

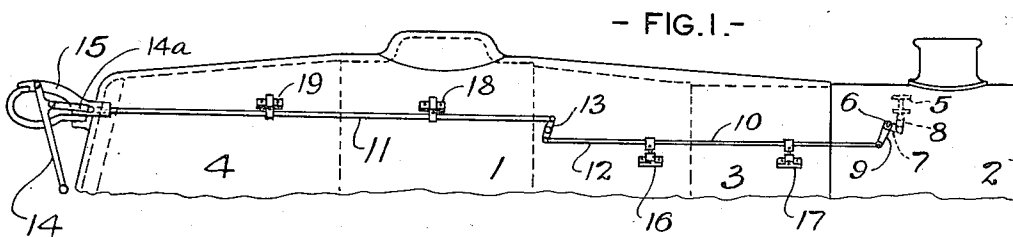
March 10, 1936.

J. G. BLUNT

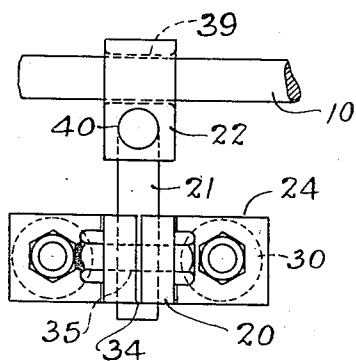
2,033,109

ROD AND SUPPORTING MEANS THEREFOR

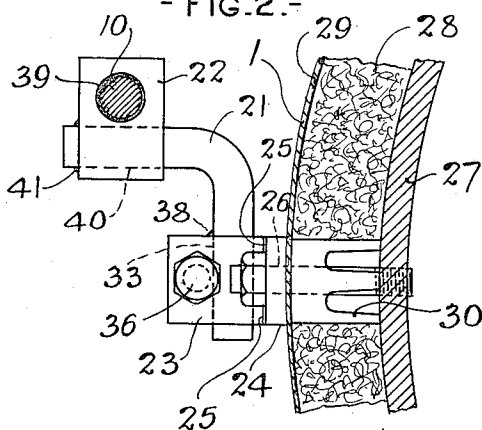
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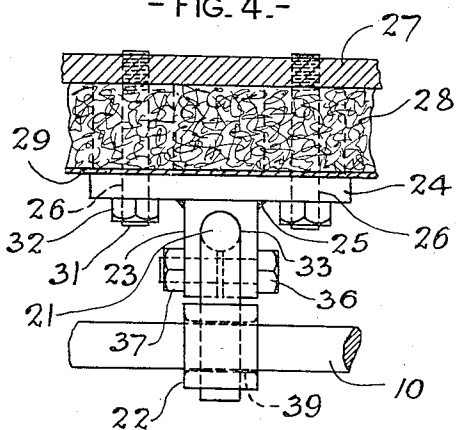
- FIG. 3.-



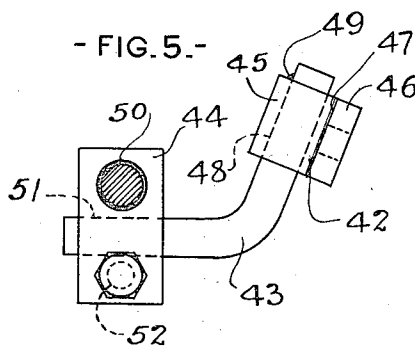
- FIG. 2.-



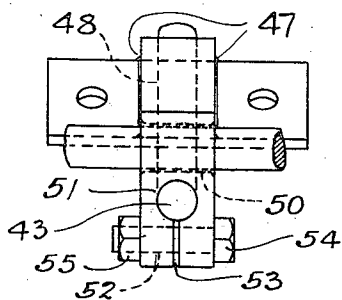
- FIG. 4.-



- FIG. 5.-



- FIG. 6.-



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ROD AND SUPPORTING MEANS THEREFOR

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2 Claims. (Cl. 248—251)

This invention relates to rods and supporting means therefor and to the supports for movable rods and especially to such supports employed in connection with a rod adapted for longitudinal movement such as a throttle operating rod of a steam locomotive.

An object of this invention is to provide an improved rod support adapted for attachment to a surface and adjustable for supporting a rod at all angular as well as different vertical and lateral positions relative to said surface.

A further object is to provide a plurality of supports of the character last described in connection with a surface, such as the outer surface of a steam locomotive boiler, to various parts of which surface the supports are attached, and in connection with a rigid rod, such as a throttle operating rod, which rod is supported by said supports, whereby, by adjustment, the supports are readily alignable so as to accommodate the rigid rod regardless of irregularity and disalignment of the various parts of the surface.

A further object is to provide supports of the character described which are characterized by sturdiness and simplicity, are constructed of a minimum number of parts and are capable of being assembled with ease.

Various other objects of and advantages achieved by this invention will be apparent from the following description of approved embodiments thereof which are illustrated in the accompanying drawing.

In the drawing: Figure 1 is an elevation of a portion of a locomotive, with the throttle rod and rod supports embodying the invention applied thereto; Fig. 2 is an enlarged end view of one of the supports shown in Fig. 1, showing the throttle rod and a fragment of the locomotive boiler in transverse section; Fig. 3 is an elevation of the support shown in Fig. 2, with the throttle rod shown fragmentally; Fig. 4 is a plan view of the support shown in Fig. 2, with the throttle rod shown fragmentally and a fragment of the boiler shown in longitudinal section; Fig. 5 is an enlarged end view of another of the supports shown in Fig. 1, of a modified form, with the throttle rod shown in transverse section; and Fig. 6 is an elevation of the support shown in Fig. 5, with the throttle rod shown fragmentally.

Referring particularly to Fig. 1, the locomotive in connection with which the present invention is exemplified comprises a boiler indicated generally by the numeral 1, and a smoke box 2 disposed at the forward end of the boiler. The boiler includes a barrel section 3 which converges forwardly and a firebox section 4 which converges rearwardly, thus exemplifying a surface to which the various supports are attached, the various parts of which surface are irregular and in disalignment.

A throttle valve 5 and a throttle rocker shaft 6 are provided in the smokebox. An arm 7 is carried by the shaft 6 and is connected by a link 8 with the throttle valve. An arm 9 is secured on the end of the shaft 6 at the outside of the locomotive boiler. A throttle operating rod 10, which is made in two sections 11 and 12, extends along the side of the boiler on the outside thereof. An equal-armed lever 13 is interposed between and pivotally connected at its opposite ends to the adjacent ends of the sections 11 and 12 and is fulcrumed between its ends to the boiler. The throttle rod is pivotally connected at its forward end with the free end of the arm 9 and at its rear end is connected by a link 14a with a throttle lever 14, which lever is fulcrumed to a bracket 15 which is secured to the back head of the boiler, the throttle rod moving through a suitable guide formed on the bracket. It will be apparent that movements of the lever 14 about its fulcrum will effect longitudinal movements of the rod 10 so as to operate the throttle valve.

All of the aforescribed parts are of the usual well-known design.

For slidably supporting the throttle rod, supports 16, 17, 18, and 19 are provided at intervals along the side of the boiler.

One embodiment of the support is shown in Figs. 2, 3, and 4 and comprises essentially three parts, a bracket 20, a rod 21 which is bent at an angle and a guide block 22. The bracket 20 includes a rectangularly shaped body portion 23 and a flange 24 secured thereto by welds 25 (see Fig. 4). The body portion and flange may of course be of one-piece formation if desired. Stud holes 26 are formed in the flange 24 at the opposite sides of the body portion.

The boiler, being of usual construction, comprises a shell 27, lagging 28 surrounding the shell, and a jacket 29. Filling pieces or thimbles 30 are disposed in the lagging between the shell and jacket, and studs 31 are tapped into the shell and extend through the filling pieces and jacket and through the holes 26. Nuts 32 are provided on the outer ends of the studs, thus securing the bracket to the boiler.

A vertical cylindrical hole 33 is formed in the body portion 23 and a slot 34 is also formed therein and extends outwardly therethrough from the hole 33. A bolt hole 35 is also formed in the body

portion outwardly from and extending at a right angle to the hole 33 across the slot.

One end portion of the rod 21 is passed through the hole 33. The rod 21 may be adjusted upwardly or downwardly as well as swung pivotally in the hole 33 and when said rod has been adjusted to its proper position, nuts 37 are drawn up on a bolt 36 which has been passed through the hole 35, thus securely clamping said rod in this position. To ensure further rigidity of the adjustment a spot weld 38 is preferably made, which joins the rod 21 and the body portion 23.

The other end portion of the rod 21 extends outwardly from the bracket and the rod is of sufficient length to provide the desired amount of adjustment both vertically relative to the bracket in the manner just described, and horizontally for the block 22 relative thereto in the manner which will presently be described.

The block 22 is of rectangular shape and is provided with two cylindrical holes 39 and 40 which are formed therein at a right angle to each other. The outwardly extending portion of the rod 21 extends through the hole 40 and the throttle rod 10 extends through the hole 39, the latter hole being of sufficient diameter to permit free longitudinal movement of the throttle rod therethrough.

The block 22 may be adjusted inwardly and outwardly relative to the boiler by moving it axially of the portion of the rod 21 which extends therethrough, and may also be rotated about this rod portion. When the correct adjustment of the block has been obtained it is secured against further movement or displacement by spot welds 41 which join the block 22 and rod 21.

A second embodiment of the invention which is interchangeable with the first described embodiment is illustrated in Figs. 5 and 6 and comprises a bracket 42, a rod 43 which is bent at an angle greater than the angle of the rod 21, and a block 44.

The bracket 42 includes a rectangularly shaped body portion 45 and a flange 46 which is secured thereto by welds 47. The body portion 45 is provided with a single cylindrical hole 48 which corresponds to the hole 33 and through which one end portion of the rod 43 is passed. The rod 43 may of course be adjusted either vertically or pivotally in the hole 48 and when the correct adjustment has been obtained it is secured in position by a spot weld 49 which joins it to the body portion.

The block 44 has three cylindrical holes 50, 51 and 52 formed therein. The holes 50 and 52 are parallel to each other and are disposed at opposite sides of and extend at right angles to the hole 51. A slot 53 is formed in the block 44 and extends outwardly through the block from the hole 51 crossing the hole 52.

The rod 43 extends downwardly and outwardly from the bracket 42 and its outer end portion is passed through the hole 51. The throttle rod 10 is passed through the hole 50 which is of sufficient diameter to permit free longitudinal movement of the throttle rod therethrough. The block 44 may be adjusted inwardly and outwardly relative to the boiler by moving it axially of the portion of the rod 43 on which it is carried, and may be also rotated about this portion. When the correct adjustment of the block 44 has been obtained a nut 55 is drawn up on a bolt 54 which has been passed through the hole 52, the block 44 being thus secured in position. A spot weld or welds may also be made if desired, to join the block 44

to the rod 43 and further secure these parts against relative movement or displacement.

While the blocks (22, 44) of the two aforescribed embodiments are shown positioned with the throttle rod supported above the extended portions of the respective bent rods (21, 43), either of the blocks may be rotated a half turn so as to support the throttle rod below this portion of the bent rod of the support if such adjustment proves convenient. Also in either of the aforescribed embodiments the bent rod may of course be extended either upwardly or downwardly from its respective bracket as desired. The bent rod may be given any desired angle, two angles being shown, to best accommodate it to its particular position along the surface to which the support is connected, in the case of a boiler, as shown, the sharper bend being preferably employed nearest the longitudinal center line of the boiler. The blocks 22 and 44 are interchangeable.

It will be noted that brackets of the supports 16 and 17 are illustrated as being disposed below the throttle rod and the brackets of the supports 18 and 19 as disposed above the throttle rod in Fig. 1.

It will be apparent that with respect to both of the embodiments aforescribed the blocks may be adjusted to accommodate all angular positions of the throttle rod relative to the surface to which a particular support is secured by turning the bent rods (21, 43) in their respective bracket holes (33, 48) to take care of angularity in a horizontal direction, and by swivelling the blocks (22, 44) on their respective bent rods to take care of angularity in a vertical direction. Also the blocks may be adjusted for different vertical positions of the throttle rod relative to said surface by raising or lowering the bent rods in their respective bracket holes and for different relative inward and outward positions by moving the blocks inwardly or outwardly on their respective extended bent rod portions.

More briefly it will be apparent that this invention provides an adjustable rod support which may be secured to a surface and adjusted to support a rod at all angular positions and at different vertical and horizontal positions relative to said surface. Furthermore the provision of a plurality of the supports of this invention in connection with a surface having irregular and disaligned portions to which the supports are respectively attached permits the guide blocks of the several supports to be readily positioned and aligned as desired regardless of such irregularity and disalignment of the surface portions. Also it will be apparent that the supports of this invention are characterized by sturdiness and simplicity, that they comprise a minimum number of parts and that they are capable of being assembled with ease.

It will be obvious that supports may be employed as bearings for rotating rods as well as for longitudinally movable rods such as the throttle rod described or for supporting an immovable rod. In the latter instance the guide blocks could of course be rigidly engaged with the supported rod if desired, as for instance by welding.

It will of course be understood that the adjusting and securing of the parts of the support in fixed positions will be accomplished at the most suitable time either previous to or after the rod has been positioned. In usual practice however the brackets will be secured to the surface before

the rod is positioned and by virtue of the present invention providing the plurality of adjustments less care need be given as to definite placements of the brackets.

5 While particular embodiments of this invention have been hereinbefore described it will be apparent that many and various changes and modifications may be made without departing
10 from the spirit of the invention, and it will be understood that all such changes and modifications as fall within the scope of the appended claims are contemplated as a part of this invention.

15 The invention claimed and desired to be secured by Letters Patent is:

1. A bracket for supporting a throttle rod or the like at a side of a locomotive, comprising a rod-engageable member having a cylindrical orifice open at both ends for engaging said rod to
20 provide a working, sliding fit therewith, whereby said rod can be moved relative to said member in a direction longitudinally of the axis of said orifice and will be held against moving relative to said member in a direction transversely of said
25 axis; a locomotive-engageable member adapted to be secured in fixed position to said side of said locomotive, each of said members having a cylindrical opening formed therein; an angular member in engagement with said rod-engageable member and in engagement with said locomotive-engageable member provided with two
30 cylindrical legs, one of said legs being disposed in said opening in said rod-engageable member to provide said engagement therewith, and the other of said legs being disposed in said opening in said locomotive-engageable member to provide said engagement therewith; and separate means for rigidly securing each of said legs with its respective engaged member, said first mentioned
40 engagement being adapted to permit movement of said rod-engageable member relative to said leg engaged therewith, prior to the application thereto of said securing means, in directions longitudinally of and about the axis of said leg engaged therewith, and said second mentioned engagement being adapted to permit movement of
45 said leg engaged with said locomotive-engageable member relative to said locomotive-engageable member, prior to the application thereto of said securing means, in directions longitudinally of and about its axis, whereby by selective effect-

ing of said movements said rod-engageable member may be accurately adjusted to a position, relative to said position for said locomotive-engageable member, to effect positioning of said
5 cylindrical orifice for engagement with said rod, to provide for said working, sliding fit between said rod-engageable member and said rod.

2. A bracket for supporting a throttle rod or the like at a side of a locomotive, comprising a rod-engageable member having a cylindrical
10 orifice open at both ends for engaging said rod to provide a working, sliding fit therewith, whereby said rod can be moved relative to said member in a direction longitudinally of the axis of said orifice and will be held against moving relative to said member in a direction transversely of
15 said axis; a locomotive-engageable member adapted to be secured in fixed position to said side of said locomotive, each of said members having a cylindrical opening formed therein; and an angular member in engagement with said rod-engageable member and in engagement with said locomotive-engageable member provided
20 with two cylindrical legs, one of said legs being disposed in said opening in said rod-engageable member to provide said engagement therewith, and the other of said legs being disposed in said opening in said locomotive-engageable member to provide said engagement therewith, each of
25 said legs being rigidly secured by a weld with its respective engaged member, said first mentioned engagement being adapted to permit movement of said rod-engageable member relative to said leg engaged therewith, prior to the application of said weld therebetween, in directions longitudinally of and about the axis of said leg engaged therewith, and said second mentioned engagement being adapted to permit movement of
30 said leg engaged with said locomotive-engageable member relative to said locomotive-engageable member, prior to the application of said weld therebetween, in directions longitudinally of and about its axis, whereby by selective effecting of said movements said rod-engageable member may be accurately adjusted to a position, relative to said position for said locomotive-engageable member, to effect positioning of said cylindrical orifice for engagement with said rod, to provide for said working, sliding fit between said
40 rod-engageable member and said rod.

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