

Oct. 7, 1930.

M. H. ROBERTS

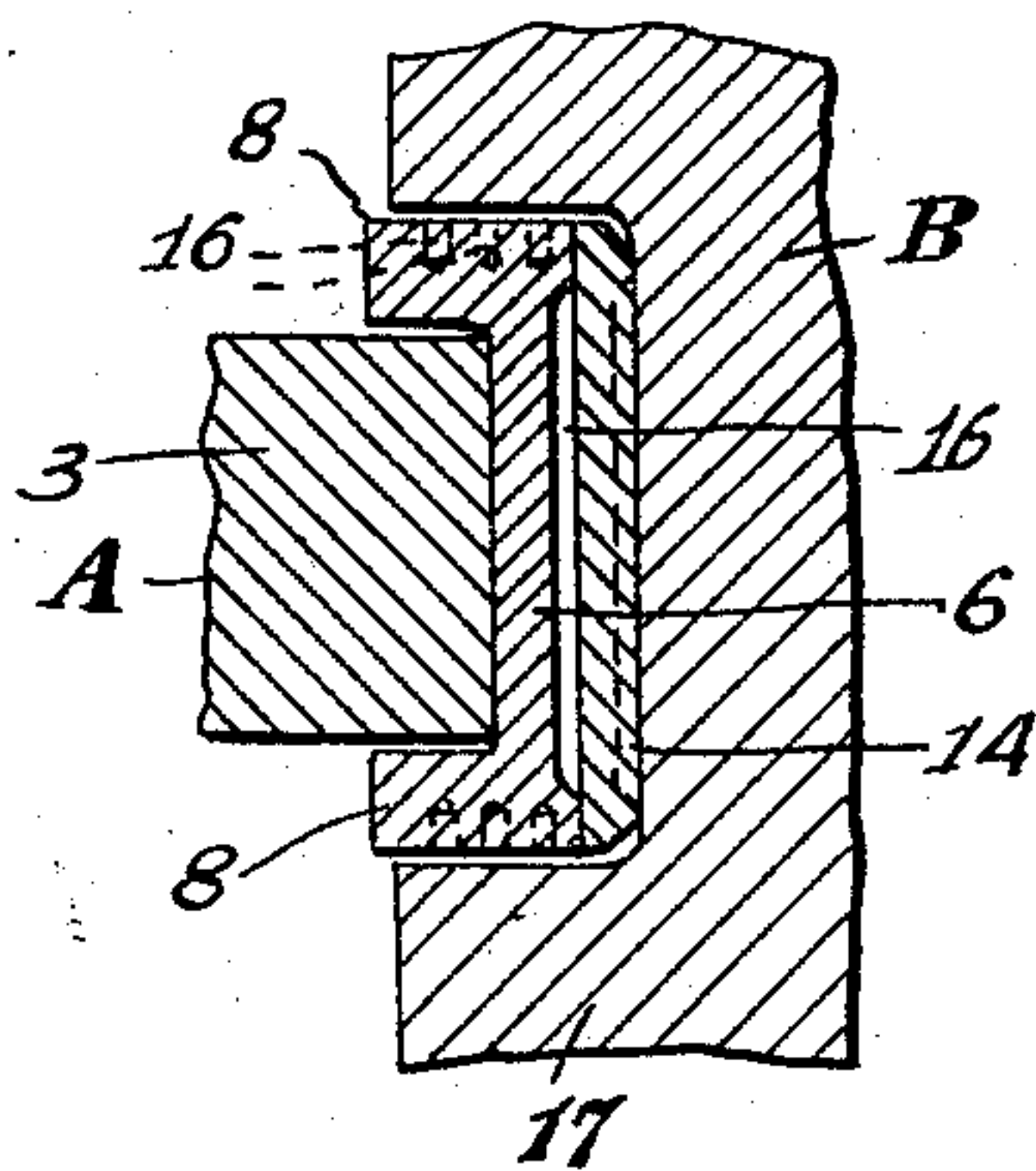
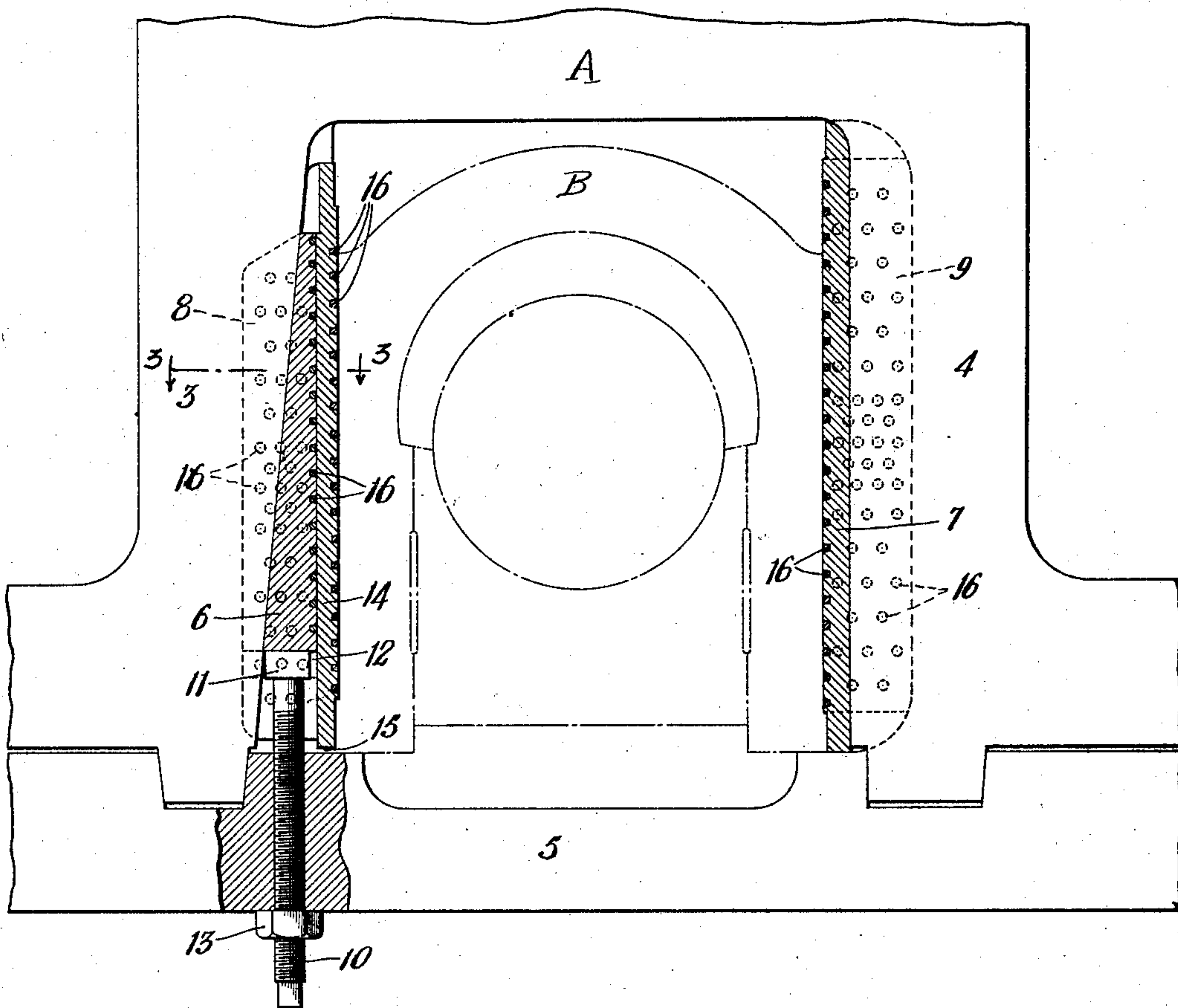
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LOCOMOTIVE DRIVING BOX

Filed Sept. 9, 1927

2 Sheets-Sheet 1

*Fig. 1.*



*Fig. 3.*

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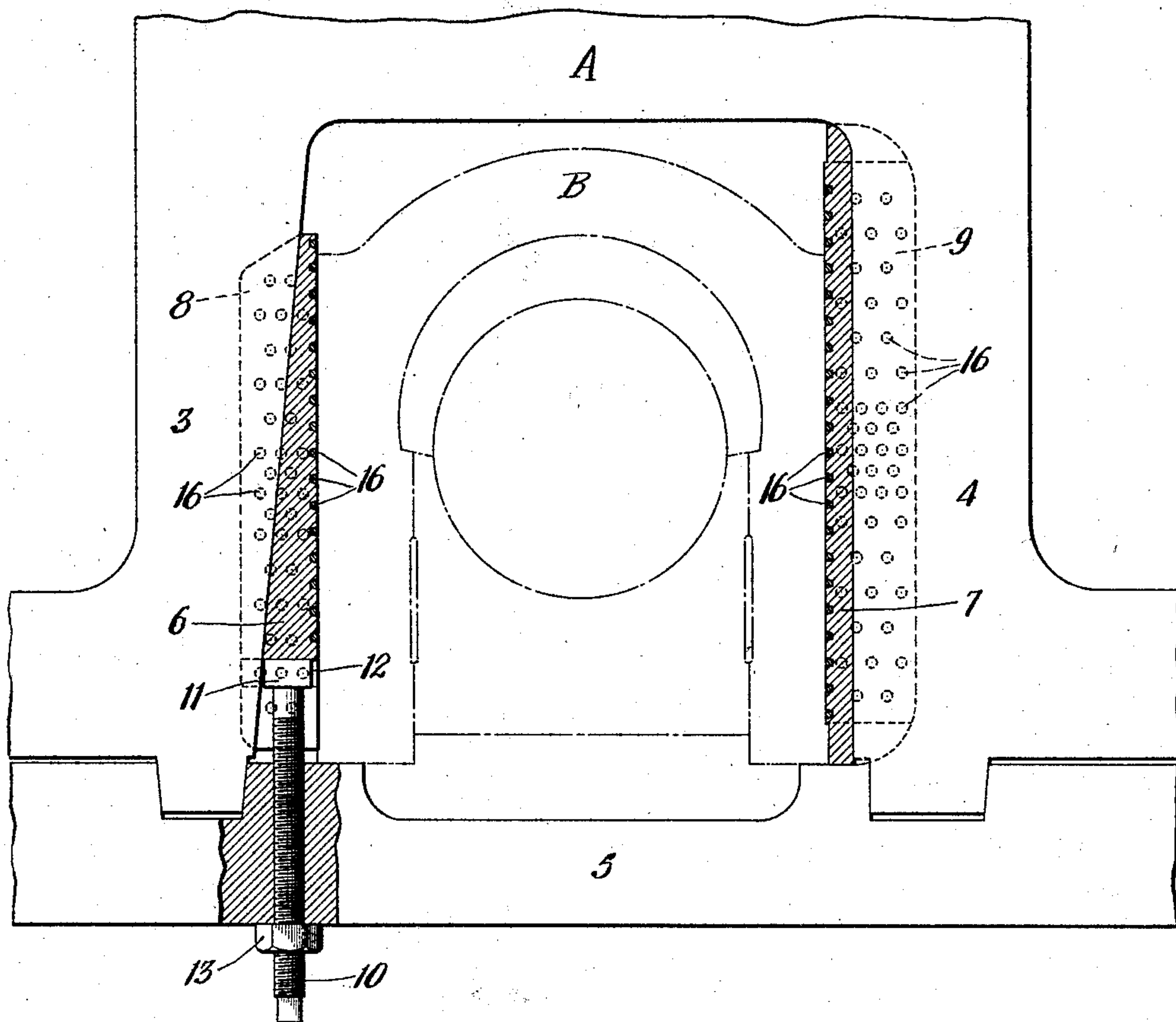
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2 Sheets-Sheet 2

Fig: 2



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# UNITED STATES PATENT OFFICE

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## LOCOMOTIVE DRIVING BOX

Application filed September 9, 1927. Serial No. 218,427.

This invention relates to locomotive driving boxes, particularly to a wear compensating wedge construction therefor.

Among the more important objects of the invention are the elimination of the necessity for lubrication by periodic application of oil or grease on the relatively moving surfaces at the box sides; the reduction of wear; the provision of a construction wherein such little wear as does occur will accumulate on a readily and inexpensively replaced part; the elimination of abnormal downward thrusts on the wedge such, for example, as are caused at times by a downward movement of the box in the pedestal jaws combined with a starting thrust on the box from the driving rod; and, generally, the provision of a construction which is simple and rugged and which may be positively and effectively adjusted to compensate for wear.

How the foregoing objects and advantages, together with others which will occur to those skilled in this art, are obtained will be clear from the following description considered in connection with the accompanying drawings, in which—

Fig. 1 is an end view of a locomotive driving box and surrounding structure with my improvements applied thereto, in their preferred form, the figure being partly in section and partly in elevation and certain of the parts being omitted and broken away for the sake of clarity;

Fig. 2 is a view of a modification of the construction taken substantially the same as the view of Fig. 1, and

Fig. 3 is a sectional view taken as indicated by the line 3—3 in Fig. 1.

Referring now to Figs. 1 and 3, the reference character A indicates a portion of the side frame of a locomotive, and B indicates a driving box which is mounted for vertical movement between downwardly extending pedestal jaws 3 and 4. A pedestal binder 5 secures the jaws 3 and 4 together and retains the box between the jaws.

Shoe members 6 and 7 are provided for the jaws 3 and 4, respectively, and these members are provided with flanges 8 and 9, respectively, which embrace the jaws. The jaw

3 and the member 6 are provided with cooperating surfaces which are oppositely inclined or angled with respect to the vertical plane of the box. The member 6 serves as the wear compensating wedge element. An adjusting bolt 10 is threaded in the pedestal binder 5 and extends upwardly below the wedge member 6. Its head 11 is seated in a recess 12 in the member 6 and is free to rotate therein. The bolt is provided with a lock nut 13.

A floating plate 14 is interposed between the wedge and the box and is made slightly shorter than the vertical distance between the pedestal binder 5 and the frame member A in order to provide the clearance indicated at 15.

The face of the plate 14 adjacent the box and the face of the member 6 adjacent the plate 14 are impregnated, so to speak, with some anti-friction material, such, for example, as Babbitt metal or the lubricating material known to the trade as "Lubrite." This material may be spun or veneered onto these surfaces, or, as shown in the drawings, these surfaces may be provided with small recesses and the material may be pressed thereinto to form the inserts 16.

The box side of the shoe 7 and the sides of the flanges 8 and 9 which are adjacent the embracing box flanges 17 are also provided with the anti-friction material inserts.

In service, when the box moves vertically between the pedestal jaws, small particles of the anti-friction material from the inserts will be spread all over the relatively moving surfaces by the constant rubbing and thus those surfaces will always have a relatively low coefficient of friction.

It is to be noted that the surface of the wedge 6 adjacent the pedestal jaw 3 is not provided with antifriction material inserts. This side of the wedge, therefore, has a relatively high coefficient of friction and will resist any tendency to move the wedge downwardly.

As the plate 14 is only permitted a very small vertical movement practically all of the rubbing incident to vertical movement of the box will take place between the side of



the box and side of the plate 14 adjacent the box. Thus such little wear as does occur at the relatively moving surfaces will accumulate on this plate 14 which is an inexpensive and easily renewed part of the structure.

The modification of Fig. 2 is identical in construction with the form of Fig. 1, except that the floating plate 14 has been omitted and the box structure has been arranged so that the face of the wedge itself contacts with the box. In this case the rubbing will occur between the wedge and the box and any wear which may occur will accumulate on the wedge.

Attention is directed to the fact that certain of the subject matter disclosed in the present case is also disclosed in applicant's earlier filed copending application Serial No. 202,419, filed June 29, 1927, which earlier application contains broad claims to this subject matter.

I claim:—

1. As an article of manufacture, a wedge for locomotive driving boxes having its box side impregnated with anti-friction material.

2. As an article of manufacture, a wedge member for locomotive driving boxes, the box side of said wedge member having a coefficient of friction sufficiently low to eliminate the necessity for periodic applications of oil or grease, and the other side of said wedge member having a relatively high coefficient of friction.

3. As an article of manufacture, a wear compensating wedge for locomotive driving boxes, said wedge having inserts of anti-friction material in its box side.

4. A driving box construction including a pedestal jaw, a wedge having flanges embracing the jaw, a driving box having flanges embracing the wedge flanges and anti-friction material carried by the box side of the wedge and by the side of the wedge flanges adjacent the box flanges.

5. A driving box construction including, in combination, a pair of pedestal jaws, a box between the jaws, a shoe member between each side of the box and its respective jaw, said members carrying inserts of anti-friction material on their box sides.

6. A driving box construction including, in combination, a pair of pedestal jaws, a box between the jaws, a shoe member between each side of the box and its respective jaw, said members carrying inserts of anti-friction material on their box sides, and one of said members and its jaw having cooperating surfaces angled with respect to the vertical plane of the box, together with means for adjusting said last mentioned member to compensate for the wear.

7. A driving box construction including, in combination, a pair of pedestal jaws, a shoe member for each jaw having flanges embracing its respective jaw, a box having flanges embracing the flanges of the shoe members and anti-friction material carried by the box side of said shoe members and by the surfaces of the flanges of the shoe members adjacent the box flanges.

8. A driving box construction comprising, in combination, a pair of pedestal jaws, a box between the jaws, a wedge between the box and one jaw and a floating plate interposed between the wedge and the box, said wedge carrying anti-friction material on its box side.

9. A driving box construction comprising, in combination, a pair of pedestal jaws, a box between the jaws, a wedge between the box and one jaw and a floating plate interposed between the wedge and the box, said wedge and plate carrying anti-friction material on their sides toward the box.

10. A driving box construction comprising, in combination, a pair of pedestal jaws, a box between the jaws, a wedge between the box and one jaw and a floating plate interposed between the wedge and the box, said wedge and plate being impregnated with anti-friction material on their sides toward the box, together with means for adjusting said wedge.

11. A driving box construction comprising, in combination, a pair of pedestal jaws, a box mounted between the jaws for vertical movement, a wear compensating wedge between the box and one jaw and a floating plate interposed between the box and the wedge, said wedge carrying anti-friction material on its box side, together with means for adjusting said wedge.

12. As an article of manufacture, a wear compensating wedge for locomotive driving boxes, said wedge carrying on its box side lubricating material for reducing the coefficient of friction to a point sufficiently low to eliminate the necessity for periodic applications of oil or grease.

In testimony whereof I have hereunto signed my name.

MONTAGUE H. ROBERTS.

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