

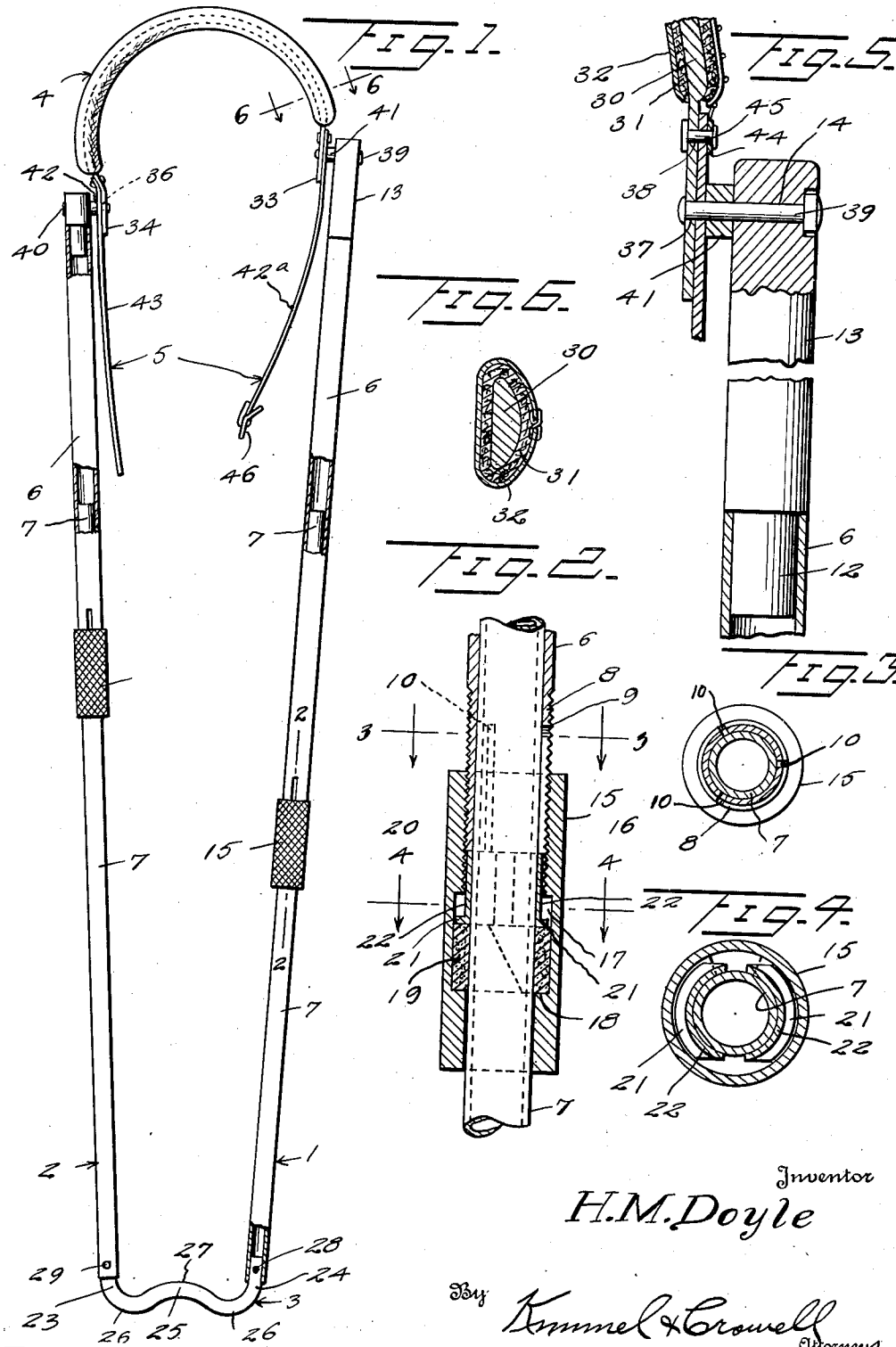
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ADJUSTABLE SPLINT

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ADJUSTABLE SPLINT

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2 Claims. (Cl. 128—85)

This invention relates to an adjustable splint. The invention aims to provide, in a manner as hereinafter set forth, a splint capable of being expeditiously positioned relative to a fractured limb and so formed to remove the weight of the body from off of the fracture when the wearer is walking or standing.

The invention further aims to provide, in a manner as hereinafter set forth, a splint capable of being used in connection with a fractured arm or leg.

The invention further aims to provide, in a manner as hereinafter set forth, a splint capable of being lengthwise adjusted to enable for its use in connection with legs of different lengths.

The invention further aims to provide, in a manner as hereinafter set forth, a lengthwise adjustable splint with means for releasably securing it in its adjusted position.

The invention further aims to provide, in a manner as hereinafter set forth, a splint which is simple in its construction, strong, durable, compact, readily installed with respect to a fractured limb or arm, thoroughly efficient in its use, conveniently adjusted and comparatively inexpensive to manufacture.

Embodying the aims aforesaid and others which may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts as will be more specifically described and illustrated in the accompanying drawing, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawing:

Figure 1 is a front elevation, partly in lengthwise section of a splint in accordance with this invention,

Figure 2 is a section on line 2—2 Figure 1,

Figure 3 is a section on line 3—3 Figure 2,

Figure 4 is a section on line 4—4 Figure 2,

Figure 5 is a fragmentary view partly in front elevation and lengthwise section, and

Figure 6 is a section on line 6—6 Figure 1.

The splint includes outer and inner lengthwise adjustable side elements 1, 2 respectively, a combined tread and coupling member 3, a coupling element 4 and a securing means 5.

The side elements 1, 2 are of like form, but the outer element 1 is of greater length than the element 2. The description of the side element 1 will apply to the side element 2. The side element 1 comprises an upper and a lower tubular member 6, 7 respectively of the desired length and diameter and preferably formed from brass tubing, but it is to be understood that the members 6, 7 may be of any suitable metallic material. The member 7 is disposed in telescopic

relation with respect to the member 6. The said members are open at their ends. The lower terminal portion 8 of the member is formed with peripheral threads 9 and it is also provided lengthwise thereof with spaced slits 10. The threads 9 are tapered. Sweated or otherwise secured in the upper terminal portion 11 of the member 6 is the shank 12 of a shouldered metallic plug 13 formed near its upper end with a diametrically disposed opening 14. The members 6, 7 are disposed in slidable relation for the purpose of lengthwise adjusting a side element and there is correlated with the member 6 a clamping structure for releasably retaining the members 6, 7 in adjusted relation.

The clamping structure includes a metallic sleeve 15 having a portion of its inner face formed with tapered threads 16 for coaction with the threads 9. The threads 14 are inversely tapered with respect to the threads 9. The inner face of the sleeve 15 below the threads 16 is formed with an annular groove 17, the lower wall 18 of which forms a seat for a split leather washer 19, which is spaced from the upper wall 20 of groove 17. The washer 19 surrounds the member 7. Seated on the washer 19 are the flanged lower ends 21 of a pair of oppositely disposed semi-cylindrical metallic clamp members 22, which bear against the lower end of the member 6 and also are to bind against the member 7.

It will be assumed that the sleeve 15 is in inactive position, that is to say disconnected from the member 6 and if it is desired to increase or decrease the length of a side element, member 6 is shifted lengthwise of member 7 or the latter shifted lengthwise of member 6. After the desired adjustment has been made, the sleeve 15 is moved to engage the threads 9 whereby the split terminal portion 8 of member 6 is held in clamping engagement with the member 7 and the members 22 also clamped against said member 7. This arrangement releasably clamps the members 6, 7 together and in this connection attention is directed to Figure 2.

The member 6 of element 2 is of less length than the member 6 of element 1. The plug 13 of element 2 is of less length than the plug 13 of element 1. The member 7 of element 1 corresponds in length to the length of member 7 of element 2. This arrangement provides for element 1 to be of greater length than element 2. When the splint is used the upper end of element 1 is arranged above the upper end of element 2.

The lower ends of the elements 1, 2 are coupled together in spaced relation, and for this purpose the combined tread and coupling member 3 is employed. The member 3 is formed of tubular metallic material and is of substantially yoke-shaped contour, whereby it is formed of a pair of arms 23, 24 and a bight 25. The latter is of

compound curvature to provide a pair of depending tread portions 26 separated by a rise 27 against which the foot of the wearer is to seat when the splint is worn. The arms 23, 24 are oppositely outwardly inclined. The arm 23 extends up into the lower end of element 1 and is secured to the latter by the holdfast means 28. The arm 24 extends up into the lower end of element 2 and is secured thereto by the holdfast means 29.

The coupling element 4 is adapted to partly encompass the upper portion of the limb, it is of curved form and pivotally connected to the inner sides of the upper ends of the elements 1, 2 whereby these latter are coupled together. The outer side of element 4 is of less length than its inner side whereby the upper end of element 1 will be arranged above the upper end of element 2, and in this connection attention is directed to Figure 1.

The element 4 includes a steel strap 30 substantially of semi-ovoidal contour in cross section for the major portion of its length, a felt covering 31 for the major portion of the length of the strap 30 and a leather casing 32 for the felt. The end terminal portions 33, 34 of the strap 30 are reduced and project from the ends of the casing 32. The strap portion 33 and the strap portion 34 are apertured, as at 37, 38. The strap portions 33, 34 oppose in spaced relation the inner faces of the upper ends of the elements 1, 2 respectively. Countersunk at their outer ends into the outer sides of the plugs 13 and extending through the openings 14 in said plugs are oppositely disposed combined coupling and pivot bolts 39, 40, which are of a length to project inwardly from the plugs. Mounted on the bolts 39, 40 are spacing washers 41, 42 respectively. The bolt 39 extends through the opening 37 in the strap portion 33 and has its inner end upset to couple it to the element 4. The washer 41 is interposed between strap portion 33 and element 1. The bolt 40 extends through the opening 37 in strap portion 34 and has its inner end upset to couple it to the element 4. The washer 41 is interposed between strap portion 34 and element 2. The arrangement of the bolts 39, 40 relative to the plugs and the strap portions 33, 34 pivotally connect the coupling element 4 at its ends with the upper ends of the side elements 1, 2.

The width of the coupling element 4 is greater than the width of the member 3, whereby the side elements 1, 2 are disposed at opposite inclinations from their upper to their lower ends when member 3 and element 4 are secured to elements 1, 2 and in this connection attention is directed to Figure 1.

The securing means 5 which is connected to the element 4 and mounted on bolts 39, 40 consists of a pair of oppositely disposed flexible strap sections 42^a, 43. The sections 42^a, 43 are mounted on bolts 39, 40 and each is formed with an opening 44. The openings 44 are to align with the openings 38 of the element 4 and rivets 45 are mounted in the aligned openings 38, 44 for fixing the strap sections 42^a, 43 to element 4. The strap section 42^a is provided with a buckle 46. The strap section 43 correlates with the buckle 46 for securing the strap sections 42^a, 43 together about the front of the limb of the wearer,

whereby the element 4 is held at the back and sides of the limb of the wearer.

The parts of the splint other than the leather casing, the felt covering, the split washer and the securing means 5 will be formed of metallic material.

The coupling member 4 is substantially rigid, cushioned and of arcuate contour.

What I claim is:

1. In a splint, a pair of spaced opposed lengthwise adjustable side elements having upper and lower ends, means for connecting the lower ends of said elements together in spaced relation, a coupling element having reduced end terminal portions disposed in juxtaposition to the upper parts of the inner sides of said side elements, oppositely disposed means extending inwardly from said side elements for pivotally connecting said terminal portions intermediate their ends to said elements in proximity to the upper ends of the latter whereby the upper portions of the side elements will be connected together in spaced relation, spacers mounted on said second means for spacing said terminal portions from said side elements, and an adjustable securing means for attaching said coupling element to a leg of the user, secured to the outer sides of said terminal portions and through which extends said second means.

2. In a splint, a pair of opposed spaced side elements each formed of an upper and a lower member disposed in telescopic adjustable relation, a coupling element having reduced end terminal portions arranged between and in juxtaposition to the upper portions of the inner sides of said upper members, oppositely disposed means extending inwardly from the upper members in proximity to the upper ends of the latter and attached to said terminal portions for pivotally supporting said coupling element whereby the latter will couple said upper members together, each upper member having its lower terminal portion provided respectively with spaced slits lengthwise thereof opening at the lower end of the member and with tapered threads throughout its outer periphery, a slidable adjustable clamping sleeve disposed about the members of a side element for clamping an upper member to a lower member, said sleeve being formed on its inner face, intermediate its ends with an annular groove having an upper and a lower wall and above said upper wall with internal tapered threads reversely tapered with respect to and coaxing with the threads on the upper member for clamping the upper member to a lower member, a split washer in said groove encompassing a lower member seated on said bottom wall and spaced from said upper wall, a pair of oppositely disposed semi-cylindrical shiftable clamps encompassing a lower member, said clamps being of angle form in vertical section each having a portion seated on the top of a washer, a portion opposing the said internal threads and abutting the lower end of an upper member, each pair of clamps providing for clamping the sleeve to a lower member when the sleeve is shifted to clamp an upper and lower member together in adjusted relation and for supporting the upper member, and means for coupling the lower ends of the lower members together in spaced relation.

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