E. L. SCHELLENS.

DRIVING BOX WEDGE ADJUSTMENT.

APPLICATION FILED MAR. 13, 1922.

**1,436,728.** **Patented Nov. 28, 1922.**

3 SHEETS—SHEET 1.

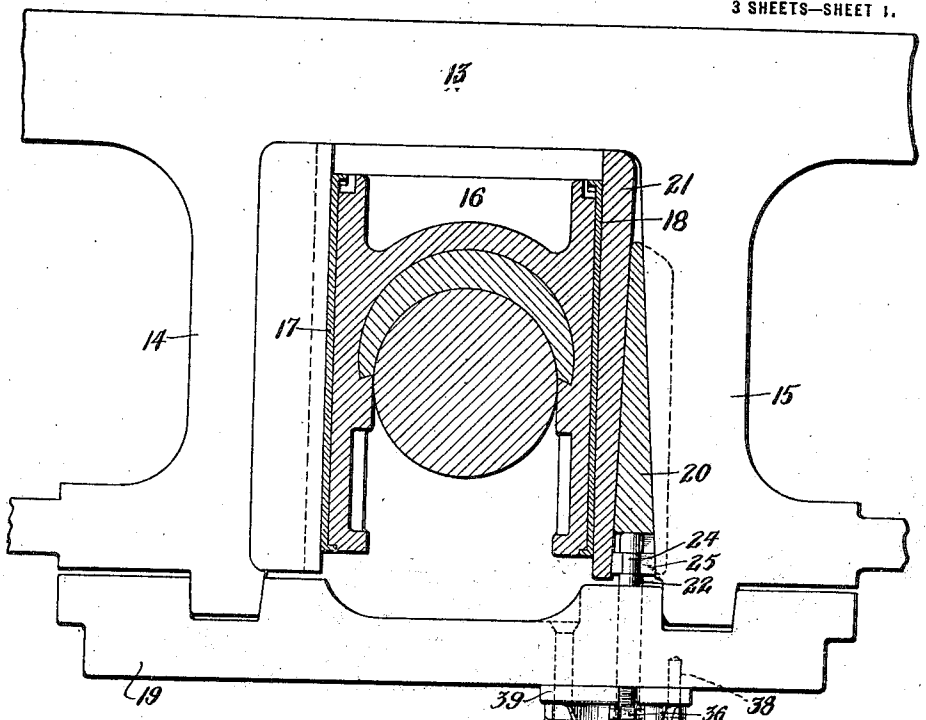



Fig. 1.

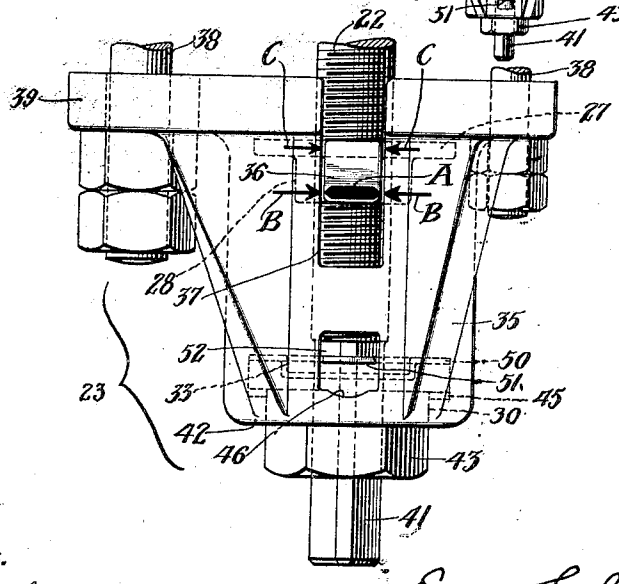



Fig. 2.

Witness.
Gustav Genzlinger.

Inventor
Eugene L. Schellens
By his Attorneys
Symmestredt & Lechner

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3 SHEETS—SHEET 2.

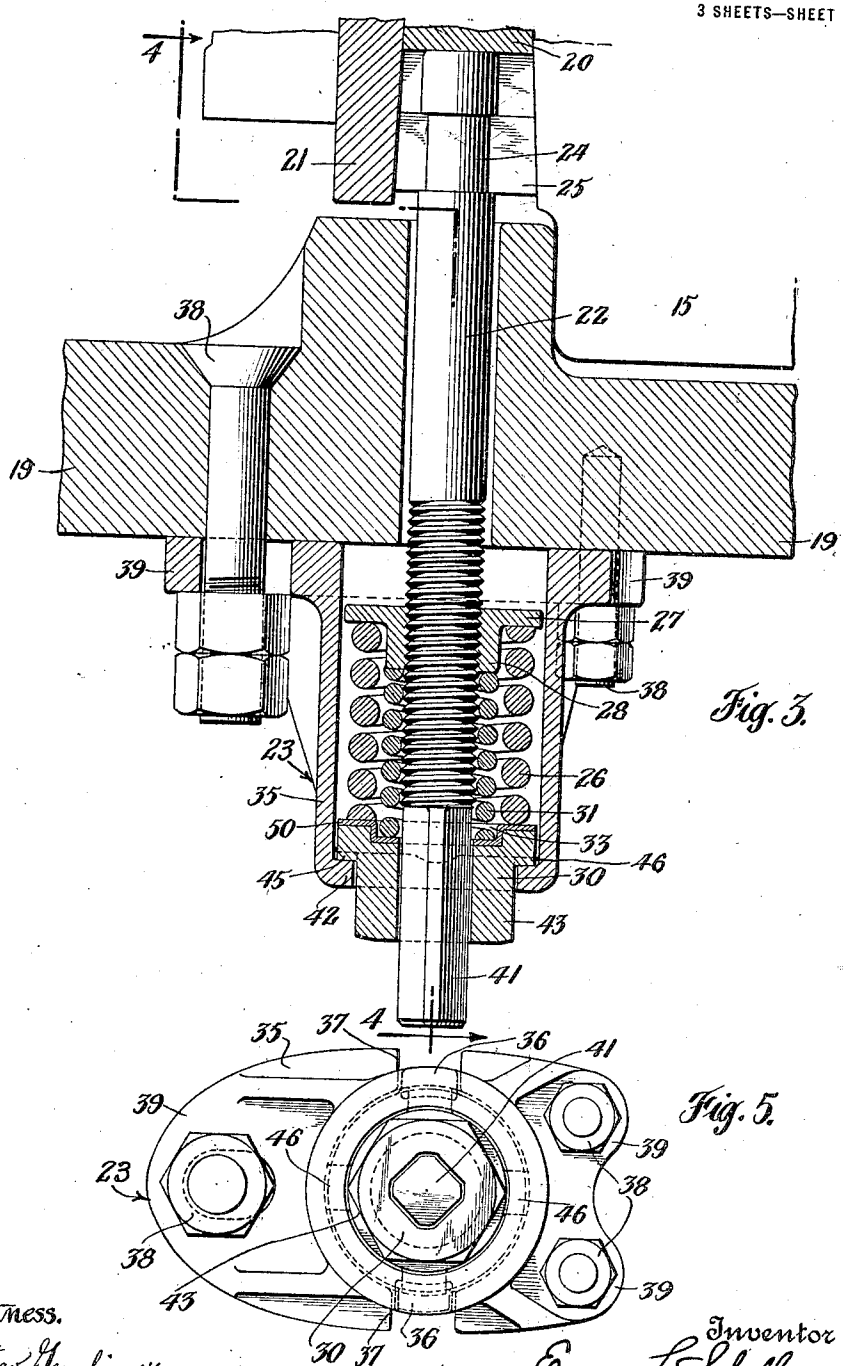



Fig. 3.




Fig. 5.

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3 SHEETS—SHEET 3.

Fig. 4.

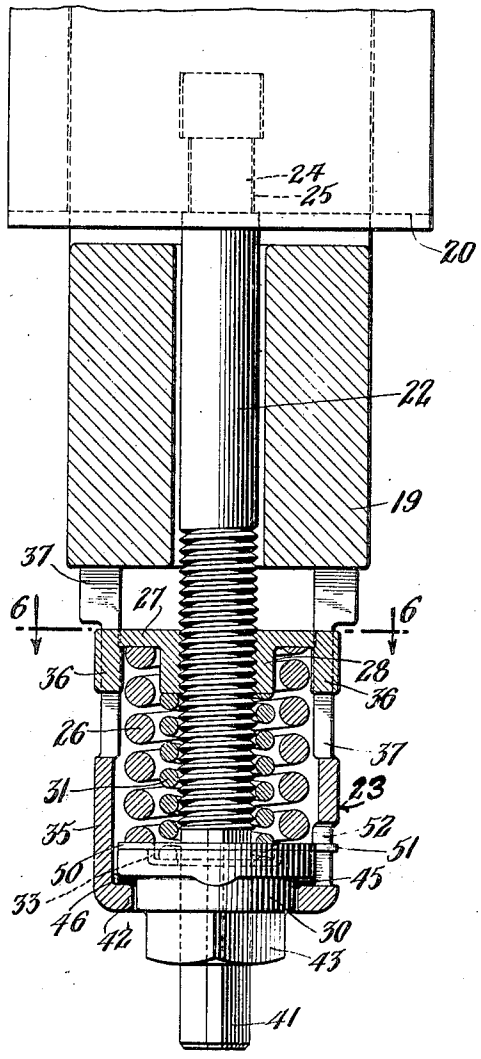



Fig. 6.

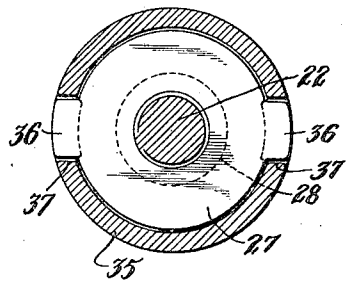



Fig. 7.

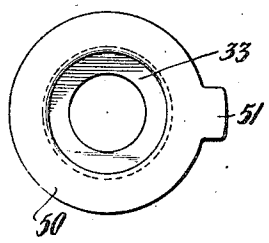
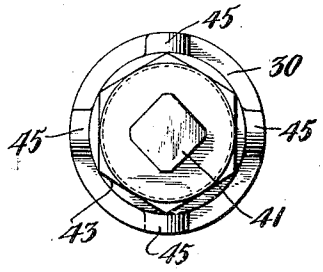



Fig. 8.




Witness.
Gustav Genzlinger.

Inventor
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Patented Nov. 28, 1922. 1,436,728

# UNITED STATES PATENT OFFICE.

EUGENE L. SCHELLENS, OF POINTE CLAIRE, QUEBEC, CANADA, ASSIGNOR TO FRANKLIN RAILWAY SUPPLY COMPANY, A CORPORATION OF DELAWARE.

## DRIVING-BOX WEDGE ADJUSTMENT.

Application filed March 13, 1922. Serial No. 543,461.

*To all whom it may concern:*

Be it known that I, EUGENE L. SCHELLENS, a citizen of the United States, residing at Pointe Claire, in the Province of Quebec, Canada, have invented certain new and useful Improvements in Driving-Box Wedge Adjustments, of which the following is a specification.

My invention relates to the adjustment of automatic wear compensating devices or mechanism for journal boxes, particularly wear compensating wedges for the driving boxes of locomotives. I aim to make the adjustment of the compensating devices as easy and convenient as possible; to make the mechanism simple, rugged, durable, and proof against serious maladjustment; and to afford plain and definite indications of when, on the one hand, the cumulated wear is so great as to require readjustment, and of when, on the other hand, the best readjustment has been properly made.

How these and other advantages can be secured through my invention will appear from my description hereinafter of the best embodiment of the invention known to me.

In the drawings, Fig. 1 shows a steam locomotive driving box with provision for adjustment according to my invention. The box proper and the compensating wedges are here shown in transverse section, while the adjusting mechanism proper, the pedestal jaws of the locomotive frame, and the pedestal binder are shown in elevation.

Fig. 2 is a similar view of the adjusting mechanism on a larger scale.

Fig. 3 is a fragmentary view showing an axial midsection through the adjusting mechanism and associated parts, taken parallel with the plane of the paper in Figs. 1 and 2.

Fig. 4 is a similar view at right angles to Fig. 3, taken as indicated by the line 4—4 in Fig. 3.

Fig. 5 is a bottom plan view of the adjusting mechanism.

Fig. 6 shows a cross section taken as indicated by the line 6—6 in Fig. 4.

Fig. 7 is a plan view of a wear or abutment plate shown in Figs. 2 to 4.

Fig. 8 is a bottom plan view of another part of the mechanism, in association with the wedge bolt.

The locomotive frame 13 in Fig. 1 has the usual pedestal jaws 14, 15 wherein is mounted for vertical play the driving box 16, with gibs 17, 18 on its pedestal faces. The frame 13 has also the usual pedestal binder 19. Between the driving box gib 18 and the adjacent pedestal jaw 15 (which has an inclined face) are interposed two wedges 20, 21 which afford automatic compensation for wear of the driving box and the pedestal jaws,—in a manner well understood in the art. The main wedge 20 is attached to one end of the rod or bolt 22 that extends down through an opening in the pedestal binder 19. This wedge 20 is automatically and yieldingly pressed home by mechanism of my invention, collectively indicated at 23. Not only does the mechanism 23 serve in the automatic adjustment of the compensating device 20, 21, but it is itself adjustable to assure proper action of said device.

Referring, now, to Figs. 1, 3 and 4, it will be seen that in the present instance, the bolt 22 is so attached or connected to the wedge 20 as to be rotatable. This attachment is effected very simply, by engagement of the circumferentially grooved upper end 24 of the bolt 22 with shoulders 25 at the sides of a fore and aft groove in the lower end of the wedge 20.

From Figs. 1 to 8 generally, it will be seen that the wedge actuating mechanism 23 comprises a helical compression spring 26 acting through a nut 27 threaded on the bolt 22. As shown, the upper end of the spring 26 is seated and engaged around a central boss or ridge 28 on the lower side of the nut 27, while the lower end of said spring is seated and engaged against a member 30, which thus serves as an abutment for the spring. Surrounding the bolt 22 within the spring 26 is an auxiliary helical compression spring 31, which is seated and acts on the boss or ridge 28 at its upper end and on the bottom of a shallow annular depression 33 in the member 30 at its lower end. Rotation of the nut 27 with the bolt 22 is prevented by free-sliding, anti-turning connection of said nut with a hollow part 35, which serves as a means of support for the springs 26 and 31 and the interposed abutment member 30, and also as a housing about the springs and the nut. As shown, free-sliding, anti-turning connection of the parts is effected by engagement of diametrically opposite radial and vertical lugs 36 on the nut 27 in corresponding verti-

cal slots 37 in the upper end of the part 35. The part 35, it will be seen, is fixedly secured to the lower side of the pedestal binder 19, by means of bolts 38 taking through ears or lugs 39 on said part 35.

As here shown, the lower portion 41 of the bolt 22 projects and is exposed below the part 35, and is squared to afford a convenient hold for a wrench or other means for turning the bolt. By turning the bolt 22 one way or the other, the nut 27 can be moved up or down with reference to the parts 30 and 35, and the compression or "initial tension" of the springs 26 and 31 thus varied. The part 30 is in free-sliding, anti-turning connection with the bolt 22, by virtue of the squared form of the bolt at 41 and the corresponding square shape and size of the opening in said part 30 through which the bolt extends, so that the parts 22 and 30 are constrained to turn together without the latter interfering with the necessary endwise movement of the bolt from time to time. In the present instance, the part 30 not only rests or bears on the internal flange or bottom 42 of the cup-like part 35, but also has a reduced lower portion that projects through the round opening in the lower end of the part 35 and is made hexagonal at 43 to afford a convenient hold for a wrench or the like. Thus the member 30 is adapted to serve as an actuator for turning the bolt 22 to adjust the "initial tension" of the springs 26 and 31. For this purpose it presents the advantage over direct actuation of the bolt 22 that its vertical position is not affected by wear of the wedges 20, 21 and the box 16.

Referring, now, especially to Figs. 1, 2 and 4, it will be observed that the apertures 37 in the housing 35 render the lug portions 36 of the nut 27 plainly visible, so that they may cooperate with the part 35 to afford an indication of the state of adjustment of the springs 26 and 31 from time to time. As shown, the slots 37 are of such length as to permit a range of adjustment greater than desirable for any particular spring. Accordingly, the lug 36 shown in Figs. 1 and 2 has a conspicuous index mark A, and the part 35 has two pairs of coacting index marks B, B and C, C at different heights. B, B and C, C are so determined and located that when A registers with B, B, (as shown), the springs 26 and 31 are compressed to a proper maximum degree; while when the mark A comes to register with C, C, the springs will be so relaxed (through upward movement of the wedge 20 due to wear at the box 16) as to require readjustment of the mechanism, by tightening of the nut 27 on the springs.

Referring, now, especially to Figs. 2, 3, 4, 5 and 8, it will be seen that on the bottom of the member 30 are four equally spaced, low, radial, arc-shaped projections or protuberances 45, and that in the bottom of the bracket support 35 are corresponding shallow, arc-shaped, radial depressions or recesses 46. By means of these projections 45 and depressions 46 at the abutting surfaces of the parts 30 and 35, the member 30 is held or locked against turning and loosening of the nut 27 thereby in consequence of vibration; also, overtightening of the nut 27, so as to compress the springs solid and so cause binding or jamming of the wedge 20, is effectually prevented. This latter result follows from the fact that if the member 30 is turned down so as just to make the spring substantially solid, its projections 45 will rest on the flat surface of the support 35 so close to the depressions 46 that a slight further turn will bring them into said depressions and relax the spring; and the resistance to still further turning of the nut such as to carry the projections out of the depressions will then be so great that even the most careless workman will give up the attempt. Leaving the projections 45 just about to enter a depression 46 with the springs solid, will, again, be harmless, because the pressure on the wedges 20 and 21 thus created will not be augmented sufficiently to cause actual jamming (by heating up and expansion of the parts in service) before vibration will have caused the nut 27 to unscrew till the pressure is relaxed and the projections 45 drop into the adjacent depressions 46 that they had last been turned past by the workman. By the parts 30 and 35 in cooperation, therefore, overtightening on the springs 26 and 31 by turning the bolt 22 is effectually prevented.

As shown by Figs. 2, 3, 4 and 7, the part 30 is provided or supplemented with a sort of "wear plate" or facing 50, of relatively thin sheet metal, embossed to conform to its upper surface. In the present instance, this part 50 has anti-turning connection with the part 35, by engagement of a peripheral lug 51 on the part 50 in a slot aperture 52 in the lower portion of the part 35. This part 50 obviates scoring of the part 30 by the spring ends, and is not so scored itself, because it remains stationary along with the springs when the part 30 turns.

What I claim is:

1. Adjusting means for a compensating wedge comprising a rotatable wedge bolt, an adjusting nut thereon, and an actuating spring for the wedge acting through said nut.

2. Adjusting means for a compensating wedge comprising a rotatable wedge bolt; an adjusting nut thereon; an actuating spring for the wedge acting through said nut; and a rotary actuator for turning the bolt affording abutment for said spring.

3. Adjusting means for a compensating

wedge comprising a rotatable wedge bolt; an adjusting nut thereon; an actuating spring for the wedge acting through said nut; and a rotary actuating member about the lower portion of the bolt in free-sliding, anti-turning connection therewith.

4. Adjusting means for a compensating wedge comprising a rotatable wedge bolt; an adjusting nut thereon; an actuating spring for the wedge acting through said nut; supporting means for said spring; and a rotary actuator for turning the bolt projecting below said supporting means.

5. Adjusting means for a compensating wedge comprising a rotatable wedge bolt; an adjusting nut thereon; an actuating spring for the wedge acting through said nut; and supporting means for said spring cooperating with said nut to indicate the adjustment of the wedge.

6. Adjusting means for a compensating wedge comprising a rotatable wedge bolt; an adjusting nut thereon; an actuating spring for the wedge acting through said nut; supporting means for said spring; and a rotary actuator for turning the bolt affording abutment for the spring and cooperating with said supporting means to prevent overtightening on the spring.

7. Adjusting means for a compensating wedge comprising a rotatable wedge bolt; an adjusting nut thereon; an actuating spring for the wedge acting through said nut; supporting means for said spring; and means for preventing overtightening on the spring by turning of said bolt.

8. Adjusting means for a compensating wedge comprising a rotatable wedge bolt; an adjusting nut thereon; an actuating spring for the wedge acting through said nut; and supporting means for said spring in free-sliding, anti-turning engagement with said nut.

9. Adjusting means for a compensating wedge comprising a rotatable wedge bolt; an adjusting nut thereon; an actuating spring for the wedge acting through said nut; a rotary actuator for turning the bolt to tighten the spring; with means for preventing overtightening on the spring thereby.

10. Adjusting means for a compensating wedge comprising a rotatable wedge bolt; an adjusting nut thereon; an actuating spring for the wedge acting through said nut; supporting means for said spring in free-sliding, anti-turning engagement with said nut; and a rotary actuator for turning the bolt interposed between said spring and said support and projecting below the latter.

11. Adjusting means for a compensating wedge comprising a rotatable wedge bolt; an adjusting nut thereon; an actuating spring for the wedge acting through said nut; a housing about said spring and nut, in free-sliding, anti-turning engagement with the latter, and apertured to render the same visible and afford an indication of the adjustment of the spring; and a rotary member in said housing about said bolt in free-sliding, anti-turning connection therewith, affording abutment for said spring and cooperating with said housing to prevent overtightening on the spring.

In testimony whereof, I have hereunto signed my name.

EUGENE L. SCHELLENS.