

C. S. WOOD,
 AMBULANCE.
 APPLICATION FILED JULY 3, 1916.

1,208,261.

Patented Dec. 12, 1916.

3 SHEETS—SHEET 1.

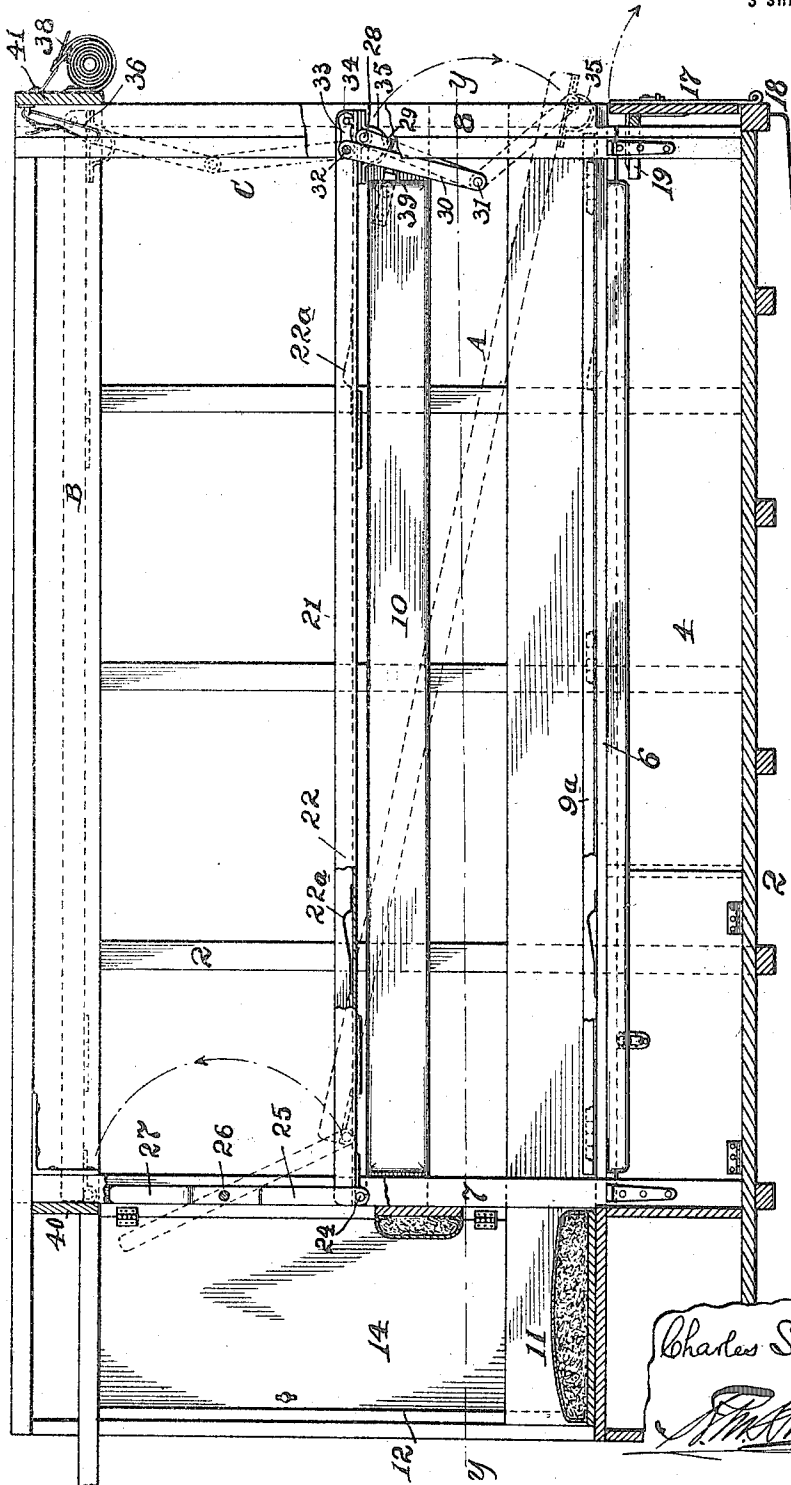


FIG. 1.

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Attorney

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3 SHEETS—SHEET 2.

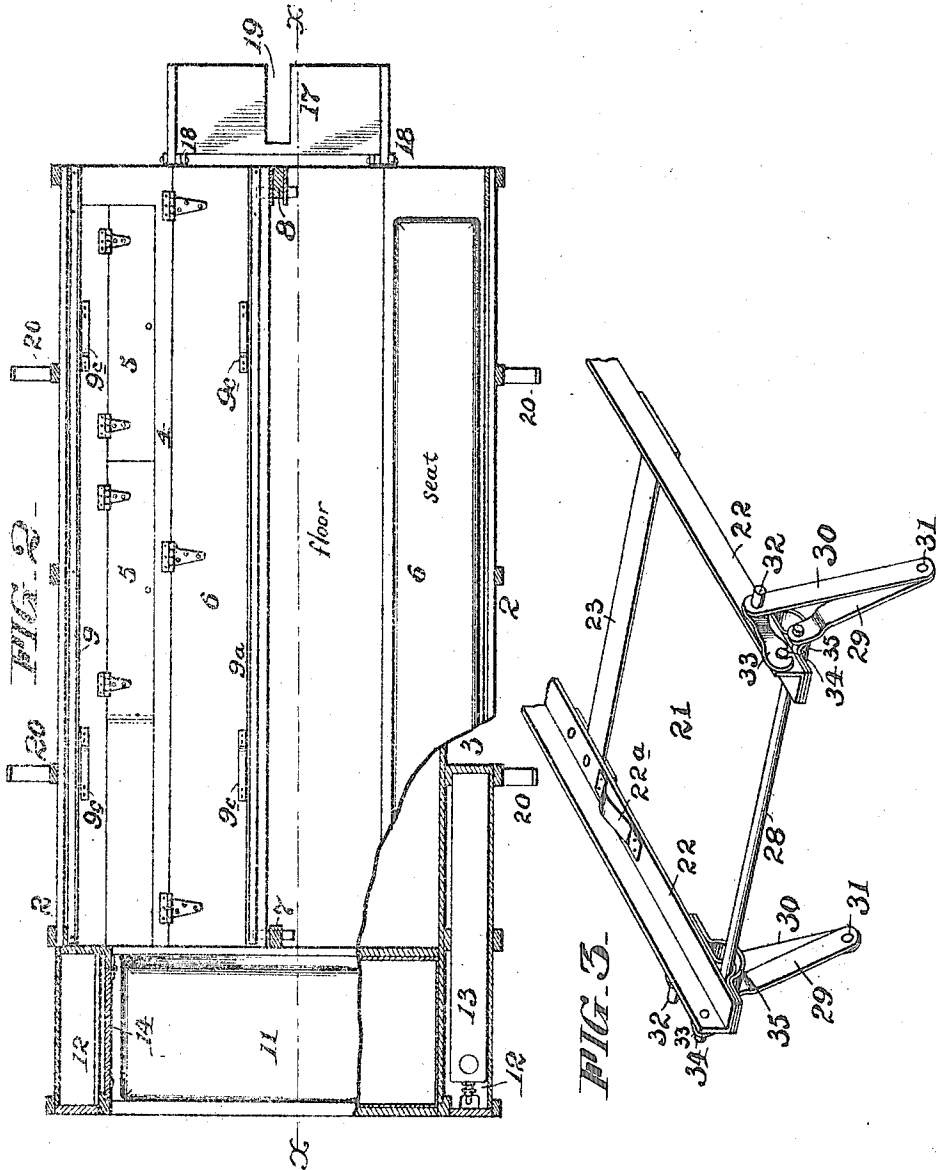


FIG. 3.

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3 SHEETS—SHEET 3.

FIG 5

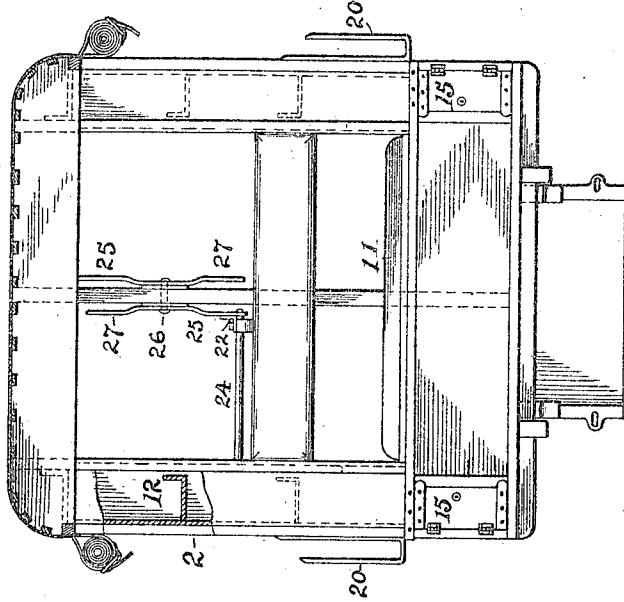
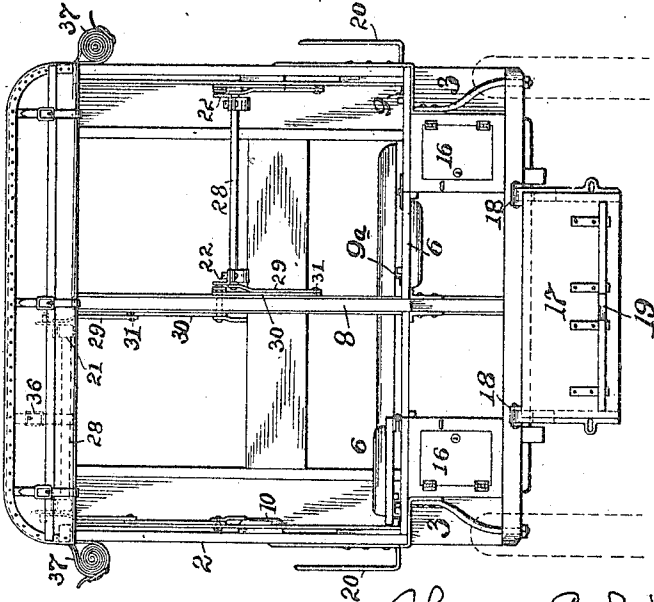


FIG 4



Inventor

Charles S. Wood

By

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UNITED STATES PATENT OFFICE.

CHARLES S. WOOD, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO RECH-MARBAKER COMPANY, A CORPORATION OF PENNSYLVANIA.

AMBULANCE.

1,208,261.

Specification of Letters Patent.

Patented Dec. 12, 1916.

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To all whom it may concern:

Be it known that I, CHARLES S. WOOD, a citizen of the United States, and resident of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Ambulances, of which the following is a specification.

The object of my invention is to provide a construction of ambulance specially suited to army requirements and of a construction embodying lightness and adaptability for conveyance of injured on stretchers or in sitting posture, the construction being such that the equipment may be speedily converted into condition suitable for either or both of said uses.

My object is further, to provide the ambulance body with stretcher-supporting means of a character that may be suspended in normal horizontal position for sustaining the stretcher and its burden during transportation, or which may be swung down at its rear end to provide an inclined guideway up which the stretcher and burden may be pushed into position before raising the lowered end to a level which will insure the stretcher being sustained in a horizontal position, the said means providing capacity for loading and unloading the ambulance of a stretcher and burden into an elevated position or vice versa, by the exertion of a single attendant after the forward end of the stretcher has been placed in position upon the inclined supporting frame.

My object is also to so hinge the stretcher supporting frame that it may be elevated close to the roof so as to be out of the way when it is desired to use the ambulance for conveyance of convalescent patients who may sit up during transportation.

With these and other objects in view, my invention consists in certain constructions, instrumentalities and combinations of parts as will be found hereinafter fully described and illustrated, and more particularly recited in the claims.

Referring to the drawings:—Figure 1 is a longitudinal sectional side view of an ambulance body embodying my invention taken on line *x—x* of Fig. 2; Fig. 2 is a sectional plan view of the same taken on line *y—y* of Fig. 1; Fig. 3 is a perspective view of the means for supporting the rear end of the stretcher supporting frames; Fig. 4 is a

rear elevation of the ambulance body; and Fig. 5 is a front elevation of the ambulance body with part broken away.

The body 2 is preferably made of light wood framework reinforced or strengthened by metal and may be inclosed by canvas sides which may be hung down and fastened; as shown, these canvas sides are rolled up and strapped, but they may be speedily adjusted to make the vehicle open or inclosed in its general arrangement, as may be desired or required to suit the conditions of the injured and the weather.

The general shape of the body is rectangular in cross section transversely or longitudinally and at each side near the lower portion and for approximately two-thirds of the length at the rear the sides are nearer together to provide undercut portions which will receive the wheels in those cases where narrow chassis are employed (see dotted lines Fig. 3). My improvements are confined to the body structure and do not include any special construction of running gear or truck, and in practice the body is mounted upon any suitable automobile chassis.

The body has at each longitudinal side seat compartments 4 which may have hinged lids 5, and said compartments occupy about one-half of the full width of the interior of the body. To the front and top of each seat compartment is hinged a cushioned seat 6 which, when turned forward and downward to a horizontal position forms, with the top of the compartment, a bed of half the width of the body. These hinged seat portions 6 meet at the longitudinal middle of the body and are supported at front and rear in the respective vertical posts 7 and 8. When the seat portions are turned down horizontally, the top side near the edge is provided with a longitudinal guide rail 9^a, and a similar guide rail 9 is secured on top of the seat compartment close to the side of the body. By this provision, the stretcher may be pushed into position and be guided by the guide rails 9 and 9^a. Obstructions 9^b may be secured to the supporting structure at places such as will receive the metal feet of the stretcher to keep it from shifting longitudinally during transportation. When stretchers are not to be supported by the parts just described, the seat portions 6 may

be turned upward and back upon the compartments 4 to provide a cushioned seat and also a space for the feet of the occupants. A back rest rail 10 may be provided on each side of the body above the compartment and this may be upholstered if desired.

The front of the body is provided with the motorman's seat 11 and at each side is a compartment 12 in one of which are arranged shelves and to which access may be had by doors 14. These compartments may be used for supplies. The body at this front portion is of the full width to the bottom, and this gives room for two smaller compartments immediately below the compartments 12 which may contain water tanks 13, and access to the spigots thereof may be had by front doors 15 (Fig. 5). The tanks may be filled by opening the doors 14.

The compartments 4 may have rear openings and doors as 16, through which stretchers and other articles of necessity may be inserted or removed. The space between these doors permits access to the interior of the body and this may be facilitated by provision of the hinged steps 17 which are hinged to the bottom frame of the body at 18 and adapted when turned up to close the space between the longitudinal compartments 4, 4. The step is slotted or notched as shown at 19 to fit about the post 8. Upon each outside of the body near the rear are two iron brackets 20 which may be employed to carry additional stretchers, poles, tents or other articles found desirable.

I will now describe the special means for suspending a stretcher and its load within the body and for easily loading and discharging the stretcher whereby one man may perform the said operations with facility. 21 is a light stretcher supporting frame, and comprises two parallel angle irons 22 connected by cross bars 23. At the forward end this frame is supported upon a cross rod 24 connected at each end to the bottom of a link 25, said links hinged to the body side and to the post 7 at 26, whereby the frame 21 may swing longitudinally. These links have upward extensions or handle portions 27 by which they may be rocked to elevate the forward end of the frame to a position near the roof as indicated in dotted lines. At the other end of the stretcher supporting frame 21 there is provided a pair of toggle links for support and adjustment, whereby the rear end of the frame may be suspended at a level which will cause the frame to be horizontal midway between the floor and roof of the vehicle, or to allow the rear end to be depressed down to substantially the level of the seat, as indicated at A in Fig. 1, or to raise the rear end of the stretcher supporting frame to the upper position indicated at B, namely that in which the said frame will be elevated out of the way of

the heads of the persons who may be occupying the seat 6 of the vehicle. The first position of the stretcher supporting frame or that for carrying an injured person is shown in solid lines in Fig. 1, at the right-hand half of Fig. 4 and left-hand half of Fig. 5. The final position or when the frame is elevated out of the way, and in which case both ends of the said frame have been elevated, is indicated at B in Fig. 1, the left-hand part of Fig. 4 and the right-hand part of Fig. 5.

More specifically referring to the toggle link support for the rear end of the stretcher supporting frame 21, there is a transverse rod 28 journaled to the underside of the two longitudinal frames 22 and near their rear ends. Secured to the ends of the said rod 28 there are arms 29 which are hinged at 31 to links 30. The links 30 are somewhat longer than the arms or links 29, and the ends of said links 30 most distant from the hinges 31 are hinged upon bolts or pins 32 secured at one side to metal strips on the outer frame of the body, and at the other side secured to the vertical central rear post 8. In the particular construction shown, it will be observed that the normal position of the transverse rod 28 is slightly to the rear of the axis of the hinged parts 32, the effect of which is to cause the hinge portions 31 to swing forward, and which action causes the links 30 to come into contact with the abutments 39. By reason of these abutments, the toggle cannot swing inward to an abnormal extent. While the frame 21 will at this time be suspended at the forward end by the links 25 hanging in a vertical direction, it is necessary to provide some means to stop the possible swinging of the frame 21 backward and thus permit its rear end to fall to the position indicated at A in Fig. 1. This is accomplished by the means of the locking hooks 33 which are hinged to the pins 32 and hence to the frame of the vehicle and have their outer or hooked ends adapted to engage lateral pins 34 on the side frames 22 of the stretcher supporting frame 21, which will be clearly understood by reference to Figs. 1 and 3. In this manner the stretcher supporting frame is held against longitudinal shifting in either direction, and at the same time it will be suspended against vertical motion. Any other suitable means of locking the stretcher supporting frame in its elevated position may be employed if so desired, as I do not limit myself in this respect.

Assuming that the stretcher-supporting frame 21 is in the position of solid lines, Fig. 1, and it is desired to lower its rear end to the position of the dotted lines at A to receive a stretcher and its burden, it is only necessary to lift the hooks 33 from engagement with the pins 34, and then pull upon 130

the transverse bar 28 in which case the said bar will swing about the hinges 31 until the rear end of the frame is brought to the dotted line position, and with the feet portions 35 thereof resting upon the rear sill of the vehicle on a level substantially that of the seat. In accomplishing this purpose, the front links 25 are swung somewhat forward as indicated in dotted lines. The stretcher which may be of any of the usual forms, but in this case of a construction having rigidity as to width, whether it be accomplished by a fixed structure or one which is adjustable laterally (said stretcher forming no part of my invention), has the forward end placed upon the depressed end of the frame 21 and then is pushed longitudinally along the side rails 22 of the frame into proper position. This position is determined by the feet of the stretcher passing over the rearmost lugs 22^a and in its final position resting upon the side rails 22 between the forward lugs 22^a and the rear lugs 22^a, and whereby it is then insured against shifting longitudinally during transportation or at times when the frame 21 is being elevated or lowered. After the stretcher has been put into position, the attendant lifts the rear end of the frame up again to the position shown in solid lines and locks it thereat by means of the hooks 33 as before. During this elevating of the frame 21, the links 25 will swing about their hinge points 26 to permit of the radial action of the bar 28 about the hinge points 31 of the links 30. During all this action the links 30 will be resting firmly against the abutments 39, and hence for all practical purposes the hinge points 31 may be considered as fixed points during these manipulations. It will also be observed that by means of the construction here shown, a single attendant may load and unload a stretcher and its burden, but of course it would require two persons to handle the stretcher once it is out of contact with the supporting frame 21.

When it is desired to raise the stretcher supporting frame 21 to a position which will not interfere with the heads of persons sitting upon the seat 6, the following operation is resorted to: The hand lever portions 27 of the links 25 are pulled forward and downward with the result that the forward end of the frame 21 is elevated to the dotted position B, Fig. 1, and at the same time the links 30 are swung around their pivotal points 32 to the dotted position indicated at C, and the rear end of the frame lifted to stretch the links or arms 29 approximately in alinement with the links 30, as indicated in dotted lines so as to permit the rear end of the frame 21 to be raised close to the roof or to the position indicated at B, Fig. 1. When this position is reached, a suitable strap or straps 36 are employed to hold the

frame in such position at the rear end. The frame when so elevated will be held against falling in either direction, as it will then be located between the transverse boards 40 and 41 of the roof frame of the vehicle. 70

While the general framing of the vehicle may be solid or open, as desired, for field work it is desirable to make the vehicle as light as possible, and this is accomplished by having the upper portion of the vehicle of more or less open framework and covered with canvas, the sides and end being adjustable so that they may be rolled up out of the way, as indicated at 37 and 38. 75

It will be seen from the foregoing description and illustration that the ambulance has capacity for four persons upon the normal guide rail supports (two at each side), and has furthermore capacity for use wholly for convalescents who can sit up, or partly for convalescents and partly for those injured so badly as to require stretcher supports. The ambulance has capacity for all possible conditions of requirement for field service, and being light is adapted for the chassis of almost any commercial truck; furthermore being provided with the undercut portions 3, the smaller and narrower chassis may be employed while providing the full width in the vehicle body itself where the stretchers are employed. The arrangement for loading and unloading is such that two attendants (one of which may be the motor-man) are all that is necessary for handling the stretchers and loading and unloading, thereby maintaining the efficiency of the ambulance even though curtailed as to the number of attendants available. 80 85 90 95 100

The general construction of the stretcher supporting frame 21 may be modified, as I do not limit myself to any particular construction of such frame except that it shall be provided with suitable longitudinal guides for the stretchers and shall be hinged at both ends so as to be capable of being raised and lowered at the rear end from a horizontal to an inclined position. The capacity for elevating the stretcher supporting frame to a position near the roof is an additional feature of construction which, while exceedingly advantageous, may or may not be used with my improvements as preferred. 105 110 115

It will now be apparent that I have devised a novel and useful construction which embodies the features of advantage enumerated as desirable, and while I have in the present instance shown and described the preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that I do not restrict myself to the details, as the same are susceptible of modification in various particulars without departing from the spirit or scope of the invention. 120 125

Having now described my invention, what 130

I claim as new and desire to secure by Letters Patent, is:—

1. In an ambulance, a body having folding seats at each side arranged to be turned
5 over toward the middle of the body to provide two stretcher supports, combined with two suspended stretcher supports one over each seat portion, suspension devices for the front end of the suspended stretcher sup-
10 ports whereby they may shift longitudinally, and suspension devices for the rear of said suspended stretcher supports whereby said end may be lowered to approximately the level of the seats, said suspended stretcher
15 supports arranged side by side and substantially occupying the full width of the body.
2. In an ambulance, a body having folding seats at each side arranged to be turned over toward the middle of the body to provide
20 two stretcher supports, combined with two suspended stretcher supports one over each seat portion, suspension devices for the front end of the suspended stretcher supports whereby they may shift longitudinally, toggle suspension devices for the rear of said
25 suspended stretcher supports whereby said end may be lowered to approximately the level of the seats, said toggles comprising jointed links one hinged to the body and the other hinged to the support, and means for
30 locking the suspended stretcher supports against longitudinal movement when elevated, said suspended stretcher supports arranged side by side and substantially occupying
35 the full width of the body.
3. In an ambulance, a body having folding seats at each side arranged to be turned over toward the middle of the body to provide
40 two stretcher supports, combined with two suspended stretcher supports one over each seat portion, suspension devices for the front end of the suspended stretcher supports whereby they may shift longitudinally and be lifted to a position close to the roof, and
45 suspension devices for the rear of said suspended stretcher supports whereby said end may be lowered to approximately the level of the seats and also raised to a position close to the roof.
4. In an ambulance, a body, combined with two longitudinally arranged suspended
50 stretcher supports, suspension devices for the front ends of the supports for permitting longitudinal movement and for elevating the supports to a position near the roof, and additional suspension devices for the rear ends of the supports for sustaining the
55 supports horizontally and for lowering their rear ends to assume an inclined position for loading and unloading and also for elevating the supports to a position near the roof.
5. In an ambulance, a body, combined with two longitudinally arranged suspended
60 stretcher supports, suspension devices for the front ends of the supports for permitting longitudinal movement and for elevating the supports to a position near the roof, additional suspension devices for the rear ends of the supports for sustaining the supports horizontally and for lowering their rear
65 ends to assume an inclined position for loading and unloading and also for elevating the supports to a position near the roof, and means to lock the supports against longitudinal movement when in their suspended position midway between the roof and floor.
6. In an ambulance, a body, combined with two longitudinally arranged suspended
70 stretcher supports, suspension devices for the front ends of the supports for permitting longitudinal movement and for elevating the supports to a position near the roof, additional suspension devices for the rear ends of the supports for sustaining the supports horizontally and for lowering their rear
75 ends to assume an inclined position for loading and unloading and also for elevating the supports to a position near the roof, means to lock the supports against longitudinal movement when in their suspended position
80 midway between the roof and floor, and means for fastening the supports in their positions adjacent to the roof.
7. In an ambulance, the body having longitudinal seats at each side and a foot
85 passage between them, said seats adjustable to be turned over to cover the foot passage, a vertical post at the middle portion of the foot passage at rear of the body, two suspended stretcher supports arranged respectively between the posts and sides of the
90 body, suspension devices for lowering the rear ends of the supports to approximately the level of the seats whereby said supports may be inclined for loading and unloading
95 said devices hinged to the vertical post and to the supports, and means for fastening the supports in their elevated positions.
8. In an ambulance, the body having longitudinal seats at each side and a foot pas-
100 sage between them, said seats adjustable to be turned over to cover the foot passage, a vertical post at the middle portion of the foot passage at the front of the body, a vertical post at the middle portion of the
105 foot passage at rear of the body, two suspended stretcher supports arranged respectively between the posts and sides of the body, suspension devices for the front ends of the supports hinged to the front vertical
110 post and supports and adapted to elevate the supports close to the roof, suspension devices for lowering the rear ends of the supports to approximately the level of the seats whereby said supports may be inclined for
115 loading and unloading said devices hinged to the vertical post and to the supports and also for raising the supports to a position close to the roof, and means for fastening the supports in their elevated positions.

9. In an ambulance, the body having longitudinal seats at each side and a foot passage between them, said seats adjustable to be turned over to cover the foot passage, a vertical post at the middle portion of the foot passage at rear of the body, two suspended stretcher supports arranged respectively between the posts and sides of the body, suspension devices for lowering the rear ends of the supports to approximately the level of the seats whereby said supports may be inclined for loading and unloading said devices hinged to the vertical post and to the supports, means for fastening the supports in their elevated positions, and a step hinged to the rear of the body in alinement with the foot passage and having a notch to receive the post when said step is turned up to close the passage.

10. In an ambulance, a body having its floor width less at the rear than at the front portion and having the sides adjacent to the narrowed floor width recessed whereby the rear lower portion of the body is narrow to provide clearance for the wheels, said body having a transverse seat at the front and compartments at each side of said seat and in the portion of the body where it is widest, combined with suitable stretcher supporting means within the body to the rear of the seat and extending over the recessed portions.

11. In an ambulance, a body, combined with a suspended stretcher support, suspending means for the front of the support comprising links hinged to the support at the bottom and to the body at a higher elevation whereby the front end of the support may be raised to a position near the roof, suspension devices for the rear of each of said supports comprising a rod hinged to the support and having downwardly extending arms, links having their lower ends hinged to the lower ends of the arms and their upper ends hinged to the body adjacent to the level of the suspended support, an abutment to restrict the swinging of the arms and links in one direction to position the hinged points between the links and arms,

and means to lock the support against longitudinal movement, the construction permitting the support and hinged arms to be moved backward and downward to bring the support into an oblique position and also to permit the support to be elevated to a position near the roof.

12. In an ambulance, a body, combined with a suspended stretcher support, suspending means for the front of the support comprising links hinged to the support at the bottom and to the body at a higher elevation whereby the front end of the support may be raised to a position near the roof, suspension devices for the rear of each of said supports comprising a rod hinged to the support and having downwardly extending arms, links having their lower ends hinged to the lower ends of the arms and their upper ends hinged to the body adjacent to the level of the suspended support at a position to the rear of the hinge points with the arms and said points in advance of the hinged rod of the arms, an abutment to restrict the swinging of the arms and links in one direction to position the hinge points between the links and arms and cause the arms to remain in contact with the abutment by the weight of the support and its burden, and means to lock the support against longitudinal movement, the construction permitting the support and hinged arms to be moved backward and downward to bring the support into an oblique position and also to permit the support to be elevated to a position near the roof.

13. In an ambulance, the body divided transversely and having a seat in the front part and compartments on the side of the body at each end of the seat, tanks in the lower portions of the compartments, and doors for the compartments opening toward and about the seat.

In testimony of which invention, I hereunto set my hand.

CHARLES S. WOOD.

Witnesses:

D. RICKLIN,
W. H. KRAUSS.