Jan. 25, 1949. W. H. BASELT 2,460,248

HANGER SUPPORT

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Fig. 1

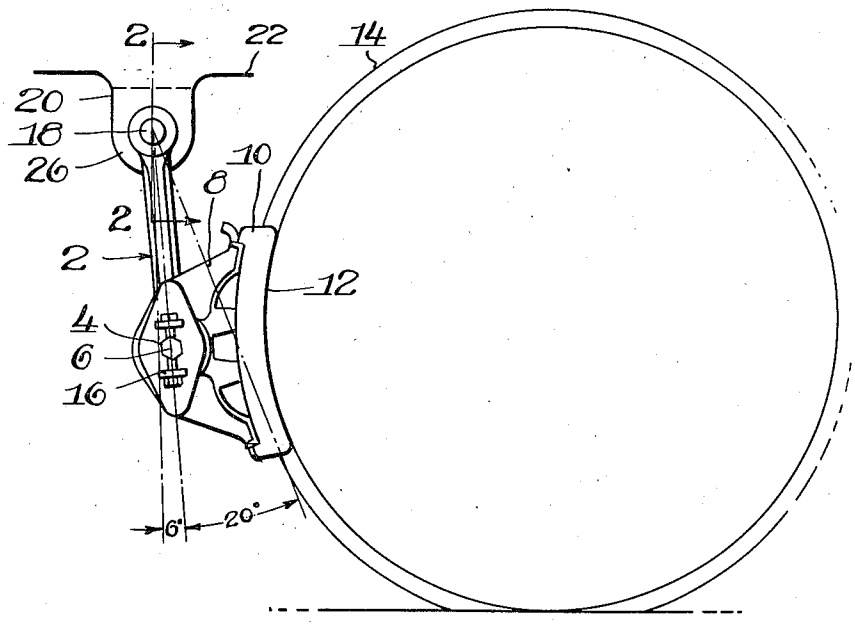
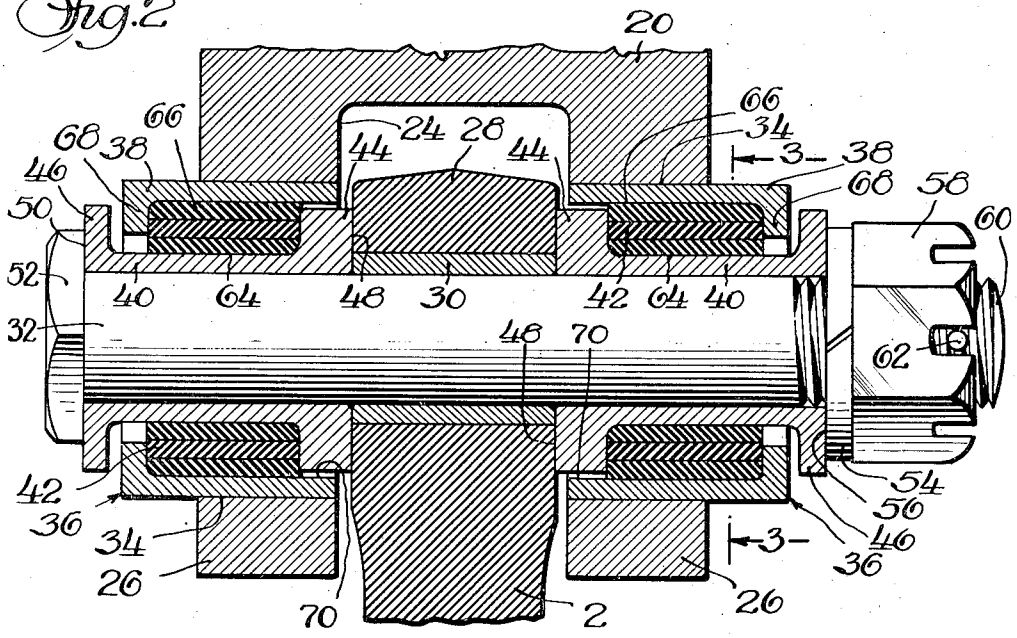


Fig. 2



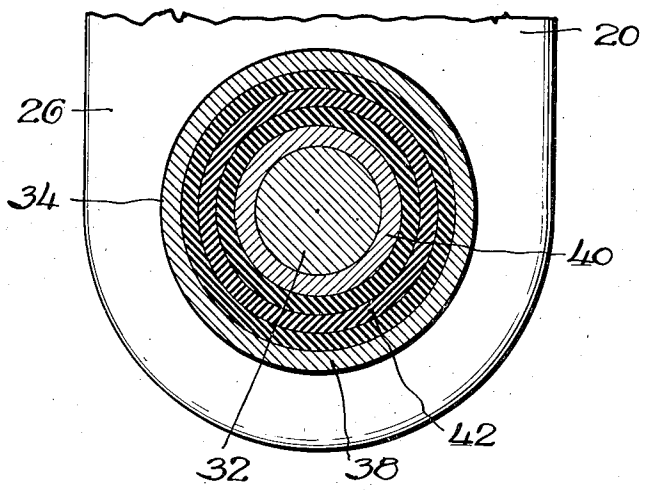
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Fig. 3



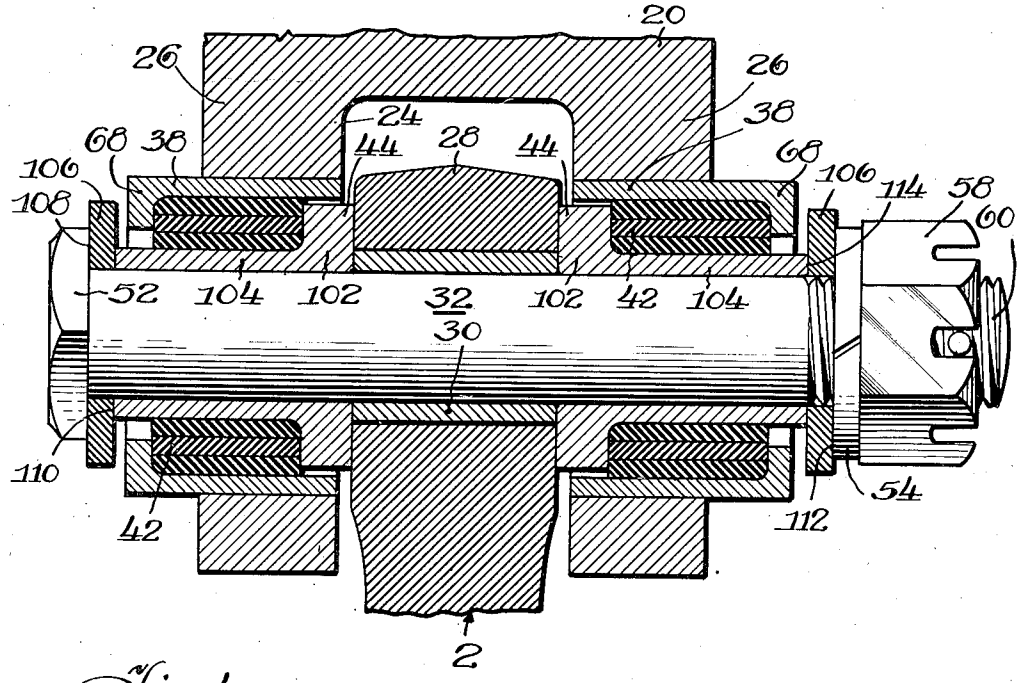


Fig. 4

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HANGER SUPPORT

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15 Claims. (Cl. 188—209)

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My invention relates to brake hangers for railway car trucks and more particularly to supporting means therefor.

An object of my invention is to provide novel means for supporting a brake hanger from an associated vehicle, such as a railway car truck, in a manner eliminating wear on the hanger and the supporting portions of the vehicle.

A further object of my invention is to provide novel support means for a hanger and an associated brake beam in which resilient means are utilized between the hanger and the vehicle frame to afford a resilient cushion between the same and functioning to restrain free swinging movement of the hanger and the beam while permitting the necessary lateral movement of the beam and lateral angling of the hanger.

My invention comprehends an arrangement in which resilient means, such as rubber, may be compressed between sleeves respectively fixed to a brake hanger bracket on the vehicle frame and to a brake hanger and wherein stop means are provided for preventing further compression of the resilient means upon the before-mentioned movements of the hanger to an extent permanently distorting the resilient means by the induced flow thereof or splitting the same with consequent failure of the same to return the hanger and its associated brake shoe to their original positions in alignment with the braking surface afforded by the periphery of an associated wheel.

My invention further contemplates an arrangement as above described wherein the resilient means is placed in shear during actuation of the hanger by the beam to facilitate return of the hanger and the beam to their normal positions. These and various other objects will be apparent from the following description and drawings and will be more particularly pointed out in the claims.

In the drawings:

Figure 1 is a fragmentary side elevation of a truck embodying my novel invention;

Figure 2 is an enlarged sectional view of a portion of the structure shown in Figure 1, the section being taken substantially in the vertical plane indicated by the line 2—2 of Figure 1 with only a portion of the hanger being shown;

Figure 3 is a sectional view taken in the vertical plane indicated by the line 3—3 of Figure 2; and

Figure 4 is a view similar to Figure 2, showing a modification of the invention.

Describing my invention in detail and referring to Figure 1, the brake hanger 2 comprises a single elongate member pivotally supporting at its lower end as at 4, a brake beam 6 having a brake head 8 pivotally connected thereto and carrying a brake shoe 10 in conventional manner for braking engagement as at 12 with the periphery of a car wheel 14, said brake assembly incorporating a brake head balancing device, generally indicated at 16, for adjustably maintaining the brake head and its shoe in operative relationship to the wheel.

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The hanger 2 is pivotally connected at its upper end as at 18 to the brake hanger bracket 20 integrally formed with the truck frame member 22 by my novel hanger support means now to be described.

Referring now to Figures 2 and 3, the hanger 2 extends within a slot 24 defined by spaced parallel lugs 26, 26 forming the bracket 20 and is formed with an eye end 28 having tightly fitted therein, as by a press fit, a collar 30 receiving a bolt 32 extending therethrough and through aligned openings 34, 34 in the lugs 26, 26. Positioned within the openings 34, 34 in said lugs 26, 26 and disposed on opposite sides of the hanger 2 are the bushings generally designated 36, 36, each of said bushings comprising an outer sleeve 38 press-fitted in the opening 34 in the associated lug 26 and an inner sleeve 40 sleeved over the bolt 32, said sleeves 38 and 40 being in spaced relationship and having compressed therebetween a tubular filler or insert 42 of resilient material, such as rubber, and which may be preferably formed as a laminated structure for a purpose hereinafter described. Each of the sleeves 40, 40 are formed with annular flanges 44 and 46 at opposite ends thereof, said flanges 44, 44 having abutment as at 48, 48 with the adjacent sides of the hanger 2. Each of said flanges 46, 46 is preferably formed by a spinning operation to confine the associated insert 42 and portion of sleeve 38 between the same and the flange 44. It may be noted that one of said flanges 46, 46 has abutment as at 50 with the head 52 of the bolt and the other of said flanges 46, 46 has a lock washer 54 urged into engagement therewith as at 56 by a nut 58 on the threaded end 60 of said bolt, a cotter 62 extending through said bolt end 60 and into aligned slots in said nut to prevent accidental disassembly of the nut and bolt. It will be apparent that the bolt and nut assembly operatively urges sleeves 40, 40 into tight engagement with the hanger so that the hanger sleeves 40, 40 and the bolt and nut assembly will rotate as a unit relative to

the bracket 20 and the sleeves 38, 38 fixed thereto. It may be further noted that the rubber inserts 42, 42, under compression between the sleeves 38 and 40 of the respective bushings, serve, through the resistance afforded by their substantial area of contact therewith as at 64 and 66, to maintain the hanger in a central position between the lugs 26, 26 of the bracket 2 as well as by the engagement of each insert 42 at opposite sides thereof with the annular end flange 68 on the associated sleeve 38 and the flange 44 on the associated sleeve 40 and under compression therebetween whereby the hanger and its associated shoe will be maintained in alignment with the periphery of the associated wheel to insure the proper braking application of the shoe to the wheel.

In the arrangement described above, the hanger 2 is resiliently supported from the bracket 20 of the truck frame member 2 and, as there is no metal-to-metal contact between the relatively movable sleeves 38 and 40 of each bushing, frictional wear is prevented during movement of the hanger relative to the bracket 20 as well as wear occurring due to the severe vibrations to which the brake hanger is subjected in service. Also, as the rubber inserts 42, 42 are under considerable compression between the sleeves associated therewith, free swinging of the hanger and the beam about the pivot point 18, represented by the bolt 32, will be restrained by the resistance of the inserts in shear to such movement and, accordingly, the hanger will be maintained in a position spaced from the adjacent truck parts, resistance of the inserts to the adjacent lateral movement of the beam and lateral hanging of the hanger being insufficient to affect actuation thereof by the associated brake rigging to position the shoe in braking application to the wheel.

In the actuation of the brake hanger by the brake beam for the application of the brake shoe to the periphery of the wheel, the rubber inserts 42, 42 will be placed in shear and the resultant torque action on the hanger 2 to return the same and the brake beam to their original positions will be of material assistance in effecting the return of these brake parts as well as those associated therewith to their normal positions. This condition is illustrated in Figure 1, the torque angle resulting from travel of the beam and hanger being indicated as approximately six degrees when new friction shoes and a new wheel are utilized and as at approximately twenty-six degrees when the same are fully worn. In order to permit movement of the beam and hanger to the maximum torque angle, the rubber inserts are preferably laminated, as illustrated, to prevent excessive shearing action of the same resulting in injury thereto.

Referring to Figure 2, it may be noted that radial movement of the hanger outwardly of the bracket 2 will be limited by abutment of the perimeters of the flanges 44, 44 of the sleeves 40, 40 with the adjacent inner cylindrical surfaces 70 of the sleeves 38, 38 and also that angular movement of the hanger in the plane of the bolt is also limited by the aforesaid engagement of the surfaces with the perimeters of the flanges during movement of the beam and hanger so that additional compression of the inserts will be limited to an extent preventing the same from splitting or becoming permanently distored by the induced flow thereof during the aforesaid movements of the hanger with resultant failure of the inserts to function to return the hanger and its

associated brake shoe to their original positions in alignment with the wheel. In the assembly of the device, each of the bushings 36, 36, previously assembled as a unit, are respectively fixed within the openings 34, 34 in the lugs 26, 26 of the bracket 20 by press-fitting the outer sleeves 38, 38 in the lugs. The hanger 2 may then have its upper end positioned within the slot 24 of the bracket 20 between the bushings 36, 36, whereupon the bolt may be passed through the inner sleeves 40, 40 and the collar 30 of the hanger 2, and the assembly completed by positioning the lock washer 54, nut 58 and cotter 62 on the threaded end of the bolt.

The modification illustrated in Figure 4 is substantially identical to the structure illustrated and described in Figures 1 to 3, differing therefrom by the formation of the outer end of each of the inner sleeves 102, 102 of the bushings as a continuation of the cylindrical portion 104 of the sleeves and positioning annular washers or plates 106, 106 on the bolt at opposite ends thereof, one of said plates having engagement as at 108 with the bolt head and as at 110 with the end of the portion 104 of the adjacent sleeve, the other of said plates having engagement as at 112 with the lock washer 54 and as at 114 with the end portion 104 of the adjacent sleeve.

It is to be understood that I do not wish to be limited by the exact embodiments of the device shown which are 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 railway car truck, a frame having a brake hanger bracket comprising spaced depending supports, a brake hanger extending between said supports, a pivot member extending through aligned openings in said supports and said hanger, bushings in the openings in said supports and sleeved over said member, each of said bushings comprising a pair of telescoping tubular elements, and resilient means compressed therebetween, the outer elements of said bushings being fixed to the associated supports and having an inwardly directed annular flange at one end thereof, the inner elements of said bushings having an annular flange at one end thereof cooperating with said inwardly directed flange to position said resilient means therebetween, a pair of annular plates sleeved over said pivot member at opposite ends thereof and having abutment with the adjacent other ends of said inner elements, and abutment means on said pivot member in engagement with said plates and urging said inner elements into engagement with opposite sides of said hanger, whereby said hanger, said inner elements and said pivot member are rotatable as a unit during movement of said hanger relative to said bracket, said resilient means being placed in shear during such movement.

2. In a railway car truck, a frame having a brake hanger bracket comprising spaced depending supports, a brake hanger extending between said supports, a pivot member extending through aligned openings in said supports and said hanger, bushings in the openings in said supports and sleeved over said member, each of said bushings comprising a pair of telescoping tubular elements, and resilient means compressed therebetween, the outer elements of said bushings being fixed to the associated supports and each having an inwardly directed flange at one end thereof, each of the

other of said elements having outwardly directed flanges receiving said last-mentioned flange therebetween and having one of the flanges thereof cooperating with said inwardly directed flange to position said resilient means therebetween, and abutment means on said pivot member at opposite ends thereof in engagement with the other of said flanges on said inner elements urging said first-mentioned flanges thereof into tight engagement with opposite sides of said brake hanger, whereby said hanger, said inner members and said pivot member are movable as a unit during lateral angling of said hanger.

3. In a railway car truck, a frame having an integral brake hanger bracket comprising spaced parallel supporting members, a brake hanger extending between said members, a bolt extending through aligned openings in said members and hanger, a bushing in the opening in each member and comprising telescoping sleeves with the outer sleeve fixed to said member and the inner sleeve surrounding said bolt and abutting the adjacent side of said hanger, a tubular resilient member compressed between said sleeves, flanges on respective sleeves in engagement with opposite ends of said tubular member, and means on the threaded end of said bolt in engagement with one of said inner sleeves and a head on said bolt in engagement with the other of said inner sleeves, said inner sleeves, bolt, and means and said hanger being rotatable as a unit relative to said bracket and said outer sleeves for placing said resilient members in shear, the flanges on one of said sleeves being engageable with the other of said sleeves for limiting movement of said unit radially outward of said bracket.

4. In a railway car truck, a frame having a brake hanger bracket comprising spaced parallel depending members, a hanger extending therebetween, a bolt extending through aligned openings in said members and hanger, a bushing in the openings in each member and comprising telescoping sleeves surrounding said bolt with the outer sleeve fixed to said member and the inner sleeve abutting the adjacent side of said hanger, resilient means compressed between said sleeves, means on the threaded end of said bolt engaging one of said inner sleeves for urging said inner sleeves into engagement with the opposite sides of said hanger for movement therewith, said resilient means being operative to maintain said hanger against movement relative to said bracket and being placed in shear, during actuation of said hanger by an external force, to return said hanger to its initial position, and stop means comprising a radially extending member on one of the sleeves of each bushing engageable with the other sleeve of the bushing for limiting compression of said resilient means and also movement of said hanger radially outward of said bracket.

5. In a railway car truck, a frame having a brake hanger bracket comprising spaced parallel supporting members and a hanger extending therebetween, aligned openings in said members and hanger, bushings in the openings in said members, a retaining member extending through said bushings and the openings in said hanger and affording pivot means for said hanger, each of said bushings comprising a sleeve fixed to the associated supporting member and a sleeve surrounding said retaining member and having abutment with the adjacent side of said hanger, resilient means compressed between said sleeves, stop means comprising radially extending rigid

elements on the sleeves surrounding said retaining member cooperable with the sleeves fixed to said supporting members to limit compression of said resilient means upon lateral angling of said hanger, and means on said retaining member in engagement with the sleeves in abutment with opposite sides of said hanger and operative to urge the same into tight engagement to cause the same and said retaining member to rotate as a unit during lateral angling of said hanger for placing said resilient means in shear.

6. In a railway car truck, a frame having a brake hanger bracket comprising spaced parallel supporting members, a hanger extending therebetween, aligned openings in said members and said hanger, a bushing in the opening in each member and comprising an outer sleeve fixed to said member, an inner sleeve having an annular radially outwardly extending flange abutting the adjacent side of said hanger and loosely received within the associated outer sleeve, and resilient means compressed between said sleeves, said flanges serving to position said resilient means and being engageable with the internal surfaces of said outer sleeves to limit compression of said resilient means during lateral angling or radial movement of said hanger, a retaining member extending through said inner sleeves and having abutment means at opposite ends thereof in engagement with said inner sleeves urging said inner sleeves into engagement with opposite sides of said hanger, whereby said hanger, retaining member, and said inner sleeves are movable as a unit during movement of said hanger relative to said bracket to further compress said resilient members or to place said members in shear to return said hanger to its initial position.

7. In a railway car truck, a frame having an integral brake hanger bracket comprising spaced parallel supporting members, a brake hanger extending between said members, a bolt extending through aligned openings in said members and hanger, a bushing in the opening in each member and comprising telescoping sleeves with the outer sleeve fixed to said member and the inner sleeve surrounding said bolt and abutting the adjacent side of said hanger, a tubular resilient member compressed between said sleeves, flanges on respective sleeves in engagement with opposite ends of said tubular member, the flanges on one of the sleeves of each bushing being engageable with the associated other sleeve of the bushing to limit compression of said resilient member upon lateral angling of said hanger, and means on the threaded end of said bolt in engagement with one of said inner sleeves and a head on said bolt in engagement with the other of said inner sleeves, said inner sleeves, bolt, and means and said hanger being rotatable as a unit relative to said bracket and said outer sleeves for placing said resilient members in shear.

8. In a railway car truck, a frame having a brake hanger bracket comprising spaced parallel depending members, aligned openings in said members, a bushing in each opening comprising an outer and an inner sleeve, a hanger between said bushings in abutment at opposite sides thereof with the inner sleeves of the respective bushings, resilient means compressed between the sleeves of each bushing, securing means extending through said inner sleeves of said bushings and said hanger, and means on the opposite ends of said securing means engaging the remote ends of said inner sleeves for drawing said inner sleeves

tightly against the opposite sides of said hanger for movement therewith, said resilient means being operative to normally maintain said hanger against movement relative to said bracket and during actuation of said hanger by an external force being placed in shear to return said hanger to its initial position.

9. In a railway car truck, a frame having a brake hanger bracket comprising spaced depending supports, a brake hanger extending between said supports, a pivot member extending through aligned openings in said supports and said hanger, bushings in the openings of said supports and sleeved over said member, each of said bushings comprising a pair of telescoping tubular elements, and resilient means compressed therebetween, the outer elements of said bushings being fixed to the associated supports and the inner elements having engagement with abutment means on said member operative to urge the same into tight engagement with opposite sides of said hanger to permit movement of said hanger, said member and said last-mentioned elements as a unit during lateral angling of said hanger.

10. In a railway car truck, a frame having an integral brake hanger bracket comprising spaced parallel supporting members, a brake hanger extending between said members, a bolt extending through aligned openings in said members and hanger, a bushing in the opening in each member and comprising telescoping sleeves with the outer sleeve fixed to said member and the inner sleeve surrounding said bolt and abutting the adjacent side of said hanger, a tubular resilient member compressed between said sleeves, and means threaded on said bolt in engagement with the adjacent inner sleeve for urging the head of said bolt into engagement with the other inner sleeve and said inner sleeves into tight engagement with the opposite sides of said hanger for movement therewith during lateral angling of said hanger.

11. In a railway car truck, a frame having a brake hanger bracket comprising a pair of supports, a brake hanger extending between said supports, pivot means extending through aligned openings in said supports and said hanger, bushings in the openings in respective supports and sleeved over said pivot means, each of said bushings comprising telescoping tubular members and resilient means under compression therebetween, the inner members of said bushings being fixed to said pivot means and said hanger and the outer members being fixed to said supports, and stop means on said inner members comprising radially extending rigid elements disposed within and engageable with said outer members to limit radial outward movement of said hanger.

12. In a railway car truck, a frame having a brake hanger bracket comprising a pair of supports, a brake hanger extending between said supports, pivot means extending through aligned openings in said supports and said hanger, bushings in the openings in respective supports and sleeved over said pivot means, each of said bushings comprising telescoping tubular members and resilient means under compression therebetween, the inner members of said bushings being fixed to said pivot means and said hanger and the outer members being fixed to said supports, and

stop means on each inner member comprising radially extending rigid elements disposed within and engageable with the associated outer member to limit lateral angling of said hanger in the plane of said pivot means.

13. In a railway car truck, a frame having a brake hanger bracket comprising spaced means, a hanger extending therebetween, aligned openings in said means and said hanger, a bushing fixed in the opening in each of said means and comprising telescoping relatively rotatable members and a resilient member under compression therebetween, a pivot member extending through the inner members of said bushings and the opening in said hanger and having means associated therewith adapted to maintain said hanger and said inner members in fixed relationship for movement as a unit during lateral angling of said hanger to place said resilient members under compression, and annular flanges on said inner members loosely received within the outer members of the respective bushings for abutment thereagainst to limit the compression of said resilient members.

14. In a railway car truck, a frame having a brake hanger bracket comprising a pair of supports, a brake hanger extending between said supports, a pivot member extending through aligned openings in said supports and said hanger, a bushing in the opening in each support and sleeved over each member, said bushing comprising spaced telescoping members, one of said telescoping members being fixed to said support and the other of said telescoping members being fixed to said pivot member and said hanger for movement therewith, resilient means under compression between said telescoping members, and stop means on similar members of the respective bushings comprising rigid elements extending toward the other of said members of said bushings for abutment thereagainst to limit compression of said resilient means.

15. In a railway car truck, a frame having a brake hanger bracket comprising a pair of supports, a brake hanger extending between said supports, pivot means extending through aligned openings in said supports and said hanger, and bushings in the openings in respective supports and sleeved over said pivot means, each of said bushings comprising telescoping tubular members and resilient means under compression therebetween, the inner members of said bushings being fixed to said pivot means and said hanger and the outer members being fixed to said supports, and radially extending projections on one of the members of each bushing engageable with the other of said members of the bushing for limiting compression of said resilient means.

WALTER H. BASELT.

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