July 21, 1931. C. C. CHITTIM 1,815,495

FOLDING DOUBLE COT

Filed Dec. 28, 1928 2 Sheets-Sheet 1

Fig. 1.

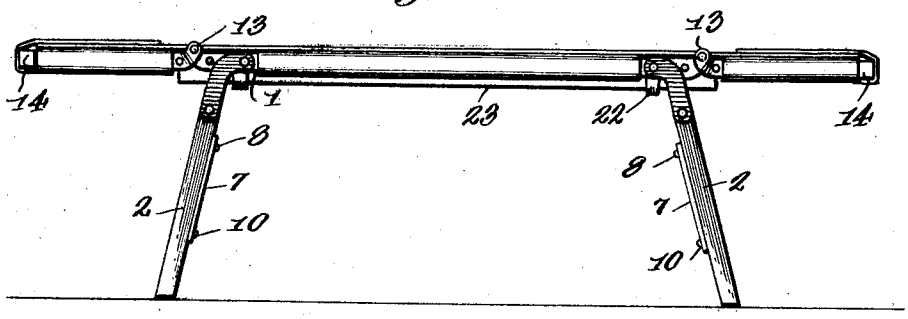


Fig. 2.

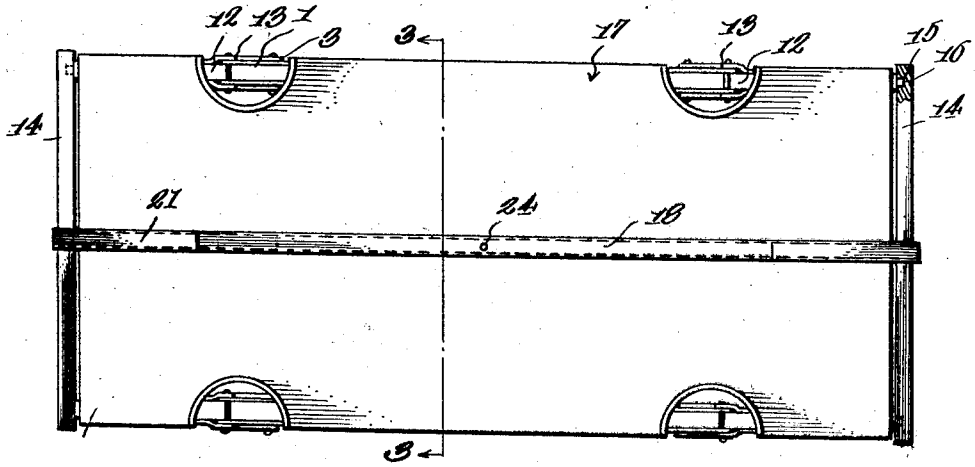


Fig. 3.

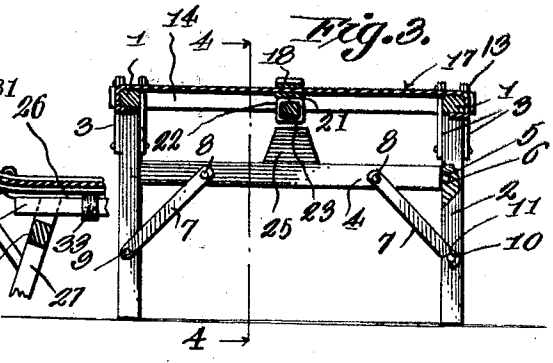
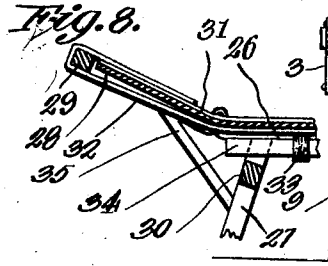


Fig. 8.



WITNESSES

Guy M. Spring

F. S. Smith.

INVENTOR.
CARL C. CHITTIM,
BY
Irving L. McCathran
ATTORNEYS.

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Fig. 4.

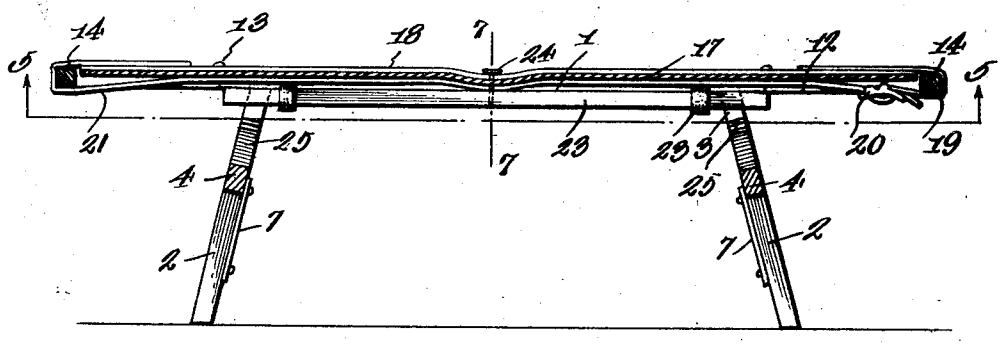


Fig. 5.

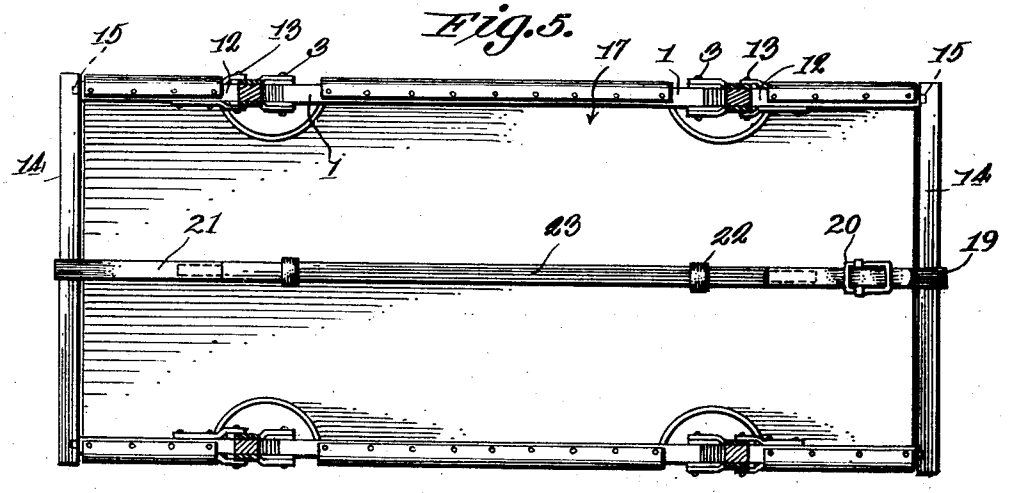


Fig. 6.

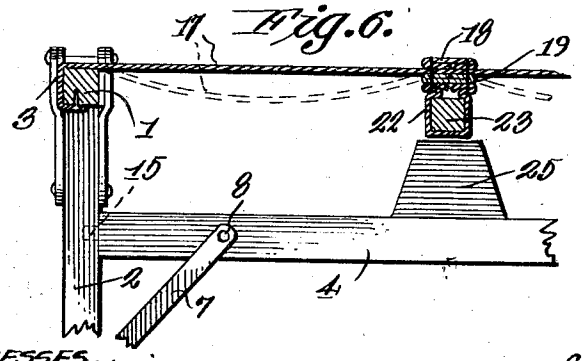
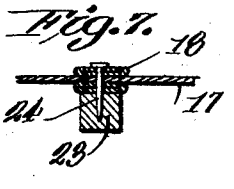


Fig. 7.



WITNESSES
Eugene Spring
F. G. Smith.

INVENTOR.
CARL C. CHITTIM
BY
Irving L. McCathran
ATTORNEYS.

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UNITED STATES PATENT OFFICE

CARL C. CHITTIM, OF SPRINGFIELD, MISSOURI

FOLDING DOUBLE COT

Application filed December 28, 1928. Serial No. 329,030.

This invention relates to improvements in folding bed structures and more particularly to bed structures of the type which are designed to be folded to occupy a minimum space so that they may be carried on camping and other trips, with convenience, and readily set up for use and as readily collapsed, and the invention is concerned more especially with foldable double beds or cots or in other words those which are intended to be occupied by two persons and the general object of the invention is to materially improve the construction of such beds or cots to overcome certain disadvantages which are presented by those heretofore employed.

In the ordinary foldable bed or cot, the bed bottom is in the form of a sheet of canvas or other suitable flexible material which is secured at its side and end margins to the side rails and end cross pieces of the bed or cot frame and, usually, these frames are made to consist of a main section and head and foot sections, means foldably connecting the same, and legs and braces foldably associated with the side rails of the main section, and ordinarily the space beneath the bed bottom is unobstructed so that the bottom may sag when the bed is occupied. An example of such a bed structure is disclosed in my copending application filed April 1, 1927, Serial No. 180,311, on which the present invention is, however, an improvement. Bed structures of the type just referred to are in every respect satisfactory where they are made of a size to accommodate a single person, but where they are made of a larger size so as to accommodate two persons, it has been found that the bed bottom, being of canvas or other flexible sheet material, will sag toward the middle of the bed with the result that the occupants will roll toward the center of the bed bottom causing annoyance and inconvenience to the occupants and interfering with their slumbers. Therefore the present invention has as its primary object to provide a simple means whereby this disadvantage may be overcome and whereby two persons may occupy a bed or cot structure, embodying the present invention, and each be enabled to occupy his or her respective side of the bed without exerting any effort to accomplish this result and without either of the occupants being subjected to any inconvenience because of the presence of the means provided for the purposes of the invention.

It has heretobefore been contemplated to provide a center rail for limiting or preventing sagging of the bed bottom along its full longitudinal median line, so that the portions of the bed bottom between this means and the side rails of the bed frame structure may sag under the weight of the two occupants of the bed, so that the sagging will be individual to the two said persons. However, this rail in prior devices, extends the full length of the cot or bed causing discomfort to the occupants, particularly at the shoulder and head portions of the cot, the rail acting as an obstruction to the shoulders and legs of the occupant and thus defeating the purpose of the cot to provide maximum comfort. Therefore the present invention has for one of its primary objects to provide a bed or cot of the above mentioned type which may be occupied by two persons without either inconveniencing the other regardless of the relative weight of the two individuals and which will cause no inconvenience to the occupant and allow complete freedom of the shoulders, arms, and legs of the occupants and still permit of the individual sagging of the bed bottom on opposite sides of its longitudinal center.

While the invention is designed primarily for embodiment in folding double beds or cots of the type embodying foldable head and foot sections, and could equally well be employed in nearly all such structures without any material alteration of the construction thereof, it will be apparent, as the description progresses, that it might be applied, so far as its basic principles are concerned, to the bed bottom of a bed comprising an integral or in other words solid frame structure which is not foldable. However the invention contemplates the attainment of further advantages, where the invention is embodied in a bed or cot having foldable head and foot sections as it has as a

further object to so arrange the means for limiting sagging of the bed or cot bottom along its longitudinal median line that the means will not offer any resistance to or tend to prevent sagging of the portions of the bed bottom which are peculiar to the said head and foot sections, so that the occupants of the bed are afforded maximum freedom of head, arm, shoulder, and foot movements in assuming a comfortable reclining position in the bed, without any interference on the part of the device embodying the invention.

Another object of the invention is to provide means for limiting or preventing the downward sagging of the bed bottom, throughout the portion thereof which is stretched between the side rails of the main section of the bed, and which means will, in itself, constitute a single, integral, one-piece part, in the nature of a rail which is disposed to extend longitudinally midway between the side rails of the main section of the frame of the bed, thereby obviating the employment of joints incident to foldably connected sections and providing for the inclusion of this member in the folded structure, as an entirety, without interfering with the folding and unfolding of any of the other parts of the structure.

Another object of the invention is to provide a sag limiting or preventing means such as that referred to above which may be employed to great advantage in beds and cots of the double type, above referred to, and in which the head section is capable of being elevated or in other words titled upwardly.

While the accompanying drawings and the description which is to follow, constitute a disclosure of the preferred embodiment of the invention, it will be understood that various changes may be made within the scope of what is claimed.

In the accompanying drawings:

Figure 1 is a view in side elevation of a folding bed constructed in accordance with the present invention, the bed being in set up condition and ready for occupancy;

Figure 2 is a top plan view thereof;

Figure 3 is a vertical transverse sectional view taken substantially on the line 3—3 of Figure 2 looking in the direction indicated by the arrows;

Figure 4 is a vertical longitudinal sectional view taken substantially on the line 4—4 of Figure 3 looking in the direction indicated by the arrows;

Figure 5 is a horizontal sectional view taken substantially on the line 5—5 of Figure 4, looking in the direction indicated by the arrows and showing the top frame structure and bed bottom of the bed in bottom plan, the supporting legs being shown in section;

Figure 6 is a fragmentary view partly in elevation and partly in section illustrating the manner in which the bed bottom may sag at opposite sides of its longitudinal median line, the bed bottom being shown in normal position in full lines and with its portions at opposite sides of the sag preventing means in the positions they will assume when the bed is occupied by two persons, in dotted lines;

Figure 7 is a detail vertical transverse sectional view taken substantially on the line 7—7 of Figure 4;

Figure 8 is a fragmentary sectional view illustrating the embodiment of the invention in a foldable bed or cot in which the head section may be supported in inclined position.

As in the structure disclosed in my copending application, above referred to, the cot or bed embodying the invention includes a main or intermediate frame embodying a pair of spaced parallel side rails which are indicated by the numeral 1, and which rails are supported, near their ends, by legs 2 foldably connected therewith each by a pair of bracket members 3 which bracket members are secured to the said legs 2 at the opposite sides of the latter and straddle, at their upper ends, the respective side rails 1, the upper ends of the legs being beveled and the brackets 3 being of such arcuate form that, when the legs are swung downwardly, their upper ends will engage the under sides of the end portions of the respective side rails 1 and the legs will thus be braced in the relatively downwardly diverging positions, with respect to each other, at the opposite ends of the said frame sections, as shown in Figures 1 and 4. In the set up position of the structure, these legs are held in spaced relation, at each end of the main frame, by a cross piece 4 provided at its ends with studs 5 which are removably fitted in sockets 6 formed in the inner sides of the said legs 2, this of course providing for separation of the cross piece from the said legs. The legs 2 are braced with respect to the cross piece 4, by diagonal brace bars 7 which are pivoted at their upper ends as at 8 to the brace 4 near the opposite ends of said brace and one of which is pivoted at its lower end as at 9 to the inner side of the respective leg 2, the other leg 2 being provided with a headed stud 10 and the respective brace 7 being provided with a notch 11 at its lower end thus adapting the brace to be separably engaged with the stud 10 and permitting of this brace being folded to lie along one side of the cross piece 4 in the knock down or folded condition of the structure. This frame structure as a whole, further includes head and foot sections which are of counterpart construction and each of which includes side rails 12 which are disposed in endwise relation to the ends of the corresponding rails 1 and which are foldably con-

nected therewith by hinges 13. The outer ends of the side rails 12 of the head and foot sections, or in other words the ends remote from the hinges 13, are connected and braced by cross pieces indicated by the numeral 14, the said ends of the rails 12 being provided with studs 15 which are removably fitted into sockets 16 formed in one side of the respective cross piece 14, the cross pieces at the two ends of the frame structure, as a whole, being in this manner removably connected with the ends of the side rails of the respective head or foot sections as the case may be. The abutment of the inner or hinged ends with the opposite ends of the side rails 1 serves of course to maintain the rails 12 in alinement with the rails 1 when the head and foot sections are swung to the positions shown in Figures 1 and 4 of the drawings, so that the head and foot sections, as a whole, will be supported as continuations of the body section. As in the copending application, the said bottom, which is indicated in general by the numeral 17 and which is of canvas or other suitable flexible material, is secured at its opposite longitudinal margins, about the side rails 1 of the main frame structure and the side rails 12 of the head and foot sections and, in the set up form of the frame structure, as a whole, the bed bottom will be stretched substantially taut between the said side rails 1 and 12 at opposite sides of the structure.

The structure, as above described, is representative of a foldable double bed or cot of this general class and, as previously pointed out, this alone, would present the disadvantage that, when the bed was occupied by two persons, the bed bottom 17 would sag toward the middle and cause inconvenience and annoyance to the occupants and consequently the invention contemplates the provision of means for preventing this inconvenience and enabling two persons to occupy the bed without interference with each other and this means will now be described.

The means referred to above comprises a strap 18 of canvas or other heavy cloth material which preferably has its longitudinal marginal portions folded under upon itself as best shown in Figure 6 of the drawings and this strap is disposed upon the upper side of the bed bottom 17 and united thereto by stitching or otherwise, the strap terminating at its ends in registration with the end margins of the said bed bottom 17. The device further includes a strap 19 which is disposed at one end portion in overlapping relation to one end portion of the strap 18 and suitably united thereto, and this strap is provided with a buckle which is indicated by the numeral 20, the buckle being located at the free end of the said strap, the strap being adapted to be passed about that one of the cross pieces 14 which is adjacent to the corresponding end of the strap 18. Another strap, indicated by the numeral 21, is secured at one end portion in overlapping relation with respect to the other end of the strap 18 and is adapted to be led about the other cross piece 14 as shown in Figure 4 of the drawings, and this strap is likewise extended longitudinally medially beneath the bed bottom 17 as shown in the said figure and in Figures 5, 6 and 7 of the drawings, and is engageable, adjustably, at its free end, with the buckle 20, provision being made, in this manner, for longitudinally medially tensioning the bed bottom 17. Loops 22 of canvas or other suitable material are secured to the under side of the strap 21 at such points that they will be located relatively close to the points of hinged connection of the legs 2 with the side rails of the main frame of the bed, and a bar 23, of rectangular form in cross section, is fitted at its end portions in these loops and is in this manner suspended beneath the bed bottom 17. This bar is of wood and constitutes the essential element of the means for limiting or preventing downward sagging of the longitudinal middle portion of the bed bottom. Preferably the bar is held against longitudinal displacement in the loops and with respect to the bed bottom, by a nail or other securing element 24 which is fitted or driven through the strap 18, the bed bottom 17, the strap 21, and into the upper side of the bar 23. By reference to Figures 3, 4 and 6 of the drawings, it will be observed that the bar 23 is of a length equal substantially to the length of the main section of the top frame of the bed and that, inasmuch as the legs 2 are hingedly connected with the side rails of the main frame section inwardly of their ends, the ends of the bar 23 will extend between the pairs of legs and above the cross braces 4 thereof, and where the cross braces 4 are located somewhat below the upper ends of the legs 2, an abutment block 25 is mounted upon the upper side of the cross piece 4 of each pair of legs and substantially midway between the ends of said cross piece and has its upper end spaced slightly below the respective end of the bar 23.

From the foregoing description of this embodiment of the invention and particularly by reference to Figure 6 of the drawings, it will be evident that, when the frame structure is set up, the sag-limiting bar 23 will be supported close to the under side of the stretched bed bottom 17, which, at this time, is in a substantially flat condition as shown in full lines in Figures 3, 4 and 6 of the drawings, and with its ends spaced slightly above the abutment blocks 25 which are mounted upon the cross pieces 4 which extend between the legs 2 at the opposite ends of the main frame section. It will now be evident that when two persons are occupying the bed, the bed bottom 17 will be sagged by the weight of the bodies of the persons reclining there-

on and, as soon as either of the persons lies upon the bed bottom, the bar 23 will be lowered and its ends will be brought into engagement with the upper sides of the abutment blocks 25. Therefore when either or both of the occupants of the bed are reclining thereon, the portions of the bed bottom between the side rails 1 of the main frame section and the bar 23, will be sagged substantially as shown in broken lines in Figure 6 of the drawings, substantially as though the bar 23 were stationary with respect to the side rails 1. It will be evident therefore that between its sagging portions, or in other words at its longitudinal median line, the bed bottom will not sag but will be supported in substantially its original elevated position and substantially as high as the marginal portions of the bottom which are anchored to the side rails 1. Therefore there will be no tendency for the occupants of the bed to roll toward the center thereof as would be the case if the bed bottom were not supported at its longitudinal median line as above described and it is quite obvious that the persons occupying the bed may lie comfortably and be as free from interference as if they were occupying separate single cots.

As previously stated, it is one of the objects of the invention to afford the persons occupying the bed or cot, full freedom of movement of their limbs and their heads and shoulders, so that they may assume the positions or postures most comfortable to them, and therefore the ends of the sag-limiting bar 23 are, as stated, terminated substantially above the cross pieces 4 which extend between the legs of the frame structure and therefore the bar does not extend at its ends beneath the portions of the said bottom which extend between the side bars 12 of the head and foot sections and, as a consequence, the longitudinal intermediate portions of the bed bottom at the ends of said bottom or in other words at the head and foot sections, may have a downward sag sufficient to effectually accomplish this result whereas, if the ends of the sag-limiting bar 23 were extended to the cross pieces 14 of the head and foot sections of the frame, discomfort would undoubtedly be caused to those occupying the bed.

Figure 8 of the drawings illustrates the manner in which the improvement, embodying the present invention, may be employed in connection with a cot the head section of which is adapted to be supported in an inclined position and in this figure the numeral 26 indicates one of the side bars of the main frame section corresponding to one of the bars 1 of the previously described embodiment, the numeral 27 one of the legs corresponding to the legs 2, the numeral 28 one of the side rails of the head section, the numeral 29 the cross piece corresponding to the cross piece 14 of the previously described embodiment, the numeral 30, a cross piece extending between the legs 27 and corresponding to the cross piece 4 of the previously described embodiment, the numeral 31 the said bottom corresponding to the bed bottom 17, the numeral 32 a strap corresponding to the strap 21, a loop 33 corresponding to one of the loops 22, and a bar 34 corresponding to the bar 23, these parts being all arranged in precisely the same manner as the corresponding parts in the previously described and illustrated embodiment, except that the cross piece 30 is in this instance located near the upper ends of the legs 27 and therefore closer to the ends of the bar 34 and therefore it is unnecessary to employ the abutment blocks 25 of the previously described embodiment. A brace 35 is provided, in this embodiment, between the legs 27 and one or more of the members of the frame of the head section and detachably connected at one of its ends to the respective parts whereby it may be folded. It will be observed by reference to the said Figure 8 that, inasmuch as the strap 30 is connected to the cover 31 midway between the side edges thereof or in other words midway between said rails 28 of the head section and the side marginal portions of the cover are secured about the said side members 28, as in the previously described embodiment, the said cover 31 will be more or less straightened at its portion which is stretched within the head section, when the occupants of the bed rest their heads and shoulders thereon and therefore the arrangement is such that the same freedom of movement of the heads, shoulders, and arms of the occupants is insured as in the previously described embodiment, it being understood that the cross bar 30 will, in this instance, serve the same purpose as the abutment blocks 25.

Having thus described the invention, what I claim is:

1. In a cot for occupation by two persons, a supporting frame structure including a main section, and head and foot sections, a bottom of flexible material stretched within the sections, each of the head and foot sections including a cross piece, a strap connected with the ends of the said bottom and extended over the cross pieces of the head and foot sections of the frame structure and beneath and secured to the said bottom and extending longitudinally medially thereof, a bar supported by said strap, and means for limiting downward movement of the bar whereby the bar will constitute means for sustaining the portion of the bottom which is stretched within the main section, from sagging under weight, substantially at its longitudinal middle.

2. In a cot for occupation by two persons, a supporting frame structure including a

main section, and head and foot sections, a bottom of flexible material stretched within the sections, each of the head and foot sections including a cross piece, a strap connected with the ends of the said bottom and extended over the cross pieces of the head and foot sections of the frame structure and beneath and secured to the said bottom and extending longitudinally medially thereof, a bar supported upon the under side of said strap, means for limiting downward movement of the bar whereby the bar will constitute means for sustaining the portion of the bottom, which is stretched within the main section, from sagging, under weight, substantially at its longitudinal middle, and a strap extending longitudinally medially of the upper side of the said bottom and secured thereto and in overlapped relation and secured to the ends of the first mentioned strap.

3. In a cot for occupation by two persons, a supporting frame structure including a main section, and head and foot sections, a bottom of flexible material stretched within the sections, each of the head and foot sections including a cross piece, a strap connected with the ends of the said bottom and extended over the cross pieces of the head and foot sections of the frame structure and beneath and secured to the said bottom and extending longitudinally medially thereof, a bar supported upon the under side of said strap, means for limiting downward movement of the bar whereby the bar will constitute means for sustaining the portion of the bottom, which is stretched within the main section, from sagging, under weight, substantially at its longitudinal middle, a strap extending longitudinally medially of the upper side of the said bottom and secured thereto and in overlapped relation and secured to the ends of the first mentioned strap, and a securing means uniting the said straps, the portion of the bottom between said straps, and the said bar, at an intermediate point in the length of the bar.

In testimony whereof I affix my signature.

CARL C. CHITTIM.