J. F. GRABILL.

ECCENTRIC MOUNTING.

APPLICATION FILED JULY 11, 1917.

1,269,075. **Patented June 11, 1918.**

Fig. 1

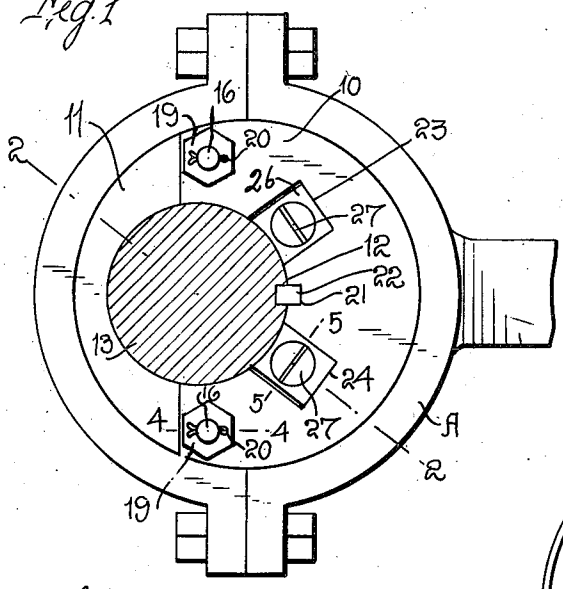


Fig. 4

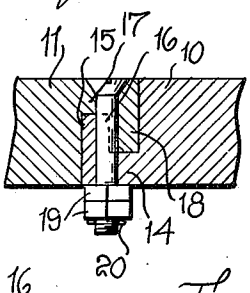


Fig. 6

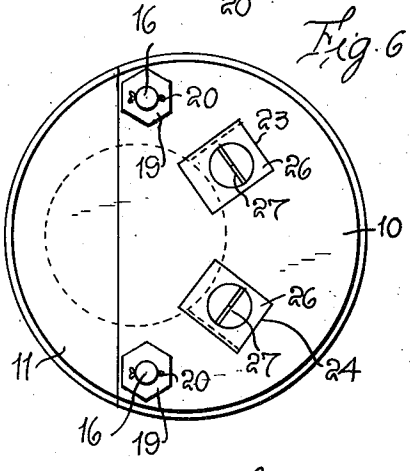


Fig. 2

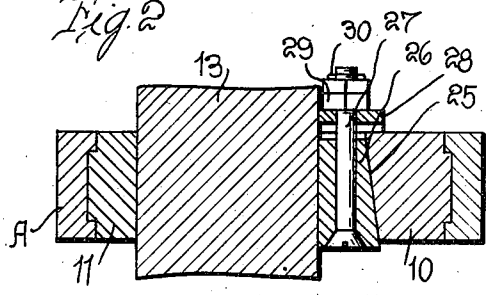


Fig. 7

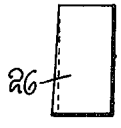


Fig. 3

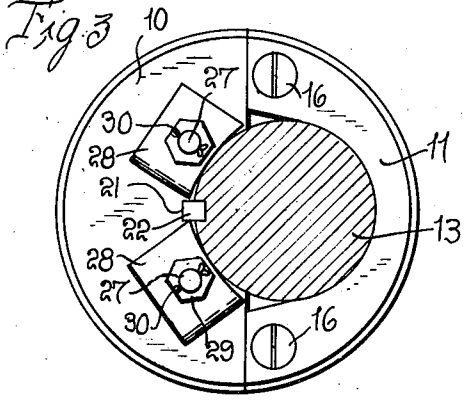
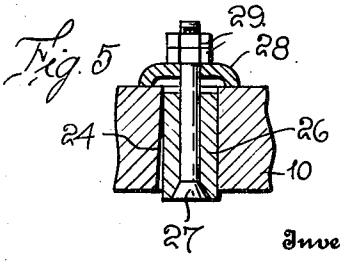


Fig. 5



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ECCENTRIC-MOUNTING.

1,269,075. Specification of Letters Patent. Patented June 11, 1918.

Application filed July 11, 1917. Serial No. 179,910.

To all whom it may concern:

Be it known that I, JOHN F. GRABILL, a citizen of the United States, residing at Flora, in the county of Clay and State of Illinois, have invented certain new and useful Improvements in Eccentric-Mountings, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to eccentrics, and more particularly to means whereby an eccentric may be operatively connected or engaged with the shaft upon which it is mounted, so that the eccentric cannot slip. While the device is particularly designed for holding eccentrics in position, it will be obvious from what follows that cams and other devices of like character might be held upon shafts in the same manner.

One of the chief causes of engine failure in locomotive engineering is the working loose of eccentrics and the breaking of eccentrics, and at the present time, as far as known to me, the eccentrics on locomotives are held in place on the eccentric shaft by means of set screws or like devices. These set screws not only bind the eccentric to the shaft in a very insecure manner, but often times, unless the eccentric is in just the right position, it is impossible for a mechanic to tighten up these set screws.

The general object of my invention is to provide improved means for holding the eccentric to the shaft, which means will cause the eccentric to firmly bind upon the shaft and prevent its getting out of position.

A further object is to provide wedging clamps for this purpose which may be tightened up by drawing the wedges into clamping position by means of nuts and bolts disposed upon the side faces of the eccentric.

A further object is to provide a device of this character which may be tightened up without regard to the position of the locomotive or without regard to the position of the eccentric, thus permitting the eccentric to be tightened up on the eccentric shaft at any time.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a face view of an eccentric constructed in accordance with my invention, the shaft being in section;

Fig. 2 is a sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a side elevation of the eccentric from the opposite side to that shown in Fig. 1, the shaft being in section;

Fig. 4 is a fragmentary section on the line 4—4 of Fig. 1;

Fig. 5 is a fragmentary section on the line 5—5 of Fig. 1;

Fig. 6 shows the sections of the eccentric engaged with each other and the wedges in place before the eccentric is bored to form the shaft passage; and

Fig. 7 is an elevation of one of the wedges previous to being cut down to the dotted line.

Referring now to Figs. 1 to 4, it will be seen that the eccentric proper is formed in two sections 10 and 11. The section 10, as is clear from Fig. 1, is larger than the section 11, and the sections 10 and 11 are both approximately crescent shaped providing when the sections are joined a central passageway 12 for the shaft 13. The section 10 at its extremities is formed to provide the projecting portions 14, each having an upwardly extending tongue 15. The portion 14 is formed with a bore for the passage of a bolt 16, and the tongue 15 is formed with a semi-circular groove forming one wall of this bore, as is clearly illustrated in Fig. 4. The ends of the section 11 are also formed with complementary portions 17, corresponding to the portions 14, and with the downwardly projecting tongues 18, the tongues having interlocking engagement with each other, as illustrated clearly in Fig. 4 and the portions 17 and 18 are also bored for the passage of the bolt 16. Thus when the two sections are engaged with each other, they are interlocked from any movement away from each other and held from any lateral sliding disengagement by means of the bolts 16. Each of these bolts 16 has a head at one end, which is disposed in a countersunk recess and at its other end carries two nuts 19, held in place by a cotter pin 20. Thus when these bolts are in place and the nuts are in place, the sections are held rigidly in engagement with each other.

The inside face of the section 10 is formed at its middle with a key groove 21 for the key 22, which connects the shaft 13 with the eccentric and on each side of this key groove, there are formed the longitudinally extending slots 23, the slots being the same in dimensions and form. As will be apparent from Fig. 3, each of these slots 23 has one side wall 24, which is at an inclination to the longitudinal axis of the eccentric, the other side wall being parallel to this axis, and as will appear from Fig. 2, the outer wall 25 of the slot is inclined to the longitudinal axis. The reason for the inclined side wall 24 will appear later, but disposed in each slot 23 and coacting with the inclined wall 25 is a sliding clamping member 26, the outer face of which is inclined to coact with the inclined wall 25 and the inner face of which is curved to fit the curvature of the shaft 13. Passing through each of these wedges 26 is a bolt 27 having a head at one end which is countersunk in the wedge and at its other end passing through a U-shaped clamping member 28 and carrying the two nuts 29 held in place by a cotter pin 30. It will now be obvious from Fig. 2 that by turning up on the nuts 29, the wedge 26 will be drawn inward into the proper groove 23 and will bind firmly against the shaft 13. The U-shaped clamping member 28, as illustrated clearly in Fig. 3, arches over the groove 23 and provides a firm abutment against which the nuts 29 operate.

The reason for having one of the walls, as for instance the wall 24 beveled or inclined, is as follows: It is necessary that the two sections 10 and 11, and the wedging members 26 should be accurately bored for the shaft 13 and to have just the proper curvature to fit this shaft and to this end, before placing the eccentric upon the shaft, I engage the sections with each other, as illustrated in Fig. 6. The wedging members 26 at this time are each formed with a beveled face, as illustrated in Fig. 7, so as to fit against the wall 24. The wedging members are then drawn snugly into their corresponding grooves and wedged against the outer and inner walls of the grooves which are formed through the section 10 and wedged against the side wall 24, so that they are firmly held in position, while the boring operation is being performed. After the sections are engaged with each other and the wedging members are firmly in place, then the eccentric is bored out on the dotted line shown in Fig. 6, which boring, of course, cuts the inner faces of the wedging blocks to the exact degree of the curvature required. Then the wedging blocks are removed and the inner face cut away so as to leave the opposite faces of the cutting blocks parallel to each other, so that there will be no obstruction to the free movement of the wedging blocks into or out of their clamping position.

A construction of this character is very simple, and thoroughly effective. The eccentric may be tightened at any time upon the shaft 13 and inasmuch as the wedging blocks have a relatively large bearing upon the shaft, it is obvious that they will engage the eccentric to the shaft very firmly. It is also obvious that the shaft 13 might be grooved and the wedging blocks form keys engaging in said grooves, but this I do not regard as preferable.

In Fig. 1 an eccentric ring is shown, which is designated A, but of course I do not wish to be limited to this character of ring. The ring is held from lateral movement on the eccentric by tongue and groove engagement. As before stated, this means of holding an eccentric upon a shaft might also be applied to holding cams, pulleys, or other like devices upon a shaft.

Having described my invention, what I claim is:—

1. A member to be mounted upon a shaft and having a shaft passage and formed in two sections, the division line between said sections extending through the shaft passage, the ends of the sections being reduced in thickness and overlapping each other, one of said sections being formed with a radially extending groove, the outer wall of which is beveled, means passing through the overlapped portions of the sections and holding them in engagement with each other, and a wedge having its inner face conforming to the curvature of the shaft passage and its outer face beveled to engage the end face of the beveled wall of said groove.

2. A member to be mounted upon a shaft and having a shaft passage and formed in two sections, the ends of the sections overlapping each other and said ends being reduced in thickness, the ends of one section being formed with a transverse groove and the ends of the other section with a tongue extending into said groove whereby the sections may be interlocked with each other, means holding the sections in engagement with each other and preventing relative lateral movement of the sections in a direction to unlock the sections from each other, and a wedge disposed in said radially extending groove and adapted to bind upon a shaft and exert an expansive force upon the sections.

3. A member to be mounted upon a shaft and formed in two sections, the member having a shaft passage, the dividing line of the sections intersecting the shaft passage, the ends of the sections having interlocking engagement with each other, bolts passing through said interlocking ends, one

of said sections being formed with a radially extending groove, having a beveled outer end wall, a wedge disposed in said groove, the inner face of the wedge conforming to the curvature of the shaft passage, the outer face of the wedge being beveled to coact with the beveled end wall, a member disposed on one face of the eccentric and arching over the groove, and a bolt passing through the wedge, through said last named member, and having nuts bearing against the last named member whereby the wedge may be adjusted.

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

JOHN F. GRABILL.

Witnesses:
H. C. KEITH,
H. C. CHAFFIN.