

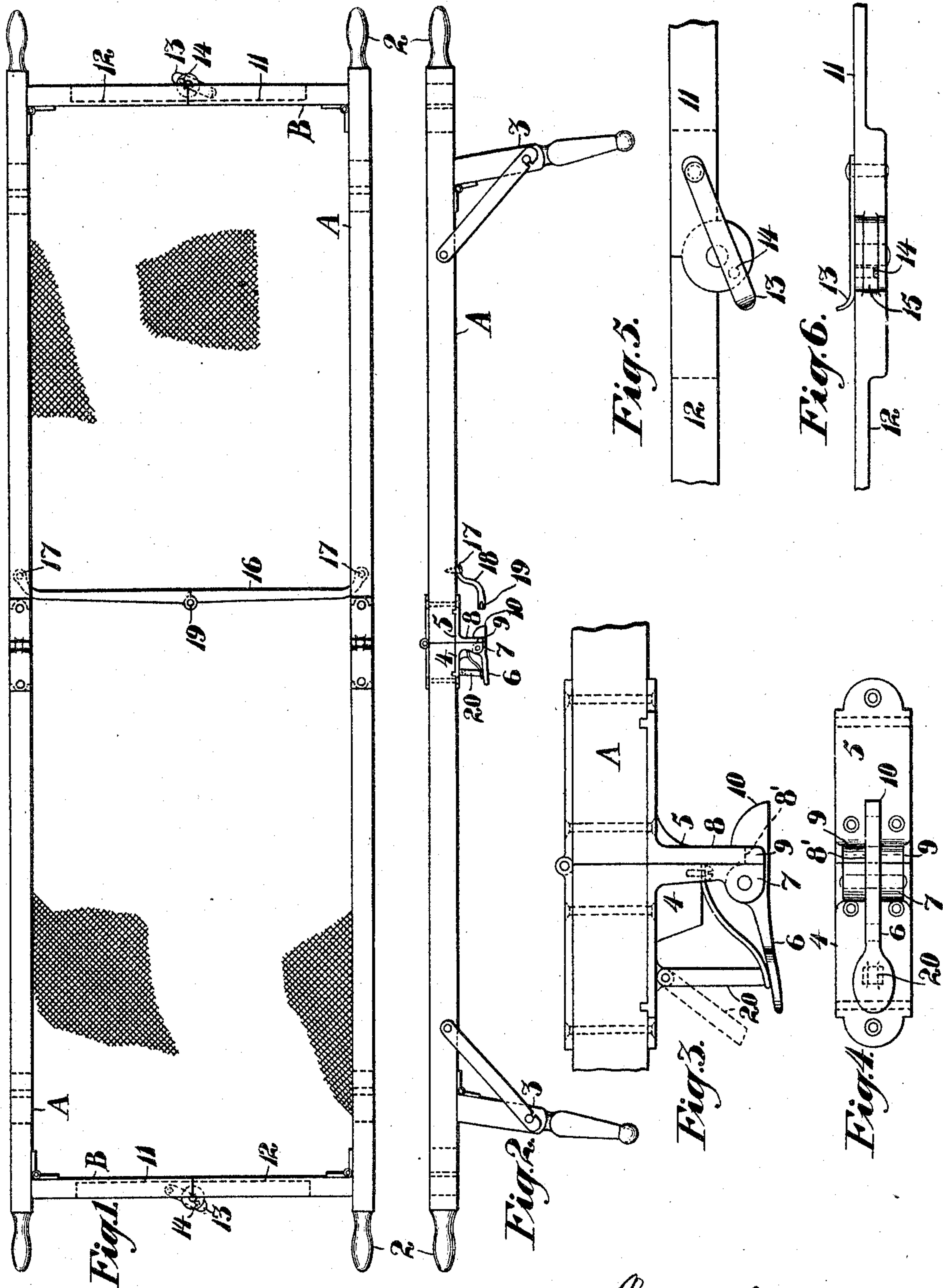
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PATENTED NOV. 29. 1904.

J. FERRIN.  
STRETCHER.

APPLICATION FILED JUNE 30, 1904.

NO MODEL.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

JOHN FERRIN, OF OAKLAND, CALIFORNIA.

## STRETCHER.

**SPECIFICATION** forming part of Letters Patent No. 776,389, dated November 29, 1904.

Application filed June 30, 1904. Serial No. 214,814. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN FERRIN, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented new and useful Improvements in Stretchers, of which the following is a specification.

My invention relates to improvements in stretchers for use in hospitals, ambulances, and the like. Its object is to provide a foldable stretcher which will be light, compact, strong, durable, and thoroughly practical.

It consists of the parts and the construction and combination of parts, as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a plan view of my invention. Fig. 2 is a side view of same. Fig. 3 is a side view of the side-rail-locking device. Fig. 4 is a bottom view of same. Fig. 5 is a plan view of the end-rail-locking device. Fig. 6 is a side view of same.

A and B represent respective side and end rails hinged at the corners and forming a suitable rectangular frame, to which is attached the canvas or other fabric constituting the bed of the stretcher. Each rail is jointed in the middle, so as to be folded upon itself to allow the entire stretcher to be folded into a space half the length of the stretcher with the sections of all the rails lying parallel. Either set of rails, as here shown the side rails, may be provided with handle extensions 2 to permit the stretcher to be easily carried, while the folding legs 3 allow the stretcher to be set down and supported anywhere.

The novelty in the present invention resides mainly in the means employed to brace and lock the rail-sections against collapse when the stretcher is in use. A main desideratum in stretchers of this character is that they be made light and at the same time absolutely rigid and that there be as few projections as possible anywhere about the frame, on which projections the patient is likely to be hurt or which will interfere with the carrying of the stretcher. Also the locking and brace connections for the rail-sections should be capable of being quickly operated and should be automatic in operation as far as

possible. Accordingly as a means for locking the sections of the side rails A, I employ a device, as follows: The side rails being hinged on top, I secure to the under side and adjacent to the meeting ends of the sections two castings 4 5, each having a base portion and a vertical portion, the two vertical portions having opposed flat faces in the planes of the meeting ends of the corresponding rail-sections and adapted to bear against each other when the two rail-sections are opened out straight. A spring-actuated hook or latch member 6 is journaled in the vertical portion 7 of casting 4 and is adapted to engage in a comparatively deep notch 8' or detent in the opposed vertical portion 8 of casting 5 when the parts 7 8 are brought together in the act of opening out the stretcher. The walls 9 of notch 8' are of sufficient length and strength to support the hook 6 laterally when the hook is in locked position. The hook end of member 6 is rounded, as shown at 10, to allow the automatic engagement of the hook and notch when the stretcher is opened. By pressing inwardly on the free end of member 6 the latter is disengaged to enable the stretcher to be folded. This side-locking device can be made very light and very strong, and being disposed underneath the rails is not in the way.

The end-rail-section-locking device comprises a hinge. (Shown in detail in Figs. 5 and 6.) This hinge is made of two pivotally-connected plates 11 12, one secured to each adjoining rail-section and on the outer side of the sections, since the end rails fold inwardly. One plate, as 11, is horizontally bifurcated and carries a spring-latch 13, having a pin 14, fitting a perforation in one of the forks of the plate and adapted when brought into register with a perforation or notch in the segmental part 15 of plate 12, which is inclosed between the forks of plate 11, to lock the sections and to hold the sections from closing. Whenever the end-rail sections are straightened, the pin 14 flies into the notch in part 15 and prevents the sections closing up. The spring 13 is turned up slightly at its end or is otherwise provided with means for disengaging the pin from the notch in part 15. If



the pin is lifted out of the notch, as when the stretcher is shut up, the pin rests or rides on part 15. This locking device is also very strong and light and furnishes practically a flush joint.

In order to support the side rails against collapse inwardly, as when a heavy person is to be carried, I employ a sectional brace 16, hinged to the under side of the opposed side rails at 17 and provided with drop portions 18 to bring the bar below the lowest point to which the canvas bed portion may sag. The brace is hinged in the middle, as at 19, and the centers 19 and 17 are thrown out of line when the brace and stretcher are opened out, so that the more the side rails are pressed together the more difficult does it become to break the joint at 19, thereby preventing any accidental collapse in the structure.

Suitable means, as the hinged stops 20, may be employed to engage the latch members 6 and prevent their being opened accidentally, which would allow the stretcher to collapse at a critical moment.

This stretcher may be compactly folded or stowed away under the seats of a car or in an ambulance and can be opened out ready for use into a rigid, light, strong, and safe structure almost instantly, the character of the locking means insuring the automatic operation of the device by the mere straightening of the side and end rails.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination in a stretcher of side bars formed in sections and hinges by which said sections are united, end bars having similar central hinges and hinges by which the end bars are connected with the side bars whereby the stretcher-frame may be folded upon itself both longitudinally and transversely and a transverse sectional foldable brace hinged at each end to the side-rail sections intermediate of the end rails, said brace having drop portions to permit it to clear the bed of the stretcher.

2. A stretcher consisting of two-part side bars hinged and foldable intermediate of the ends, end bars hinged to said side bars and also formed in two parts and hinged intermediate of their ends and means for locking said end and side bars in the extended position, said locking means including a hinge having a bifurcated member, the other member pivoted in said bifurcated portion, and a spring-latch member carried by one of said hinge members engaging the opposite hinge member.

3. A stretcher consisting of two-part side bars hinged and foldable intermediate of the ends, end bars hinged to said side bars and also formed in two parts and hinged intermediate of their ends and means for locking said end and side bars in the extended position, said locking means including a hinge having a bi-

furcated member and a spring-latch member carried by said bifurcated member and engaging a notch in the opposite hinge member.

4. A stretcher consisting of two-part side bars hinged and foldable intermediate of the ends, end bars hinged to said side bars and also formed in two parts and hinged intermediate of their ends and means for locking said end and side bars in the extended position, said locking means including a hinge with a spring-latch carried by one of the hinge members engageable with the other member to limit the movement of the two members.

5. A stretcher consisting of two-part side bars hinged and foldable intermediate of the ends, end bars hinged to said side bars and also formed in two parts and hinged intermediate of their ends and means for locking said end and side bars in the extended position, said locking means including a hinge having a bifurcated member, a second member pivoted in said bifurcated portion, a spring-latch secured to the bifurcated member and having a projection extending through a perforation in said member and arranged in the path of a notch on the other member.

6. A stretcher consisting of two-part side bars having hinges upon their upper sides, whereby said side bars are foldable upon themselves, end bars made in two parts and having hinges upon the sides of the joints, hinges fixed at the meeting angles of the side and end bars whereby the end bars may be folded inwardly between the side bars and the latter folded upon themselves to bring the folded end-bar sections substantially parallel with each other and with the folded side bars, and means for locking the side and end bars in extended position, said means including two cooperating locking members carried on adjoining bar-sections, one of said members having a spring-actuated hook part engageable with the other member.

7. A stretcher consisting of two-part side bars hinged and foldable intermediate of the ends, end bars hinged to said side bars and also formed in two parts and hinged intermediate of their ends and means for locking said end and side bars in the extended position, said means including two cooperating locking members carried on adjoining bar-sections, said members having extensions in the planes of the meeting ends of said bar-sections, and a spring-actuated hook member pivoted on one of said locking members and normally interposed in the path of the other member.

8. The combination in a stretcher of hinged side and end sectional rails adapted to be folded upon themselves and upon each other, a flexible bed connected with said side and end rails, foldable legs, means for locking said end and side rails in their extended position, said means for the end rails including a hinge secured to the outside of the end-rail sections and a spring-latch carried by one member of said hinge and

detent means for said latch on the other hinge member, the side-rail-locking means including two downwardly-extending castings carried on adjoining side-rail sections, a spring-latch  
5 member pivoted on one of said castings and detent means for said latch on the opposite casting.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN FERRIN.

Witnesses:

J. P. POTTER,  
SAML. J. TAYLOR.