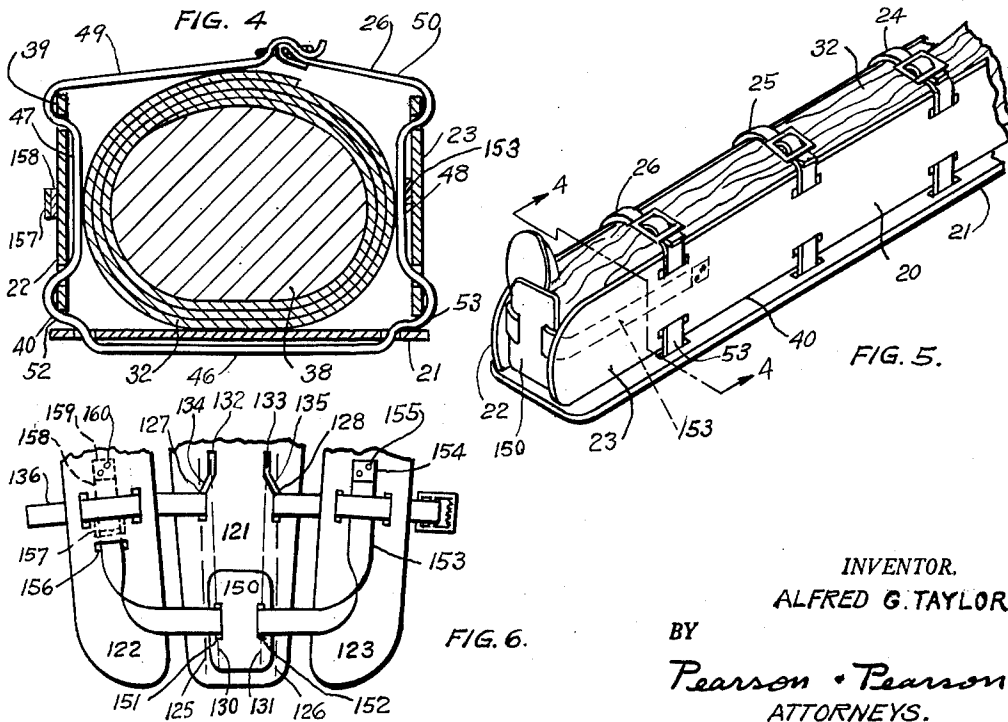
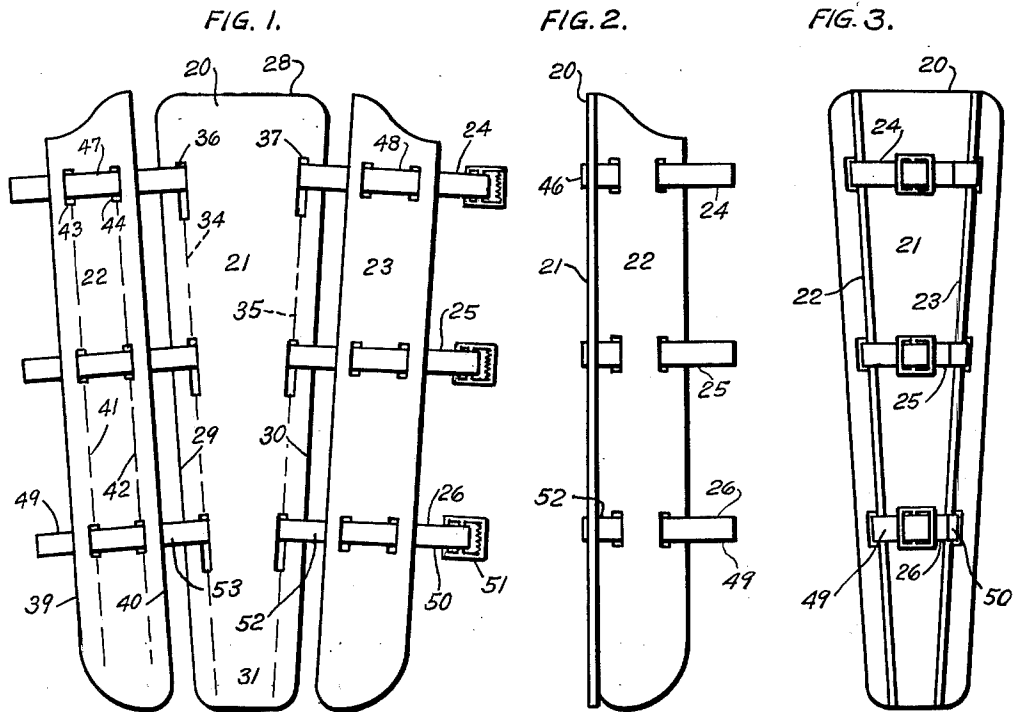


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EMERGENCY LEG SPLINT

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4 Claims. (Cl. 128—87)

This invention relates to adjustable splints for supporting human legs under emergency conditions.

It has heretofore been proposed to provide adjustable splints of this type with rigid longitudinal members moveable on fixed pivots laterally, but such devices have been difficult to adjust to properly support legs of different sizes. It has also been proposed to provide rigid longitudinal members permanently connected by flexible lateral members as by staples, riveting and the like, but excessive flexibility in an unwanted degree has sometimes been the result. In addition adjustability during an emergency, such as the removal of a victim from an automobile accident or burning building, requires a simple and foolproof structure to avoid doing more harm than good to the limb.

It is the principal object of this invention to provide an adjustable splint for human legs which can be applied by a novice in only a few seconds and under extreme emergency conditions.

Another object of the invention is to provide an adjustable splint having a flat, rigid bottom member and flat, rigid side members moveably pivoted thereto whereby the leg is fully enclosed in three quadrants therearound while being tightly held with uniform pressure against movement.

Another object of the invention is to provide an adjustable splint having an adjustable foot prop of flat sheet material capable of supporting the foot of a human leg against ankle drop in an outward direction.

A further object of the invention is to provide an emergency splint which can be adjusted quickly to accommodate the leg of a small human or a large human without unthreading the tightening straps from the rigid bottom and side members.

Still another object of the invention is to provide an emergency splint which can be made of low cost, flat, sheet material in three pieces and either shipped and stored folded flat with flexible straps in place or detached therefrom.

A still further object of the invention is to provide an emergency splint of greater dimensions than the average human leg and a detachable sheet of cushioning material whereby the splint can be erected around a leg enclosed in said material with flexible straps holding all of the parts in place.

Other objects and advantages of the invention will be apparent from the claims, the description of the drawing and from the drawing in which:

Fig. 1 is a plan view of the splint of this invention in open position.

Fig. 2 is a side view and Fig. 3 a plan view of the splint in closed or erected position.

Fig. 4 is an enlarged end view, in section on line 4—4 of Fig. 5.

Fig. 5 is a perspective view of the splint erected and in place on a human leg with a sheet of cushioning material also in place, and

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Fig. 6 is a fragmentary view, similar to Fig. 1, of a modification.

As shown in Figs. 1-3 a preferred embodiment of the adjustable emergency splint 20, of this invention, includes a flat, rigid bottom member 21, a pair of identical, flat, rigid side members 22 and 23 and a plurality of flexible straps 24, 25 and 26. The bottom member 21 and the side members 22 and 23 may be of any suitable flat, rigid sheet material such as plywood and the straps may be of leather, rubber, fabric or the like.

The bottom member 21 includes a wide end 28 and tapered side edges 29 and 30 converging to a narrow end 31. Member 21 is of substantially greater longitudinal and lateral dimension than the corresponding dimensions of the average human leg in order to accommodate a rectangular sheet of cushioning material 32 as well as the leg. A pair of lines 34 and 35 of elongated strap slots such as 36 and 37 extend parallel to the side edges 29 and 30 of member 21 and converge toward each other from the wide end 28 to the narrow end 31. Three such slots are preferred in each line, but it is obvious that more may be used if desired.

Each side member 22 or 23 is preferably coextensive longitudinally with the bottom member 21 and includes parallel side edges such as 39 and 40 spaced apart a distance substantially equal to the lateral dimension of the narrow end 31.

The narrow end 31 is the ankle end of the device and the ankle strap 26 thus clamps the leg such as 38, and the cushioning element 32, while the straps 25 and 24 achieve even greater clamping action on the knee and thigh portions of the leg because they reach well above the height of the erected side walls. Each side member 22 or 23 is provided with a pair of lines such as 41 and 42 of elongated strap slots such as 43 and 44, each line extending parallel to the adjacent side edge 39 or 40.

The elongated strap slots such as 36, 37, 43 and 44 are aligned laterally with each other and a strap such as 24, 25 and 26 is threaded therethrough in the manner illustrated. The straps are on the outside of the bottom member 21 as at 46 in Fig. 4 but are on the inside of the side members 22 and 23 as at 47 and 48. This brings the free ends 49 and 50 of each strap 26 around the outside edge, such as 39, of each side member and achieves maximum leverage on the side members during attachment of the splint. Buckles 51 of the spring catch type are preferred since they provide more flexibility and easier operation than other types.

As best shown in Fig. 4, the flexible lateral members such as 26 are not only completely detachable when desired, but the rigid members 21, 22 and 23 are slideable thereon to any desired position. The connection along the meeting lines of the side edges such as 40 of members 22 and 23 and the bottom member 21 is the flexible hinge portions such as 52 and 53 of the straps such as 26. Thus the side members may be vertical whether upstanding above the line of slots 34 and 35 or moved bodily outwardly therefrom as shown. An excessively thin or heavy leg can be also accommodated by inclining the side members 22 and 23 inwardly or outwardly from the portions 52 and 53 of the straps as a movable, flexible centre of pivoting. In the event that the leg to be splinted is of unusual configuration, it will be apparent that the flexible movable pivot connection of the three rigid members of the device will enable ready adjustment for supporting the leg. In addition the detachable cushioning element 32 may be so folded or crimped as to form a filler of any desired shape.

The element 32 is preferably coextensive longitudinally with the members 21, 22 and 23 and about one inch in thickness. It may be of foam or sponge rubber or similar

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padding material or may be a blanket folded into a suitable rectangular size.

In Fig. 6 a modification is shown wherein the side members 122 and 123 are identical with members 22 and 23 but the bottom member 121 differs from member 21. Member 121 includes a pair of outer lines 125 and 126 of elongated spaced slots 127 and 128 similar to lines 34 and 35. It also includes a second pair of lines 130 and 131 of identical elongated spaced slots 132 and 133 together with oblique connecting slots such as at 134 and 135. The straps such as 136 may thus be selectively moved to either pair of lines of slot as occasion demands without unthreading the same from the members 121, 122 and 123.

As shown in Figs. 4-6 the adjustable foot prop of the invention includes a flat, rigid, end member 150 of sheet material having a pair of strap slots 151 and 152. A strap 153 is fixed by a metal plate 154 and screws 155 to a side member such as 123 and is then threaded through slots 151 and 152 in the manner shown. Strap 153 is then threaded through a slot 156 in the other side member 122 to the outside of the splint where it may be inserted in the buckle 157 of a buckle strap 158. Strap 158 is affixed to the outside of member 122 by a metal plate 159 and screws 160. The end member 150 may thus lie flat during non-use, storage or shipment, but may be erected to support the foot of a leg in the splint to prevent outward ankle drop.

I claim:

1. An adjustable emergency leg splint for humans, said splint comprising a flat, rigid, bottom member of greater lateral and longitudinal dimensions than the corresponding dimensions of a human leg, said bottom member having tapered side edges converging from a wide end to a narrow end and a pair of converging lines of strap slots, each line extending parallel to the adjacent side edge of said bottom member; a pair of identical flat, rigid, side members, each coextensive longitudinally with said bottom member and having parallel side edges spaced apart a distance substantially equal to the lateral dimension of said narrow end, each said side member having a pair of lines of spaced strap slots each line extending parallel to the adjacent side edge of a side member and slots therein being aligned laterally with corresponding slots in said bottom member, a plurality of flexible straps each slideably threaded through a pair of strap slots in said bottom member and through the corresponding pairs of strap slots in each of said side members, all of said members being slideable on said straps to expand and contract the cross sectional area of said splint and said straps forming flexible hinges on movable pivots at the meeting lines of said members when the free ends thereof are joined across the top of the erected splint.

2. A combination as specified in claim 1 wherein said bottom member includes a second pair of lines of strap

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slots at a spaced distance inside said first pair of strap slots and includes connecting slots extending obliquely and laterally between corresponding slots of adjacent lines of slots whereby straps may be selectively moved inwardly and outwardly relative to the longitudinal centre line of said bottom member without unthreading the same.

3. An adjustable emergency leg splint and foot prop for humans, said splint comprising a single bottom member, a single end member and a pair of single side members, each member being of flat, rigid, sheet material and having strap slots therein and a plurality of flexible straps slideably threaded in the slots of said members and all of said members being slideable on said straps to expand or contract said splint laterally and longitudinally and said straps holding said end and side members in erected position relative to said bottom member when tightened transversely on a human leg supported on said bottom member.

4. An adjustable, emergency leg splint for humans, said splint comprising a flat, rigid, elongated, bottom member having a line of elongated spaced strap slots extending along each longitudinal side edge portion thereof; a pair of flat, rigid elongated side members, each having a line of elongated, correspondingly spaced, strap slots extending along each longitudinal side edge portion thereof; a plurality of flexible straps, each extending laterally of, and slidably threaded in corresponding slots of, said bottom and side members, said side members being slidable on said straps to vary the cross sectional area of said splint and said straps forming flexible and movable hinge pivots at the meeting lines of said members when said splint is erected; a flat, rigid, end member having a strap slot on each side edge portion thereof and a flexible, adjustable strap slidably threaded in the strap slots of said end member and fixed at each opposite end to one of said side members for adjustably retaining said end member as a foot prop on said splint.

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