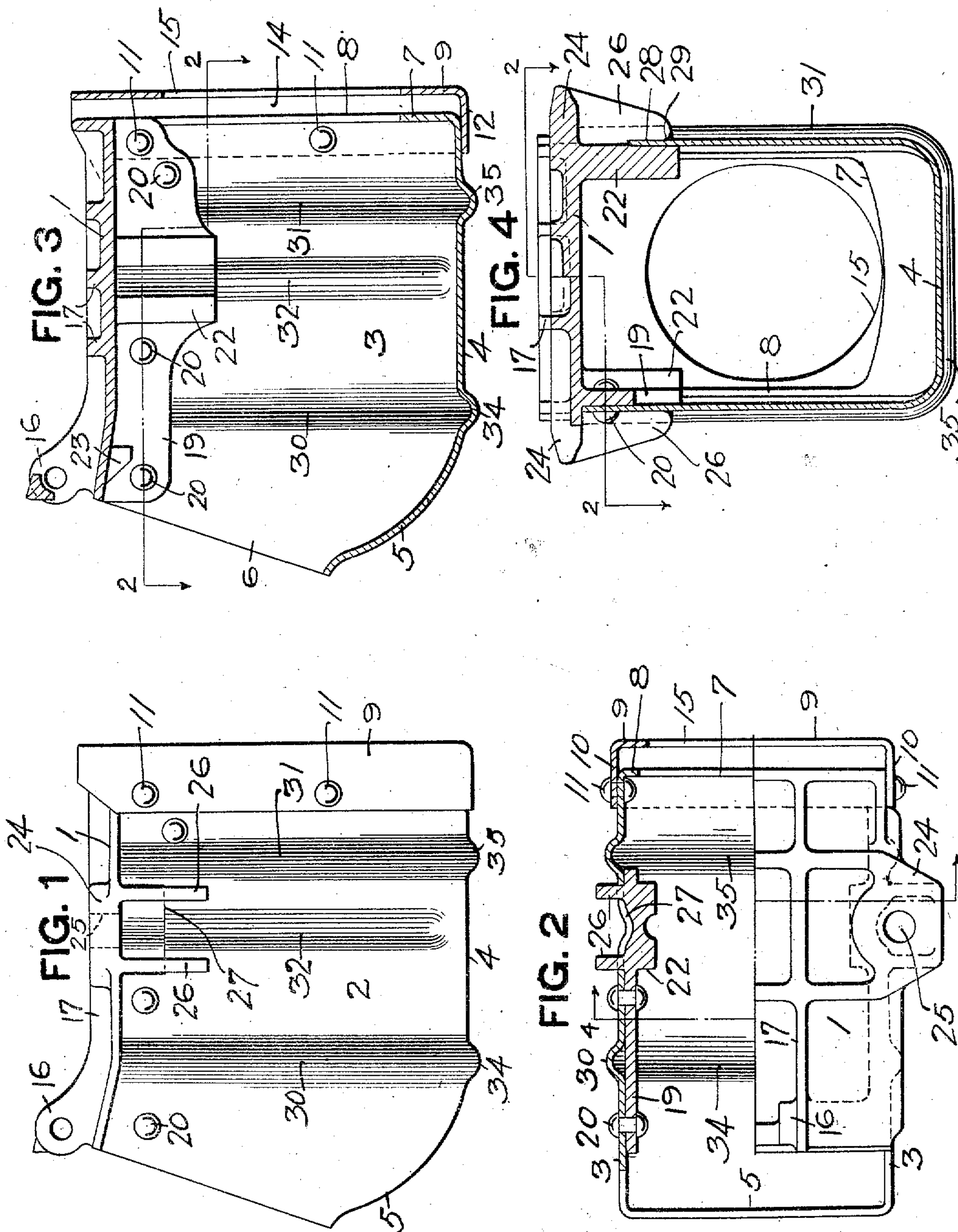


969,933.

Patented Sept. 13, 1910.



WITNESSES.

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UNITED STATES PATENT OFFICE.

LEONARD G. WOODS, OF PITTSBURG, PENNSYLVANIA.

JOURNAL-BOX.

969,933.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed February 28, 1908. Serial No. 418,336.

To all whom it may concern:

Be it known that I, LEONARD G. WOODS, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Journal-Boxes; and I do hereby declare the following to be a full, clear, and exact description thereof.

This invention relates to journal boxes for railway car trucks.

The object is to provide a journal box which is light, yet strong, so as to do away with dangerous and frequent breakages and which conforms to and is interchangeable with the Master Car Builders' standard journal box.

The invention relates to that type of journal box consisting of a pressed body portion with a rigid top of a metal of different character rigidly secured to the body.

The invention comprises the details of construction of a box of this character hereinafter described and claimed.

In the accompanying drawing Figure 1 is a side view of my improved journal box; Fig. 2 is in part a plan view and in part a horizontal section of the same on the line 2-2, Figs. 3 and 4; Fig. 3 is a central vertical longitudinal section through the box; and Fig. 4 is a vertical transverse section on the line 4-4, Fig. 2.

The journal box comprises a cast or drop forged top portion 1 and a pressed metal body portion 2. The latter comprises sides 3 and bottom 4, said bottom being turned upwardly at its outer end, as at 5, to conform to the usual Master Car Builders' type and to provide the usual opening 6 for the axle box lid. The bottom is turned upwardly at the inner end of the box to provide a shallow flange 7 which does not extend up quite to the axle opening and serves merely as a wall to retain the oil. The edges of the side portions 2 at their inner ends are also flanged inwardly slightly, as at 8, in order to provide a finish at this part, but can be left off if preferred. The flanges 7 and 8, however, are comparatively narrow, so that the body can be pressed by a simple die operation and without necessitating the gathering together of a large amount of metal at the lower inner corners of the box.

The pocket for the dust guard is formed by means of a pressed metal plate 9 having flanges 10 on its side edges which are secured to the sides of the body by suitable

means, such as rivets 11, and also having a bottom flange 12 fitting underneath the bottom of the body of the box. This pressed plate is spaced from the inner end of the box leaving the vertical space 14 in which the dust guard is located, and being provided with the opening 15 through which the axle passes. Some railroads prefer an open bottom and a closed top, others a slot clear through, in which case the dust guard plate can be modified to suit.

The top 1 is formed either of cast metal or as a forging. It is provided on its top at its forward or outer end with the usual lugs 16 to which the axle box lid is hinged and is also ribbed, as at 17, giving lightness without sacrificing strength. Along its side edges on its lower face it is provided with the continuous depending flanges 19 fitting inside the pressed body portion and serving as a means to secure the top and body portion together, such as by means of rivets 20 driven through the flanges and the sides 2 of the body. These flanges are continuous for the length of the box and are of considerable depth, thus giving material strength, bracing the box and tending to keep it square. Midway of their lengths these flanges are extended to a considerable depth, always in contact with the sides of the body so as to brace the latter, and also forming shoulders 22 for holding the journal bearing. Near its forward end the top is provided with the lugs 23 which act as stops for the journal box wedge.

On its side edges the box is provided with the lugs 24 which are provided with holes 25 for receiving the journal box bolts. These lugs 24 are stiffened by means of braces 26 connecting the same with the flanges 19. These braces also strengthen the inside shoulders 22. The sides 2 of the body are notched or cut away, as indicated at 27, to fit around these braces. The braces 26 are recessed from below so as to provide vertical kerfs or slots 28 into which the top edges of the body fit. The braces are preferably rounded off at their lower ends, as shown at 29, in order to assist the edges of the body to enter the slots when assembling. The plate sides of the body have a tight fit in said slots. The slots serve to prevent the sheets from bending or yielding when there is a tendency to force the box out of square. They also permit the braces 26 to be made deeper than would otherwise be

the case. The deep braces and flanges support the sides of the body quite low down and hence increase the strength and rigidity of these sides. The slots prevent movement of the box sides in either direction.

The body portion is strengthened by providing the same with corrugations or ribs, the sides being shown as provided with vertical corrugations 30, 31 and 32, while the bottom is provided with transverse corrugations 34 and 35, the latter corrugations being preferably located on both sides of the tie bar. The side corrugations 30 and 31 and bottom corrugations 34 and 35 are preferably continuous as shown to extend around the lower corners of the body and give strength at these points and prevent the box from getting out of square. To further assist in preventing the sides from getting out of true vertical position the corrugations 30 and 31 extend practically up to the upper edges of the sides of the box, considerably above the lower edges of the flanges 19, thus giving great stiffness to the side walls of the box at and below the flanges, and preventing bending of said side walls over the lower edges of the flanges 19. The extension of the corrugations above the lower edge of the flanges, together with having the top edges of the intermediate portions of the side walls fitting up into the slots or grooves 28 in braces 26, prevents the sides of the box from getting out of vertical position and assists in keeping the box square.

The axle box described is interchangeable with the Master Car Builders' type. It is light, and yet stronger than the usual cast box. The top portion is rigid so as to effectively take care of the vertical loads and also of the lateral loads produced by starting and stopping the train, as well as to resist the endwise thrusts of the axles due to the swinging of the car bodies on curves. The peculiar construction of the pressed body portion with the corrugations extending continuously around the lower corners thereof and extending up above the lower edges of the flanges 19 of the top, gives great stiffness to the body and not only assists in resisting vertical pinching stresses due to drawing the journal box nuts tight, but also acts as a diagonal brace between the arch bar and tie bar, and prevents the box from getting out of square.

The box is designed to resist all of the various stresses to which it is subjected as effectively as an all cast metal box, and at the same time is very much lighter. It is formed of tough metal and is not liable to break when the truck leaves the track. It is much stronger than the pressed steel boxes which have heretofore been designed, and some of which did not conform to the Master Car Builders' standards.

What I claim is:

1. A journal box composed of a pressed plate body portion comprising sides and a bottom, and a rigid top portion of metal of a different character provided on its side edges with continuous deep vertical flanges to which the body portion is secured, and having outwardly projecting journal box lugs, and braces extending from the side flanges to said lugs, said braces being provided with vertical slots or kerfs for receiving the top edges of the sides of the body.

2. A journal box composed of a pressed plate body portion comprising sides and a bottom, and a rigid top portion of metal of a different character provided on its side edges with continuous deep vertical flanges to which the body portion is secured, and having outwardly projecting journal box lugs, and braces extending from the side flanges to said lugs, said braces being provided with vertical slots or kerfs for receiving the top edges of the sides of the body, said body being provided with vertical corrugations or ribs extending upwardly above the lower edges of said flanges.

3. A journal box composed of a pressed plate body portion comprising sides and a bottom, and a rigid top portion of metal of a different character provided on its side edges with flanges to which the body portion is secured, and having outwardly projecting journal box lugs, and braces extending from the side flanges of said lugs, said braces being provided with vertical slots or kerfs, and the sides of the body portion being cut away to fit around the braces and having the edges of said cut-away portions projecting up into the kerfs or slots in the braces.

In testimony whereof, I the said LEONARD G. Woods have hereunto set my hand.

LEONARD G. WOODS.

Witnesses:

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