June 17, 1924. 1,498,110

T. E. MURRAY

JOURNAL BOX

Filed Dec. 6, 1920

Fig.1.

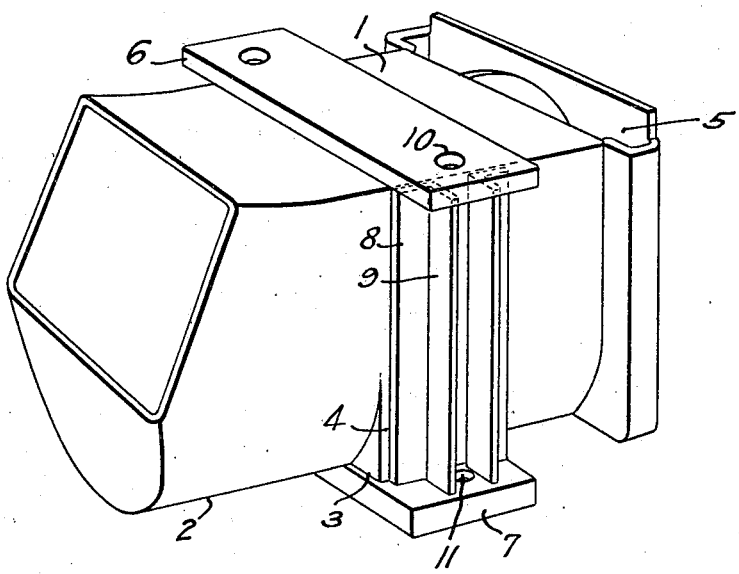


Fig.3.

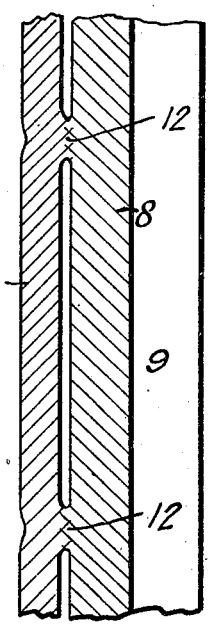
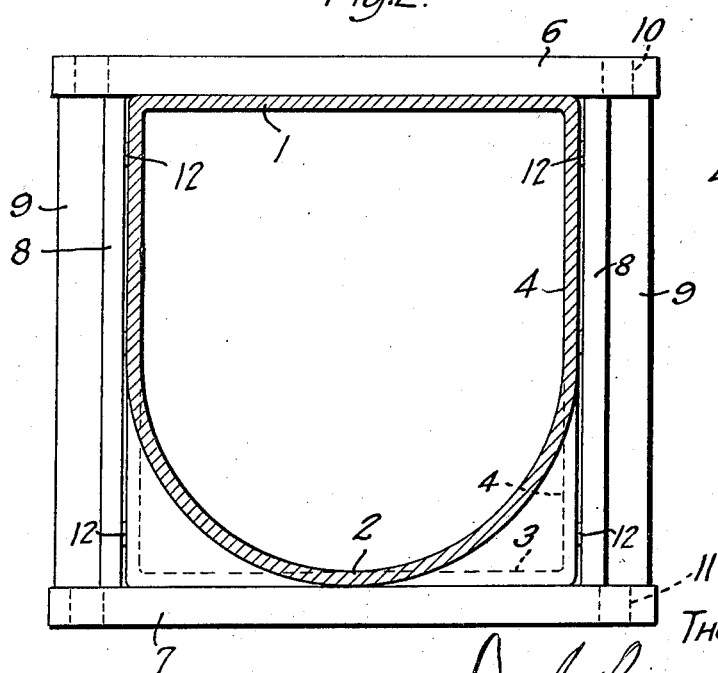


Fig.2.



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UNITED STATES PATENT OFFICE.

THOMAS E. MURRAY, OF BROOKLYN, NEW YORK.

JOURNAL BOX.

Application filed December 6, 1920. Serial No. 428,455.

To all whom it may concern:

Be it known that I, THOMAS E. MURRAY, a citizen of the United States, residing in the borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Journal Boxes, of which the following is a specification.

My invention aims to provide certain improvements designed particularly for railway car journal boxes and adapted also for bearing boxes of various other vehicles and machines which are supported on the axle or shaft whose bearings are carried in the box. By my improvement such boxes can be made chiefly of sheet metal so as to be lighter and cheaper than those at present generally used.

The accompanying drawings illustrate an embodiment of my invention.

Fig. 1 is a perspective view of a journal box embodying the invention;

Fig. 2 is a transverse section of the same adjacent to the stiffeners or reinforcing members referred to hereinafter;

Fig. 3 is an enlarged sectional view of the connection between the box proper and one of the stiffening members.

Referring to the embodiment of the invention illustrated, the box proper 1, or cellar as it is called, is made of sheet metal formed in any one of various ways, as for example by shaping it in segments and welding these together in the manner described in the Williams application No. 414,282, filed October 2, 1920. The bottom 2 of the box is rounded throughout the greater portion of its length. The middle portion, however, is made rectangular with a flat bottom 3 and straight vertical sides 4. The inside of the box is formed or provided with the usual or any suitable flanges and stops for holding the bearing block which rests on the end of the axle, the wedge for holding the latter down, etc., and a dust guard pocket 5 is provided at the inner end. These parts may be of any usual or suitable design and are, therefore, not illustrated.

On the top of the box across the central part thereof is located a plate or bar 6 forming an arch bar seat and on the bottom a similar member 7 constituting the tie bar seat, these parts being located on the rectangular part of the box and forming the bearing plates for parts of the truck.

When a bearing is overheated it is sometimes necessary to put a jack under the journal box and to lift the latter and the weight of the car carried thereby so as to relieve the downward pressure of the bearing block on the axle, in order to remove the wedge and bearing block and to substitute new parts therefor. Under such circumstances the entire journal box is very hot, often red hot, and unless made of heavy metal is liable to collapse under the upward pressure of the jack; the weight on a bearing often amounting to several tons. For this reason sheet metal boxes, although they have been proposed, have found little or no place in actual use.

I propose to provide stiffening means which will reinforce the box against this upward pressure or which will themselves transmit all or the greater part of the pressure to the car so as to lift the latter without collapsing or distorting the box.

For this purpose I provide on each of the opposite straight sides of the box a pair of vertical members with longitudinal flanges 8 by which they are united to the box and transverse flanges 9 which give lateral stiffness. These members rest on the tie bar seat 7 and are engaged at their upper ends by the arch bar seat 6 so as to transmit an upward pressure directly from the former to the latter and thus to lift the car without putting any substantial pressure on the sides 4 of the box. These vertical members on each side of the box form spaces between them for the fastening bolts of the car bolsters which pass also through the holes 10 and 11 in the projecting ends of the seats 6 and 7.

The stiffening members are united to the box at separate points as, for example, by means of outward projections 12 on the sides of the box welded to the flanges 8 of the stiffening bars. This leaves the stiffening bars and box merely in light contact with each other throughout the greater part of their adjacent faces so that there is a minimum transmission of heat from the box to the stiffening members. These members, therefore, will be the better adapted to withstand the upward stress by reason of their size and arrangement and also by reason of their comparative coolness. Various other means of fastening may be used instead of the projection weld illustrated. In fact these members may serve their function of lifting the car without being directly fas-

tened to the box. For clearness of illustration I have shown an actual space in Fig. 3 between the parts 4 and 8. In fastening them together these two parts may be pressed into contact with each other, which will still be so poor a contact as to interfere considerably with the transmission of heat, or there may be actually spaced away from each other as shown.

There are various other structures and machines, the parts of which have to stand a considerable strain at times and are also highly heated under the conditions of use. This invention may be applied to a great variety of such structures, uniting stiffeners to the parts in question or uniting one of the parts thereof to another by means of projection welding or otherwise at separated points so as to minimize the transmission of heat.

Though I have described with great particularity of detail certain specific embodiments of my invention yet it will be understood that the invention is not restricted to the particular embodiment illustrated. Various modifications thereof in detail and in the arrangement and design of the parts may be made by those skilled in the art without departing from my invention as defined in the following claims.

What I claim is—

1. A journal box of sheet metal having on the top a separately formed arch bar seat and on the bottom a separately formed tie bar seat in combination with vertical members attached to the sides of said box, separately formed from said seats and adapted to transmit an upward pressure to the car independently of the sheet metal parts.

2. A journal box of sheet metal having on the top an arch bar seat formed separately from the cellar in combination with vertical members formed separately from said seat, mounted at the sides of the box and adapted to transmit an upward pressure independently of the parts of the cellar.

3. A journal box of sheet metal in combination with separate means for transmitting an upward pressure to the car, said means being united to the box and engaging it closely at separated points only so as to minimize transmission of heat thereto.

4. A journal box of sheet metal having on the top an arch bar seat formed separately from the cellar and on the bottom a tie bar seat also formed separately from the cellar, said seats projecting beyond the sides of the cellar with openings through their projected portions for the passage of fastening bolts in combination with separately formed vertical bars, one mounted at each side of the box between said seats in vertical positions to constitute guides for the fastening bolts and adapted also to transmit an upward pressure to the car independently of the parts of the cellar.

5. A device of the class described having a part of sheet metal which is adapted to be highly heated and softened in use and having a separately formed part which reinforces the first to prevent its yielding under pressure and is united thereto at separated points so as to minimize the transmission of heat thereto.

6. A device of the class described having a part of sheet metal which is adapted to be highly heated in use and having a separately formed part which reinforces the first to prevent its yielding under pressure and is united thereto by projection welding at separated points so as to minimize the transmission of heat therefrom.

In witness whereof, I have hereunto signed my name.

THOMAS E. MURRAY.