Nov. 12, 1935. W. C. HEDGCOCK 2,020,358

JOURNAL BOX

Filed Nov. 16, 1931

Fig. 1.

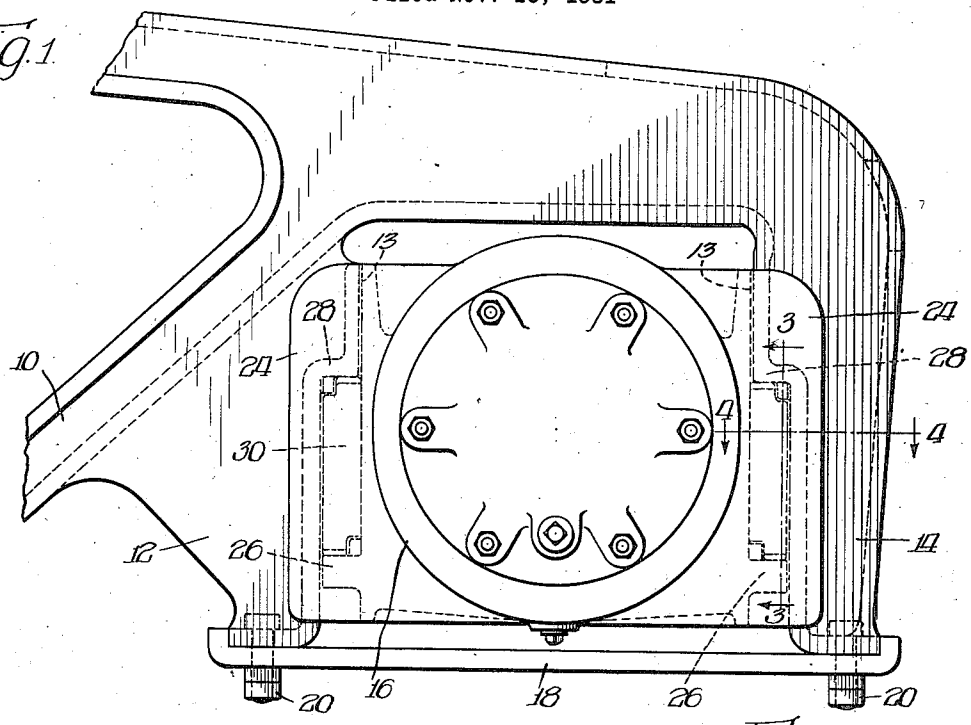


Fig. 2.

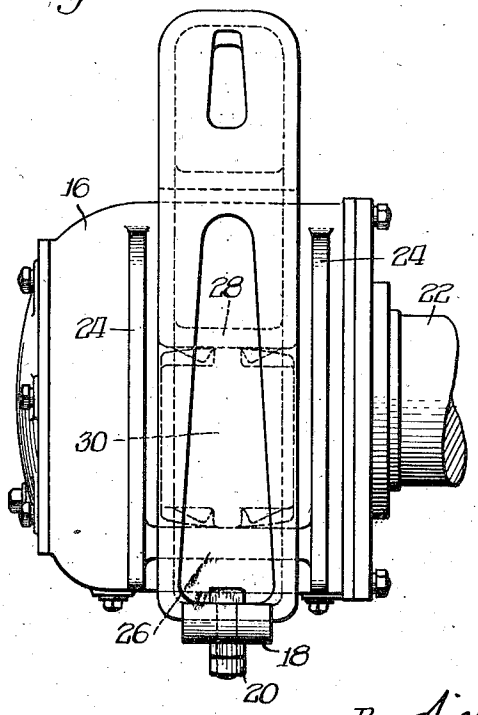


Fig. 3.

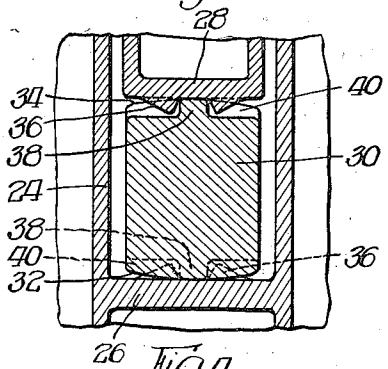
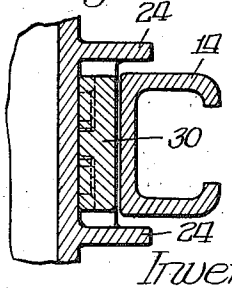


Fig. 4.



Inventor:
William C. Hedgcock,
By Dickinson, Dunley, Byron & Knight
Attys.

Patented Nov. 12, 1935 2,020,358

UNITED STATES PATENT OFFICE

2,020,358

JOURNAL BOX

William C. Hedgcock, Wilmette, Ill., assignor to American Steel Foundries, Chicago, Ill., a corporation of New Jersey

Application November 16, 1931, Serial No. 575,296

5 Claims. (Cl. 105—222)

This invention pertains to a journal box and more particularly to a journal box arranged for lateral motion with respect to a truck side frame.

It is well known that a certain amount of lateral motion between the car axle and the truck frame is desirable so as to permit a certain amount of relative freedom to the wheels in lateral motion to accommodate themselves to track conditions without imparting shocks or forces to the truck frame.

Where usual axle journals and usual brass friction bearings are used this lateral motion is accommodated by providing a certain amount of end clearance for lateral motion between the journal and the brass bearing. Where roller bearings are mounted in the journal box for engagement with the axle journal it is difficult to arrange for this lateral motion within the journal box, since the roller bearings must be set up for very limited lateral motion.

It is therefore an object of this invention to provide a journal box construction adapted to be used with a truck side frame providing for lateral motion between the journal box and truck side frame.

Another object is to provide a journal box adapted for relative movement with respect to a truck side frame wherein a centering device is provided for returning the box to normal position and for tending to maintain the box in normal position.

A further object is to provide a lateral motion journal box which is inexpensive to make and maintain, and fulfills all requirements of manufacture and service.

With these and various other objects in view, the invention may consist of certain novel features of construction and operation as will be more fully described and particularly pointed out in the specification, drawing and claims appended hereto.

In the drawing which illustrates an embodiment of the device and wherein like reference characters are used to designate like parts—

Figure 1 is a fragmentary side elevation of a truck side frame showing the application thereto of a journal box which is the subject matter of the present invention;

Figure 2 is an end elevation of the side frame and journal box construction shown in Figure 1;

Figure 3 is a fragmentary sectional elevation taken substantially in the plane indicated by the line 3—3 of Figure 1;

Figure 4 is a fragmentary sectional top plan view taken substantially in the plane indicated by the line 4—4 of Figure 1.

In the construction illustrated, the truck side frame 10, which may be of any desired construction, is provided with spaced jaws 12 and 14 between which the journal box 16 is mounted, there being provided the journal box retaining plate 18 spanning the jaws and being removably secured thereto by means such as the bolts 20. The jaws and journal boxes have relative lateral sliding engagement as between guide members or columns 13 for guiding cooperation and to help maintain the journal box in squared relation to the truck frame. The journal box 16, which may be of any desired construction, is adapted to accommodate the axle 22, which may be the standard friction type of axle, or that used with any type of roller bearing. The journal box is provided with the spaced flanges 24 adapted to embrace the depending jaws 12 and 14, being spaced from said jaws a sufficient amount to permit limited relative lateral movement between the truck side frame and the journal box.

The journal box is provided with the shelves 26 disposed between the flanges 24 and projecting from the sides of the journal box toward each pedestal jaw. Each pedestal jaw is provided with a ledge 28 facing its respective shelf 26 and extending toward the sides of the journal box whereby it may be said that the ledges 28 overhang the shelves 26. Rocker members 30 are disposed between the shelves and ledges and are provided with curved or arcuate surfaces 32—34 adapted to have rocking cooperation between the surfaces of the shelves. The shelves and ledges are provided with spaced outwardly flaring lugs 36 adapted to embrace the lugs 38 formed on the recesses 40 adjacent the arcuate surfaces 32—34 whereby positioning means is formed for maintaining each rocker in its proper position in relation with its co-acting surfaces on the journal box and truck side frame. It may thus be said that the rockers 30 are carried on the shelves 26, and in turn support the truck side frame through the ledges 28.

The truck side frame is thereby operatively carried upon the journal boxes, but is permitted a certain amount of lateral movement by the rocking action permitted by the rockers. The radii of the arcuate surfaces 32—34 of the rocker are preferably so proportioned with respect to their cooperating seats on the shelves 26 and ledges 28 that lateral movement from normal position causes the contact point on surface 34

to move to one side of a vertical line through contact point on surface **32**, and to cause a lifting action of the truck side frame **10** on the journal box **16**, thereby effecting a resistance to too free lateral motion and a restoring moment to re-center the journal box in the side frame. The arcuate rocker surfaces also permit a certain amount of rocking, or vertical angular movement of the journal box transversely with respect to the side frame, whereby the journal box is permitted self-alignment with the axle. In order that the journal box be maintained in stable equilibrium it is desirable that the load carrying shelves **26** be positioned below the center line of the journal, that is, below the center line of the axle **22** so that the load is always carried below the rotative center of the journal, and there is no tendency for the journal box to become angularly disposed, or be out of its proper alignment from its vertical arrangement with the truck side frame.

With the construction shown and described a very advantageous, inexpensive, yet effective construction is provided, and it is to be understood that I do not wish to be limited by the exact embodiment of the device shown, which is merely by way of illustration and not limitation, as various and other forms of the device will of course be apparent to those skilled in the art without departing from the spirit of the invention or the scope of the claims.

I claim:

1. In a truck, the combination of a side frame having spaced jaws, a journal box disposed between said jaws and provided with flanges embracing said jaws for limiting movements between said side frame and journal box, a substantially flat shelf provided between said flanges, a substantially flat ledge provided on said jaws overlying said shelf, and rocker means disposed between said shelf and ledge, said rocker means and shelf and ledge being provided with positioning means for maintaining said rocker means in normal position.

2. In a truck, the combination of a side frame having spaced jaws, a journal box disposed between and having sliding engagement with said jaws and provided with flanges embracing said jaws for limiting movements between said side frame and journal box, a substantially flat shelf provided between said flanges, a substantially flat ledge provided on said jaws overlying said shelf, and rocker means disposed between said shelf and ledge, said rocker means having curved surfaces engaging said shelf and ledges, said rocker means and shelf and ledge being provided with positioning means for maintaining said rocker means in normal position.

3. In a truck, the combination of a side frame having spaced jaws, ledges on said jaws, a journal box disposed between and having guiding relation with said jaws adjacent the top of said box, said journal box having shelves thereon, and lateral motion means disposed between said ledges and shelves.

4. In a truck, the combination of a side frame having spaced jaws, ledges on said jaws, a journal box disposed between and having guiding relation with said jaws adjacent the top of said box, said journal box having shelves thereon, lateral motion means disposed between said ledges and shelves, and means for maintaining said rocker means in normal position.

5. In a truck, the combination of a side frame having spaced jaws, said jaws being provided with ledges and guide means directly above the same, a journal box disposed between said jaws and cooperating with said guide means and being provided with shelves below said ledges, and lateral motion means disposed between said ledges and shelves.

WILLIAM C. HEDGCOCK.