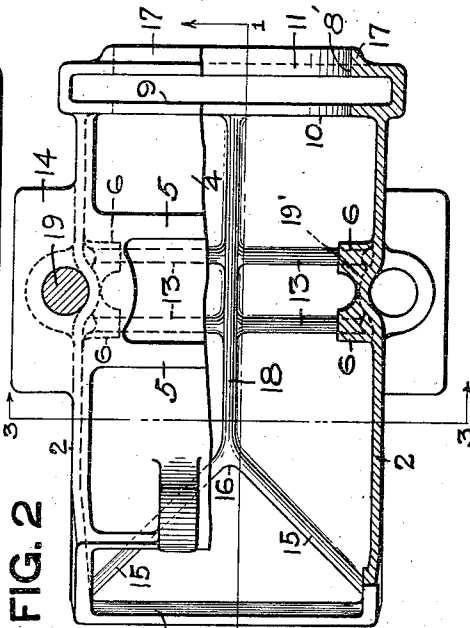
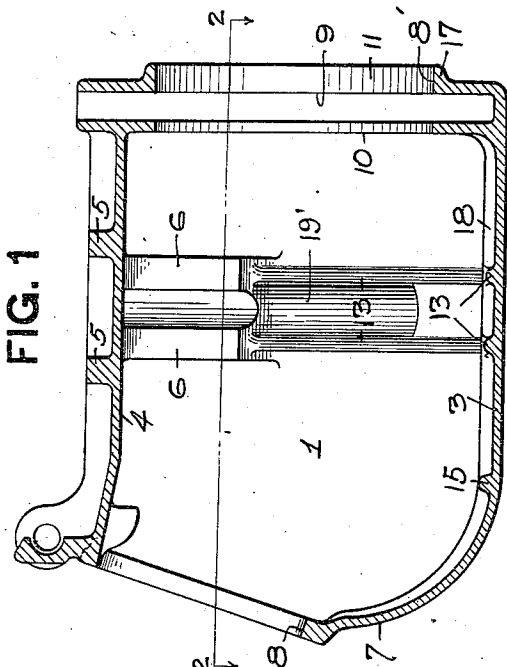
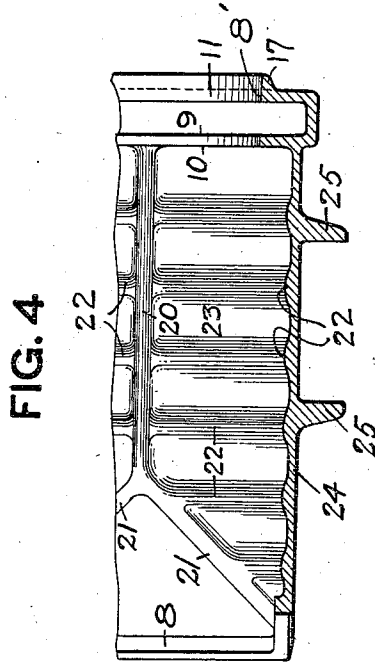
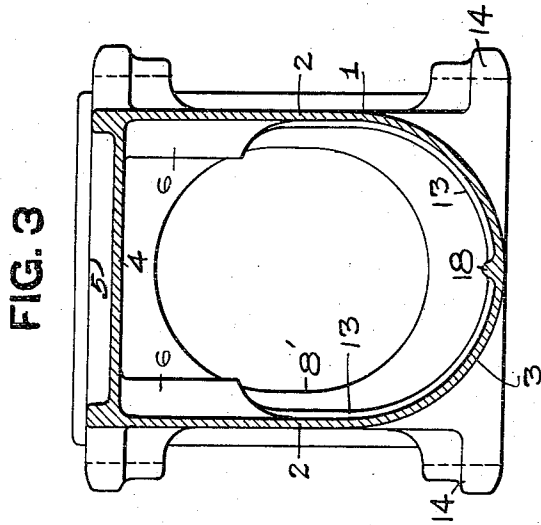


L. G. WOODS.
JOURNAL BOX.
APPLICATION FILED DEC. 19, 1910.

1,019,109.

Patented Mar. 5, 1912.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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JOURNAL-BOX.

1,019,109.

Specification of Letters Patent.

Patented Mar. 5, 1912.

Application filed December 19, 1910. Serial No. 597,971.

To all whom it may concern:

Be it known that I, LEONARD G. WOODS, a resident of Pittsburgh, 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.

My invention relates to railway journal boxes. Its object is to provide a form or construction of box which may be manufactured of cast metal, such as cast steel or cast iron and which is both light and capable of resisting excessive stresses in traffic when used with cars of large capacity.

I am aware that journal boxes have been constructed of malleable iron with thin sides, and also that pressed steel boxes are made with corrugations extending down the sides. My invention contemplates, however, a construction of box in which it is feasible to provide very thin side and bottom walls, and which is at the same time so braced by a preferred arrangement of beads or ribs that it will have the requisite stiffness to withstand the heavy jars and shocks incident to use in modern railroad and street railway traffic.

While my invention is applicable to journal boxes for use with all types of cars or trucks, it is especially valuable in connection with railroad cars of great capacity in which it is necessary to brace the box in the region receiving the greatest strains. By my invention I also aim to provide a construction of journal box which may be made of cast steel and still have very thin walls, the bracing beads or ribs forming in casting, runner portions of the cavity in the mold; so that premature chilling of the metal is prevented and a satisfactory percentage of commercial castings is secured.

To these ends my invention contemplates, generally stated, a cast metal journal box having thin side and bottom wall portions and an integral bracing rib or bead extending continuously around the box in its central portion or region of greatest strain, preferably two or more of such beads being employed.

My invention also contemplates the employment of a series of bracing ribs extending around the journal box body at intervals from its front to its rear end.

My invention also consists in providing in combination with the bracing beads, above referred to, a bracing rib extending longitudinally of the bottom wall of the box and bracing beads or ribs arranged to stiffen the front wall thereof beneath the lid opening; and also includes preferably a bracing bead on the rear wall preferably extending around the opening for the axle as well as other features of construction, as hereinafter more particularly pointed out and claimed.

By the term "rib" as used in the accompanying claims I mean to include a bead or swelling enlargement of an equivalent nature as distinguished from a mere corrugation. A journal box of pressed metal having pressed interior corrugations is to be distinguished from my construction in which the continuity of the outer wall surface directly outside of an internal bead or rib is preserved, the total thickness of the wall being thus greatly increased at the bracing rib.

In the drawings illustrating my invention, Figure 1 is a longitudinal vertical section parallel to the axle (not illustrated) showing one form of my invention. Fig. 2 is a horizontal section of the same on line 2—2 Fig. 1. Fig. 3 is a vertical section of the same on the line 3—3 Fig. 2. Fig. 4 is a horizontal sectional view partly broken away illustrating a modification.

The box 1 illustrated in Figs. 1 to 3 may be constructed in widely varying forms to suit the exigencies of use. By my invention, however, it may always have its side walls 2 and curved bottom 3 of thin metal. Its top portion 4 is preferably of cast steel or like metal integral with the side walls 2 and provided preferably with transverse ribs 5 to brace it at the point of greatest strain. It will be understood that the truck arch bars or pedestal guides grip the box about the mid portion or region of the transverse ribs 5, 5 of the top 4. The wedge guides 6 extend downwardly in this portion of the box

and serve to further strengthen it as well as to position the wedge and bearing (not illustrated).

The front wall 7 of the box is usually of cylindrical form, its axis being at right angles to the axis of the cylindrical or otherwise curved bottom wall 3. Above the front wall 7 is situated the opening 8 which is normally closed by the lid (not illustrated). The dust guard pocket 9 is situated between the back walls 10, 11 of the box, which may be of usual or any desired form, although my invention permits of a thinner wall 11 on account of the braced construction of the box in general, and the bead 17, extending around the journal opening 8'.

The main bracing ribs 13 are integral with the side walls 2 and bottom walls 3 and extend continuously across the same. The ribs 13 are preferably arranged in the region of greatest strain or load, being illustrated as extending downwardly from and connecting the wedge guides 6. One rib 13 may be employed, or any desired number and any requisite thickness or weight of rib may be cast in the box. These ribs or beads increase the thickness of the wall at the point of greatest strain, the opposite wall surface being continued in its contour, and not being dipped or depressed to form a corrugation such as those employed in some types of pressed metal boxes. As these ribs or beads carry the main portion of the load, it is obvious that their weight should be considerable, and also that any increase therein not only strengthens the box, but renders its manufacture of cast metal easier.

The ribs or beads 15 extend preferably diagonally of the box along the lines of intersection of the front wall 7 and the bottom 3 to intersect at the point 16. The said ribs 15 preferably taper off in an upward and forward direction so that they become, when their upper extremities reach the top of the front wall 7, if desired, large fillets. The ribs 15 may, however, obviously be cast of any desired thickness so as to brace the front portion of the box.

The longitudinal rib 18 extends preferably internally along the bottom portion 3 to meet the ribs 15 at their point of intersection 16. The rib 18 is of the same character as the ribs 13 and completes a truss of basket rib construction, which forms in effect the load carrying frame of the box, comprising the transverse ribs 13, the intersecting longitudinal rib 18 and the diagonal or upwardly extending ribs 15. By increasing the size of said ribs the box is not only strengthened but the possible thinness of the wall portion proper is increased, as in making the casting the cavities in the molds which provide for the ribs at the

same time provide runners or channels to facilitate the distribution of the molten metal.

The journal box bolts 19 illustrated in Fig. 2 are of usual construction, being situated on the outside of the side walls 2 opposite to the wedge guide 6 and extending from the bottom lug 14 to the top 4 of the box being illustrated as seated within the journal box bolt depressions or corrugations 19' preferably employed.

Fig. 4 illustrates a modification in which the longitudinal rib 20 and forward diagonal ribs 21 are in all respects similar to the ribs 18 and 15 respectively, described above. The transverse bracing rib construction is here shown in the form of a series of swellings or ribs 22 which extend around the bottom portion of the box 23 and up its side walls 24. The number of such ribs employed is sufficient to effectively brace the box from its front to its rear end. This construction is especially adaptable to boxes for use with railroad cars employing trucks of the pedestal type, the box illustrated in Fig. 4 having guides 25 suitable for use with the jaws of a pedestal truck frame. The swellings or ribs 22 not only effectively brace the box, but also greatly facilitate the flow of molten metal in casting.

What I claim is:

1. A journal box having integral side and bottom walls of thin metal, wedge guides extending inwardly from said side walls, and an inwardly extending box bolt corrugation arranged in each side wall, and internally thickened integral bracing ribs extending continuously across said side and bottom walls and connecting said wedge guides to brace the box in the region of greatest strain.

2. A cast metal journal box having side and bottom walls of thin metal, and a top wall of thicker metal integral with said side walls, wedge guides integral with said side walls and depending from said top wall, and continuous connecting ribs of thickened metal extending downwardly from said wedge guides in the side walls and across the bottom wall to form a complete truss framework to receive the load stresses, substantially as described.

3. A cast metal journal box having transverse integral ribs in its top portion, thin side walls and wedge guides integral therewith and extending downwardly to brace the same, a bottom wall of thin metal integral with the side walls, and a pair of continuous ribs of thickened metal extending across said side and bottom walls and connecting the wedge guides to brace the box in the region of greatest strain.

4. An integral cast metal journal box having transversely extending ribs in its top portion, wedge guides depending therefrom, and continuous connecting ribs extending downwardly from said wedge guides and across the bottom portion of the box to form a complete truss framework to receive the load stresses, the box walls being of thin metal integral with said truss framework. 10

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

Witnesses:

ROBERT C. TOTTEN,
JOHN F. WILL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."