apr. 30, 1912.

Application filed October 5, 1911. Serial No. 653,081.

*To all whom it may concern:*

Be it known that we, ROBERT D. VALENTINE and HENRY S. BATTEE, of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Bearing-Adjusting Means, of which the following is a specification.

Our invention relates to means for taking up the wear of a bearing and particularly the bearing of a connecting rod on the crank shaft of an engine, and the object of our invention is to provide means whereby the strap of the rod can be easily and quickly taken up to compensate for the wear of the bearing.

The invention consists generally in an eccentric bolt passing through the end of the connecting rod and the strap and a gib inserted between the bolt and the bearing.

In the accompanying drawing forming part of this specification, Figure 1 is a side view of a connecting rod, partially in section, illustrating our invention applied thereto, Fig. 2 is a top view of one end of the rod, Fig. 3 is a perspective view of the bolt and gib, showing the curved face of the gib bearing on the bolt, the end of the bolt being cut away to illustrate this bearing more clearly. Fig. 4 is a sectional view through the bearing, showing the relative position of the eccentric bolt in the gib.

In the drawing, 2 represents a connecting rod having an end bearing 3 opposite the bearing 4 on the strap 5. This bearing is adapted to receive a crank shaft in the usual way. The ends of the strap have holes 6 therein with flaring walls, into which the bolt 7 is inserted. This bolt is provided with eccentric cones 8 and 9 which fit the flaring walls of the holes 6 and one end of the bolt is threaded, as at 10, to receive a lock nut 11. This end of the bolt is preferably squared to allow the application of a wrench thereto for the purpose of rotating the bolt and loosening or tightening the strap. The cones being eccentrically mounted on the bolt, it is evident that rotation of the bolt will operate to tighten or loosen the strap, the hole in the rod through which the bolt passes being preferably square, as indicated at 12 in Fig. 4, and sufficiently large to allow for the rotation of the eccentric bolt. The wall of the opening 12, as indicated in Fig. 4, contacts with the shank of the bolt, so that by ro-

tating the bolt the strap can be moved in either direction for the purpose of adjustment.

As shown in Fig. 1, the cone 8 is preferably formed integrally on one end of the bolt, while the cone 9 is splined thereon and adapted to slide lengthwise, so that when the desired adjustment of the strap has been obtained the bolt may be held from turning with one wrench and with another wrench the lock nut 11 is tightened to draw the cones against their seats in the ends of the strap and lock the parts securely together. It has been found, where an eccentric bolt is used for this purpose, and the bolt had a narrow bearing directly on the wall of the socket, that it would soon cut into the wall and defeat the purpose for which the device was designed. To obviate this objection we insert a floating gib into the opening 12 between the bolt and the wall separating the opening, the gib having a flat surface 14 on one side to bear on the wall and a curved surface 15 on the opposite side to fit the surface of the bolt and form a broad bearing thereon. This gib fits loosely in the opening 12 and may slide from side to side to adapt itself to the different adjustments of the bolt, presenting at all times a broad bearing surface on the bolt and a flat bearing on the wall. We have discovered that where this gib is used that a perfect adjustment of the strap can be obtained and that there will be practically no wear between the bolt and the bearing.

We have shown the gib on one side only of the bolt, but it may entirely inclose the bolt and have bearings on two sides of the opening 12, sufficient space being provided between the gib and the other two walls of the opening to allow for lateral movement in the rotation of the eccentric bolt. This construction will be a mere duplication of the gib shown and illustration is not thought to be necessary.

We do not wish to be confined to the details of construction herein, as they are capable of considerable modification and still be within the scope of our invention.

We claim as our invention:—

1. The combination, with a connecting rod and strap, of a bolt fitting within a hole in said rod and connecting the ends of said strap, eccentric cones on said bolt, the rota-

tion of said bolt operating to draw said strap toward said rod, and a gib having a face on one side to bear on the end wall of said rod and a surface on the other side to fit said bolt.

2. A bearing including separately movable members, one of said members straddling the other member, a rotating, eccentric bolt extending through both of said members, and a gib having freedom for lateral movement interposed between said bolt and one of said members.

3. The combination, with a connecting rod having a transverse opening there-through at one end and a bearing strap, of an eccentric bolt passing through the hole in said rod and the ends of said strap, the rotation of said bolt operating to draw said strap toward the end of said rod, and a floating gib interposed between said bolt and the end wall of said rod.

4. The combination, with a connecting rod having a bearing surface at one end and a transverse hole or opening near said bearing and a strap adapted to move toward or from the end of said rod, of an eccentric bolt passing through the ends of said strap and through the hole in said rod, said bolt fitting loosely in said rod, eccentric cones carried by said bolt and engaging the ends of said strap, and a loose gib interposed between the shank of said bolt and the end wall of said rod and having a curved face on one side to fit the surface of said bolt and a flat face on the opposite side to bear on the wall of said rod, said gib being capable of lateral movement in said opening to adapt itself to the rotary adjustment of said bolt.

5. The combination, of a connecting rod having a square hole extending transversely therethrough at one end, a strap cooperating with the end of said rod to form a bearing, the end of the rod being inserted between the ends of said strap, a bolt fitting within the hole in said rod, eccentric cones on said bolt fitting corresponding sockets in the ends of said strap, and means having a bearing on said rod and on said bolt, said means having a transverse movement in said hole to accommodate itself to the rotation of said bolt.

6. A bearing, including separately movable members, one of said members straddling the other member, a rotating eccentric bolt extending through said members, and a floating gib interposed between said bolt and one of said members, said gib having a curved surface on one side adapted to fit the surface of said bolt.

7. A bearing including separately movable members, one of said members straddling the other member, an eccentric mechanism for shifting the members relative to each other, said mechanism including a connecting bolt extending through both of the members, tapered eccentrics revoluble with said bolt, means for simultaneously rotating the eccentrics about a common axis, and a gib interposed between said bolt and one of said members.

In witness whereof, we have hereunto set our hands this 27th day of September 1911.

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HENRY S. BATTEE.

Witnesses:

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