

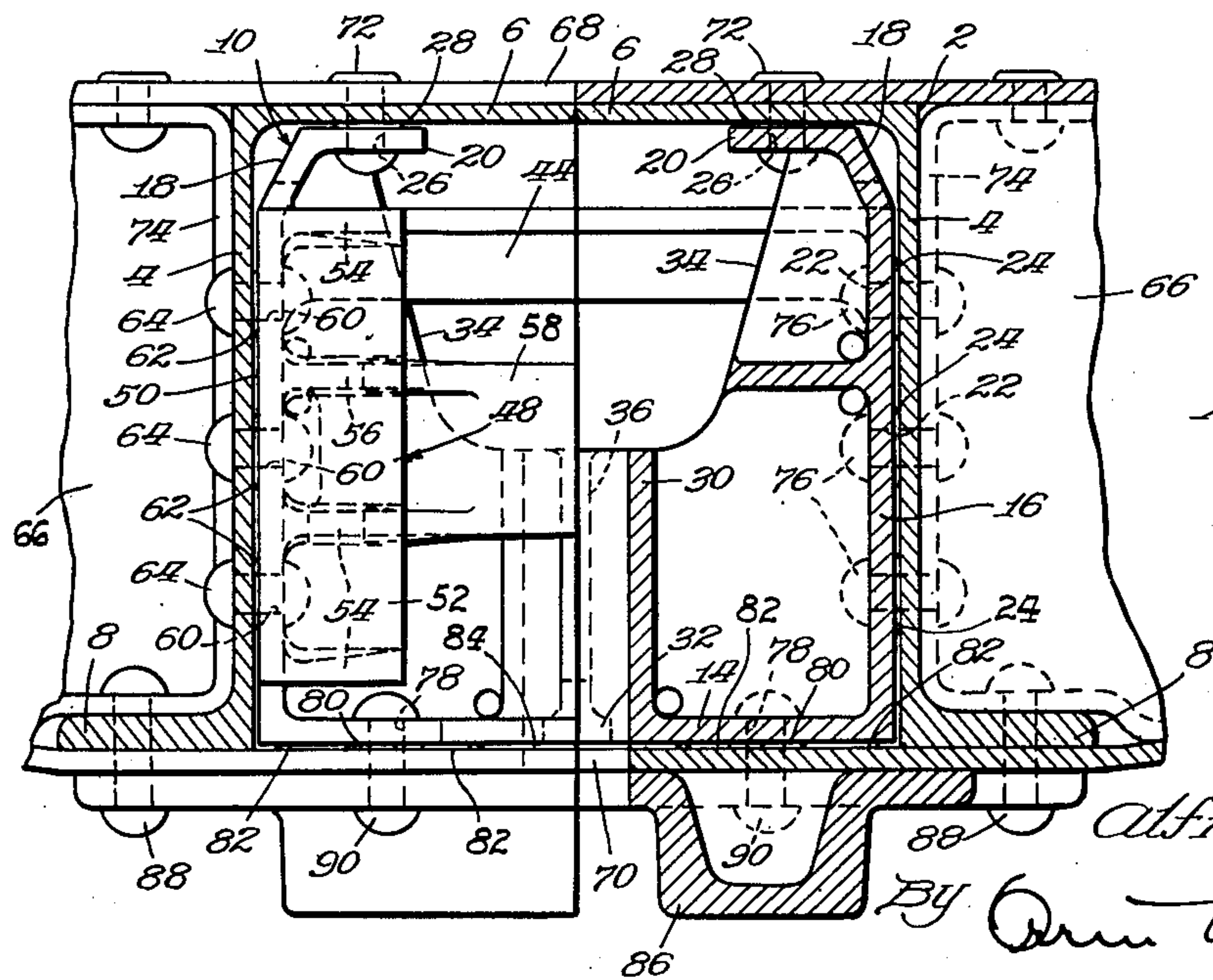
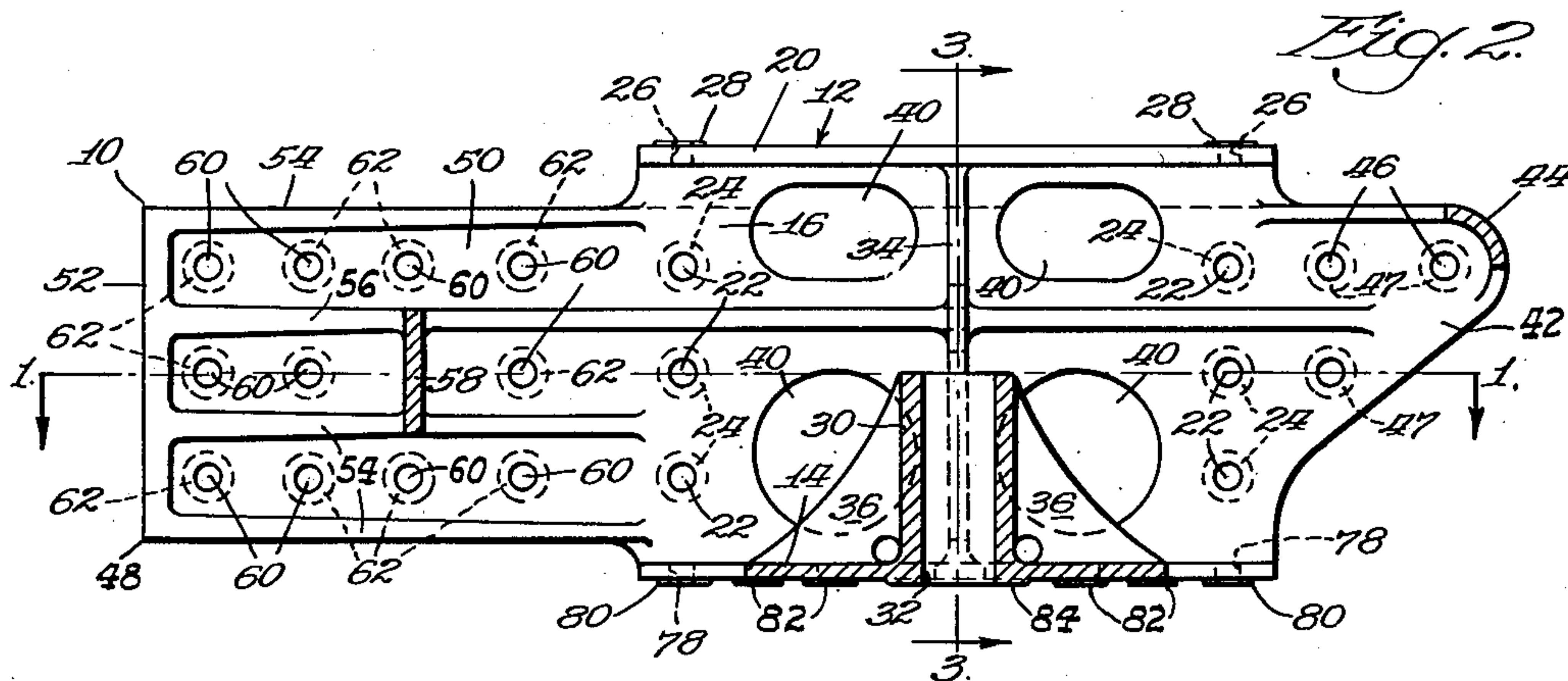
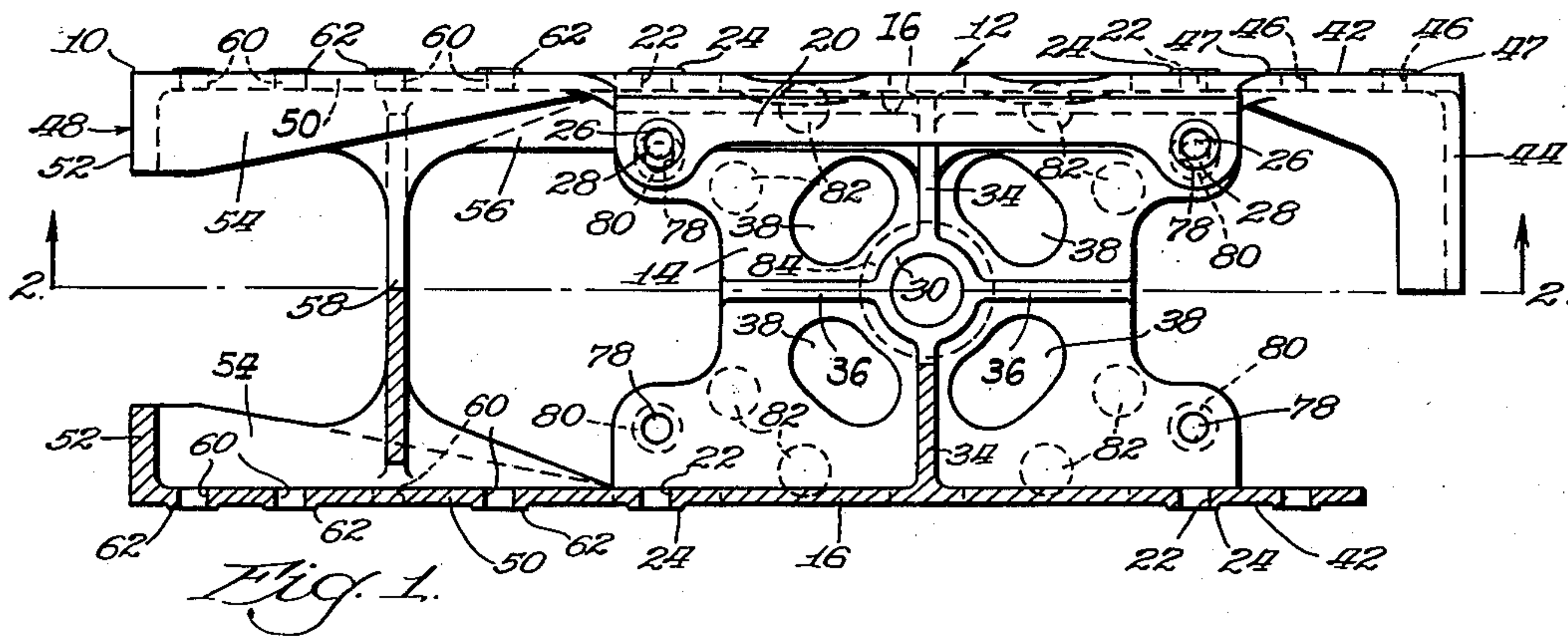
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CENTER FILLER

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CENTER FILLER

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This invention relates to improvements in the underframes of railway cars, and more particularly to that portion of the underframe in the region of the center sill and body bolster which involves the bolster center brace or filler and rear draft lug structure.

The object of the invention is to provide a structure such as described which will meet all requirements in service and which may be readily applied to a center sill of a car body underframe and connected to associated parts.

This and other objects of the invention will be apparent from the specification and drawings, wherein:

Figure 1 is a top plan view of a center sill and rear draft lug structure embodying the features of my invention with the lower half being shown in horizontal section taken substantially in the plane indicated by line 1—1 of Figure 2;

Figure 2 is a vertical longitudinal sectional view of the structure shown in Figure 1, the view being taken substantially in the plane indicated by line 2—2 of Figure 1; and

Figure 3 is a fragmentary view of the car body underframe in the region of the center sill and car body bolster with the combined center filler and rear draft lug structure applied thereto, the left half of Figure 3 showing the body bolster in side elevation, the center sill in transverse vertical section, and the structure in end elevation, and the right half of Figure 3 showing the structure in transverse vertical section taken substantially on line 3—3 of Figure 2, the body bolster in longitudinal vertical section, and the center sill in transverse vertical section.

The invention is illustrated in connection with a center sill, generally designated 2 (Figure 3), of the type which comprises two pieces of Z section having vertical webs 4, 4 with their upper horizontal flanges 6, 6 turned inwardly and joined together by welding to form a top wall and with their lower flanges 8, 8 extending horizontally outwardly so that the whole center sill is of an inverted channel U-shape in section.

Within the center sill is disposed a center filler and rear draft lug structure, generally designated 10, and as best shown in Figures 1 and 2, comprising a single casting having adjacent its rear extremity a housing forming the center filler proper, generally indicated at 12, said housing including a horizontal bottom wall 14 and spaced vertical side walls 16, 16 integral with said bottom wall, the side walls having their upper ends inclined inwardly of the housing as at 18, 18 to avoid corner abutment with the center sill as clearly shown in Figure 3, thus avoiding machin-

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ing of the corners formed by the upper flanges 6 and vertical webs 4 of said center sill. The upper ends of the side walls 16, 16 are provided with inturned horizontally extending flanges 20, 20.

To eliminate the necessity of machining the whole outer surface of each side wall in order to obtain a flat seat therefor against the inner faces of the respective webs 4 of the center sill, each side wall 16 is provided adjacent opposite ends thereof with a series of vertically spaced and aligned rivet hole openings 22, 22 formed with hollow bosses 24, 24 therearound, the bosses extending outwardly of the outer surface of the associated wall. The outer surfaces of these bosses 24, 24 are machined to provide coplanar surfaces and seat the opposite sides of the housing against the respective webs of the center sill.

Similarly, the flanges 20, 20 are provided at opposite ends thereof with rivet openings 26, 26 surrounded by upstanding bosses 28, 28 with coplanar machined outer surfaces which seat the structure against the upper flanges 6, 6 of the center sill.

A center or king pin holder 30 is formed centrally on said bottom wall of the housing intermediate the side walls 16, 16 and rises to about half-way the height of the housing. The king pin holder is preferably in the form of a hollow cylinder formed on the top surface of said bottom wall for reception of a king pin (not shown) therein through an axially aligned opening 32 (Figure 2) in said bottom wall of the housing.

The king pin holder is held upright and braced by vertical ribs 34, 34 extending transversely of the housing, the ribs 34, 34 being connected to said holder at diametrically opposite sides thereof, and merging at their lower ends with the top surface of the bottom wall of the housing and at their outer edges being joined to the inner faces of the respective side walls of the housing, and at their upper ends diverging away from each other and merging with the inner surfaces of the respective of the upper flanges 20 of the housing.

To further strengthen the connection between the pin holder and the bottom wall of the housing, a pair of coplanar ribs 36, 36 are disposed at right angles to said ribs 34, 34, said ribs 36, 36 being integrally connected with said holder at diametrically opposite sides thereof and merging at their lower ends with said top surface of the bottom wall of the housing.

The bottom wall of the housing is cored away with substantially oval-shaped openings as at 38, 38 (Figure 1) between each pair of adjacent

ribs 34 and 36 to lighten the structure. For a similar purpose the side walls are also cored away as at 40, 40.

Rearwardly of the housing the side walls are formed with luglike extensions 42, 42 intermediate the top and bottom edges thereof extending longitudinally of the housing and connected by a transverse tie member 44 serving to strengthen the rear portion of the structure. These extensions are also provided with rivet openings 46, 46 surrounded by outstanding bosses 47, 47 which have their outer surfaces machined and coplanar with the outer surfaces of the bosses 24, 24 on the respective side walls 16 of the housing.

Forwardly of the housing is formed the rear draft lug portion of the structure, generally designated 48, and comprising side webs 50, 50 each being coplanar with the respective side wall of the housing, said side webs merging at their rear edges with the forward edges of the respective side walls. The height of these webs 50, 50 is less than that of said side walls of the housing, the webs 50 being centered lengthwise between the top and bottom edges of said side walls and having their forward ends turned inwardly to form lugs 52, 52 serving as rear stops for an associated draft gear (not shown). The draft lug portion of the structure is strengthened by a plurality of spaced parallel gussets 54, 54 extending between each lug 52 and the associated web 50 and connecting the same and extending lengthwise on the respective webs 50 and terminating at the juncture between the webs 50 and the side walls of the housing.

Each wall 16 and associated web 50 is reinforced by a rib 56 formed on the inner side thereof and extending substantially the full length of the structure, the rib 56 merging at its forward end with the inner surface of the associated lug 52.

A tie member 58 extends between and merges at opposite ends with said webs 50, 50 and with the rib 56 and with an adjacent gusset 54 on each web.

The side webs 50, 50 of the rear draft lug portion of the structure are also provided with series of rivet openings 60, 60 and spaced longitudinally of the webs 50, 50. The openings in each series are vertically spaced from one another and in vertical alignment. Each opening 60 is surrounded by an outstanding boss 62 which has its outer face machined and coplanar with the outer surfaces of the bosses on the associated side wall of the housing.

Thus, it will be noted that the outer surfaces on the bosses 24, 24, 47, 47 and 62, 62 on each side wall and extension and associated side web are coplanar and afford the only seating for the structure against the respective webs 4, 4 of the center sill and that the bosses 28, 28 on the flanges 20, 20 afford the only seating for the structure against the center sill flanges 6, 6.

The structure 10 is retained in the center sill by rivets 64, 64 extending through the rivet openings 60, 60 in said side webs and aligned openings in said webs 4, 4 of the center sill.

At opposite sides of the center sill extends a body bolster of the type having flanged diaphragms 66 spaced apart and extending laterally from each side of the center sill and having top and bottom plates 68 and 70 which extend across the top and bottom, respectively, of the center sill.

It will be noted that the upper flanges 20, 20 of the housing are secured to the upper flanges 6, 6 of the center sill and to the top plate 68 by

rivets 72, 72 extending through the bossed openings 26, 26 and bosses 28, 28. The walls 16, 16 of the center filler or housing are secured to the respective vertical webs 4 of the center sill and to flanges 74, 74 on the respective diaphragms of the bolster by rivets 76, 76 extending through the openings 22, 22 and bosses 24, 24 in the side walls 16, 16 and through said aligned openings in center sill webs 4, 4 and said flanges 74, 74 on said diaphragms. The extensions 42 are also connected to the webs 4 by rivets (not shown) as will be readily understood by those skilled in the art.

It will also be noted that the bottom wall 14 of the housing is provided at each corner thereof with a rivet hole 78 surrounded by a depending hollow boss 80 and is also provided adjacent each corner thereof inwardly of these holes 78 with spaced depending solid circular bosses or pads 82, 82, and also that the opening in the bottom wall of the housing beneath the pin holder is formed with a surrounding depending boss 84. All of these bosses on the bottom plate are machined to provide a flat seat for the bottom plate 70 of the body bolster.

Beneath the bottom plate 70 is a body center plate 86 which is secured to the center sill bottom flanges 8 by means of the same rivets 88 which secure the bottom plate and bolster diaphragms to the bottom flanges of the center sill.

The bottom plate and body center plate are provided with openings coaxial with the opening in the pin holder to accommodate the center pin. The body bolster center plate and bolster bottom plate are secured to the bottom wall of the housing by rivets 90, 90 extending through the openings 78, 78 and bosses 80, 80 in said bottom wall and aligned openings in said bottom bolster plate and center plate.

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. A combined center filler and rear draft lug structure comprising spaced substantially vertical side walls extending from end to end of said structure longitudinally thereof, intumed rear draft lugs formed at one of the ends of said side walls, intumed seating flanges formed at the upper ends of said side walls intermediate the ends of said structure, a bottom wall formed integrally with the lower edges of said side walls and disposed intermediate the ends of said structure below said flanges, a substantially vertical cylindrical hollow king pin holder formed centrally on the top side of said bottom wall coaxially with an aperture through said bottom wall, a set of generally vertical ribs at diametrically opposite sides of said holder formed integral therewith and with the top side of said bottom wall and the interior sides of said side walls and the bottom sides of the flanges and extending substantially perpendicular to said side walls, another set of generally vertical ribs at diametrically opposite sides of the pin holder and extending substantially perpendicular to said first-mentioned set and formed integral with said holder and the top side of said bottom wall, said sets of ribs dividing said bottom wall into quadrants, depending pads including an annular series of pads on the bottom side of said bottom

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wall around said aperture, the pads of the series being arranged two to a quadrant, one pad of each two partially underlying the adjacent side wall and the other pad being disposed substantially medially between the adjacent side wall and the adjacent rib of the second-mentioned set, a depending pad on the bottom side of said bottom wall around said aperture, all of said pads presenting coplanar seating surfaces for said structure, and seating pads arranged on said flanges at the top of said structure in substantial alignment with certain of said first-mentioned pads.

2. A combined center filler and rear draft lug structure comprising spaced generally vertical side walls, intumed flanges formed integral with the upper edges of said side walls and forming the top side of said structure, a bottom wall interconnecting the side walls at their lower edges, a generally vertical hollow pin holder formed integral centrally on the top side of said bottom wall, a pair of substantially vertical ribs at diametrically opposite sides of the pin holder formed integral therewith and with the top side of the bottom wall and the internal sides of the side walls thereadjacent and with the bottom sides of said flanges and extending substantially perpendicular to said side walls, another pair of substantially vertical ribs at diametrically opposite sides of the pin holder and arranged generally perpendicular to said first-mentioned pair of ribs and formed integral with said holder and the top

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side of said bottom wall, said pairs of ribs dividing said bottom wall into quadrants, said bottom wall having an opening therethrough coaxial with said pin holder, pads including an annular series of pads depending from said bottom wall around said opening, said series of pads comprising at least one pad in each quadrant in partial vertical alignment with the adjacent side wall and at least another pad in each quadrant disposed substantially medially between the adjacent side wall and the adjacent of said second-mentioned ribs, a depending pad on said bottom wall around said opening, said pads presenting coplanar seating surfaces for the bottom of said structure, and seating pads arranged on the top side of said structure on said flanges in substantial alignment with certain of said first-mentioned pads.

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