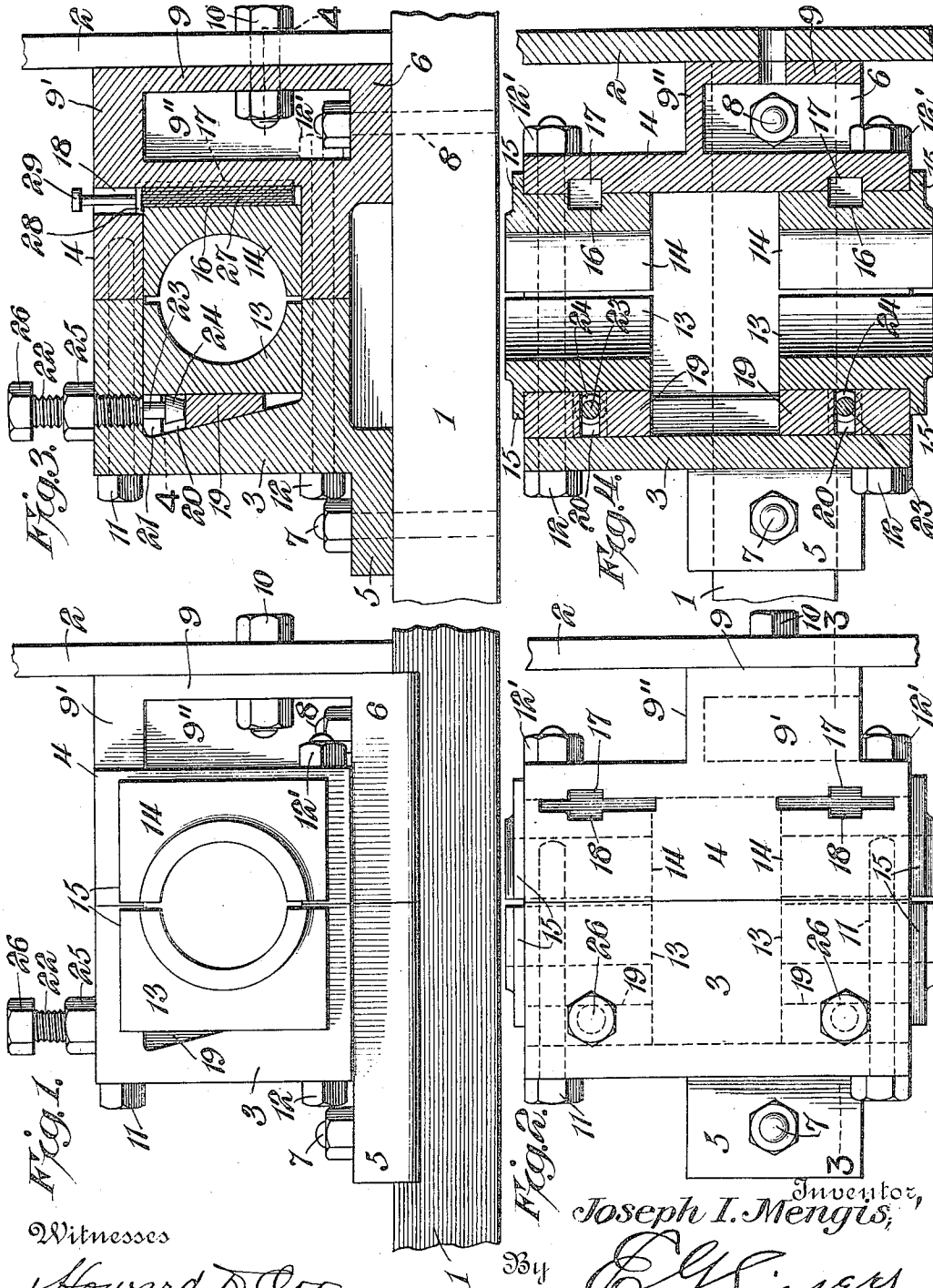


J. I. MENGIS.
 ADJUSTABLE JOURNAL BOX FOR ROCK SHAFTS.
 APPLICATION FILED OCT. 27, 1908.

962,447.

Patented June 28, 1910.

2 SHEETS—SHEET 1.



Witnesses

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Fig. 6.

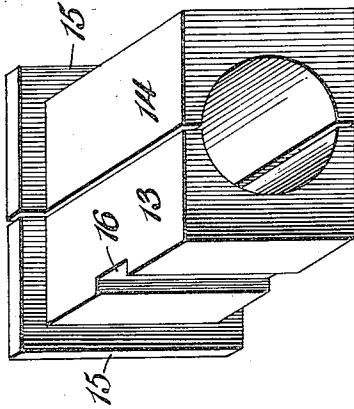


Fig. 10.

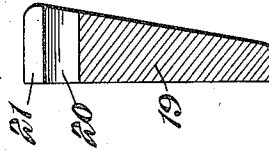


Fig. 9.

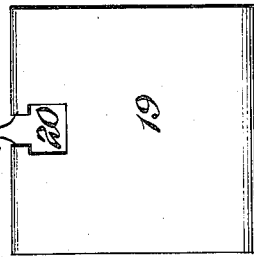


Fig. 8.

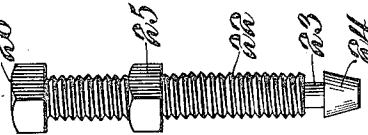


Fig. 5.

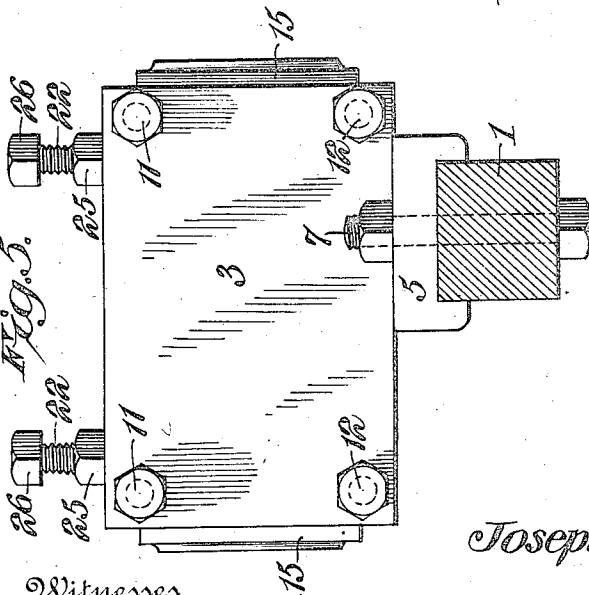
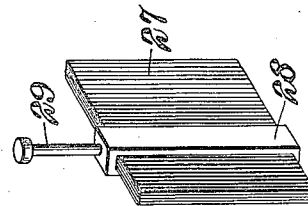


Fig. 7.



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ADJUSTABLE JOURNAL-BOX FOR ROCK-SHAFTS.

962,447.

Specification of Letters Patent. Patented June 28, 1910.

Application filed October 27, 1908. Serial No. 459,799.

To all whom it may concern:

Be it known that I, JOSEPH ILLY MENGIS, a citizen of the United States, residing at Vicksburg, in the county of Warren and State of Mississippi, have invented a new and useful Adjustable Journal-Box for Rock-Shafts, of which the following is a specification.

My invention relates to journal boxes, and particularly to journal boxes for supporting the rockers or rock shafts of locomotive valve motions and other like apparatus, the main object of my invention being to make said journals with adjustable bearing brasses or bushings, whereby wear on the bushings may be taken up and compensated, and whereby the rock shaft may be adjusted laterally to suit various circumstances.

Other objects are to hold the bushings rigidly in their adjusted position within the journal box, to secure a firm contact with the box on all sides of the bushings, and to provide for a firm engagement between the yoke or supporting frame and the journal box.

The invention consists in providing such journal boxes with means for wedging one of the sections of the bearing bushings toward the other, and holding it in its adjusted position, in providing a box with means whereby one or more liner plates may be inserted behind the other of said bushing sections, whereby the wear may be compensated and the shaft adjusted laterally, and in certain arrangement of parts and details of construction set forth in the accompanying specification and more specifically described in the claims appended.

In the drawings: Figure 1 is an end view of my improved box. Fig. 2 is a top view thereof. Fig. 3 is a vertical section on line 3—3 of Fig. 2. Fig. 4 a horizontal section on line 4—4 of Fig. 3. Fig. 5, a side elevation. Fig. 6 a perspective view of the bushings. Fig. 7 a perspective enlarged detail of the liner plates and their holder. Fig. 8 a side view of the wedge adjusting screw. Fig. 9 a side view of the adjusting wedge. Fig. 10 a transverse section thereof.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

In the drawings, 1 and 2 designate respectively the main frame and the guide yoke, which usually supports the journal box of

the ordinary locomotive engine rocker shaft. My journal box is formed of two lateral sections 3—4 which when placed together, form a hollow box approximately square in section and having open ends in which the bearing bushings are received. The section 3 has the lateral foot flange 5, and section 4 the opposed lateral foot or flange 6. Bolts 7—8 pass through the feet flanges 5 and 6 and hold the sections firmly to the frame member 1. A vertical flange or web 9 rises from the margin of the foot flange 6, whereby through the bolt 10, the box may be attached to the frame member 2. In order to strengthen this vertical flange 9, it is connected to the main portion of the box sections 4 by a top web 9' and end web 9''. There is thus a space inclosed by the vertical flange 9 and the webs 9'—9''. The feet 5 and 6 do not extend the length of the journal box, but are merely slightly longer than the width of the supporting member 1. The two sections of the box are held together at their upper portions by the tap bolts 11 which pass from the exterior face of the section 3 into the section 4 and by the bolts 12, which pass entirely through the two sections, and are provided with the nuts 12'. These bolts are located at opposite ends of the box and serve to hold the two sections of the box tightly together and against the bushings carried within the same.

As before stated, the two sections 3—4 when placed together, form a journal box square in section and open at both ends for the reception of duplicate sets of bushings, each consisting of two sections 13, 14, which are shown in perspective in Fig. 6.

Both of the bushing sections are provided with the end flanges 15, which bear against the end of the box when the bushings are in place. The section 13 is flat on its side face, as seen in Figs. 3 and 4, but the section 14 has a vertical groove 16 formed on its side face, which registers with one of the vertical grooves 17 formed in the ends of the inner faces of the section 4, as shown in Fig. 4. These registering grooves are for a purpose later described, and coincide with slots 18 formed in the upper face of the section 4 in line with the inside lateral face of said section, as will be later explained.

The inside face of the side wall of the box section 3 is upwardly and outwardly inclined, as seen in Fig. 3 for the reception of

a wedging block 19, shown in Figs. 9 and 10. This block is flat on one face, but its opposite face is inclined to bear against the inclined inner face of the box section 4. The upper end of the wedging block is slotted, as at 20, the slot having contracted upper edges or shoulders 21, and in this slot is inserted the lower end of the adjusting screw 22 shown in Fig. 8. The lower end of this screw has a contracted shank 23, which is small enough to pass through the contracted opening between the shoulders 21, and the extremity of the shank is provided with a head 24 wider than the space between the shoulders 21 and adapted to be accommodated within the wider portion of the slot 20. The adjusting screw 22 is further provided with the locking nut 25 and the head 26. As will be seen from Fig. 3, the adjusting screws 22 pass down one through each end of the box section 3, through screw threaded passages for this purpose. The head 24 of the screw engages with the wedge block, as before stated. By adjusting the screws 22 within the box, the wedge blocks at either end of the journal box can be forced downward, thus forcing inward the bushing sections 13 or the wedge blocks can be raised, allowing the bushing sections to be forced outward. The opposite bushing section 14 at each end of the journal box is to be adjusted laterally by the use of liners or liner plates 27, which are shown in position in Fig. 3, and in perspective in Fig. 7. These liners are composed of thin metal plates which are supported within a frame or holder 28 provided with a headed shank 29. The registering grooves 16 and 17 and the enlarged middle portion of the slot is adapted to accommodate the holder 28, while the liner plates fit between the inner face of the section 4 and the outer lateral face of the bushing section 13. It is to be understood that these liner plates are to be inserted and used as the bearing wears, and that at first the liner plates are not used. The sectional view of Fig. 4 shows my journal box without these liner plates in the condition in which it is first used, while the section in Fig. 3 shows a plurality of liner plates inserted in the position above described. It will be seen that the slot 18 is longer in one direction than it is in the other, and hence that the holder 28 is not located around the middle of the liner plates, but somewhat toward one end.

In the drawings, I have shown a box having two independent sets of bushings located at opposite ends of the box, and each independently adjustable. I wish however, to be understood that I do not intend to limit myself to this construction, as the principle of my invention could be applied to a box having only one set of bushings as well. The two sets of bushings, however,

permit of a more delicate adjustment of the bearing and give a better support to the shaft than one could possibly do.

The operation of my invention will be clear from what has gone before. As the bearing is worn, the adjusting screw 22 may be turned down, forcing downward the wedge block 19, and thus forcing inward the bushing section 13. If, however, a lateral adjustment of the shaft as a whole is desired, or if it is desired to adjust the bushing section 14 inward, the liners 27 are used. These are inserted one by one as necessity requires and forced downward through the slots 18, the wedge block 19 being raised for this purpose to a degree permitting the necessary adjustment to be made.

It will be seen that by the use of the adjusting screw and wedge together with the liner plates, a very delicate relative adjustment of the shaft may be made as well as wear taken up, and that this adjustment may be made at any time with little labor and very quickly, this adjustment not requiring that the box shall be dismembered for the introduction of new bushings or for the introduction of additional liners. It will also be seen that by reason of the flat sides of the interior of the journal box and the square form of my bushings, that the bushings will be held with peculiar rigidity and will hence wear perfectly true. It will also be seen that my bearing permits of a large extent of contact surface between the box and the supporting frame and yoke 1 and 2 and that the box is rigidly held to said supporting frame.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. The combination of a journal box composed of two sections separably connected, one of the sections having a recessed internal wall, a bushing mounted on the box and composed of sections, one of the sections of the bushing have a recessed wall disposed opposite the first-mentioned recessed wall, a device disposed in the recesses of the said walls consisting of a liner holder and a plurality of liner plates mounted in the holder, and means acting on the unrecessed section of the bushing for holding the sections of the bushing in place.

2. The combination of a journal box composed of a pair of sections, a bushing mount-

ed therein and composed of sections, a liner device consisting of a holder and plates mounted between one section of the box and the adjacent section of the bushing, and adjustable means disposed between the other sections of the box and bushing to cooperate with the liners for positioning the bushing sections of the box.

3. The combination of a bearing box, a bushing composed of separable sections mounted therein, there being a chamber between one section of the bushing and the adjacent wall of the box, a liner device mounted in the chamber consisting of a holder having an open body with detachable plates mounted therein and provided with a stem extending out of the chamber, and an adjustable device arranged in the bearing box and acting on the section of the bushing opposite to that adjacent the liner device to cooperate with the said device for positioning the bushing.

4. In a journal box of the class described, two independent box sections having means whereby they may be rigidly connected to each other and to a supporting frame, two laterally shiftable independent bushing sections contained within the box, a wedging block arranged between the outer face of one of said sections and the inner face of the adjacent box section, an adjusting screw passing down through the top of said box section and engaging with the wedging block to raise or lower the same, lock nuts on the adjusting screw, liner plates adapted to be inserted between the outer face of the opposed bushing section and the inner face of the adjacent box section whereby the bushing sections may be adjusted laterally, said last-mentioned faces having alined recesses, and a holder for the plates seated in the recesses.

5. In a journal box of the class described, two independent box sections having attaching flanges, means for clamping said box sections together, bushing sections carried within said box sections, a wedging block arranged between the outside face of one of said bushing sections and the inside face of the adjacent box section, an adjusting screw for raising and lowering said wedging block, the top of the opposed section being provided with a longitudinal slot having an enlarged portion at its middle, the inner face of the said box section and the outer face of the adjacent bushing section being each formed with a vertical groove corre-

sponding to the widened middle portion of said slot, in combination with a liner holder adapted to clasp a plurality of liner plates and to be received within said longitudinal registering grooves in the bushing and box sections.

6. In a journal box of the class described, two independent box sections having means whereby they may be rigidly connected to each other, the outer box section being provided with an attaching base flange, the opposed box section being provided with a base flange and a vertical attaching flange, the outermost section having an inwardly and downwardly inclined side, two laterally shiftable independent bushing sections contained within the box sections, a wedging block arranged between the outer face of one of said sections and the adjacent inclined face of the box section, said block having a slot formed in its upper edge and having inwardly projecting shoulders at the upper end of said slot, and an adjusting screw passing through the top of the box section having a contracted neck, and an enlarged head adapted to be received within the recess formed in the upper edge of the wedging block, the upper face of the opposed box section being slotted for the introduction of liner plates between the inside face of the box section and the outer face of the adjacent bushing section.

7. The combination with a support composed of angularly-disposed members, of a journal box bearing on both members and composed of separable sections each having spaced flanges for engaging one of the members for preventing lateral displacement, fastenings for securing the box sections to the said members, a bushing in the bearing box composed of separable sections, bolts for securing the sections of the bearing box together, a wedge between the bearing box and bushing for taking up the wear of the latter, a liner holder, and liner plates carried by the holder and cooperating with the wedge for alining the bushing, said wedge and liner plates being disposed at opposite sides of the bushing.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOSEPH ILLY MENGIS.

Witnesses:

E. B. BANKS,
CHAS. J. SCHAFER.