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[56] **References Cited**

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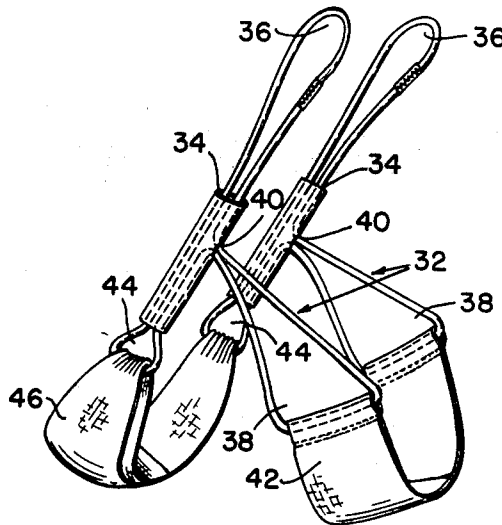
[54] **CERVICAL HALTER**
 10 Claims, 5 Drawing Figs.

[52] U.S. Cl..... 128/75,
 128/76

[51] Int. Cl..... A61h 1/02

[50] Field of Search..... 128/75, 76,
 82, 87, 94, 84; 272/80; 5/89

ABSTRACT: The present invention relates to orthopedic traction devices and more particularly to improved head halters useful for applying cervical traction having independently adjustable occipital and chin-supporting pads supported and positioned by flexible controllable support members adapted to be secured to a traction-applying device.



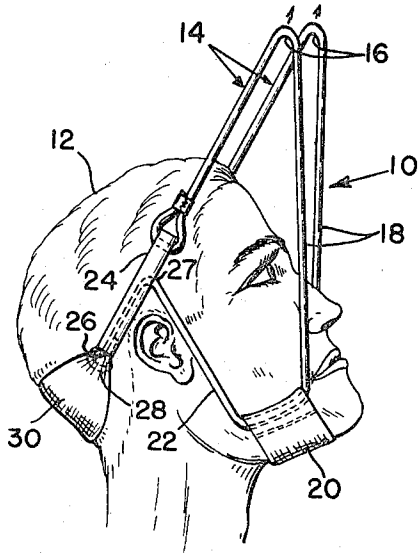


FIG. 1

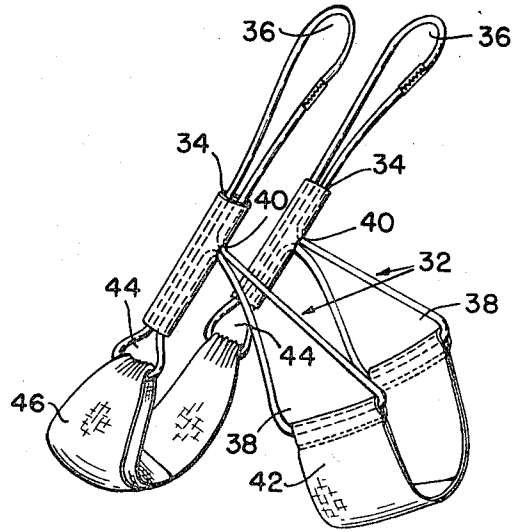


FIG. 2

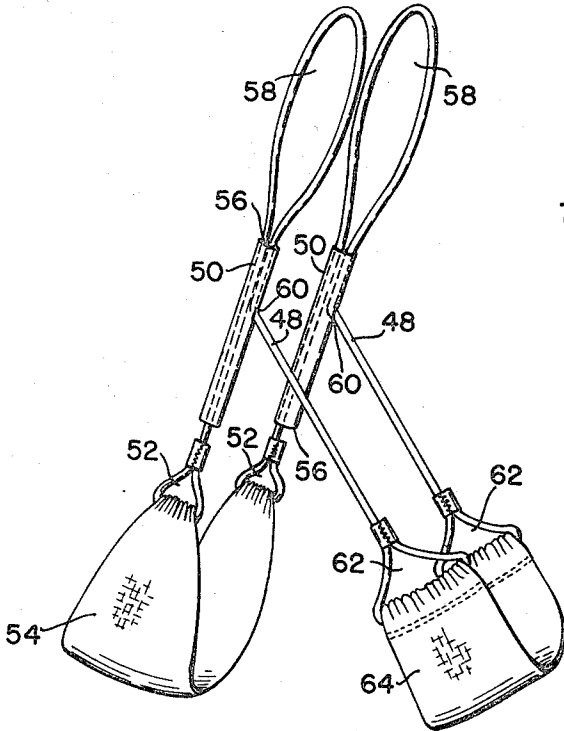


FIG. 3

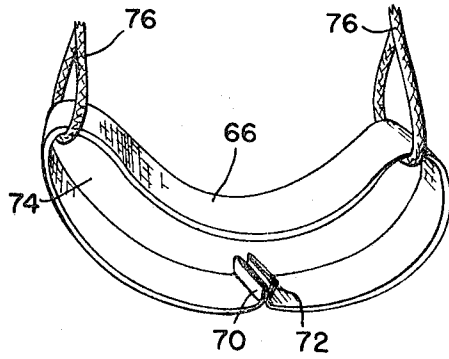


FIG. 4



FIG. 5

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CERVICAL HALTER

BACKGROUND, BRIEF SUMMARY, AND OBJECTIVES OF THE INVENTION

Traction head halters of various kinds and descriptions are widely used by orthopedic surgeons in the office, laboratory and hospital. In general, they comprise formidable arrangements of buckle-adjustable straps of cloth, leather or other durable material for supporting engagement beneath the jaw and behind the occiput portion of a patient's head, which cooperate with conventional weight and pulley traction devices. For the most part, these head halters are cumbersome, uncomfortable and costly, both in manufacture and upkeep, and, since they require frequent cleaning, their use and maintenance entail considerable expense to hospitals and orthopedic surgeons alike.

Recent developments in head halter construction have resulted in simply constructed, inexpensive, lightweight and disposable head halters which eliminate the costly upkeep experienced in the use of conventionally constructed halters. While these recently developed halters are a decided improvement, they have not been developed and perfected to the extent that the patient or wearer is comfortable primarily because a structural portion of the halter extends below the patient's ears and causes a constriction along the lower portion of the face and neck. Additionally, since these recently developed halters are usually formed from two loops having slidably disposed supporting pads connecting therebetween, there is no positive regulation of the pad positions with respect to the head of the wearer and no absolute control of the traction exerted at any particular supporting pad through any loop member.

The present invention is a head-engaging cervical halter through which traction may be applied to a wearer's head and includes a pair of flexible and adjustable support members positioned along opposite sides of the wearer's head for securement to a traction applying device that are interconnected by occipital and chin support pads which may be independently and positively regulated to provide the precisely needed traction for the patient's own need in the most comfortable manner possible. An important aspect of the present invention is the particular configuration of the adjustable support members which is such that these members contact the wearer's head across the front and upper portion of the ear and not below as has been the case in conventional halters. This eliminates the discomfort experienced when a portion of the halter binds or constricts the patient's lower jaw and neck.

A number of embodiments are provided, each containing the structural configuration discussed above and each allowing independent and positive adjustment of the supporting pads to conform to the patient's physical impairment and head size.

It is therefore the principal object of this invention to provide a cervical halter of the type described which is simple in construction, easily manipulated and more effective than those which have been previously available for applying traction to a patient.

Another object of the present invention is to provide a head halter which, because of the independent and positive control of the applied traction, more readily remains in place during intermittent traction than do known head halters of its type.

Yet another object of the present invention is to provide a head halter which is adjustable to a very wide range of head sizes and shapes for applying traction in any desired manner.

Still another object of the present invention is to provide a head halter of the type described having an occipital and chin support pad, both of which distribute pressure exerted evenly over the jaws and occiput portion of the head, thereby producing a more comfortable fit than has been previously possible in the application of heavy traction.

Yet still another object of the present invention is to provide a cervical halter of the type described that is highly efficient

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and yet is of such simple and inexpensive construction that it can be discarded, after use, at practically negligible cost.

Yet still another further object of the present invention is to provide a cervical halter of the type described having a pair of flexible support members positioned along opposite sides of the wearer's head which allow positive and independent regulation of the occipital and chin-support pads that interconnect these flexible support members.

These and other objects of the present invention will become apparent from a consideration of the following detailed description taken in conjunction with the accompanying drawings in which like characters of reference designate like parts.

FIGURE DESCRIPTION

FIG. 1 is a side elevational, generally perspective view of one embodiment of a head-engaging cervical halter positioned about the head of the wearer showing the occipital-support pad, the chin-support pad and the flexible adjustable support members connected by these pads which are to be engaged by a traction-applying device.

FIG. 2 is a perspective view of another embodiment of the present invention showing the flexible and adjustable support members positioned in a substantially parallel arrangement whereby the support members each are formed from a continuous loop of flexible cord that can be regulated by cooperative adjustment with an elongated tubular member.

FIG. 3 is a perspective view of still another embodiment of the present invention showing generally parallel flexible and adjustable support members each formed by a length of flexible cord and cooperatively operable with an elongated tubular member to regulate the positioning of attached occipital and chin-support pads.

FIG. 4 is a front perspective view of one of the support pads showing the construction thereof and particularly the joining of the folded material to form a pad in the form of a continuous loop which is sustained by the flexible support members of the halter.

FIG. 5 is a side elevational view of the soft inexpensive material used in the formation of the occipital and chin-support pads showing the folding technique applied prior to the seaming of the terminal ends to form a continuous loop as shown in FIG. 4.

DETAILED DESCRIPTION

Referring now to the drawings and particularly to FIG. 1, there is generally shown a head-engaging cervical halter 10 suitably positioned about the head 12 of a wearer which is constructed of a pair of flexible and adjustable support members generally designated 14 each of which is adapted to be positioned along opposite sides of the wearer's head 12. The support members 14 are each folded along their upper portion 16 so that they might be engaged by a traction-applying device (not shown) which will, through a suitable weight and pulley arrangement, apply the necessary lifting force to the halter. The front or forward portion 18 of each support member 14 extends downwardly from portion 16 to a chin-support pad 20 which is positioned beneath the chin of the wearer in a manner to exert consistent pressure throughout the lower jaw portion. Each of support members 14 then have a rearwardly and upwardly extending portion 22 lying generally contiguous to the wearer's face and in front and above the wearer's ear so that pressure is evenly distributed along the solid rather insensitive cheekbone area rather than behind the ear and along the neck and lower jaw portion.

Each support member 14 then extends to an elongated hollow tubular member 24 and enters the interior chamber 26 of that member at an opening 27 intermediate its ends. Support member 14 then is extended through the rearward portion of chamber 26 and outwardly therefrom to form a loop 28 which accommodates an occipital support pad 30 in a manner subsequently to be described. It will be apparent that the terminal

or looped end 28 of support member 14 can be slidably extended away from tubular member 24 any desired distance to accommodate wearers having larger heads. There is adjustability in chin pad 20 with respect to support member 14 since this pad can be positively slid along the member to a preselected location to apply proper pressure distribution and traction along the chin area.

When traction is applied at the upper portion 16 of support members 14, the chin pad 20 will be uplifted to distribute generally and evenly lifting pressure along the lower jaw of the wearer, and at the same time, by reason of the interconnection of rearwardly extending member 22 of member 14, the occipital pad 30 will be urged downwardly thus insuring that the pad is held in place along the occiput portion of the wearer's head. The resulting traction force uplifts the wearer's chin and simultaneously urges the occipital pad downwardly and forwardly behind the wearer's head so that an even pressure distribution is achieved. Regulation of the positioning of the two pads 20 and 30 by selectively sliding member 14 through elongated member 24 can provide the exact amount of traction necessary for the particular wearer's physical impairment and head shape.

Another embodiment of a cervical halter having similar regulatory capabilities is shown in FIG. 2 and comprises generally a pair of closed loop support members 32 which are slidably disposed within an elongated tubular member 34 in the manner illustrated so that a loop 36 is formed at the upper portion for engagement with the traction-applying device, a loop 38 is extended from a location 40 intermediate the ends of member 34 to sustain the chin-support pad 42, and a third loop 44 extends from the other end of member 34 to sustain the occipital support pad 46.

Position regulation of support pads 42 and 46 and the tension applying loop 36 is achieved in a manner similar to that previously described for the embodiment shown in FIG. 1 since support member 32 can be slidably drawn through member 34 to adjust the supporting pads 42 and 46 to conform to the shape of the wearer's head and to respond to the physical impairment which is to be treated. Note that any slidable movement of member 32 provides a positive and independent positioning of the support pads 42 and 46 so that the lifting force exerted by the traction-applying device will urge the occipital pad downwardly and in secure engagement with the occipital portion of the wearer's head and simultaneously urge the pad upwardly in secure engagement with the wearer's chin.

Yet another embodiment of the present invention is shown in FIG. 3 and comprises generally a pair of flexible support members adapted to be disposed along opposite sides of the wearer's head, each of the members being formed from a length of flexible cord 48 in conjunction with an elongated tubular member 50. A first end of cord 48 is securely looped 52 to engage an occipital pad 54, and the cord 48 then extends through the interior 56 of member 50 outwardly therefrom and back again to form an upper traction device engaging loop 58. Cord 48 then extends back into chamber 56 of member 50 and outwardly intermediate its length through an opening 60 and then downwardly to form a loop 62 for engaging a chin-support pad 64.

The regulation of the third embodiment is somewhat similar to those described in that cord 48 is selectively drawn through the interior 56 of member 50 to form a traction device-engaging loop 58 of any desired dimension which action simultaneously adjusts the occipital support pad 54 and the chin-support pad 64 to accommodate the head shape and physical impairment of the wearer.

The occipital and chin-supporting pads are generally formed as shown in FIG. 4 and comprise a segment of pre-folded, soft, flexible material 66 (FIG. 5) which is then connected by any suitable means at its ends 70 and 72 to form a continuous loop 74 adapted to be received by each of the support members 76. The looped construction described and illustrated is easily accomplished and provides a low cost item

that can be quickly assembled about the appropriate support members.

The halter of this invention is particularly desirable because of its simplicity of application and its extremely low production cost. As the components are made up of a portion of flexible cord, and any disposable material such as cheesecloth or the like along with an inexpensive plastic tubular member, the unit is considered to be completely disposable and is thus desirable in reducing cleaning and maintenance expenses normally associated with buckle-adjustable straps made of cloth, leather or other like material.

While there has been described a number of preferred embodiments of the present invention, it is to be understood that many modifications may be made to the flexible support members, the occipital and chin-support pads and the associated tubular member as well as the cooperation between these elements without departing from the spirit and purpose of this invention, and such modifications and alterations as well as the use of equivalents to those herein illustrated and described are contemplated.

I claim:

1. A head-engaging cervical halter through which traction may be applied to a wearer's head comprising: a pair of flexible and adjustable support members for positioning along opposite sides of a wearer's head and adapted to be engaged by a traction applying device, each support member having a plurality of loop portions formed therein an occipital support-pad interconnecting a first pair of corresponding loop portions formed by said support members, and a chin-support pad interconnecting a second pair of corresponding loop portions formed by said support members, each of said members adapted to position upon selective adjustment each of said pads positively and independently in preselected head-supporting positions so that the lifting force exerted by the traction applying device will urge the occipital pad downwardly in secure engagement with the occipital portion of the wearer's head and simultaneously urge the chin pad upwardly in secure engagement with the wearer's chin.

2. A halter as claimed in claim 1, each of said support members adapted for disposition along opposite sides of the wearer's head above the upper portion of the wearer's ear, each of said pads being of flexible construction.

3. A halter as claimed in claim 1, each of said support members including a flexible cord engaging said occipital and chin pads, and an elongated hollow tubular member, one end of said elongated member being secured to one end of said cord and the other end of said cord entering said elongated member intermediate its ends and extending therethrough for securement to said occipital pad whereby the cord may be slidably displaced through the elongated member to independently adjust said pads to conform to the wearer's head.

4. A halter as claimed in claim 1, each of said support members including a flexible cord secured at a first end to said occipital pad and at the second end to said chin pad, and an elongated hollow tubular member receiving said cord, said cord extending from said occipital pad, through said elongated tubular member, outwardly therefrom to form traction device engaging loops and back through a portion of said tubular member and outwardly therefrom for securement to said chin pad whereby slidable adjustment of said cord will position independently the pads in accordance with the size of the wearer's head.

5. A halter as claimed in claim 1, each of said support members including a closed loop of flexible cord engaging said occipital and chin-support pads, and an elongated tubular member disposed about portions of said cord to form a traction device engaging loop, a chin pad-engaging loop and an occipital pad-engaging loop whereby each of said pads may be adjusted independently to conform to the wearer's head size by selective slidable movement of said cord through said tubular member.

6. A halter as claimed in claim 2, each of said support members including a flexible cord engaging said occipital and chin

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pads, and an elongated hollow tubular member, one end of said elongated member being secured to one end of said cord and the other end of said cord entering said elongated member intermediate its ends and extending therethrough for securement to said occipital pad whereby the cord may be slidably displaced through the elongated member to independently adjust said pads to conform to the wearer's head.

7. A halter as claimed in claim 2, each of said support members including a flexible cord secured at a first end to said occipital pad and at the second end to said chin pad, and an elongated hollow tubular member receiving said cord, said cord extending from said occipital pad, through said elongated tubular member, outwardly therefrom to form traction device engaging loops and back through a portion of said tubular member and outwardly therefrom for securement to said chin pad whereby slidable adjustment of said cord will position independently the pads in accordance with the size of the wearer's head.

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8. A halter as claimed in claim 2, each of said support members including a closed loop of flexible cord engaging said occipital and chin-support pads, and an elongated tubular member disposed about portions of said cord to form a traction device engaging loop, a chin pad-engaging loop and an occipital pad-engaging loop whereby each of said pads may be adjusted independently to conform to the wearer's head size by selective slidable movement of said cord through said tubular member.

9. A halter as claimed in claim 5, said occipital and chin pads comprising a segment of a prefolded soft flexible material, the ends of which are connected to form a continuous loop adapted to be received by each of said support members.

10. A halter as claimed in claim 8, said occipital and chin pads comprising a segment of a prefolded soft material, the ends of which are connected to form a continuous loop adapted to be received by each of said support members.

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