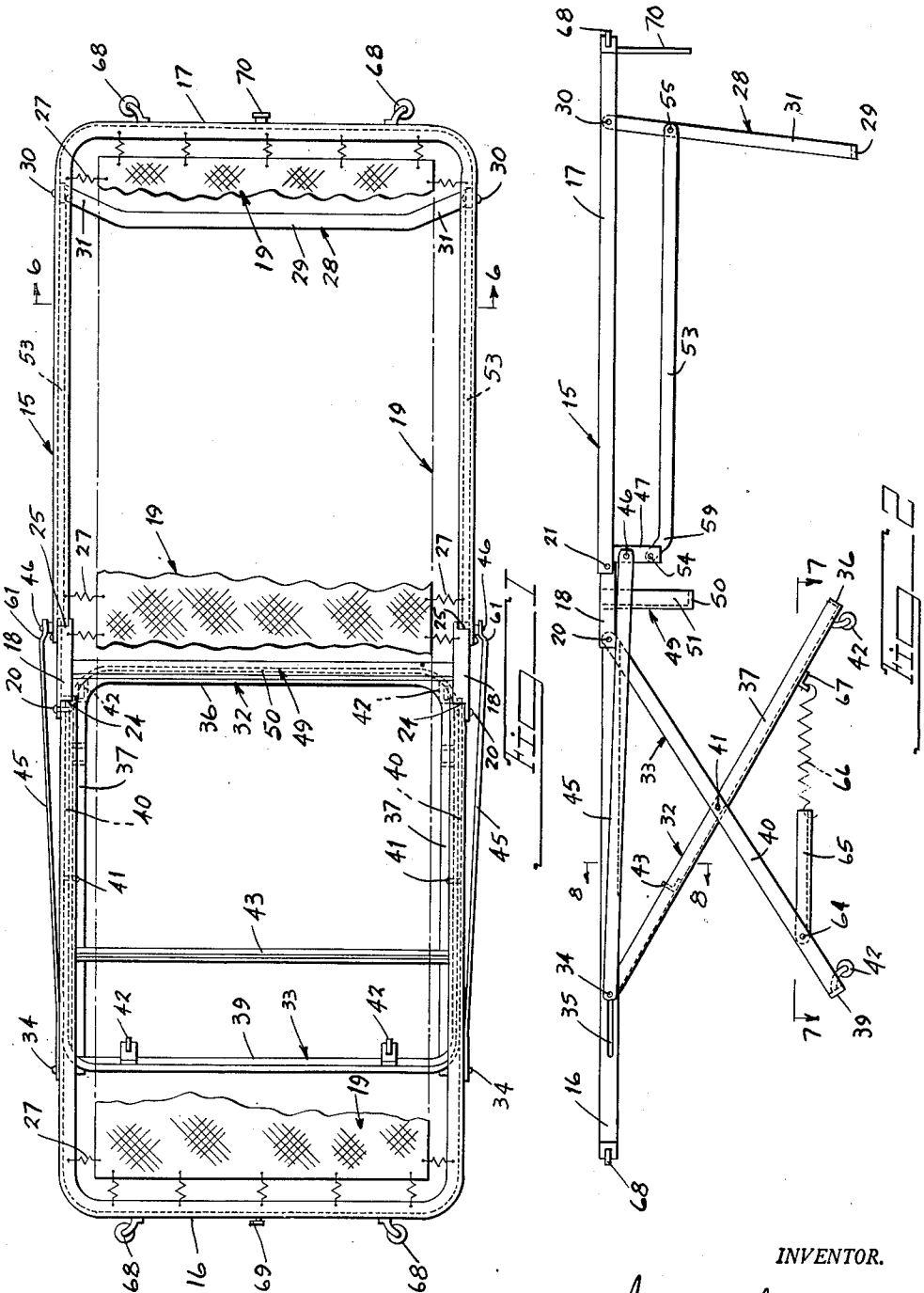
June 27, 1950 E. GOTTLIEB 2,513,167

FOLDING COT OR BED

Filed July 5, 1947 3 Sheets-Sheet 1



INVENTOR.

Edward Gottlieb

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FOLDING COT OR BED

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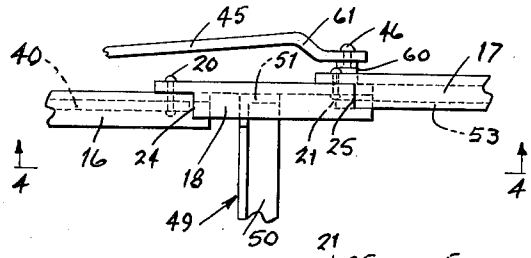



Fig 3

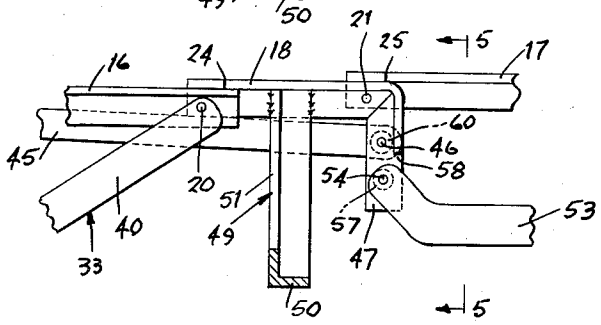



Fig 4

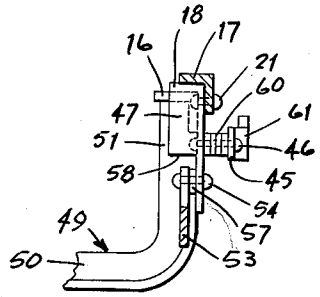



Fig 5

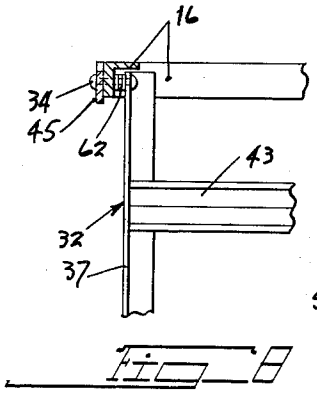



Fig 8

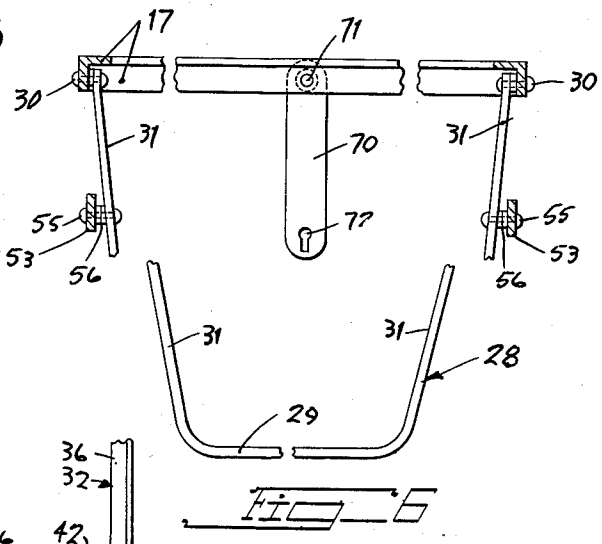



Fig 6

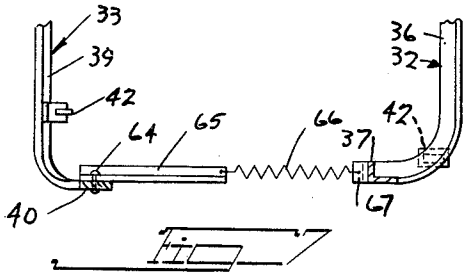



Fig 7

INVENTOR.

Edward Gottlieb

June 27, 1950 E. GOTTLIEB 2,513,167

FOLDING COT OR BED

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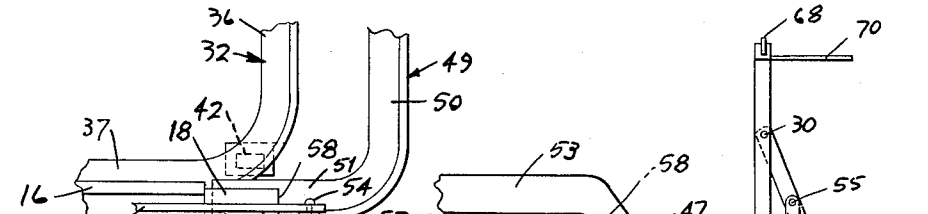


Fig. 11



Fig. 12

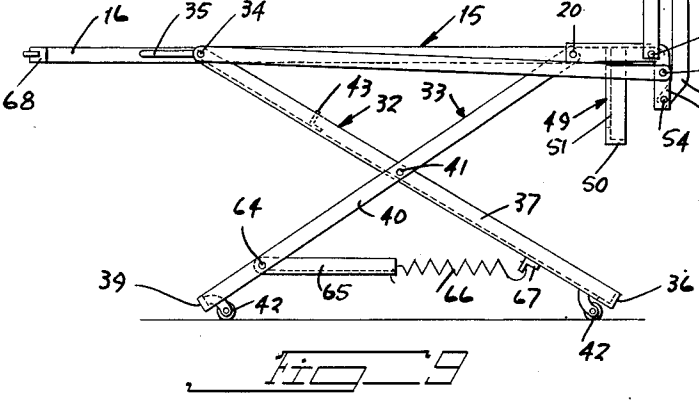


Fig. 9

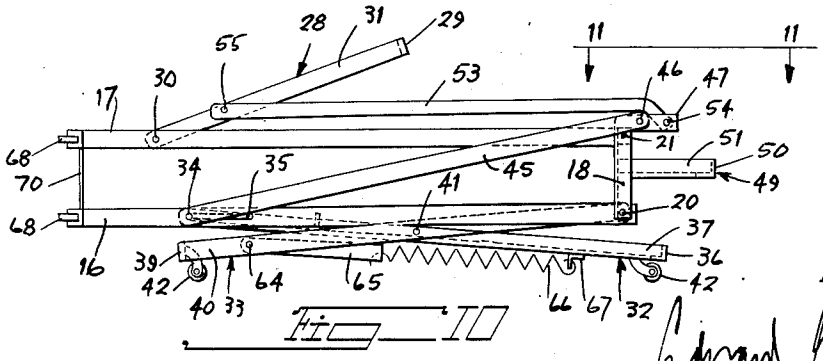
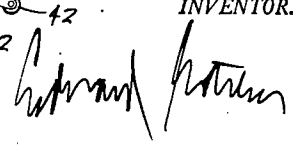


Fig. 10

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# UNITED STATES PATENT OFFICE

2,513,167

## FOLDING COT OR BED

Edward Gottlieb, Brooklyn, N. Y.

Application July 5, 1947, Serial No. 759,090

3 Claims. (Cl. 5—111)

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This invention relates to new and useful improvements in folding cots and beds.

The invention more particularly relates to a folding cot or a bed which is provided with a pair of pivotally connected crossed legs at one end and a single leg at the other end. Cots and beds of this type are folded by lifting the end with the single leg and swinging it around over the end with the crossed legs. Heretofore the linkage used in automatically folding the legs when the cot or bed was folded closed, projected above the mattress supporting surface of the cot or bed. The height of the mattress was relied upon to support a person above the projecting links to prevent injury. However, in a short time the mattress sags and then the cot or bed may be dangerous. Men may be ruptured by sitting down unintentionally on the linkage. Women may also be seriously injured.

It is an important object of this invention to avoid projecting any operating linkage above the mattress supporting surface of the folding cot or bed.

Another object of the invention resides in so constructing the connecting linkage that the folding cot or bed when in an open position will be locked open so as not to accidentally close when a person's weight is placed on any point on the cot or bed.

Another object of the invention is to so construct the cot or bed that it will not sag or bend at the center under a person's weight while in an open condition.

It is a further object of this invention to construct a folding cot or bed embodying the advantages outlined above, which is simple and durable and which may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure—

Fig. 1 is a plan view of a folding cot or bed constructed in accordance with this invention, illustrated with certain parts broken away to more clearly disclose under parts.

Fig. 2 is a front elevational view of Fig. 1.

Fig. 3 is a fragmentary enlarged detailed view of a portion of Fig. 1.

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 3.

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Fig. 5 is a transverse sectional view taken on the line 5—5 of Fig. 4.

Fig. 6 is a fragmentary enlarged transverse vertical sectional view taken on the line 6—6 of Fig. 1.

Fig. 7 is a fragmentary horizontal sectional view taken on the line 7—7 of Fig. 2.

Fig. 8 is a fragmentary enlarged transverse sectional view taken on the line 8—8 of Fig. 2.

Fig. 9 is a side elevational view similar to Fig. 2 but illustrating the cot or bed in a partially folded closed position.

Fig. 10 is an elevational view similar to Fig. 9 but illustrating the cot or bed completely folded closed.

Fig. 11 is a fragmentary plan view of a portion of Fig. 10 looking in the direction of the line 11—11 thereof.

Fig. 12 is a front elevational view of Fig. 11 but illustrated with certain front parts broken away to disclose under parts.

The folding cot or bed, in accordance with this invention, includes a mattress supporting frame 15 having a horizontal U-shaped head section 16, a horizontal U-shaped foot section 17, a pair of horizontal central arm sections 18 between and pivotally connected with the opposed ends of the arms of said U-shaped sections 16 and 17, and a flexible mattress support member 19 mounted between said sections 16, 17 and 18. The head section 16 is pivotally connected with the central arm sections 18 with pintle rivets 20. The foot section 17 is pivotally connected with the central arm sections 18 with pintle rivets 21. The sections 16, 17 and 18 are formed from angle members arranged with one of their arms horizontally at the top and extended inwards, and the other of their arms outside and extended vertically downwards. The central arm sections 18 are set upon the ends of the arms of the U-shaped head section 16 and the pintles 20 are engaged through the adjacent vertical arms of the angle members forming said sections 16 and 18. The ends of the arms of the U-shaped foot section 17 are set upon the adjacent ends of the central arm sections 18 and the pintle rivets 21 are engaged through the adjacent vertical arms of the angle members forming said sections 17 and 18.

Means is provided for limiting downward pivoting of the horizontal central arm sections 18 in relation with said horizontal U-shaped head section 16 and for limiting upward pivoting of said horizontal central arm sections 18 to right angles in relation to said horizontal U-shaped

head section 16. This limiting means comprises notched-out portions 24 formed in the top arms of the angle members forming the central arm sections 18. The edge portions of the notches 24 rest upon the end portions of the arms of the U-shaped head section 16 and in this way the central arm sections 18 are limited from pivoting downwards. The notches 24 are so designed that the central arm sections 18 may pivot upwards to positions at right angles to the head section 16 and then the edges of the notches 24 strike the top face of the head section 16, as clearly illustrated in Fig. 12.

Means is also provided for limiting downward pivoting of the horizontal U-shaped foot section 17 in relation with said horizontal central arm sections 18 and limiting upward pivoting of said horizontal U-shaped foot section 17 to right angles with and in relation to said horizontal central arm sections 18. This means comprises notched-out portions 25 formed in the top arms of the angle members forming the U-shaped foot section 17. The edge portions of the notches 25 rest on the edge portions of the central arm sections 18 limiting downward pivoting of the foot section 17 in relation with said horizontal central arm sections 18. The foot section 17 may pivot upwards to right angles in relation to said horizontal central arm sections 18 in which positions the edges of the notches 25 will strike the top faces of the central arm sections 18, as clearly illustrated in Fig. 12.

Said flexible mattress support member 19 may be of any design and construction. It is illustrated as a sheet of canvas or other cloth material which is mounted between the sections 16, 17 and 18 with a plurality of springs 27 connecting the edge portions of said sheet with the top arms of the angle members forming the sections 16, 17 and 18. A single leg 28 is pivotally connected with said foot section 17 at a point near its outer end and extends downwards. This single leg 28 is of U-shape having a flat bottom portion 29 which rests on the floor, and arms 31 extending upwardly and pivotally connected by pintles 30 to the inside faces of the vertical arms of the angle members forming the foot section 17.

A pair of pivotally connected cross legs 32 and 33 have the inner ones of their top ends pivotally connected with said head section 16 near said central arm sections 18 with said pintle rivets 20 which are also used to pivotally connect the head section 16 with the central arm sections 18. The outer ends of the crossed legs 32 and 33 have their top ends slidably connected with the head section 16 by pintle slide rivets 34 slidably engaging in slots 35 formed in the vertical arms of the angle member forming the head section 16. These slide rivets 34 and slots 35 are near the outer end of the head section 16. The leg 32 is of U-shape having a flat bottom 36 and side arms 37. It is constructed of angle material arranged with one of its arms vertical and at the out position, and the other of their arms extending inwards and at the down position. The leg 33 is also of U-shape having a relatively flat bottom 39 and side arms 40. The leg 33 is formed of flat material. The side arms 37 and 40 of said legs 32 and 33 are pivotally connected with each other with pintles 41. Casters 42 are mounted upon the bottom portions of the crossed legs 32 and 33, and normally rest on the ground. An angle member brace 43 is mounted between



the side arms 37 of the leg 32 at a point between the pivots 41 and the slide rivets 34 for reinforcing the leg structure. The upper ends of the side arms 37 are disposed adjacent the inner faces of the vertical arms of the angle member forming the head sections 16.

Stretcher rods 45 positioned below the top of the mattress support frame 15 pivotally connect with the slide rivets 34 of said leg 32 and pivotally connect with one of the sections of the frame 15 other than section 16, at a point in the vicinity of the pivot points of said sections 17 and 18. More particularly, the stretcher rods 45 pivotally connect with the central arm sections 18 by the pintle rivets 46. The central arm sections 18 have end portions 47 adjacent the end of the foot section 17 bent downwards, for example see Fig. 4. The pintle rivets 46 are mounted upon these down bent ends 47. The pintle rivets 46 are located short distances beneath the pintles 21 so as to lock the central arm sections 18 with respect to the head section 16 when the cot or bed is in the open position as illustrated in Fig. 2. A U-shaped brace 49 rigidly connects the said central arm sections 18. This brace 49 is formed from angle material. It has a relatively flat bottom 50 and side arms 51. The side arms 51 extend upwards and engage the inner faces of the side arms of the angle material forming the central arm sections 18 and are welded at these points to said central arm sections 18.

Tie rods 53 are disposed below the top of the mattress support frame 15 and are connected with said central arm sections 18, more specifically, with the downturned end portions 47 thereof, with pintle rivets 54. The tie rods 53 extend towards the single leg 28 and are pivotally connected therewith with pintle rivets 55. In order to prevent binding of the parts washers 56 are engaged upon the pintle rivets 55 between the tie rods 53 and the single leg 28. Washers 57 are engaged upon the pintle 54 between the downturned ends 47 and the tie rods 53. The downturned ends 47 are formed with notches 58 formed in one of the arms of the angle material from which the central arm sections 18 are made, so as to provide room for the tie rods 53 to pivot during the closing of the cot or bed. The end portions 59 of the tie rods 53 are suitably bent or offset so that the tie rods 53 may extend upwards along the sides of the downturned end portions 47, as for example illustrated in Fig. 9, during the folding operation of the bed. Washers 60 are engaged on the pintle rivets 46 between the ends of the stretcher rods 45 and the downturned portions 47 of the arm sections 18. Moreover, the end portions 61 of the stretcher rods 45 are bent outwardly (see particularly Fig. 3) so as to make room for the moving of the stretcher rods 45 when the cot or bed is folded closed. Washers 62 are engaged upon the pintle slide rivets 34 between the upper ends of the leg 32 and the vertical arms of the angle member forming the head section 16. Washers may also be engaged at other points, but only the more important points have been clearly specified.

Resilient means is connected between the bottom end portions of the crossed legs 32 and 33 for assisting in opening the folding cot or bed after it has been closed. This resilient means comprises angle members 65 pivotally connected by pintles 64 with the bottom portions of the side arms 40 of the leg 33. Tension springs 66

are connected with the angle members **65** and with brackets **67** mounted upon the side arms **37** of the leg **32**. Casters **68** are mounted upon the outer ends of the head section **16** and foot section **17**. The outer ends of said sections **16** and **17** are also provided with a latch comprising a headed stud **69** mounted upon the head section **16** and cooperative with a pivotally mounted bolt **70** mounted on the foot section **17**. The bolt **70** is pivotally supported with a pintle **71** (see Fig. 6). The outer end of the bolt **70** is provided with a bayonet slot **72** engageable on the headed stud **69** for locking the cot or bed closed.

The operation of the folding cot and bed may be understood from the following:

In Figs. 1 and 2 the cot or bed is shown in its open position. It may be folded closed by manually gripping the foot section **17** and pivoting it upwards until it assumes a position at right angles to the central arm sections **18**, as illustrated in Fig. 9. This automatically folds closed the single leg **28**. Then the foot section **17** is further moved so as to cause the central arm sections **18** to pivot upwards and so as to dispose the foot section **17** above the head section **16**, as illustrated in Fig. 10. During this motion the stretcher rods **45** will automatically move the slide rivets **34** along the slots **35** and fold closed the crossed legs **32** and **33**. The latch bolt **70** is now engaged on the headed stud **69**. It should be understood that a mattress, not illustrated, for the folding bed or cot may be tied to and remain thereon while it is folded and will assume a position in the space between the foot section **17** and head section **18**.

For clarity of illustration the single leg **28** has not been shown fully closed in Fig. 10. It may be squeezed downwards into a lower position substantially into the plane of the foot section **17**. Similarly, the cross legs **32** and **33** are not illustrated fully closed. Pressure may be applied upon the top of the cot so as to fold these legs further so that they are substantially in a common plane with the head section **16**. In the further folded position of the crossed legs **32** and **33** the members **65** and springs **66** will assume positions substantially across the pintles **41** locking the cross legs **32** and **33** in a closed position.

The bed or cot may be reopened by first opening the latch bolt **70** and then pulling upwards on the single leg **28**, and finally lifting the foot section **17** to pivot it upwards so that the central arm sections **18** turn back to their horizontal position, as shown in Fig. 9. When the parts assume this position the crossed legs **32** and **33** will automatically open. During this motion it may be necessary to pull upwards on the foot section **17** and slightly shake the cot to cause the folded crossed legs **32** and **33** to drop slightly downwards, or the operator may step with one foot on the crossed legs **32** while pulling upwards on the foot section **17** so as to force the crossed legs downwards out of their locked position. Immediately the springs **66** will assist in opening the crossed legs to their full positions. Finally, the foot section **17** is dropped downwards to its horizontal position which automatically opens the single leg **28** and now the cot is again as illustrated in Fig. 2.

An important feature of the invention resides in the fact that the stretcher rods **45** and the tie rods **53** are below the mattress supporting surface of the mattress support frame **15**. For this reason no matter how badly a mattress on the cot or bed sags or becomes worn, there is no possibility of a person sitting down on upwardly projecting parts which might cause injury. Another important feature of the invention resides in the specific arrangement of the central arm sections **18** and the stretcher rods **45** and tie rods **53**. This arrangement is such as to lock the parts in their open positions resisting downward sagging at the center of the cot or bed while in the open position. The cot or bed can only be closed by lifting the outer ends of the foot section **17** or the head section **16**, or both simultaneously, but the cot cannot be closed by downward pressure at its center.



While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:

1. In a folding cot or bed, a mattress support frame having a horizontal U-shaped head section, a horizontal U-shaped foot section, a pair of horizontal central arm sections between and pivotally connected with the opposed ends of the arms of said U-shaped sections, and a flexible mattress support member mounted between said sections, means for limiting downward pivoting of said horizontal central arm sections in relation with said horizontal U-shaped head section, means for limiting downward pivoting of said horizontal U-shaped foot section in relation with said horizontal central arm sections, a single leg pivotally connected with said foot section at a point near its outer end and extending downwards, a pair of pivotally connected crossed legs having the inner one of their top ends pivotally connected with said head sections near said central arm sections and having the outer one of their top ends slidably connected with said head section near the outer end of the head section, stretcher rods below the top of said mattress support frame in order that persons sitting on said cot or bed cannot possibly be hurt by said stretcher rods projecting above said mattress support frame, and said stretcher rods being pivotally connected with the slidable end of said crossed legs and pivotally connected with one of said sections other than said head section at a point in the vicinity of the pivot points of said sections, and tie rods below the top of said mattress support frame in order that persons sitting on said cot or bed cannot possibly be hurt by said tie rods projecting above said mattress support frame, and said tie rods being pivotally connected with said central arm sections and with said single leg at points below the pivots of said sections.

2. In a folding cot or bed, a horizontal mattress support frame having three adjacent horizontal sections in single file and in end alignment with each other, said three sections being designated first, second and third, respectively, from one end of said single file to the other end, means for pivotally connecting together the adjacent ends of said adjacent sections, means for limiting pivoting of said adjacent sections downwards from said horizontal position, a pair of pivotally connected crossed legs beneath said first section and having the inner end of their top ends pivotally

connected with said first section at a point near said second section and having the outer one of their top ends slidably connected with said first section near the outer end thereof, and stretcher rods for closing said crossed legs when said second and third sections are pivoted upwards relative to said first section, said stretcher rods being pivotally connected with the slidable end of said crossed legs and pivotally connected with one of said sections other than said first section, and said stretcher rods being below the top of said mattress support frame while said frame is in its horizontal position in order that persons sitting on said cot or bed cannot possibly be hurt by said stretcher rods projecting above said mattress support frame.

3. In a folding cot or bed, a horizontal mattress support frame having three adjacent horizontal sections in single file and in end alignment with each other, said three sections being designated first, second and third, respectively, from one end of said single file to the other end, means for pivotally connecting together the adjacent ends of said adjacent sections, means for limiting pivoting of said adjacent sections downwards from said horizontal position, a pair of pivotally connected crossed legs beneath said first section and having the inner end of their top ends pivotally connected with said first section at a point near said second section and having the outer one of their top ends slidably connected with said first section near the outer end thereof, stretcher rods for closing said crossed legs when said second and third sections are pivoted upwards relative to said first section, said stretcher rods being pivotally connected with the slidable end of said crossed legs and pivotally connected with one of said sections other than said first section, and said stretcher rods being below the top of said mattress support frame while said frame is in its horizontal position in order that, persons sitting on said cot or bed cannot possibly be hurt by said stretcher rods projecting above said mattress support frame, a single leg pivotally connected with said third section and extending downwards, and tie rods for closing said single leg when said second and third sections are pivoted upwards relative to said first section, said tie rods being pivotally connected with said second section and with said single leg at points below the pivots of said sections, and said tie rods being below the top of said mattress support frame in order that persons sitting on said cot or bed cannot possibly be hurt by said tie rods projecting above said mattress support frame.



EDWARD GOTTLIEB.


## REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

| Number | Name | Date |
|---|---|---|
| 2,231,993 | Fischer | Feb. 18, 1941 |

FOREIGN PATENTS

| Number | Country | Date |
|---|---|---|
| 778,964 | French | Jan. 5, 1935 |