

May 16, 1939.

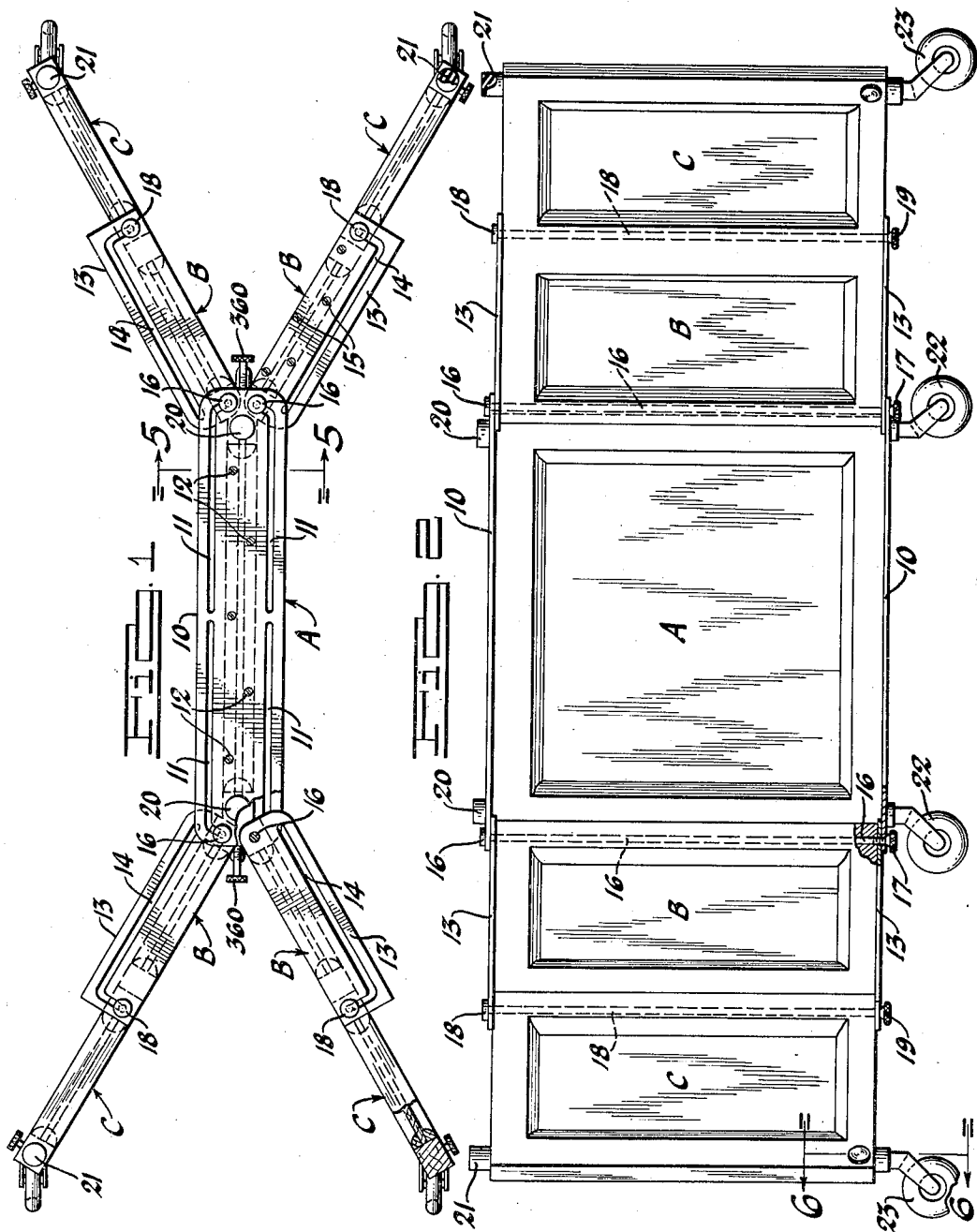
B. J. LANG ET AL

2,158,546

ADJUSTABLE BIER

Filed June 15, 1938

2 Sheets-Sheet 1



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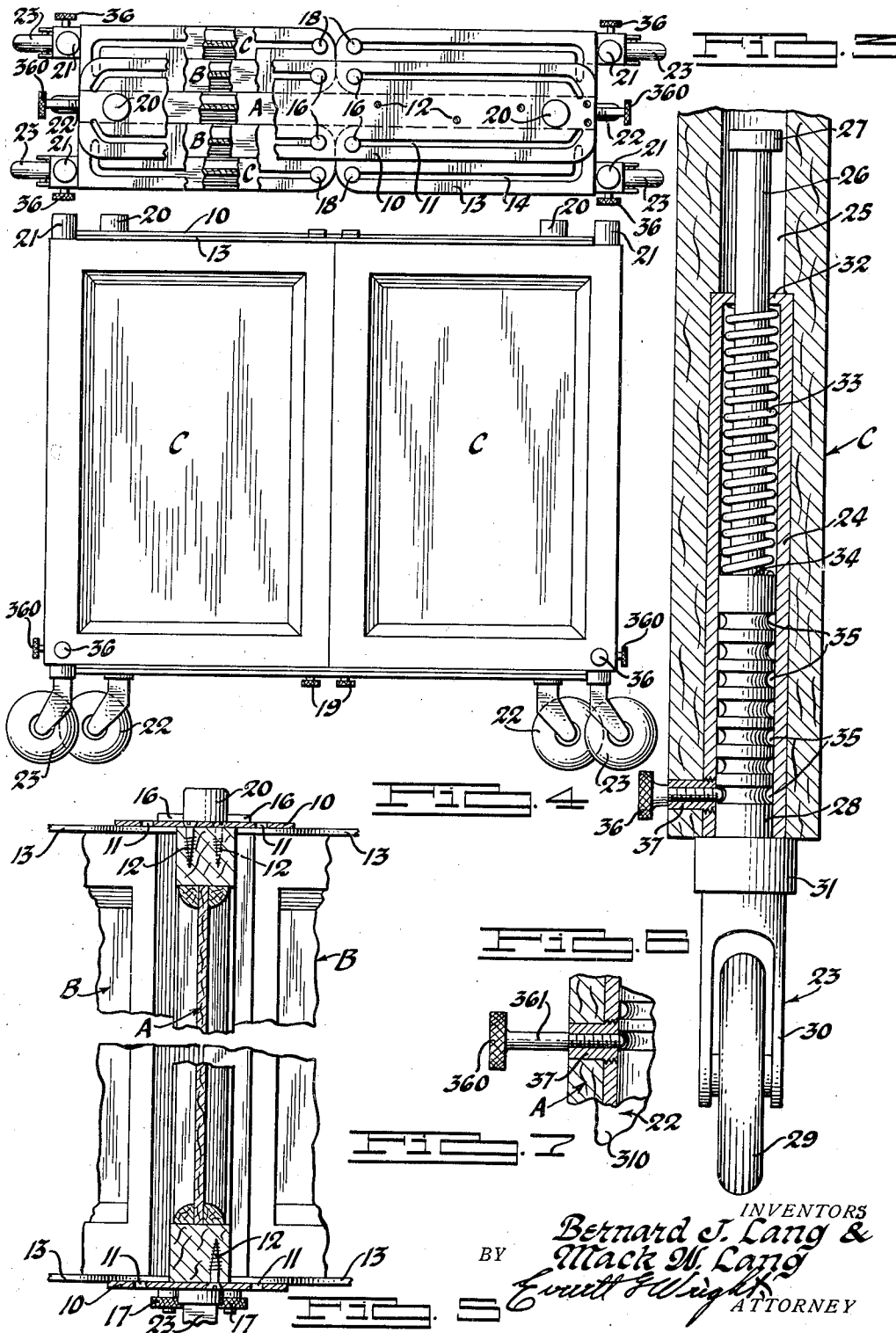
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UNITED STATES PATENT OFFICE

2,158,546

ADJUSTABLE BIER

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Application June 15, 1938, Serial No. 213,836

10 Claims. (Cl. 248—166)

This invention relates to biers and in particular to biers adjustable to accommodate various sizes and heights of caskets and contractable to admit of convenient mobility.

One object of the invention is to provide a bier which may be expanded or contracted to accommodate itself to support caskets of various sizes and shapes and which may be contracted into a readily portable unit.

Another object of the invention is to provide a bier adapted to accommodate itself to support all sizes of caskets which is readily and easily adjustable to support deep or shallow caskets at a desired height.

Another object of the invention is to provide a bier that may be readily adjusted to support caskets of various sizes and shapes at various heights in accordance with the weight of any casket placed thereon.

Another object of the invention is to provide a bier adjustable to support various sizes and shapes of caskets at a desired height and which is adapted to be readily and thoroughly secured in its adjusted position.

Other objects of the invention will become apparent by reference to the following detailed description taken in connection with the accompanying drawings, in which:

Fig. 1 is a top plan view of a bier embodying the invention shown in its fully extended position with certain portions thereof cut away to better show the invention.

Fig. 2 is a side elevational view of the embodiment of the invention shown in Fig. 1 shown in its fully extended position.

Fig. 3 is a top plan view of the novel bier disclosed in Fig. 1 shown in its fully contracted position.

Fig. 4 is a side elevational view of the novel bier disclosed in Fig. 1 shown in its fully contracted position.

Fig. 5 is a detailed sectional view taken on the line 5—5 of Fig. 1.

Fig. 6 is a detailed sectional view taken on the line 6—6 of Fig. 2 showing the novel means for readily adjusting the height of the bier and securing the said bier in its vertical adjusted position.

Fig. 7 is a fragmentary sectional view showing the use of a long handled set screw for securing the casters at the ends of the central panel in their adjusted position.

Referring now to the drawings wherein like numerals refer to like and corresponding parts throughout the several views, the embodiment of

the invention disclosed therein comprises, in general, a bier composed of a vertically disposed central panel A, two pairs of vertically disposed intermediate panels B, and four vertically disposed end panels C, one pair of the said intermediate panels B being slidably and rotatably extensible with respect to each end of the said central panel A, and one of the said end panels C being slidably and rotatably extensible with respect to each of the said intermediate panels B. The said panels A, B and C are preferably constructed of wood or metal either with solid centers as shown in the drawings or in the style of rectangular frames, all according to the architectural effect desired.

The central panel A is provided with a top and bottom guide plate 10 having four guide slots 11 therein through which pivot pins of the intermediate panels B are positioned as indicated in the drawings and as hereinafter described. The said central guide plates 10 are preferably secured to the top and bottom of the central panel A by such means as countersunk head screws 12. The said central guide plates 10 are sufficiently wider than the central panel A to permit the guide slots 11 thereof to be laterally spaced outside the said central panel A a distance slightly greater than one-half of the thickness of the intermediate panels B to permit the said intermediate panels B to be guided by the pivot pins thereof telescopically between the said upper and lower central guide plates 10 without scratching, marring or otherwise harming the finish of the sides of the said central panel A.

Each intermediate panel B is provided with a top and bottom guide plate 13 having a guide slot 14 therein laterally spaced outside the said intermediate panel B a distance slightly greater than one-half the thickness of the end panels C to permit the said end panels C to be guided by the pivot pins thereof telescopically between the said upper and lower intermediate guide plates 13 without scratching, marring or otherwise harming the finish of the sides of the intermediate panels B. The said intermediate guide plates 13 are secured to the top and bottom of the said intermediate panels B by such means as countersunk head screws 15.

It will be noted that the height of each intermediate panel B plus the top and bottom guide plates 13 thereof is slightly less than the distance between the central guide plates 10 secured to the top and bottom of the central panel A to permit the intermediate panels B to be guided alongside the central panel A in telescopic

relationship with respect to the said central guide plates 10 on the top and bottom of the said central panel A. Also, the height of each end panel C is slightly less than the distance between the top and bottom guide plates 13 of the intermediate panels B to permit the said end panel C to be guided alongside the said intermediate panels B in telescopic relationship with respect to the intermediate guide plates 13 on the top and bottom of the said intermediate panels B.

The inner end of each intermediate panel B is preferably provided with a vertically disposed pivot pin 16 which extends through one of the slots 11 in the upper and lower central guide plates 10 as best illustrated in Figs. 1 and 2 by means of which the intermediate panels B are guided to any desired adjusted position along the central panel A from the fully extended position shown in Fig. 1 to the fully contracted position shown in Fig. 3. An anchorage nut 17 threaded on the bottom of each pivot pin 16 is preferably used to clamp the said intermediate panels B between the upper and lower guide plates 10 in any position with respect to the said central panel A to which they may be adjusted.

The inner end of each end panel C is preferably provided with a vertically disposed pivot pin 18 which extends through the slot 14 in the upper and lower intermediate guide plates 13 of an intermediate panel B as best illustrated in Figs. 1 and 2 by means of which the end panels C are guided to any desired adjusted position with respect to the intermediate panels B from the fully extended position shown in Fig. 1 to the fully contracted position shown in Fig. 3. An anchorage nut 19 threaded on the bottom of each pivot pin 18 is preferably used to clamp the said end panels C between the upper and lower guide plates 13 in any position with respect to the panel B to which they may be adjusted.

In addition to the pivot pins 16 and 18 serving as means by which the intermediate panels B and the end panels C may be guided in any desired position with respect to the central panel A and intermediate panels B respectively, the said pivot pins 16 and 18 permit the said intermediate panels B and end panels C to be pivoted at any desired angle with respect to the central panel A and intermediate panels B respectively. The combined sliding and pivotal adjustment of the intermediate panels B with respect to the central panel A and the combined sliding and pivotal adjustment of the end panels C with respect to the intermediate panels B permits the bier to be adjusted any size from a maximum extended position as indicated in Figs. 1 and 2 to the minimum contracted position as indicated in Figs. 3 and 4.

A preferably rubber casket support 20 is provided at the top of the said central panel A near each outer end thereof, and a single preferably rubber casket support 21 is provided on the top of the extreme outer end of each end panel C. It will be noted that the supports 21 are higher than the supports 22 in order to compensate for the lower height of the top of the end panels C with respect to the height of the central panel A so that the top of all the said casket supports 21 and 22 will be at the same elevation.

A rubber tired caster 22 is preferably mounted on the bottom of the extreme outer ends of the central panel A and a like rubber tired caster 23 is mounted on the bottom of the extreme outer end of each end panel C as best indicated in

Figs. 1, 2, 3 and 4 to permit the bier to be easily moved either in its expanded, partially expanded or contracted position.

It is preferable to provide means by which the bier may be easily and readily adjusted to a desired vertical height and it is extremely desirable to have the said means for vertical adjustment capable of causing the said bier to automatically compensate for the various heights of caskets placed thereon. Large caskets are generally constructed deeper than smaller caskets and the larger caskets weigh more proportionately than do the smaller ones, therefore, the weight of the various sizes of caskets is substantially a direct function of the height thereof. With this fact in view a novel self vertical adjustment of the expandible and contractible bier disclosed herein may be accomplished as disclosed in Figs. 6 and 7.

The bier is preferably provided with casters 22 at the extreme outer ends of the central portion A and casters 23 at the extreme outer end of each of the end panels C which may be spring mounted in the said panels A and B as best indicated in Fig. 6, the construction shown in Fig. 6 particularly applying to the mounting of the casters 23 in the extreme outer ends of the end panels C.

Referring now particularly to Fig. 6, the outer end of the end panel C is bored and counterbored from the bottom to receive a caster mounting sleeve 24 and provide a suitable space 25 into which the upper portion 26 and stop 27 of the stem 28 of the said caster 23 may reciprocate. The caster 23 comprises a preferably rubber tired wheel 29 rotatably mounted in the caster fork 30 disposed below a shank 31 from which the stem 28 of the caster 23 upwardly extends into the caster mounting sleeve 24. The caster stem 28 is telescoped snugly into the lower end of the caster mounting sleeve 24 while the upper portion 26 of the said caster stem 28 which is smaller in diameter than the lower portion of the caster stem 28 is telescoped through a suitable aperture provided in the top 32 of the said caster mounting sleeve 24 as best illustrated in Fig. 6. The upper portion 26 of the said caster stem 28 is smaller in diameter than the said lower portion of the said caster stem 28 to admit of a compression spring 33 being positioned therearound in the upper end of the said mounting sleeves 22. The said compression spring acts against the shoulder 34 at the top of the lower portion of the caster stem 28 and reacts against the inside of the top 32 of the said caster mounting sleeve 24 and normally urges the caster 23 to a depending position with respect to the bottom of the end panel C.

The lower portion of the said caster stem 28 is preferably provided with a plurality of spaced annular semi-circular grooves 35 as best indicated in Fig. 6 into which a semi-spherical ended set screw 36 threaded in the sleeve 37 projecting through one side of the panel C is positioned in such a relationship with respect to the said stem 28 of the caster 23 as to prevent the caster 23 from telescoping out of any adjusted position to which the said caster may be set with respect to the bottom of the bier and at the same time permit the caster and stem thereof to turn within the said caster mounting sleeve 24. It will be noted that the radius of the semi-spherical end of the set screw 36 is preferably slightly less than the radius of the semi-circular grooves 35 in the caster stem 28 to prevent the set screw

36 from locking the said caster sleeve 28 against turning in its mounting sleeve 24.

In the embodiment of the invention disclosed in the drawings each of the six compression 5 springs 33 used are of such strength as to compress to the position indicated in Fig. 6 when the maximum size and weight of caskets is positioned on the bier. The stem of each caster is telescoped within the caster mounting sleeve 24 10 thereof as indicated in Fig. 6 when the weight of a maximum size and weight of casket is placed on the bier and also when the bier is not in use. In order to maintain the said casters 23 in their retracted position, the set screw 36 is turned into 15 engagement with the lower annular groove 35 of each caster stem 28.

In order to avoid the set screw 36 from fouling the intermediate panels B when the bier is contracted or adjusted to a semi-contracted position, a set screw 360 with an elongated shank 361 is 20 provided at the ends of the said center panel A, otherwise, the construction of casters 22 at the ends of the center panel A are identical to the construction of casters 23 with the additional exception that the shank 310 of each of the casters 22 is shorter than the shank 31 of the casters 23 25 to compensate for the extra depth of the central panel A as compared to the depth of the end panels C.

When using the adjustable bier, the said bier is 30 first adjusted in width and length to accommodate the casket to be placed thereon and the anchorage nuts 17 and 19 are securely drawn up. The set screws 36 and 37 are released and the bier is extended vertically to its highest position 35 on the casters 22 and 23, the stops 27 preferably threaded on top of the upper portion 26 of each of the stems 28 of the casters 22 and 23 serving to maintain the bier level in its highest position. 40 The casket is then placed on top of the bier, the weight of which causes the bier to settle to the normal desired height. The set screws 36 and 360 are then turned so that the semi-spherical end thereof registers with one of the spaced annular grooves 35 in the lower portion of the 45 stem 28 of each of the casters 22 and 23.

It is readily observed that the bier may be extended to the desired size, a casket placed thereon and adjusted to the desired height with a minimum of confusion and effort. Also, once adjusted 50 the height to which the bier is set cannot be varied without the release of the set screws 36 or 360, yet, the casters are free to turn in their mountings making the bier easily portable after adjustment. Also, if a height is required other 55 than the normal height to which the bier automatically positions itself after a casket is set thereon, any new height may be established without the necessity of those adjusting the height 60 of the casket lifting a total weight of the casket inasmuch as the compression springs 33 are of the correct strength to receive some of the weight of the caskets during vertical adjustment thereby making the adjustment of the height of the 65 bier to suit required or desired conditions very easy to accomplish after a casket has been placed thereon.

Although but one embodiment of the invention has been disclosed and described herein, it is 70 readily observed that many changes including the size, shape, arrangement and detail of the various parts thereof may be made without departing from the spirit of the invention as defined in the appended claims.

75 We claim:

1. An adjustable bier comprising a vertically disposed central panel, a pair of vertically disposed intermediate panels mounted vertically pivotally and horizontally slidably with respect to each end of the said central panel, a vertically 5 disposed end panel mounted vertically pivotally and horizontally slidably with respect to each intermediate panel, and means for fixing each intermediate and end panel at the position to which the said panels are slidably and pivotally adjusted 10 with respect to the central and intermediate panels respectively.

2. An adjustable bier comprising a vertically disposed central panel, four vertically disposed intermediate panels, four vertically disposed end 15 panels, and means for slidably and pivotally connecting one end of each intermediate panel and one end of each end panel to the said central panel and one of the said intermediate panels respectively, the said connecting means being 20 adapted to fix the said intermediate and end panels in the position to which they are slid or pivoted with respect to the central and intermediate panels respectively.

3. An adjustable bier comprising a vertically 25 disposed central panel, top and bottom central guide plates on said central panel projecting therearound having a plurality of guide slots therein generally parallel to the said central panel but spaced therefrom, vertically disposed intermediate panels, top and bottom intermediate 30 guide plates on said intermediate panels projecting on the outside and outer end thereof having a guide slot therein generally parallel to the side and outer end of the said intermediate panels but spaced therefrom, vertically disposed end 35 panels, means positioned through the slots in said guide plates adapted to vertically pivot and horizontally guide the said intermediate panels and end panels to any desired telescoped and pivoted position with respect to the said central guide 40 plates and intermediate guide plates respectively, and means for fixing the said intermediate panels and end panels into the telescoped and pivoted position with respect to the guide plates 45 of the said central panel and intermediate panels respectively to which they may be adjusted.

4. An adjustable bier comprising a vertically disposed central panel, top and bottom central guide plates on said central panel projecting 50 therearound having a plurality of guide slots therein generally parallel to the said central panel but spaced therefrom, vertically disposed intermediate panels, top and bottom intermediate guide plates on said intermediate panels projecting 55 on the outside and outer end thereof having a guide slot therein generally parallel to the side and outer end of the said intermediate panels but spaced therefrom, vertically disposed end panels, a pivot pin extending vertically 60 through the inner end of each intermediate and end panel positioned through the said guide slots in the central and intermediate guide plates respectively whereby to engage said guide plates and admit of lateral sliding and pivotal adjustment 65 of the said intermediate and end panels with respect to the said central and intermediate panels respectively, and means for locking the said intermediate and end panels in their adjusted position. 70

5. An adjustable bier comprising a vertically disposed central panel, four vertically disposed intermediate panels, four vertically disposed end 75 panels, means for slidably and pivotally connecting one end of each intermediate panel and

one end of each end panel to the said central panel and one of the said intermediate panels respectively, the said connecting means being adapted to fix the said intermediate and end panels in the position to which they are slid or pivoted with respect to the central and intermediate panels respectively, and casters supporting said bier mounted near the ends of the central panel and near the outer end of each outer panel.

6. An adjustable bier comprising a vertically disposed central panel, four vertically disposed intermediate panels, four vertically disposed end panels, means for slidably and pivotally connecting one end of each intermediate panel and one end of each end panel to the said central panel and one of the said intermediate panels respectively, the said connecting means being adapted to fix the said intermediate and end panels in the position to which they are slid or pivoted with respect to the central and intermediate panels respectively, a plurality of casters supporting said bier self adjustable to height in response to weight placed on the said bier, and means for fixing the said casters to any vertically adjusted position.

7. An adjustable bier comprising a vertically disposed central panel, top and bottom central guide plates on said central panel projecting therearound having a plurality of guide slots therein generally parallel to the said central panel but spaced therefrom, vertically disposed intermediate panels, top and bottom intermediate guide plates on said intermediate panels projecting on the outside and outer end thereof having a guide slot therein generally parallel to the side and outer end of the said intermediate panels but spaced therefrom, vertically disposed end panels, a pivot pin extending vertically through the inner end of each intermediate and end panel positioned through the said guide slots in the central and intermediate guide plates respectively whereby to engage said guide plates and admit of lateral sliding and pivotal adjustment of the said intermediate and end panels with respect to the said central and intermediate panels respectively, means for locking the said intermediate and end panels in their adjusted position, and casters supporting said bier mounted near the ends of the central panel and near the outer end of each outer panel.

8. An adjustable bier comprising a vertically disposed central panel, top and bottom central guide plates on said central panel projecting therearound having a plurality of guide slots therein generally parallel to the said central panel but spaced therefrom, vertically disposed intermediate panels, top and bottom intermediate guide plates on said intermediate panels projecting on the outside and outer end thereof having a guide slot therein generally parallel to the side and outer end of the said intermediate panels but spaced therefrom, vertically disposed end panels, means positioned through the slots in said guide plates adapted to vertically pivot and horizontally guide the said intermediate panels and end panels to any desired telescoped and pivoted position with respect to the said central guide plates and intermediate guide plates respectively, means for fixing the said intermediate panels and end panels into the telescoped and pivoted position with respect to the guide plates of the said central panel and intermediate panels respectively to which they may be ad-

justed, a plurality of casters supporting said bier self adjustable to height in response to weight placed on the said bier, and means for fixing the said casters to any vertically adjusted position.

9. An adjustable bier comprising a vertically disposed central panel, top and bottom central guide plates on said central panel projecting therearound having a plurality of guide slots therein generally parallel to the said central panel but spaced therefrom, vertically disposed intermediate panels, top and bottom intermediate guide plates on said intermediate panels projecting on the outside and outer end thereof having a guide slot therein generally parallel to the side and outer end of the said intermediate panels but spaced therefrom, vertically disposed end panels, a pivot pin extending vertically through the inner end of each intermediate and end panel positioned through the said guide slots in the central and intermediate guide plates respectively whereby to engage said guide plates and admit of lateral sliding and pivotal adjustment of the said intermediate and end panels with respect to the said central and intermediate panels respectively, means for locking the said intermediate and end panels in their adjusted position, a plurality of casters supporting said bier self adjustable to height in response to weight placed on the said bier, and means for fixing the said casters to any vertically adjusted position.

10. An adjustable bier comprising, in combination, a vertically disposed central panel, top and bottom central guide plates on said central panel projecting therearound having a plurality of guide slots therein generally parallel to the said central panel but spaced therefrom, vertically disposed intermediate panels, top and bottom intermediate guide plates on said intermediate panels projecting on the outside and outer end thereof having a guide slot therein generally parallel to the side and outer end of the said intermediate panels but spaced therefrom, vertically disposed end panels, a pivot pin extending vertically through the inner end of each intermediate and end panel positioned through the said guide slots in the central and intermediate guide plates respectively whereby to engage said guide plates and admit of lateral sliding and pivotal adjustment of the said intermediate and end panels with respect to the said central and intermediate panels respectively, means for locking the said intermediate and end panels in their adjusted position, casters supporting the said bier near the ends of the central panel and near the outer end of each outer panel, sleeves fixed in said bier panels in which the stems of the said casters are telescopingly and rotatably mounted, spring means in said sleeves adapted to telescopingly adjust the height of the bier with respect to the said casters responsive to weight placed on the said bier, the shanks of the said casters having a plurality of vertically spaced annularly disposed grooves therein, and spherical headed set screw through each sleeve adapted to be positioned in one of the annular grooves in the caster shank mounted therein whereby to fix the telescopic adjustment of the said casters and at the same time permit the casters to rotate freely in their mounting.

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