March 16, 1926. 1,576,919

C. LOWERY

FOLDING BED FOR AUTOMOBILES

Filed Nov. 4, 1924 3 Sheets-Sheet 1

Fig. 1

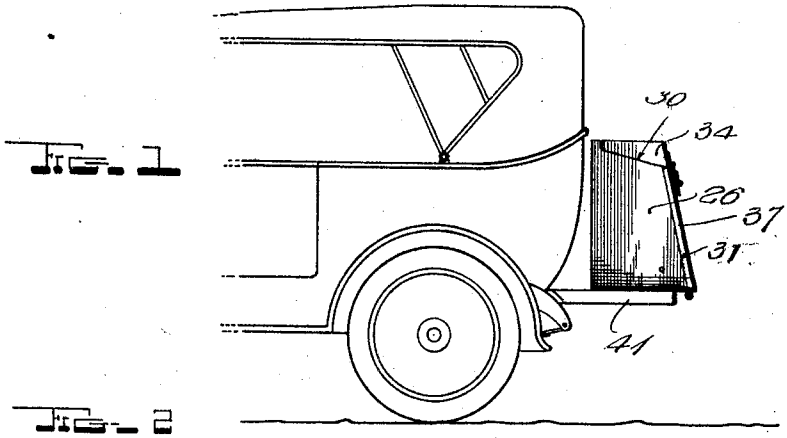
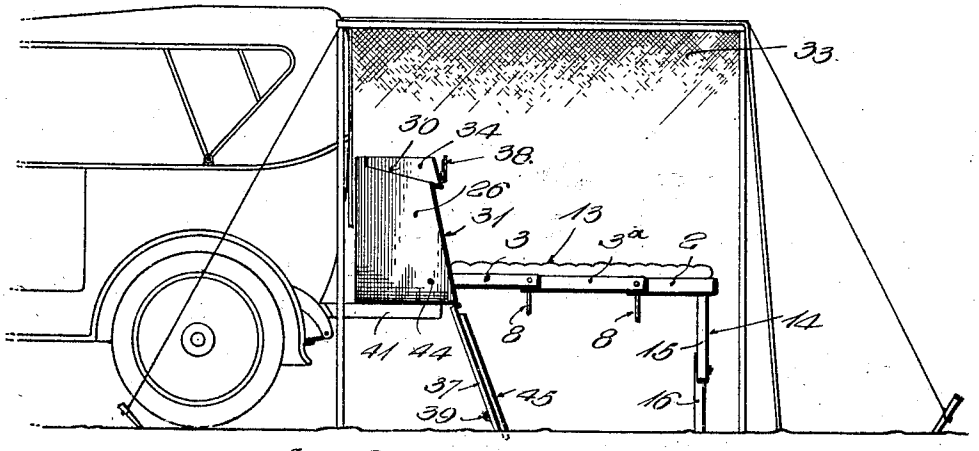


Fig. 2



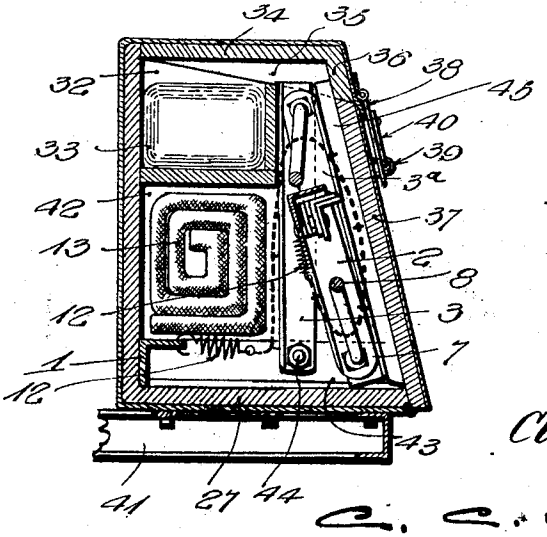


Fig. 3

INVENTOR:
Cleve Lowery,
BY
C. C. Hines.
ATTORNEY.

March 16, 1926. 1,576,919

C. LOWERY

FOLDING BED FOR AUTOMOBILES

Filed Nov. 4, 1924 3 Sheets-Sheet 2

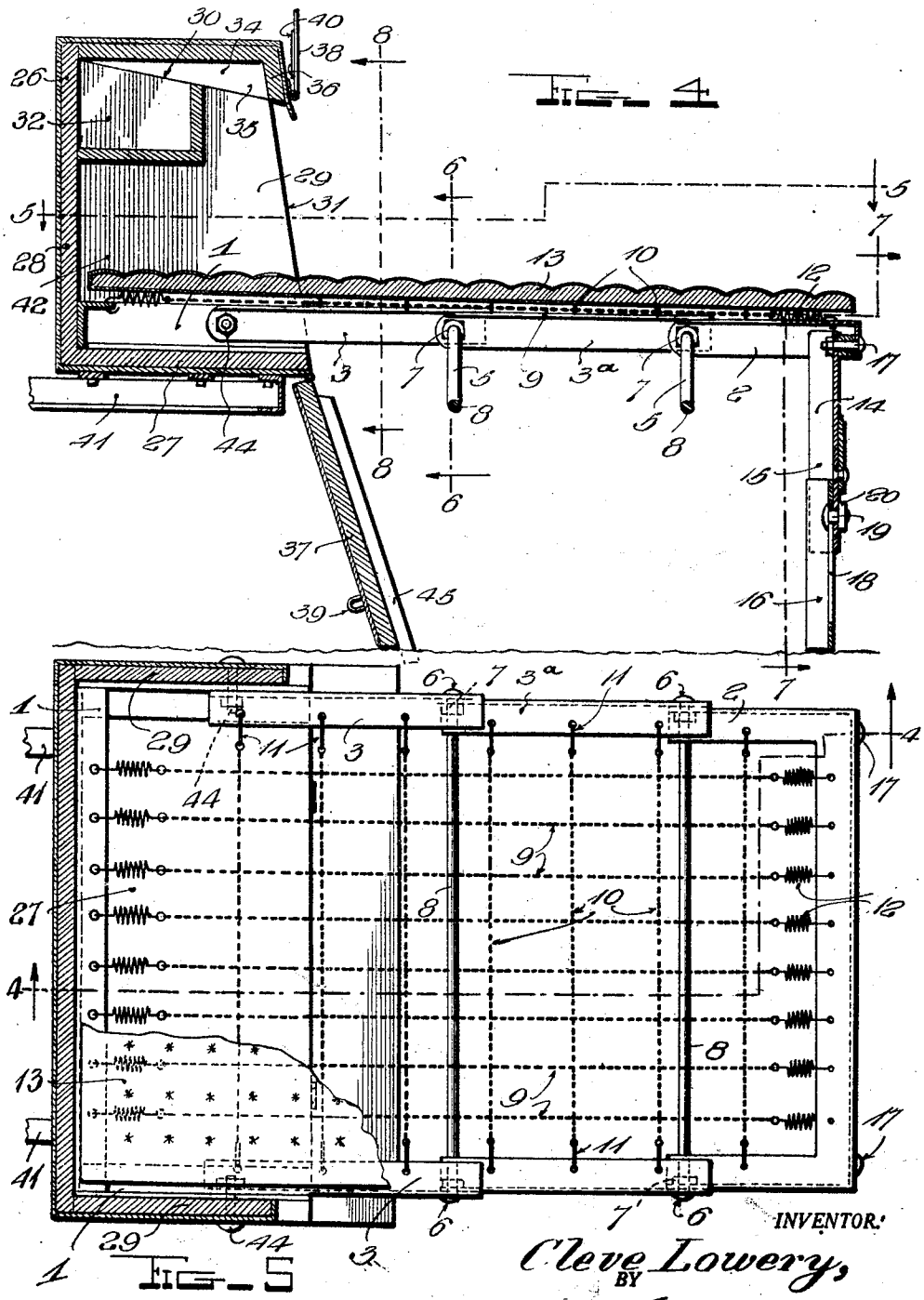


FIG. 4

FIG. 5

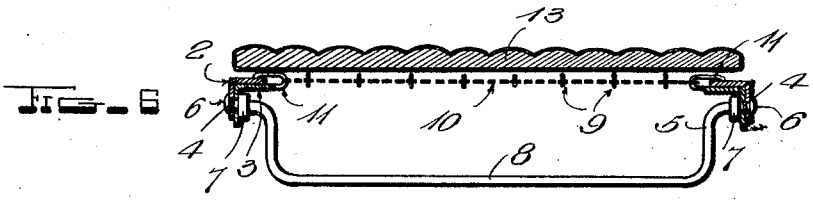
INVENTOR:
Cleve Lowery,
BY
C. A. Hines, ATTORNEY.

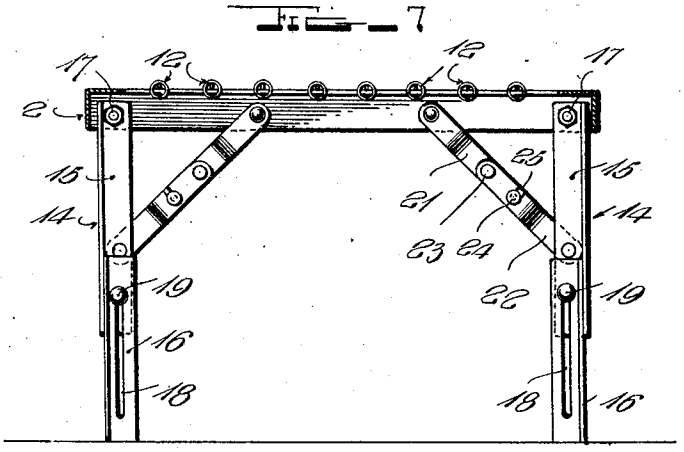
March 16, 1926. 1,576,919

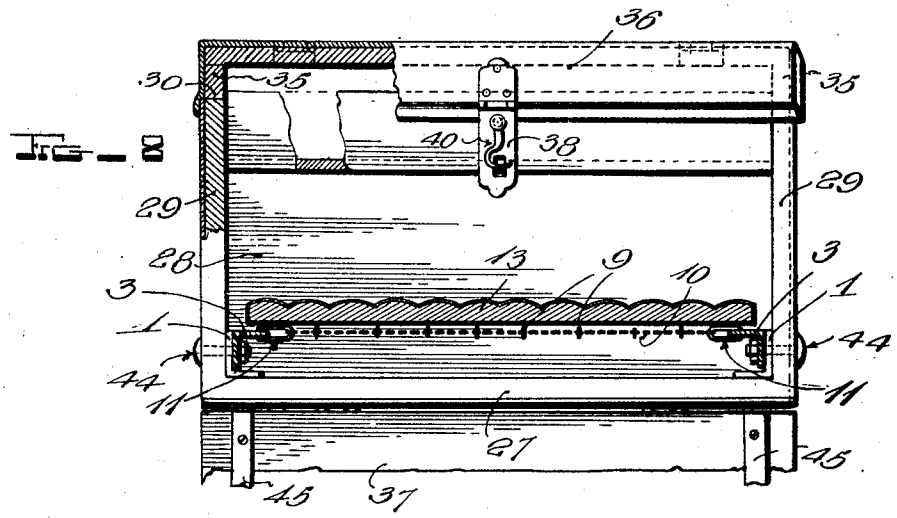
C. LOWERY

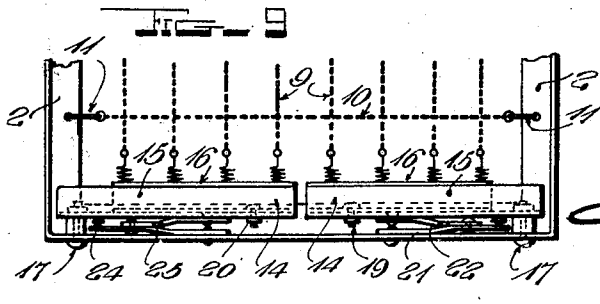
FOLDING BED FOR AUTOMOBILES

Filed Nov. 4, 1924 3 Sheets-Sheet 3









INVENTOR:
Cleve Lowery,
BY C. C. Lowery,
ATTORNEY.

Patented Mar. 16, 1926. 1,576,919

UNITED STATES PATENT OFFICE.

CLEVE LOWERY, OF ORCHARDS, WASHINGTON.

FOLDING BED FOR AUTOMOBILES.

Application filed November 4, 1924. Serial No. 747,755.

To all whom it may concern:

Be it known that I, CLEVE LOWERY, a citizen of the United States, residing at Orchards, in the county of Clarke and State of Washington, have invented new and useful Improvements in Folding Beds for Automobiles, of which the following is a specification.

This invention relates to folding beds for automobiles, designed especially for the use of automobile tourists, etc., in camping out, and one object of the invention is to provide a folding bed and carrier case or cabinet therefor so constructed as to adapt the bed frame to be compactly folded and enclosed with the necessary mattress and bed clothing and a protecting tent within the carrier case or cabinet, whereby the bed and accessories may be disposed in an out of the way position when not in use and protected from access of dust, dirt and the action of the elements.

A further object of the invention is to provide a four-section, three-fold bed of light, strong and durable type which is rigid when let down for use and at the same time is foldable in such close compass as to be contained complete with bedding and tent in a cabinet of a size not greater than a small trunk, allowing the device to be carried without detracting from the appearance of the automobile.

A still further object of the invention is to provide a bed frame embodying a minimum number of parts to be fastened and unfastened in its unfolding and folding actions, and which is complete in itself and devoid of independent bracing, fastening or other parts difficult to handle or liable to be lost or mislaid.

A still further object of the invention is to provide a bed frame having a flexible bottom formed of longitudinal and transverse link chain strands or stretches or the like permitting the same to fold and unfold readily with the rigid frame parts, together with springs operating to hold the flexible strands properly taut and provide a cushioned mattress support when the bed frame is outfolded for use.

A still further object of the invention is to provide a case or cabinet for the bed frame and its accessories which affords great convenience in folding and unfolding the bed and applying and removing the mattress, bed clothes and shelter tent, and which includes a door section adapted for use as a table.

A still further object of the invention is to provide a bed frame comprising a stationary section, located within the case or cabinet, and one or more foldable sections designed to extend in bed-forming position beyond the case or cabinet, whereby a bed frame of convenient length and comfortable of type may be furnished, such parts also being so constructed as to permit the mattress to be rolled inwardly and disposed within the cabinet inside the foldable sections of the frame and to rest upon the stationary section of the frame.

With these and other objects in view, the invention consists of the features of construction, combination and arrangement of parts, hereinafter fully described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a side view of the rear portion of an automobile to which my invention is applied, showing the cabinet as it appears with parts contained and the cabinet closed.

Figure 2 is a similar view, showing the bed unfolded for use and the shelter tent erected.

Figure 3 is a vertical front-to-rear section through the cabinet with all parts enclosed therein.

Figure 4 is a vertical section on line 4—4 of Figure 5.

Figure 5 is a section on line 5—5 of Figure 4.

Figure 6 is a section on line 6—6 of Figure 4.

Figure 7 is a section on line 7—7 of Figure 4.

Figure 8 is a section on line 8—8 of Figure 4.

Figure 9 is a fragmentary bottom plan view of the foot section of the bed frame, showing the supporting legs in folded condition.

In carrying my invention into practice I provide a four-section, three-fold bed frame comprising a fixed head section 1, foot section 2, and a pair of intermediate sections 3—3ª, preferably formed of a light and strong angle metal. The frame sections 2, 3, 3ª have portions of their vertical flanges overlapping and pivotally connected

at their adjacent ends by the end portions 4 of transverse brace rods 5, the outer ends of the portions 4 being headed or riveted as at 6, and the inner ends thereof threaded to receive nuts 7, whereby the lapping flanges of the frame sections are held pivotally coupled and in close relation to each other. The rods 5 serve to hold the sides of the sections 2, 3 and 3^a in properly spaced relation and brace the bed frame transversely. Each rod is provided with a bowed body portion 8 forming a convenient type of crank handle whereby such body portions of the rods may be swung downwardly, as shown in Figure 4, to avoid interference with the depression and cushioning action of the bed spring and mattress when in use, or swung upwardly parallel with the frame sections, as in Figure 3, so as to lie within the plane of the frame and adapt the sections thereof to be folded in close compass. The adjoining ends of the horizontal flanges of the frame sections are adapted to overlap when the bed frame is unfolded, as clearly shown in Figure 3, to prevent downward swinging motion thereof on the hinged connections when the sections are in position for use, whereby rigidity of the bed frame when in service condition is ensured.

The bed frame carries a bed bottom made up of longitudinal strands or stretches 9 and transverse strands or stretches 10 of wire, link chains or the like. The transverse strands or stretches 10 may be secured by suitable rigid fasteners 11 to the horizontal flanges at the sides of the frame sections, while the ends of the longitudinal strands 9 are connected to coiled tension springs 12 which are in turn fastened to the horizontal flanges of the head and foot sections 1 and 2, which springs operate to hold the longitudinal stretches 9 properly taut and under a desired tension when the bed frame is unfolded for use, the action of unfolding the frame sections placing the springs under a prescribed tension. The strands 9 may form supports for the strands 10, and hence a flexible bottom of elastic type is provided to support the mattress 13 and which, through its flexibility, is adapted to fold upon itself in the manner indicated in dotted lines in Figure 3 when the bed frame sections are folded, to permit the latter to be folded in compact form and without interference.

The foot section 2 is provided with a foldable stand to support it from the ground and hold the set-up bed from deflection and in proper horizontal position. This stand comprises a pair of supporting legs 14 each made of angle metal and formed of slidably connected inner and outer sections 15 and 16. The sections 15 are pivotally connected at their inner ends to the horizontal flange of the outer cross bar of the foot section 2, as at 17, while the sections 16 are provided with longitudinal slots 18 to receive bolts 19 on the sections 15, whereby the legs may be adjusted as to the length according to the elevation or any irregularities in the ground surface to support the bed at the prescribed height, clamping nuts 20 being provided for drawing the bolts 19 tight and holding the leg sections 16 firmly in adjusted position. A folding brace is provided for connecting each leg section 15 with the frame section 2, and each of these braces comprise a pair of brace members 21 and 22 respectively pivoted at their relatively outer ends to the parts 2 and 14, the member 21 being pivotally connected intermediate of its ends to the inner end of the member 22, as at 23, and having its free end provided with a headed pin or stud 24 to engage and interlock with a notch or recess 25 in the member 22. In folding the legs the outer leg sections 16 are adjusted fully inwardly on the leg sections 15 and fastened by their securing nuts 20, after which the shortened leg sections may be swung inwardly into the plane of the flanges of the frame section 2, prior to which operation the braces are shifted on their pivotal connections 23 to break the locking connections between the studs 24 and slots 25, whereupon the legs may be folded as described, in which folding operation the brace members 21 and 22 will interfold upon one another and assume a folded position between the folded legs and cross bar or horizontal flange of the frame section 2, as clearly indicated in Figure 9. The manner in which the legs and braces may be swung outwardly and adjusted and interlocked for use to hold the legs 14 rigid in supporting position will be obvious from the foregoing description.

A case or cabinet 26 is provided for receiving and supporting the head section 1 of the bed frame and receiving and housing the folded bed frame complete, the mattress, associated bed clothing and a shelter tent, if desired. This cabinet 26 is of trunk-like construction and comprises a bottom wall 27, a rigid front wall 28, and rigid side walls 29, the said side walls having downwardly and rearwardly sloping upper edges 30 and similarly sloping rear edges 31. The upper front portion of this cabinet is partitioned to form a chamber 32 open at the top and in which may be stored a folded shelter tent 33. The upper door section 34 is hinged to the wall 28 and provided at its side edges with depending portions 35 and at its rear edge with a depending portion 36, the portions 35 being designed to rest upon the edges 30 and the portion 36 to close the upper part of the open rear portion of the cabinet above the line of the edges 31. A

rear or main door section 37 is hinged at its lower edge to the rear edge of the bottom wall 27 and is adapted to be swung upwardly and close against the inclined edges 31 and to bear at its free edge against the edge of the extension 36 of the upper door section 34, whereby when both door sections are in closed position the cabinet will be completely closed. Any suitable fastening means may be provided for coupling the door sections and locking them in closed position, such as a hasp 38 upon the door section 34 adapted to engage a staple 39 on the door section 37. A hook 40 may be provided on the hasp 38 to engage the staple 39 for holding the door sections normally closed, and any suitable type of pad lock may be employed for engagement with the staple 39 to lock the cabinet in such manner as to prevent entrance thereto by unauthorized persons. The cabinet is of such small size and compact form that it may be secured to and supported upon one of the running boards of the automobile, or it may be mounted upon and secured to an extension, such as a trunk rack 41, fastened to the vehicle chassis or frame at the rear thereof, in which position the device may assume that commonly occupied by a touring trunk. It will be observed that by the construction described, a space 42 is formed between the transverse center and wall 28 of the cabinet, beneath the compartment 32, which space will be of sufficient size to receive the rolled mattress 13, as clearly shown in Figure 3. Also in rear of the compartment 32 and space 42 will be left a space 43 of the full depth of the cabinet and which will be directly closed by the doors, in which space 43 the folded bed frame is adapted to be received, as shown in Figure 3.

The U-shaped head section 1 of the bed frame is normally held in the base of the space 43 and is fastened at its sides by bolts 44 or the like to the cabinet walls 29, while the inner ends of the section 3 are pivoted to the same bolts, whereby said section 3 is adapted to swing into and out of the opening at the rear of the cabinet, allowing it to be turned downward and outward to the horizontal position shown in Figure 4 or turned upwardly and inwardly over the section 1 into the space 43 to the vertical position shown in Figure 3. In folding the bed frame it will be understood that after the leg sections are folded beneath the outer frame section 2, the said outer frame section 2 is swung downwardly and beneath the intermediate frame section 3^a, after which the folded frame sections 2 and 3^a are folded together inwardly and under the frame section 3, whereupon by swinging the frame thus folded upwardly and forwardly the same may be moved in such folded condition into the space 43 of the cabinet, in which the parts will lie in collapsed condition with the frame section 3 supported by its pivots and the frame sections 2 and 3^a depending from the upper pivot members 4 and supported thereby and by the bottom wall 27 on which they rest. If desired, the door 37 may be provided with cleats 45 located adjacent to and parallel with its side edges to overlap the walls 29 when said door is closed, thus securely closing the intervening joints and these cleats may also serve as outer supports bearing on the folded bed frame to clamp the same firmly in position against any possibility of shifting in the cabinet and causing objectionable noise when the vehicle is running.

It will be seen from the construction and arrangement of parts above-described, that the bed frame is made up of a stationary section enclosed within the case or cabinet and three jointed sections adapted to be folded to lie within the case or cabinet and to be extended beyond the case or cabinet to provide with the stationary frame section a bed frame of convenient length and comfortable type; that the mattress may be packed by simply rolling it inwardly upon the extended sections of the bed frame and disposing it in rolled condition upon the stationary section of the bed frame and may be unrolled for use in a convenient manner; and that the jointed sections of the bed frame when folded will lie within the mattress enclosing space and door of the case or cabinet, whereby all parts will be enclosed in a compact condition and so disposed as to be readily and conveniently handled in unfolding and folding the bed.

In the use of the device, it will be understood by reference to Figure 2, that upon opening the cabinet doors the bed frame may be unfolded and supported in the positions shown in Figures 2 and 4 to serve as a bed, the mattress 13 removed from the cabinet and placed thereon, together with the necessary bed clothing, and the tent material removed from the cabinet and placed in position as shown in Figure 2 to form a shelter tent enclosing the made up bed. The bed in practice may be large enough to comfortably sleep two persons and the erected tent 33 may be used to shelter the bed and its occupants during the night or at other times when the bed is in use and to serve also as a refreshment tent or bathing tent if desired. When the bed is folded within the cabinet the door section 37 may be used as a table for eating or writing purposes by simply letting it down to a horizontal position and supporting it in such position in any suitable manner.

From the foregoing description, taken in connection with the accompanying drawings, the construction and mode of use of my improved folding bed for automobiles

will be readily understood and it will be seen that the invention provides a device of this character which embodies all the advantages and desirable features stated. While the construction shown is preferred, it will, of course, be understood that changes in the form, proportions and details of construction may be made within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus fully described my invention, I claim:—

1. In a bed construction of the character described, the combination of a cabinet having fixed bottom, front and side walls and open at the top and rear, means for closing the open top and rear of the cabinet, a substantially U-shaped fixed bed frame section secured to the cabinet and resting on the bottom of the cabinet and extending around the front and side walls thereof, foldable bed frame sections consisting of a foot section and a pair of intermediate sections hinged to each other and to the sides of said fixed bed frame section so as to be folded in substantially parallel relation, and whereby one of the intermediate sections is adapted to be disposed in an upright position and supported by the fixed bed frame section and the other intermediate bed frame section and the foot section are adapted to assume an inclined position and rest upon the floor of the cabinet, and a flexible bed bottom joined at its ends to the fixed bed frame section and foot section and adapted to loop about the folded bed frame sections when folded and disposed in the cabinet.

2. In a bed construction of the character described, the combination of a cabinet open at its rear and top, doors for closing the top and rear of the cabinet, a U-shaped bed frame section fixed to the cabinet and resting on the bottom wall and extending around the front wall and sides thereof, foldable bed frame sections consisting of a foot section and two intermediate sections hinged to each other and to the fixed bed frame section so as to fold substantially parallel with each other and to lie substantially vertically in the cabinet and to rest upon and be partially supported by the bottom wall thereof, and cleats on the rear door of the cabinet closing the spaces between the same and the sides of the cabinet and bearing on the folded bed frame sections to hold the same against displacement.

3. In a bed construction of the character described, the combination of a cabinet having a bottom wall, front wall and side walls, said cabinet being open at the top and rear, covers for closing the top and rear of the cabinet, a bed frame section fixed within the cabinet and resting on the bottom wall and extending around the front and side walls thereof, an open top chamber disposed in the upper portion of the front of the cabinet in spaced relation to the door members thereof and in spaced relation to the fixed bed frame section below, foldable bed frame sections comprising a foot section and two intermediate sections hinged to each other and to the fixed bed frame section so as to be folded in substantially parallel relation and to be enclosed within the rear portion of the cabinet between the line of the rear wall of said top chamber and the rear door and to rest partly upon the bottom wall of the cabinet, the said folded bed frame sections when so arranged forming a mattress receiving compartment at the front of the cabinet between the same and the front wall and between the fixed bed frame section and open top chamber, and a flexible bed bottom secured at one end to the fixed bed frame section and at its opposite end to the foldable foot section and adapted to loop about the folded bed frame sections and between the same and the mattress receiving space when said parts are enclosed within the cabinet.

4. A folding bed for automobiles comprising head, foot and intermediate sections, each including angle metal frame pieces having vertical and horizontal flanges, the ends of the flanges of the sections being arranged to overlap, extension legs pivotally connected with the vertical flange of the foot sections, folding braces connecting said legs with the vertical flange of the foot section, said legs and braces being adapted to fold parallel with said flange, and bail-shaped rods having end portions pivotally connecting the lapping ends of the vertical flanges of the sections, the body portions of said rods being adapted to be swung into and out of the horizontal plane of the vertical flanges of the sections.

In testimony whereof I affix my signature.

CLEVE LOWERY.