

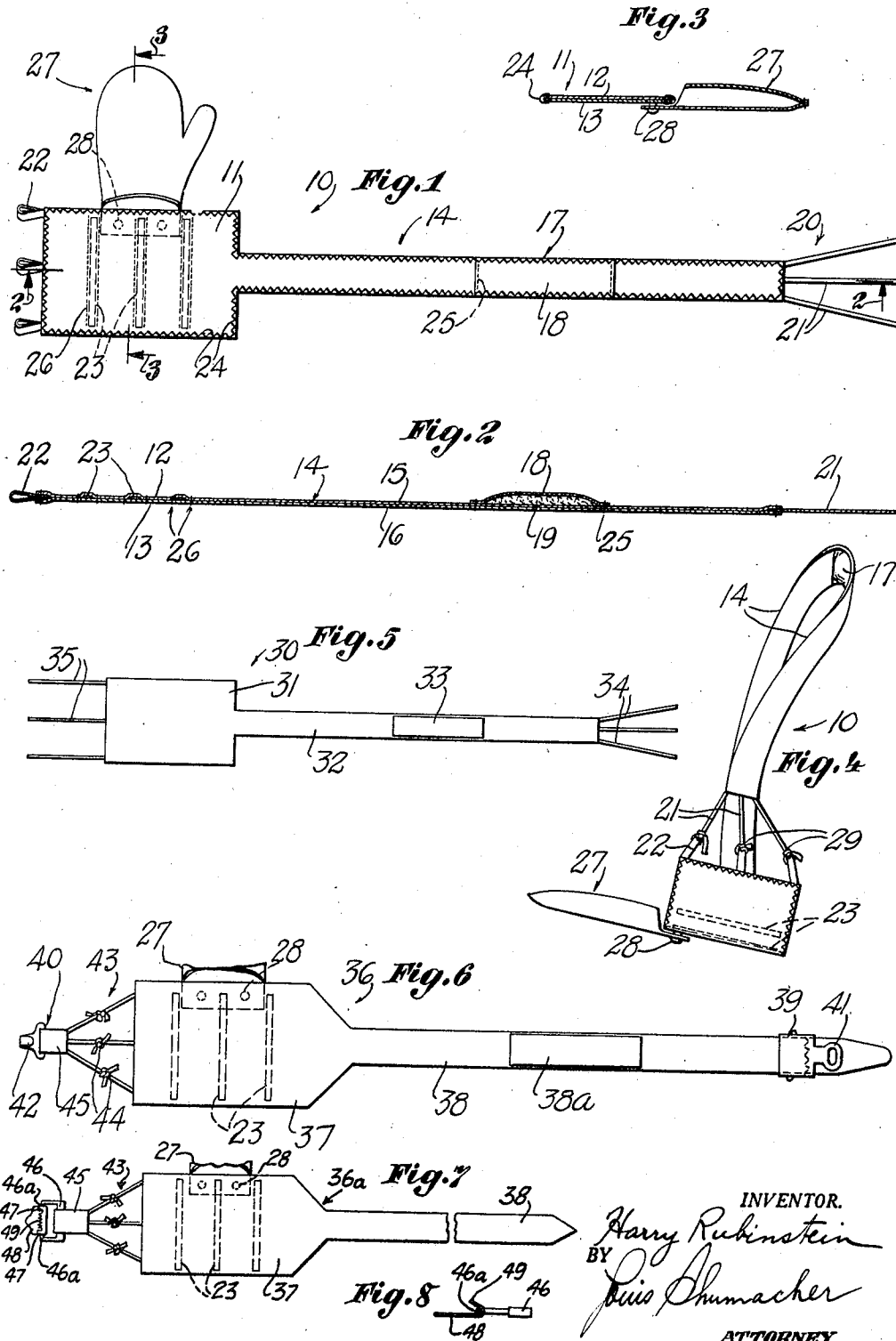
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ARM SLING

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ARM SLING

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3 Claims. (Cl. 128—94)

This invention relates to arm slings.

One object of the invention is to provide an arm sling of improved construction such that the sling can be easily mounted and comfortably worn.

Heretofore slings for fractured or sprained arms have been haphazard affairs, improvised of such materials as happened to be available, and hence untidy and only partially efficient. Generally, the ends of the sling were tied together by a large knot at the back of the neck, causing an uncomfortable pressure, and disarrangement of the collars of the wearer's garments. Such knots were inaccessible to the wearer and could be tied only by an attendant.

It is therefore an object of the invention to provide a sling which can be tied or adjusted by the wearer to suit his needs day by day, if necessary, and further, to furnish such slings made in different colors to afford the wearer an opportunity of selecting a sling that shall conform or harmonize with his garments; and further, to provide a cushioning neck pad on the sling band.

Frequently an arm is most comfortable or heals best if held in a particular position at an angle to the horizontal. There has been no provision for this in the slings heretofore used, and in any case they tended to shift so that any special provisions made could not be relied upon.

It is therefore another object of the invention to provide a sling having improved means for convenient angular adjustment to suit the arm.

Oftentimes the sling tends to shift along the arm, necessitating readjustment. And of course the hand is exposed in cold weather.

I therefore provide a further improvement comprising a glove attached to the sling in such a manner that the glove is applied to the hand coincident with the placing of the arm in the sling, and the glove serving to prevent the sling from slipping from its desired position along the arm.

Occasionally the arm may be subjected to impact which may cause considerable pain in a fractured arm. While the bandage may afford considerable protection, it may often be so thin as to be incapable of properly cushioning the arm.

Another object of the invention is therefore to furnish a sling having improved pressure distributing means such as spaced stiffener strips which shall not interfere with transverse flexibility and which shall permit the sling to be light and compact.

A further object of the invention is to provide a sling which shall be simple and convenient in use, inexpensive in quantity production, adapted to be made in very few or only two sizes, to meet the needs of adults and children, and durable, reliable and efficient in use.

Other objects and advantages of the invention will become apparent as the specification proceeds.

With the aforesaid objects in view, the invention consists in the novel combinations and arrangements of parts hereinafter described in their preferred embodiments, pointed out in the subjoined claims, and illustrated in the annexed drawing, wherein like parts are designated by the same reference characters throughout the several views.

In the drawing:

Figure 1 is a plan view, with parts in section, showing a sling embodying the invention.

Fig. 2 is a longitudinal sectional view thereof, on the line 2—2 of Fig. 1.

Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

Fig. 4 is a view showing the sling approximately as in use.

Fig. 5 is a plan view of a modified sling.

Fig. 6 is a plan view with a part broken away, of another modification according to the invention.

Fig. 7 is a view of another modification.

Fig. 8 is an enlarged cross sectional view of the buckle thereof.

The advantages of the invention as here outlined are best realized when all of its features and instrumentalities are combined in one and the same structure, but, useful devices may be produced embodying less than the whole.

It will be obvious to those skilled in the art to which the invention appertains, that the same may be incorporated in several different constructions. The accompanying drawing, therefore, is submitted merely as showing the preferred exemplification of the invention.

Referring in detail to the drawing, 10 denotes a sling embodying the invention. The same may be made of any suitable material such as cloth, rubber or other flexible or composition materials, which are preferably colored to harmonize with the clothing or uniform of the wearer. The sling may include an arm support or body section 11 of any suitable shape and formed of one or more plies of material 12, 13. This body section is of sufficient size to embrace the arm and extend approximately from the elbow

to the wrist. To one end of the body section 11 is secured a band structure 14 which may be integral with the body section or suitably connected thereto. This band structure is of sufficient length to engage around the back of the wearer's neck and extend down to the other end of the body section at which it may be detachably or adjustably connected to thus avoid the formation of an uncomfortable knot or securement means at the neck of the wearer. The band structure 14 may also consist of a plurality of plies 15, 16 of material like those of the body section. Where it engages around the back of the neck, a cushioning means 17 may be provided which may comprise a sheet of material 18 enclosing any soft padding 19. A fastening means 20 at the remote end of the band 14 may include one or more series of spaced fastener elements such as tapes 21 detachably engageable with one or more companion fastener elements such as ring or loop elements 22 secured to the free end of the body section 11. Thus adjustment to suit any desired angular position of the arm is easily obtained. Within the latter and extending transversely of the sling are a plurality of stiffener members 23 made of wood or composition material and serving to afford better support to the arm and particularly to cushion and distribute accidental impacts.

The structure thus far described may be cheaply made on a quantity production basis by securing or stitching together the different plies of fabric, as by an overseaming stitch 24, after suitably positioning the tapes 21, loops 22, and stiffeners 23 so that all of these are secured in one operation. If desired, the padding 19 may also be placed between the plies 15, 16. If the member 18 is employed it may be secured by the stitching 24, and then closed at its cross ends by conventional stitching at 25. Similarly stitching at 26 may form pockets for the stiffeners 23 to prevent them from shifting. Reinforcing tacking may be applied where necessary, as at the fastener elements.

Connected to the body section 11 is a glove 27 intended to protect the hand from cold and to position the body section of the sling against accidental shifting. The glove may be of any well known type and only one part of the opening thereof is secured to the sling, permanently or detachably. The detachable arrangement is preferable to permit selection of gloves of different sizes, and therefore, I utilize any feasible connecting means, such as snap fasteners 28, which leave the opening of the glove unobstructed so that the hand may be inserted into the glove coincident with the placing of the arm in the sling.

In use, the sling may be adjusted to the wearer by sufficient take-up on the tapes 21 which are threaded through the loops 22 and secured by suitable knots as at 29. In so fastening the tapes 21, adjustment may also be made for any desired angularity of the arm, and hence the take-up on the different tapes may be different. The wearer places his arm in the body section 11, whose reinforcements 23 serve to protect it by distributing any jarring impact. In mounting the sling, the hand is simultaneously inserted into the glove 27 to keep it warm in cold weather and to fix the sling against shifting along the arm. The wearer may conveniently carry the weight of his arm in the sling because the band 14 is smooth and is cushioned by the neck pad 17.

In Fig. 5 is shown a modified sling having a body portion 31 from one end of which extends a band 32 having a cushioning neck pad 33 and terminating in a plurality of tapes 34. Companion tapes 35 are secured to the free end of the body portion for knotting with the respective tapes to obtain the adjustments for length and angularity. This sling 30 is in these respects like that at 10 but omits certain features of the latter and hence is much more simple and cheap to manufacture.

In Fig. 6 is shown a sling 36 illustrating another modification of the invention. The same may include a body section 37 having at one end a band 38 having a neck pad 38a and carrying a buckle 39 which is adapted to be adjustably fixed therealong in any suitable manner. This buckle may suitably engage a companion fastener element 40 at the other end of the sling. Preferably the buckle 39 may have an eye portion 41 into which tongue 42 of the fastener 40 may be conveniently detachably engaged by the use of a single hand of the wearer. While the buckle 39 affords adjustment for length, there may be adjusting means 43 for angularity. This may include a plurality of tapes adjustably knotted or secured as at 44, and converging from the body 37 to which they are secured to the band element 45 to which the fastener 40 is secured. Hence when once the tapes 43 have been adjusted they need not be disturbed in operating the fastener means 41, 42. This sling 32 may be regarded as incorporating therein the other features of the sling 10, including the reinforcements 23, and the glove 27 and it may consist of one or more plies, whose raw edges may be finished by an over-seaming stitch as in the sling 10.

It will be noted that the sling 36 may be used in the same manner and for the same purposes as the sling 10 except that it possesses the additional advantage that once its tapes have been adjusted for angularity they need not be disturbed, and the wearer may put on and take off the sling with the single available hand, as by engagement and disengagement of the tongue 42 in the eye 41 of the adjusted buckle 39.

In Figs. 7 and 8 is shown a further modification including a sling 36a which may be exactly like sling 36 except that the buckle structure is different. Thus sling 36a may comprise a buckle having a loop portion 46, one side of which is passed through the loop 45, and the other side of which forms a pintle 46a for the ears 47 of a plate 48 carrying a serrated tooth portion 49. The part 48 is readily operated by hand to cause pivotal motion of the buckle so that the band 38 passed therethrough is gripped by the serrated tooth part 49. This buckle can be easily opened by merely tilting the plate 48 to the position shown. By the use of this buckle, the wearer may instantly adjust the length of the sling so as to support his arm at any desired elevation.

I claim:

1. A device including an arm suspension sling having a flexible pad of generally rectangular form and of such size as to be adapted to be folded to compactly fit the arm from the wrist to the elbow, a relatively narrow band permanently connected to one end of the pad in central alignment therewith, said band adapted to extend continuously around the neck of the wearer into proximity to the other end of the pad, said band having a cushioning neck engaging pad, adjustable means for connecting the free

end portion of the band to the other end of the pad in central alignment therewith, whereby the arm can be uniformly supported with the band being adjusted to wearer's of different size, and the cushioning pad being elongated along the band so to be engageable with the back of the neck in different positions of adjustment of the band.

2. A device including a suspension arm sling having a pad of generally rectangular form and being of such size as to be folded to compactly fit the arm from the wrist to the elbow, said pad being centrally, longitudinally folded into U-shape to loosely receive the arm, a band connected to the pad for supporting the same from the neck of the wearer, spaced wooden strip elements in the pad generally parallel to the fold line, the pad being otherwise highly flexible, at least one of said elements adapted to lie under the arm and at least one of said elements adapted to lie at each side of the arm, and means for adjustably connecting one end of the band to the pad, including a plurality of band portions downwardly diverging from the band toward the

pad and each band portion being separately adjustable to adjust the angle of the sling, whereby said elements closely hug the arm in different positions of adjustment.

5 3. A device including an arm sling having a flexible pad of sufficient size to be adapted to loosely fit the arm from the wrist to the elbow in the folded position of the pad, a band connected to the pad at opposite ends of the pad and in central relation thereto, a glove preformed to receive the hand disposed in transverse relation to the band, and means detachably connecting the open end of the glove to a side of the pad in central relation thereto and so as to form substantially a continuation of the pad, said glove being permanently open and normally flat, and lying in the plane of the unfolded pad, said pad being otherwise adapted to be substantially free of the arm and being held in required position along the arm solely by the glove and the glove and pad having flexible portions so as to be flexibly related to each other so that the hand can be manipulated.

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