

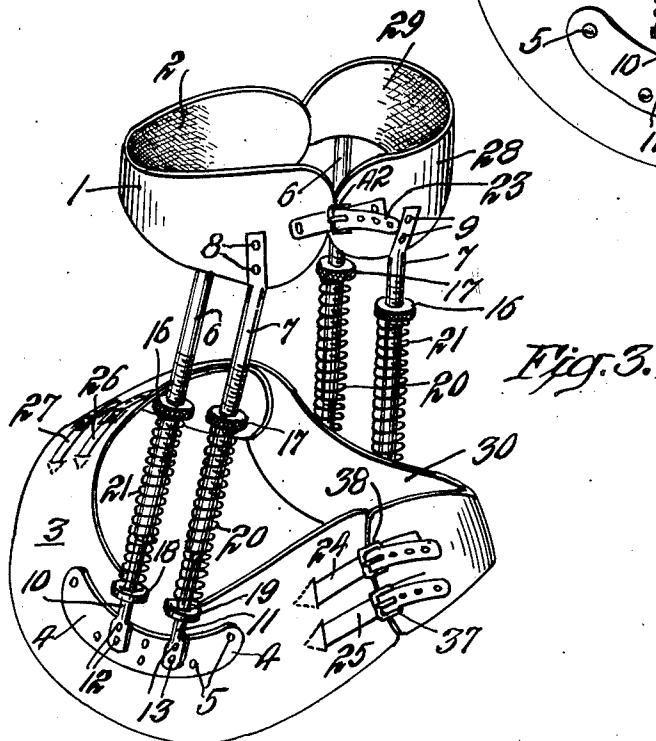
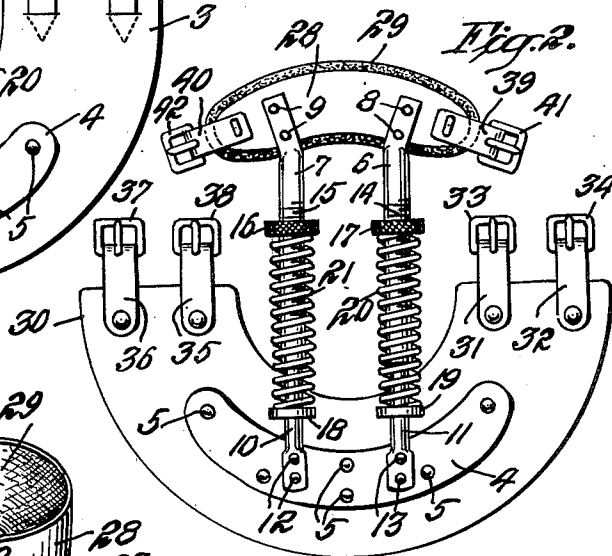
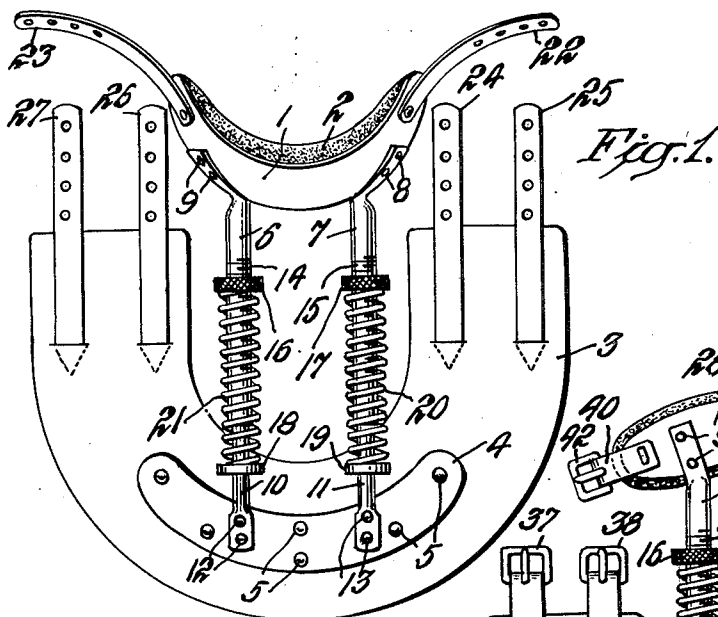
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CERVICAL BRACE

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CERVICAL BRACE

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The present invention deals with a cervical brace and more particularly with a spinal splint for the cervical region of the spine.

Generally, cervical splints comprise a supporting collar, or the like, which supports the base of the neck and the chin and a cooperating collar which contacts the shoulders of the wearer and with a linkage consisting of four turnbuckles which join the two collars. Such a splint is adjusted by manipulating the turnbuckles to provide a pressure between the two collars to effect a separating force with respect to the cervical discs. A brace of this type, while substantially compact and substantially non-cumbersome, has the disadvantage of discomfort to the wearer in that a rigid set position is effected. Otherwise any shock or accidental movement is transmitted in substantial force to the cervical area.

It is an object of this invention to provide an improved cervical brace. It is another object of this invention to provide a cervical brace structurally adapted to eliminate to a large degree the discomfort afforded by conventional cervical braces. It is a further object of this invention to provide a cervical brace whereby accidental shock or movement is substantially cushioned or otherwise absorbed without deleterious consequence to the cervical spine region. It is a still further object of this invention to provide a cervical brace adapted to provide a more effective and more efficient splint for the cervical region of the spine. Other objects and advantages of this invention will become apparent from the description hereinafter following and the drawings forming a part hereof, in which:

Figure 1 is a front elevational view of a chin-supporting brace,

Figure 2 is a rear elevational view of a neck-base-supporting brace, and

Figure 3 is a perspective view of a chin-supporting and neck-base-supporting brace as applied in combination to provide the cervical brace according to this invention.

According to the invention, there is provided a cervical brace which eliminates the disadvantages of conventional cervical braces by a structural combination of cooperating components which provide for substantial comfort, cushion accidents, shock or accidental movement effects, and provide for a more effective splint action for the cervical area of the spine.

According to Figure 1, the chin-supporting brace comprises an arcuate chin-supporting member 1 of plastic or metal composition contoured for supporting the chin therein, e. g. cup-shaped, and having a concave surface thereof covered by a padding 2. Cooperating with the chin-supporting member 1 is a U-shaped shoulder or collar member 3, e. g. a leather half-collar, having a rigid plate 4 secured thereto by securing means 5 such as rivets. A pair of substantially parallel rods 6 and 7, laterally spaced with respect to each other, are secured to the chin-member 1 by securing means 8 and 9. These rods 6 and 7 are each provided with a tubular recess longitudinally thereof for forming a substantially tubular member for

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receiving an insert member therein as hereinafter described.

A pair of laterally spaced rods 10 and 11 are secured to the plate 4 by securing means 12 and 13; said rods 5 being dimensioned and spaced for insertion and longitudinal slidable engagement within the substantially tubular members 6 and 7 each of which comprise a threaded outer surface 14 and 15 along the length thereof. The said threaded surfaces 14 and 15 are each provided with a nut member 16 and 17 thereon. The rod members 10 and 11 are each provided with a boss or abutment means 18 and 19. A spring member 20 is positioned over the engaged tube 6 and rod 11 between the nut 17 and the abutment 19. Likewise, a spring member 21 is positioned 15 over the engaged tube 7 and rod 10 between the nut 16 and abutment 18. Strap members 22 and 23 are secured to opposite end portions of the chin-supporting member 1. Strap members 24 and 25 are secured on the half-collar 3 and extend in the direction of one free end thereof. 20 Also, strap members 26 and 27 are similarly secured to and extend in the direction of the other free end of said half-collar.

According to Figure 2, the neck-base supporting member comprises an arcuate plate 28 contoured for supporting 25 the base of the neck therein and having the inner surface thereof covered by a padding 29. Cooperating with the neck-base supporting member is a U-shaped shoulder of collar member 30, e. g. a second half-collar. The said half-collar 30 comprises strap members 31 and 32 secured thereto and extending in the direction of one free end thereof and with buckles 33 and 34 fastened on the said straps. Strap members 35 and 36 are similarly secured to and extend in the direction of the other free end of said half-collar and are also provided with buckles 37 and 38. 30 Strap members 39 and 40 are secured to opposite end portions of the plate 28 with buckles 41 and 42 fastened to said strap members. Otherwise, the connecting means between the said neck-base supporting member 28 and the half-collar 30 are identical with that described with respect to Figure 1 and are denoted by common numerical 40 references. However, it is herein contemplated that the tubular members connected to the chin supporting and neck-base-supporting members and the slidable insert rods connected to both half-collars 4 and 30 may be reversed with respect to each other to provide functional equivalent 45 means.

In accordance with Figure 3, the chin-supporting member 1 and the neck-base supporting member 28 are buckled together to form in cooperation a head-supporting collar. Likewise, the half-collar 3 and half-collar 30 are buckled together to form a shoulder harness or collar with the said four spring members cooperating between the said head supporting collar and the shoulder collar.

In cooperating operation, the said head supporting collar and shoulder collar are placed in position on the 55 wearer. The four nuts 16 and 17 are selectively turned on the threaded portions 14 and 15 against the spring tension of springs 20 and 21 until sufficient separating force has been established between the head and shoulders of the wearer to provide an optimum cervical disc separation.

Having established sufficient elastic separating force or pressure by means of said tensioned springs, it will be apparent that such separating force is not solely dependent upon a fixed or rigid setting because each spring will tend to aid another in maintaining a resultant equilibrium which can be adjusted by means of selective operation of the nuts 16 and 17. In view of the fact that the springs are compressible and tend to restore the initially applied 60 tension, the wearer is protected from transmittal of accidental shock or movement to the cervical region and is 70

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provided with more freedom of movement than with known cervical splint devices of the rigidly fixed type.

While this invention is particularly described with respect to resilient or spring linkage between the head supporting member and the shoulder collar, it is herein intended that equivalent means of modified form can be utilized in accordance with the teaching herein set forth.

What I claim is:

1. A cervical brace, comprising in combination upper and lower collars, support means separating said collars, said support means comprising a pair of upright members connected to said lower collar and a pair of depending members connected to said upper collar, said upright members and said depending members being longitudinally insertable one within another, abutment means on each of said upright and depending members, and spring means between said abutment means.

2. A cervical brace according to claim 1, wherein said abutment means on each of said depending members is adjustable longitudinally thereof.

3. A cervical brace according to claim 1, wherein said abutment means on each of said upright members is adjustable longitudinally thereof.

4. A cervical brace comprising in combination an upper chin-supporting member and a lower U-shaped shoulder member, support means separating said chin and shoulder members, said support means comprising a pair of upright members connected to said shoulder member and a pair of depending members connected to said chin member,

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said upright and depending members being longitudinally insertable one within another, abutment means on each of said upright and depending members, spring means between said abutment means, an upper head supporting member and a second lower U-shaped shoulder member, support means separating said head and second shoulder members, said support means comprising a pair of upright members connected to said second shoulder member and a pair of depending members connected to said head member, said upright and depending members being longitudinally insertable one within the other, abutment means on each of said upright and depending members, spring means between said abutment means, means connecting said upper chin member and upper head member to form an upper collar, and means connecting said first and second shoulder members to form a lower collar.

5. A cervical brace according to claim 4, wherein said abutment means on said depending members are adjustable longitudinally thereof.

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