Feb. 23, 1937. B. F. FITCH 2,071,334

FREIGHT CONTAINER

Filed Nov. 23, 1933 3 Sheets-Sheet 1

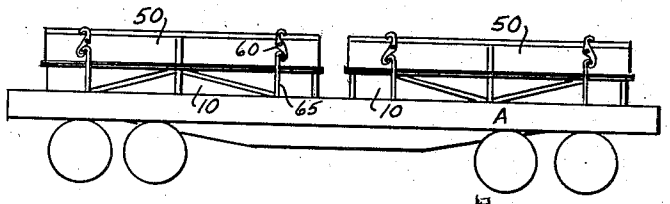


FIG. 1

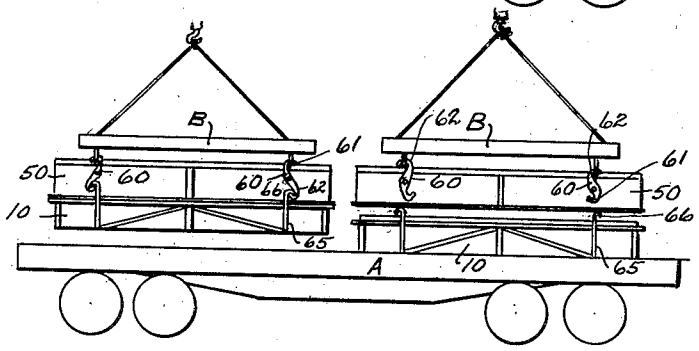
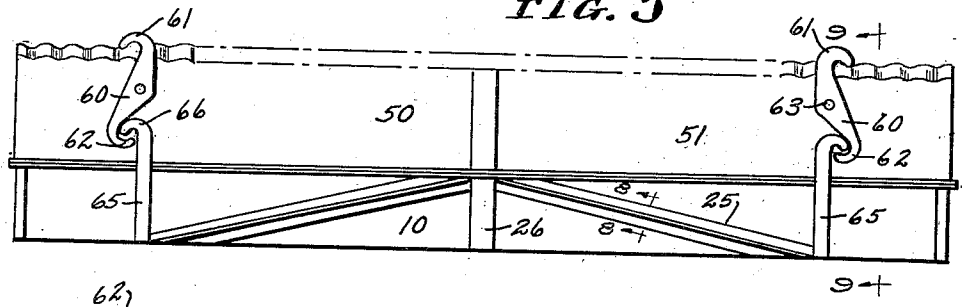


FIG. 2

FIG. 3



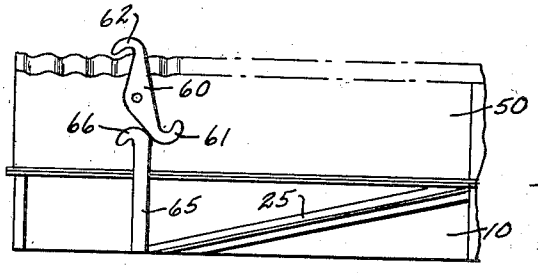


FIG. 4

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FREIGHT CONTAINER

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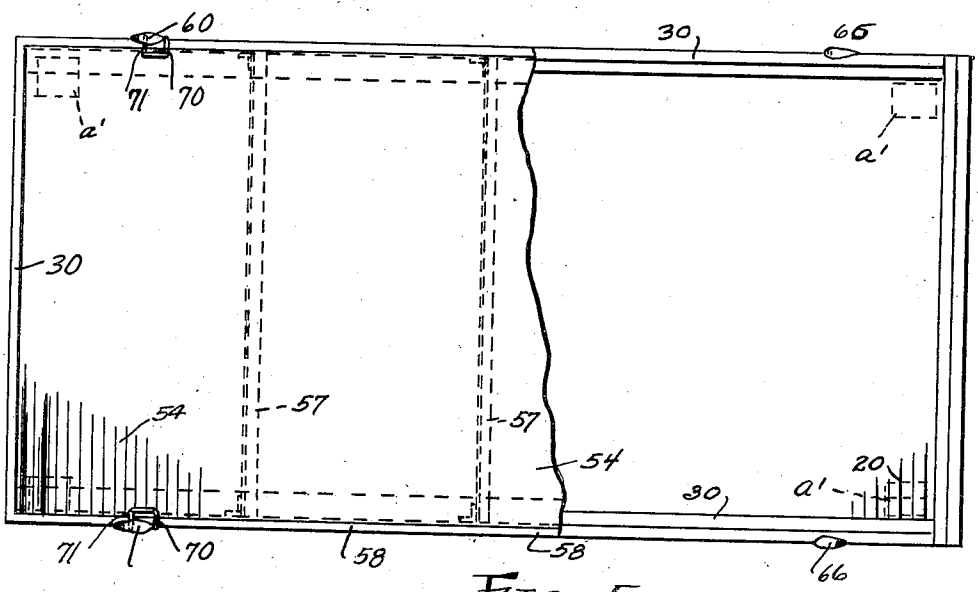


FIG. 5

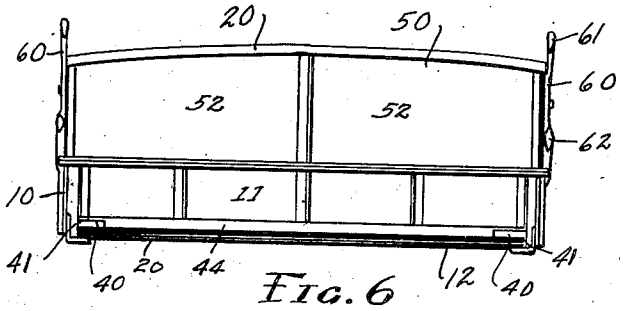


FIG. 6

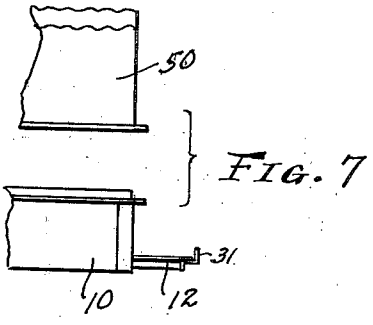


FIG. 7

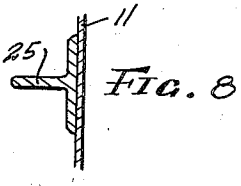


FIG. 8

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FREIGHT CONTAINER

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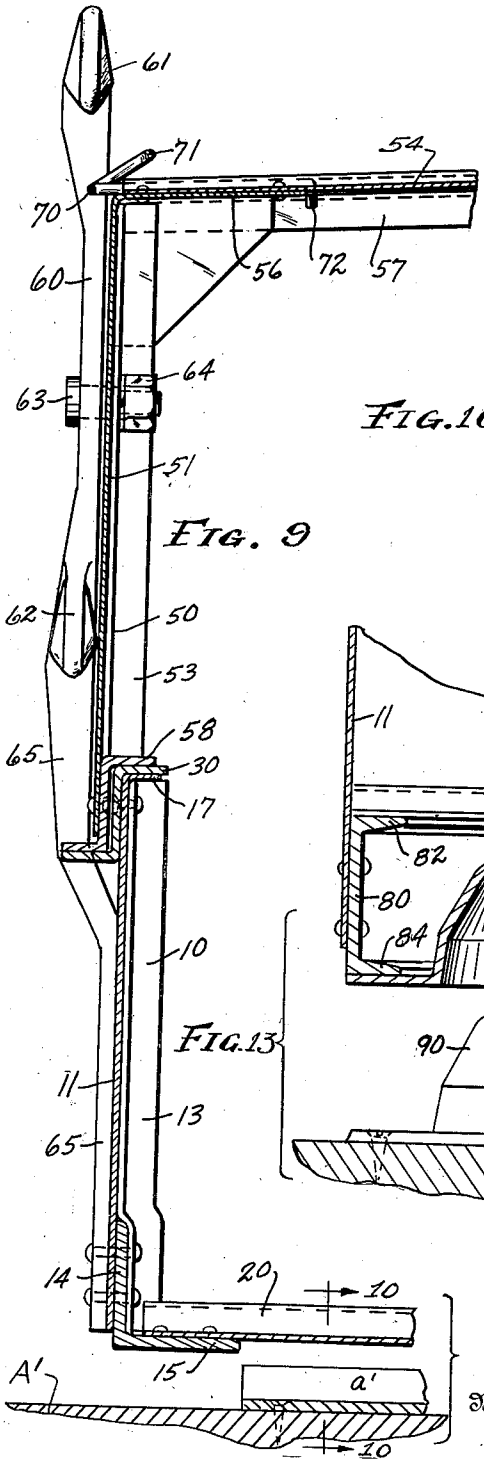


FIG. 9

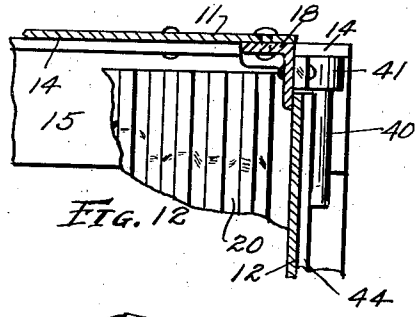


FIG. 12

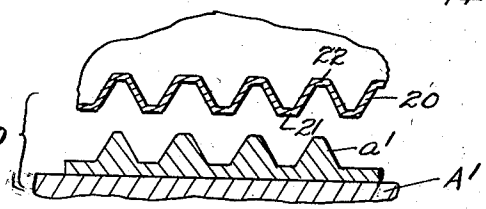


FIG. 10

FIG. 13

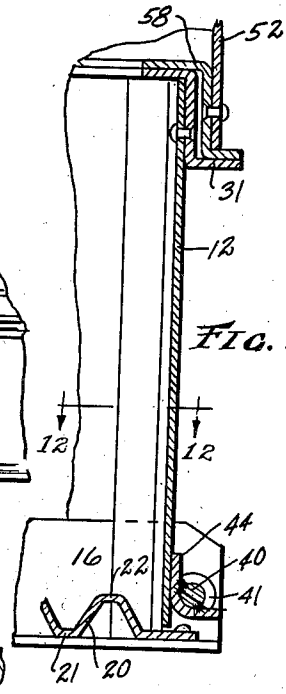


FIG. 11

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UNITED STATES PATENT OFFICE

2,071,334

FREIGHT CONTAINER

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Application November 23, 1933, Serial No. 699,384

12 Claims. (Cl. 220—1.5)

This invention relates to a container adapted to be loaded with freight and placed on a railway flat car for transportation. The container, with its load, is thereafter lifted from the vehicle for delivery. The container is especially adapted for use with very heavy loads, as, for instance, a pile of sheet steel. Such steel as produced in the mill may be readily placed in my container, as hereinafter explained, and then the loaded container shipped by rail to the factory, where the container, with its load, may be at once delivered to the portion of the factory concerned with its use. For example, fender steel can be moved direct to fender presses; body steel, to body presses, and frame steel to the frame presses, and so on. This very materially reduces the time over the method of transporting by box car, which involves also the expense of loading and then warehousing at the receiving end, and thereafter delivery to the appropriate parts of the factory.

My container is of comparatively low height and is of comparatively light construction, while at the same time being strong, thus enabling the heavy load to be transported without carrying unnecessary non-paying weight.

To enable the container to be very readily loaded, its body is formed of a base portion having low height walls, permitting ready handling of the material for both loading and unloading from either side of the body. The container has a top with a depending skirt, whereby a load projecting above the base portion may be entirely housed. The construction of the body and top, enabling this operation efficiently, is one of the features of the invention.

Another feature of my invention is concerned with a peculiar arrangement of attaching devices for engagement by a suitable lifting mechanism or hoist. These attaching devices are movably mounted on the container top and are so formed that in one position they enable the hoist to lift the top alone and in another position they lock the top to the body, so that the hoist may lift both parts of the container together.

Another feature of the invention relates to the floor construction of the body member of the container. This floor is formed so as to be very light in weight and still have sufficient stiffness and strength for the load, and it is adapted to interlock with suitable positioners on the floor of the vehicle, to prevent shifting of the container during transportation.

An approved embodiment of my invention is shown in the drawings hereof, and is hereinafter more fully described, and the essential novel features of the invention are summarized in the claims.

In the drawings, Fig. 1 is a side elevation of a railway flat car, on which are mounted two of my containers; Fig. 2 is a side elevation of such car, illustrating, in the left-hand portion, a hoist mechanism lifting the body and top together, and in the right-hand portion a hoist mechanism lifting the top alone; Fig. 3 is a side elevation of the complete container, showing the attaching devices on the top interlocked with the body; Fig. 4 is a fragmentary side elevation illustrating the attaching device on the top out of lifting engagement with the body; Fig. 5 is a plan of the complete container, the right-hand portion of the top being removed to show the body member; Fig. 6 is an end view of the container; Fig. 7 is a diagrammatic elevation of the part of the container adjacent one end, showing the tail gate on the body portion turned down; Fig. 8 is a detail in a cross-section through a reinforcing bar on the side of the body portion, as indicated by the line 8—8 on Fig. 3; Fig. 9 is a vertical section through the top and body portions of the container in engaged position, the view illustrating also means on a vehicle floor which may interlock with the base of the container; Fig. 10 is a vertical section through the floor of the container and a portion of the floor of the vehicle, as indicated by the line 10—10 on Fig. 9; Fig. 11 is a vertical section of the tail gate of the container body; Fig. 12 is a fragmentary plan through a corner of the body adjacent the tail gate; Fig. 13 is a vertical section of a modification of the container body, with a sub-base having a positioning socket cooperating with a positioning projection on a vehicle.

In Figs. 1 and 2, A indicates a railway flat car adapted to carry two of my containers, and B indicates a suitable hoist mechanism equipped with four depending shackles or other members adapted to engage hooks on the container top to lift the complete container or the top alone, as desired. The container body is designated at 10, the top 50, and the hoist attaching devices 60. The latter, in one position, as shown in the left-hand portion of Fig. 2, coact with the hook members 65 on the body, so that the body and top may be lifted as a unit. In another position, the attachers 60 may engage the hoist, but are free from the body, so that the top portion may be lifted alone, as shown in the right-hand portion of Fig. 2. This construction will be hereinafter described in detail.

The body 10 has side walls 11, one fixed end

wall (not specifically designated), and a movable end wall 12, compising a tail gate. The sides 11 and the fixed end are secured together by vertical angle bars 13, at the inner corners. At the base there are horizontal angle bars having vertical flanges 14 secured to the sides 11 and the fixed end of the body, and having horizontal flanges 15 extending inwardly. Mounted on these horizontal flanges is the floor 20, which is shown as composed of a corrugated sheet having flattened ridges. The lower faces 21 of the ridges engage the horizontal flange 15 and the top faces 22 form a horizontal floor surface.

The upper edge of the sides 11 and the fixed end of the body preferably flanged inwardly, as shown at 17, (Fig. 9) and the tops are further reinforced by a boundary member 30 of Z-bar form in cross-section, as shown in Fig. 9. This Z-bar forms a stiff reinforce and protection for the upper end of the side and fixed end wall and also provides a seat for the top, as hereinafter explained.

I prefer to provide a movable tail gate pivotally mounted at its lower edge at one end of the body. This is illustrated in Figs. 6, 7, 11 and 12. The tail gate 12 has secured to its upper portion a Z-bar member 31, corresponding to the bar 30 of the sides and fixed end. Secured to the tail gate near its lower edge and adjacent its opposite vertical edges are a pair of horizontal pins 40, which have bearings in brackets 41 secured to the vertical corner angle bars 18, which are secured to the sides 11.

I prefer to mount the pins 40 on the tail gate by means of bent clips 44, welded to the tail gate, and also to the pins, as illustrated in Fig. 11. The pins freely occupy the bearing brackets 41 and at their outer ends abut the extensions of the vertical flanges 16 of the horizontal base angle bars.

When the tail gate is turned down into a horizontal position, as illustrated in Fig. 7, for loading or unloading the body, the flange 31 of the Z-bar 31 forms a convenient support for the gate. When, however, the gate is vertical, this Z-bar 31 forms a boundary member corresponding to the boundary members 30 of the sides and fixed end, all of which cooperate with the top, now to be described.

The top 50 comprises vertical side walls 51, vertical end walls 52, secured together by corner angles 53. There is also a roof 54, which is preferably of corrugated sheet metal, with the valleys extending transversely. The roof is supported by an inwardly flanged portion 56 of the side plates 51 and by cross-beams 57. At their lower ends, the sides and ends of the top are reinforced by boundary members 58 in the form of Z-bars, in cross-section. This makes a very stiff and firm construction for the lower edge of the top, so that there is no danger of it becoming distorted.

The webs of the Z-bars 58 of the top have the same height as the webs of the body Z-bars 30, 31, and hence, when the top is in place, both horizontal flanges of the top Z-bars engage the horizontal flanges of the body Z-bars, as illustrated in Figs. 9 and 11. The top, therefore, carries at its lower edge an effective rectangular socket for receiving the upper end of the body, so that the top may readily be mounted. The construction likewise insures a weathertight connection between the top and body.

The body side is shown as being braced by diagonal brace bars 25, which may be T-bars, as illustrated in Fig. 8, and by vertical straps 26 and 65. These vetrical members are secured to the vertical flanges 14 of the base angles of the floor frame, as well as the sides. The members 65 perform also the function of interlocking with top hooks, as about to be explained.

I provide four attaching devices 60, which are intermediately pivoted to the side walls 51 of the container top. These members are of substantially S-form,—that is to say, they have oppositely facing hooks, 61 and 62, at their opposite ends. At the center they are pivotally mounted on the bolts 63, which extend through the top side walls and plate-like reinforcements, secured to the inner face of the wall, and then receive nuts 64. The body straps 65, heretofore mentioned, are formed at their upper ends with hooks 66, which may coact with the hooks 62 of the top, as shown in Fig. 3. When the hooks are in this engagement, the top is latched to the body, and if a hoist mechanism is applied to the other hooks 61, it may lift the top and body together, as shown in the left-hand part of Fig. 2.

However, whenever desired, the hook members 60 may be tipped over approximately one hundred and eighty degrees, so that the parts 61 lie against the backs of the hooks 66, as shown in Fig. 4, and when the hook members 60 are in this position, the engagement of the hoist with the top hooks 62 will merely lift the top and leave the body standing. This is a very simple arrangement, and it enables the same hoist mechanism, or the same load-engaging cradle, to lift the top alone or the entire container, as desired.

I provide bolts for locking the reversible hoist attachers in either position to prevent inadvertent displacement. Such bolts are illustrated at 70 in Figs. 5 and 9 and comprise rods slidably mounted on the underside of roof corrugations over the inturned side plates 56. These rods have looped ends 71, providing outwardly facing U-shaped portions, which, when the bolts are drawn outwardly, will embrace the shank of the attaching member 60. The loop is preferably inclined upwardly, as shown in Fig. 9, to furnish a convenient handle by which it may be manipulated. A stop, limiting the outward movement, may be provided by turning downwardly the inner end of the bolt, as shown at 72, such stop being adapted to abut the inner edge of the side plate flange 56 when the bolt is in its outermost position.

The corrugated floor frame not only provides a strong and light construction of the floor for the body, but it also furnishes means for interlocking the floor with the vehicle,—that is to say, the vehicle floor, illustrated at A1 in Figs. 9 and 10, carries on its top surface suitable ribs *a1*, which enter the downwardly faced grooves of the container floor. The ribs *a1* may be a solid portion of a casting, as indicated in Fig. 10, or a pressed metal corrugated member, similar to the floor itself, may be employed.

It will be seen that the vehicle floor projections occupy downwardly facing grooves on the underside of the floor frame and position the container against longitudinal movement. Likewise, the floor projections, by extending across the horizontal flange 15 of the floor angle of the body and standing close to that flange, prevent lateral shifting of the body on the vehicle.

I have heretofore provided for handling package freight large demountable automobile bodies having a base frame, with downwardly facing

sockets in its corners, which coact with upwardly facing projections on the floor of a railway car or a highway truck, such body being interchangeable between the car and truck. If it be desired to employ a similar feature in the present body, that may be accomplished by providing a sub-base having the positioning sockets.

A socketed sub-base is illustrated in Fig. 13, where the side walls of the body are secured to channel shaped sills **80**, **81**, and the corrugated floor **20** of the body rests on the upper flanges **82** and **83** of these sills. A gusset plate **87**, carrying the socket **88**, is secured to the lower flanges **84**, **85**, of these sills. The sockets **88** may coact with a projection **90** rising from a plate **91**, secured to the vehicle floor **A2**, as illustrated in Fig. 13, thus positioning the body against movement on the vehicle in any horizontal direction.

I claim:

1. A portable freight container comprising side walls and a fixed end wall secured together by corner angle bars, horizontally extending angle bars at the base of the sides having their vertical flanges secured to the sides and their horizontal flanges extending inwardly, the floor resting on the horizontal flanges, reinforces at the top of the sides, a top having a depending skirt reinforced at its lower edge, the reinforces of the body standing beneath the reinforces of the skirt and engaging them to support the top when it is in place, means for locking the top to the body, and means for attaching a hoist to the top.

2. A freight container comprising a body portion and a top portion, hoist attaching means movably mounted on the top portion and adapted to interlock with the body portion or be free therefrom.

3. A freight container comprising a body portion having a base and upstanding walls of low height, a top portion having a roof and a downwardly projecting skirt, and movable load attaching devices secured to the top and adapted in one position to interlock with the body and in another position to be free therefrom, and adapted in either position for the attachment of hoisting mechanism.

4. In a freight container, the combination of a body portion, a top portion adapted to close against the body portion, reversibly mounted S-hooks carried by the top portion and adapted in either position to be connected with raising mechanism and in one position to interlock with the body.

5. The combination with a body having a floor and side walls, said side walls being reinforced by straps having engageable members, and a top having movable attaching devices which in one position may coact with the engageable members of the body member and in another position may clear the same, and means whereby said attaching devices in either position may be connected with a raising mechanism.

6. In a freight container, the combination of a body portion having a base and sides, reinforcing straps secured to its sides and terminating in hooks at their tops, a top portion having a depending skirt adapted to close against the body portion, reversibly mounted S-hooks carried by said skirt and adapted in either position to be connected with raising mechanism and in one position to interlock with the hooks of the body.

7. The combination of a body portion of a container, a top portion, movable attaching devices carried by the top portion and adapted in one position to interlock with the body and in another position to be free therefrom, and in each position adapted to be attached to an elevating mechanism, and means for locking the attaching devices in selected position.

8. The combination of a container body having side walls secured to vertical flanges of angle bars which have inwardly directed horizontal flanges, a floor secured to the horizontal flanges, an end gate pivoted near its lower edge by horizontal pins carried by the end gate and journalled in brackets carried by the side walls, the ends of said pins being opposed by extensions of the vertical flanges of the horizontal angle bars.

9. The combination of a body having walls, Z-bars secured to the exterior of the sides adjacent the top thereof, said Z-bars having their webs vertical, their top flanges extending inwardly over the top of the walls, their bottom flanges projecting externally, and a top member comprising a roof having a depending skirt and Z-bars secured to the interior of the skirt adjacent the bottom thereof, said last mentioned Z-bars having their lower flanges extending outwardly beneath the skirt, the Z-bars of the skirt nesting with the Z-bars of the body when the top is in place.

10. A freight container comprising a body having a side wall and a fixed end wall, each of which has an external flange at the top, and an end gate pivotally mounted near its lower edge and having an external flange at its top, and a separable top member having a skirt adapted to extend about the outside of the upper portion of the body and having an external flange at its lower end adapted to coact with the flanges of the side walls, the fixed end wall and the end gate.

11. A freight containing comprising a body having a side wall and a fixed end wall, each of which has an internal flange at the top, and an end gate pivotally mounted near its lower edge and having an internal flange at its top, and a separable top member having a skirt adapted to extend about the outside of the upper portion of the body and having on its interior above its lower edge an inward flange adapted to coact with the inward flanges of the side walls, the fixed end wall and the end gate.

12. A freight container comprising an open body having a base and comparatively low sides, a tail gate hinged near its lower edge to the body and a top member having a depending skirt adapted to extend outside of the sides and tail gate, said skirt being formed with a ledge on its inner face a short distance above its lower edge, which ledge may make a close connection with the top of the sides and tail gate, said top member having at its lower end an outwardly extending flange and the sides and tail gate having adjacent their upper ends outwardly extending flanges with which the flanges of the top may make a close connection.

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