Sept. 25, 1934. J D. PRESLEY 1,974,628

CLAMP

Filed April 16, 1932

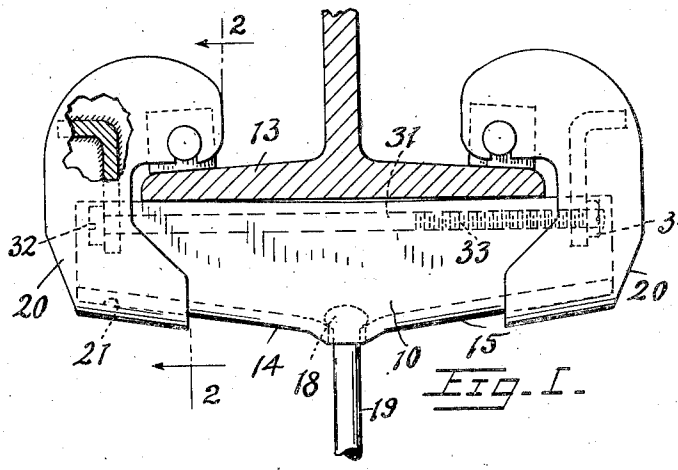


Fig. 1.

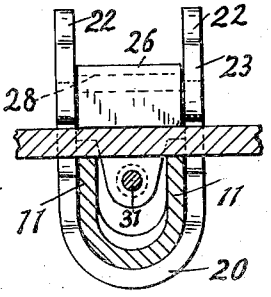


Fig. 2.

Fig. 3.

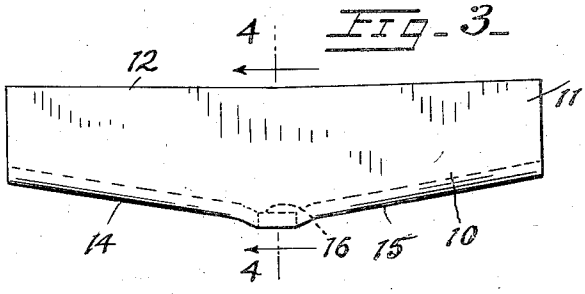
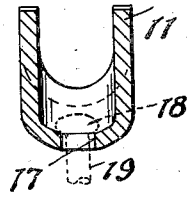


Fig. 4.



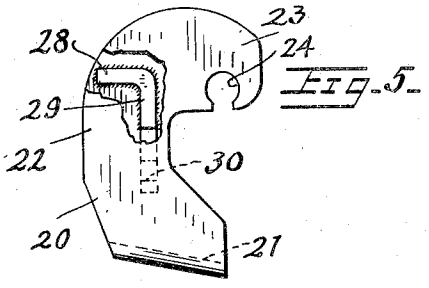


Fig. 5.

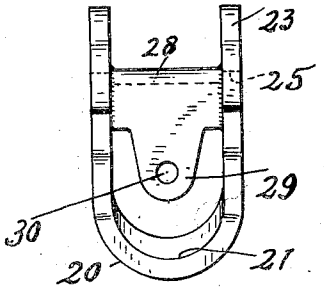


Fig. 6.

Fig. 7.

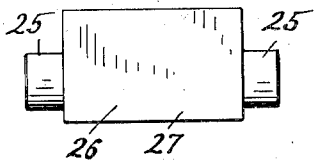
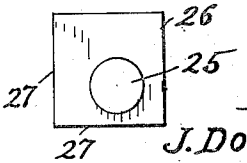


Fig. 8.



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1,974,628

CLAMP

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Application April 16, 1932, Serial No. 605,691

11 Claims. (Cl. 248—32)

This invention relates to beam clamps for use generally with I-beams or other flanged superstructures and which are particularly adapted for attaching flexible hangers for suspending the tracks of an overhead system, the invention having for one of its objects to provide a clamp of improved construction which, when secured to the flanges of the beam or other structure, is effectively held against creeping movement therealong.

Another object of the present invention is to produce a clamp having so-called universal adaptation, or one which may be used with beams having flanges of various widths and thicknesses within certain predetermined limits.

Another object of the invention is to produce a clamp which is simple in construction, efficient in operation and inexpensive to manufacture.

Further and additional objects and advantages residing in the invention will become apparent hereinafter during the detailed description of an embodiment of the invention which is to follow and whch is illustrated in the accompanying drawing.

Referring to the drawing:

Figure 1 is a transverse section through a beam showing in side elevation a clamp embodying the present invention attached to the beam;

Fig. 2 is a transverse sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a side elevational view of the hanger bar of the clamp;

Fig. 4 is a transverse sectional view taken on line 4—4 of Fig. 3;

Fig. 5 is a side elevational view of one of the clips of the clamp with a portion broken away to show the details of construction.

Fig. 6 is a side elevational view of the clip shown in Fig. 5;

Fig. 7 is a front view of the adjustable block; and

Fig. 8 is a side view of the block shown in Fig. 7.

Referring to the drawing, the clamp includes a channel-shaped hanger bar 10 which has parallel side flanges 11 and upper slightly concave surfaces 12 adapted to engage one side, preferably the lower or under, of a beam flange 13 at point contact to afford a more rigid securing, as will be later explained.

The hanger bar 10 has wedge-shaped ends gradually increasing in depth toward the center of the bar and in transverse cross-section are rounded to provide oppositely inclined bottom surfaces 14 and 15. At the center of the bar 10 there is a depressed seat 16 which has a central opening 17 and this seat is adapted to support the rounded head 18 of a hanger rod 19. The rod 19 extends through the opening 17, which is somewhat larger in diameter than the rod, to permit the latter to swing in substantially any direction within the limits permitted by the opening. The hanger rod 19 forms a support for a suspended track (not shown) which may be attached to the rod in any suitable manner.

The hanger bar 10 is preferably of uniform width from end to end and the inclined bottom surfaces 14 and 15 are of uniform transverse curvature. The bar 10 is adapted to be secured against the outer side of the beam flange 13 by means of clips 20 which are U-shaped and formed to fit upon the exterior of the bar 10, the clips 20 also having inclined bottom portions 21 engageable with the inclined bottom surfaces 14 and 15 of the bar 10 and slidable therealong. The clips 20 further have upwardly extending sides 22 which overlie the flanges 11 of the bar 10 and at their upper ends the sides 22 have inwardly extending integral projections or lugs 23. The lugs 23 are provided with aligned openings 24 near the lower portion thereof which pivotally receive trunnions 25 formed upon the opposite ends of a bearing block or member 26, which is disposed between the lugs 23 and is engageable with the opposite side of the beam flange 13 from that engageable by the hanger bar 10. The bearing blocks 26 have a plurality of substantially flat contacting faces 27, four of which are herein shown extending at right angles to each other, which lie in planes at various distances from the pivotal axis of the trunnions 25. In other words, the axis of the trunnions 25 is eccentric with respect to the planes of the contacting faces 27 and the block 26, being adjustable about the axis of the trunnions 25, presents contacting faces of different distances from the axis. These contacting faces 27, being engageable with the beam flange 13, permit the clamps to be adapted for use with different size beams and different thicknesses of flanges by merely rotating the bearing member or block 26 after selecting the desired contacting face for the size of the beam used.

The clips 20 have inverted L-shaped members 28 welded or otherwise secured to the inner surfaces of the sides 22 to maintain the clips in assembled relation and the L-shaped members 28 have depending extensions 29 provided with aligned openings 30 slightly below the top surfaces 12 of the bar 10. These openings 30 are adapted to receive a bolt 31 which extends lon-

gitudinally of the bar 10 and within the channel thereof. The bolt 31 is provided at one end with a head 32 which engages the extension 29 of one of the clips 20 and at its opposite end has a threaded portion 33 which receives a nut 34 adapted to bear against the extensions 29 of the other clip 20.

When the clamp is applied to an I-beam, the hanger bar 10 is positioned beneath the beam flange 13 and the clips 20 are positioned around the ends of the beam flange so that the bearing blocks 26 contact with the opposite side of the beam flange and the bolt 31 is then rotated to draw the clips 20 toward each other. During the inward movement of the clips 20 the bearing blocks 26 engage the inner surface of the beam flange and tend to draw the clips and hanger bar 10, supported by the clips, upwardly toward the beam. At the same time the inclined portion 21 of the clips 20, sliding on the inclined portions 14 and 15 of the hanger bar 10, tends to crowd the hanger bar upwardly towards the beam. When the clips are tightened the flange of the I-beam is very tightly clamped between the bearing blocks 26 and the upper surfaces 12 of the hanger bar 10 by reason of the wedging action between the clips 20 and the hanger bar 10, so that a heavy gripping pressure is exerted upon the beam flange and the clamp is securely anchored against creeping movement along the beam.

By reason of the fact that the clips 20 are movable or slidable along the hanger bar 10, the clamp may be applied to beams having flanges of various widths and, in view of the plurality of contacting faces provided upon the bearing blocks 26, adjustability of these blocks to present different contacting faces enables the clamp to be attached to flanges or other suitable structures of various thicknesses.

While I have described the preferred embodiment of the invention, it is to be understood that I am not to be limited thereto inasmuch as changes and modifications may be resorted to without departing from the spirit of the invention as defined in the appended claims.

Having thus described my invention I claim:

1. A clamp for beams and the like comprising a hanger bar engageable with one side of a beam flange, clips on said hanger bar, bearing members adjustably mounted on said clips and provided with a plurality of surfaces selectively engageable with the opposite side of the beam flange, and means for rigidly drawing said bearing members and hanger bar into engagement with said beam flange.

2. A clamp for beams and the like comprising a hanger bar engageable with one side of a beam flange, clips on said hanger bar, adjustable bearing members pivotally mounted on said clips and provided with a plurality of surfaces selectively engageable with the opposite side of the beam flange, and means for rigidly drawing said bearing members and hanger bar into engagement with said beam flange.

3. A clamp for beams and the like comprising a hanger bar engageable with one side of a beam flange, clips on said hanger bar, bearing members pivotally mounted on said clips on an axis transversely thereof and provided with a plurality of surfaces selectively engageable with the opposite side of the beam flange, and means for rigidly drawing said bearing members and hanger bar into engagement with said beam flange.

4. A clamp for beams and the like comprising a hanger bar engageable with one side of a beam flange, clips on said hanger bar, bearing members having a plurality of substantially flat faces and pivotally mounted on said clips, said faces being selectively engageable with the opposite side of the beam flange, and means for rigidly drawing said bearing members and hanger bar into engagement with said beam flange.

5. A clamp for beams and the like comprising a hanger bar engageable with one side of a beam flange, clips on said hanger bar, bearing members having a plurality of substantially flat faces and pivotally mounted on said clips on an axis eccentric with respect to said faces, said faces being engageable with the opposite side of the beam flange, and means for rigidly drawing said bearing members and hanger bar into engagement with said beam flange.

6. A clamp for beams and the like comprising a hanger bar engageable with one side of a beam flange, clips slidably mounted on said hanger bar, bearing members adjustably mounted on said clips and provided with a plurality of surfaces selectively engageable with the opposite side of the beam flange, and means for drawing said clips toward each other to rigidly secure said beam flange between said bearing members and said hanger bar.

7. A clamp for beams and the like comprising a hanger bar engageable with one side of a beam flange, clips slidably mounted on said hanger bar, bearing members having a plurality of substantially flat faces and pivotally mounted on said clips, said faces being selectively engageable with the opposite side of the beam flange, and means for drawing said clips toward each other to rigidly secure said beam flange between said bearing members and said hanger bar.

8. A clamp for beams and the like comprising a hanger bar engageable with one side of a beam flange, clips slidably mounted on said hanger bar, bearing members having a plurality of substantially flat faces and pivotally mounted on said clips on an axis transverse with respect to the direction of movement of said clips, said faces being selectively engageable with the opposite side of the beam flange, and means for drawing said clips toward each other to rigidly secure said beam flange between said bearing members and said hanger bar.

9. A clamp for beams and the like comprising a hanger bar engageable with one side of a beam flange, clips slidably mounted on said hanger bar, bearing members having a plurality of substantially flat faces and pivotally mounted on said clips on an axis transverse with respect to the direction of movement of said clips and eccentric with respect to said faces, said faces being engageable with the opposite side of the beam flange, and means for drawing said clips toward each other to rigidly secure said beam flange between said bearing members and said hanger bar.

10. A clamp for beams and the like comprising a hanger bar engageable with one side of a beam flange and having oppositely tapered surfaces, clips having tapered surfaces engageable with the tapered surfaces of said hanger bar and slidably mounted on the latter, bearing members adjustably mounted on said clips and provided with a plurality of surfaces selectively engageable with the opposite side of the beam flange, and means for drawing said clips toward each other to rigidly secure said beam flange between said bearing members and said hanger bar.

11. A clamp for beams and the like comprising a hanger bar engageable with one side of a beam flange and having oppositely tapered surfaces, clips having tapered surfaces engageable with the tapered surfaces of said hanger bar and slidably mounted on the latter, bearing members having a plurality of substantially flat faces and pivotally mounted on said clips on an axis eccentric with respect to said faces, said faces being engageable with the opposite side of the beam flange, and means for drawing said clips toward each other to rigidly secure said beam flange between said bearing members and said hanger bar.

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