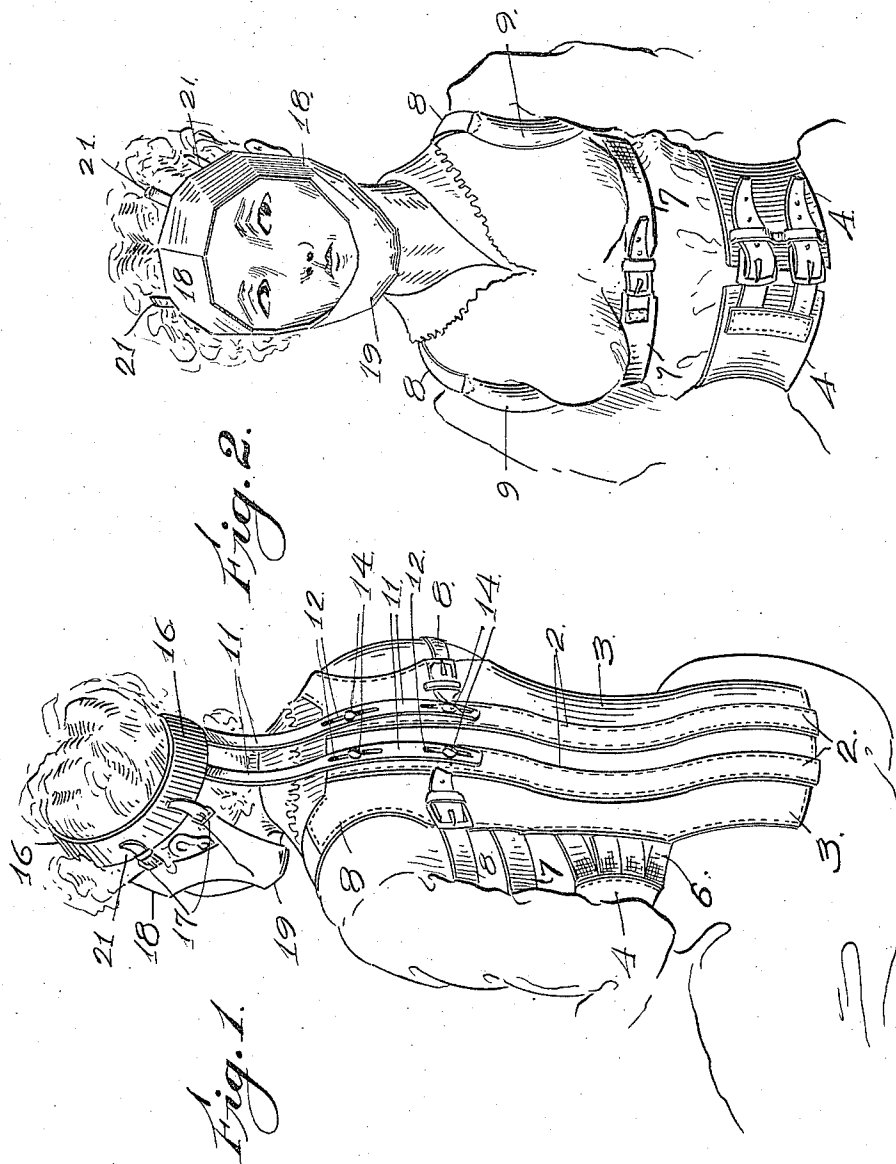


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 AND THE OCCIPUT.
 APPLICATION FILED JUNE 11, 1917.
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 2 SHEETS—SHEET 1.



INVENTOR.
Mary M. Kroetz
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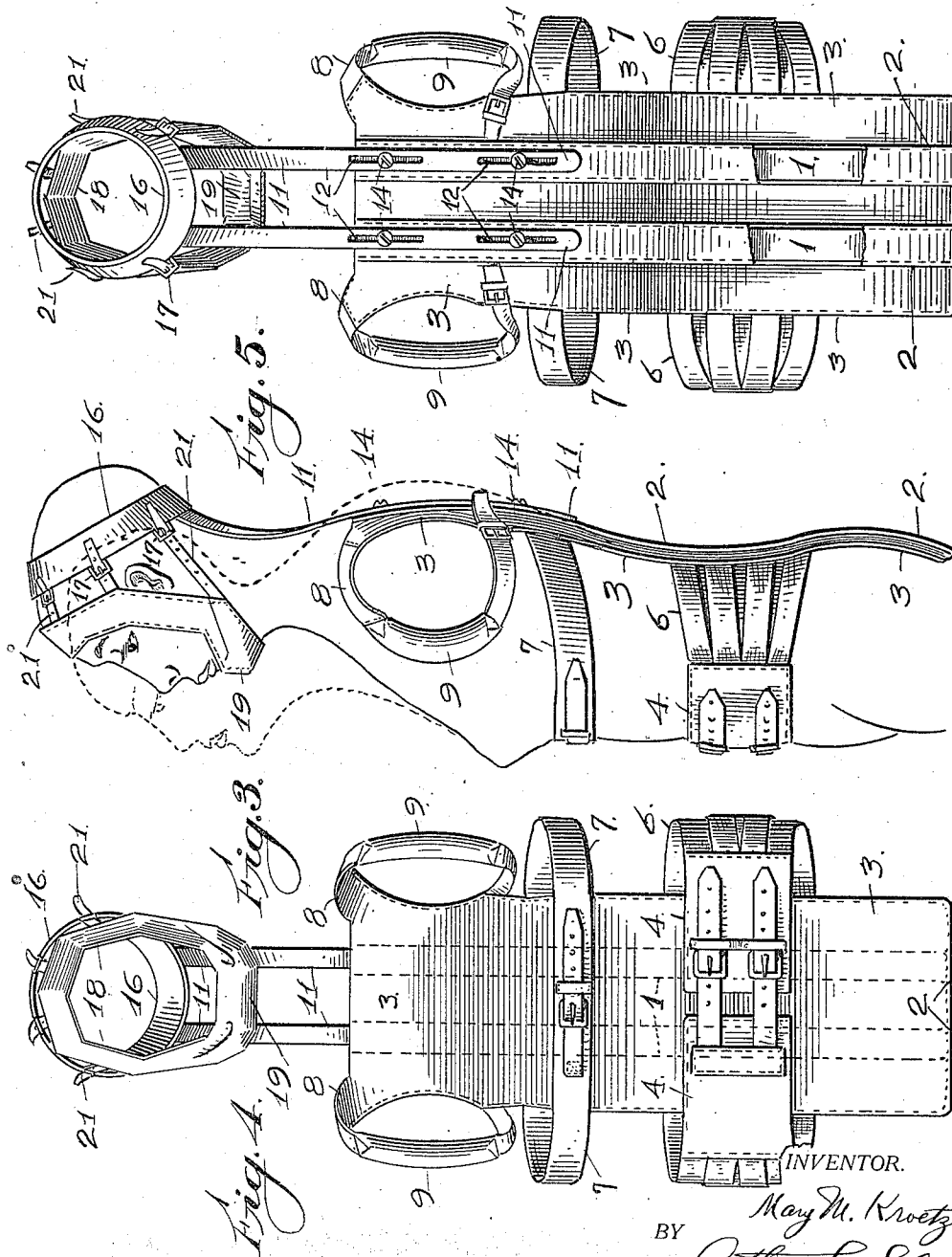
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UNITED STATES PATENT OFFICE.

MARY M. KROETZ, OF SAN FRANCISCO, CALIFORNIA.

SUPPORT FOR THE CORRECTION OF MALPOSITIONS OF THE CERVICAL VERTEBRÆ AND THE OCCIPUT.

1,301,276.

Specification of Letters Patent.

Patented Apr. 22, 1919.

Application filed June 11, 1917. Serial No. 174,361.

To all whom it may concern:

Be it known that I, Dr. MARY M. KROETZ, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented a new and useful Improvement in Supports for the Correction of Malpositions of the Cervical Vertebrae and the Occiput, of which the following is a specification.

My invention relates to supports for the correction of mal-positions of the cervical vertebrae and the occiput wherein an extensible occipital and chin support operates in conjunction with a spinal support to extend the erector spinæ.

Normally the spinal column consists mainly of a longitudinal convex curve embracing practically all of the dorsal vertebrae, with substantially compensatory concaved curves above and below and embracing the cervical and lumbar vertebrae respectively. Below the lumbar the sacral vertebrae form a second convex curve terminating in the coccyx.

The normal position of the spinal column is maintained by means of the muscles known as the erector spinæ which extend from the pelvis to the complexus by means of which it is connected to the occiput.

When the erector spinæ and complexus are relaxed the weight of the skull is borne almost entirely by the vertebrae causing an accentuation of the curves thereof, and a thrusting forward and upward of the chin which position is known as a "mal-position of the cervical vertebrae and occiput."

This mal-position or abnormal condition of the spinal column and occiput may be corrected by extending the erector spinæ and the complexus to return the vertebrae to normal curvature and position.

If the erector spinæ and complexus are extended and retained in such extended position for regular periods while the occiput and chin are supported rigidly in normal position the mal-position may be permanently corrected.

To return the cervical and dorsal vertebrae and the occiput to normal position and thereby correct the mal-position I have devised the device disclosed in the drawings wherein like characters of reference are used to designate similar parts throughout

the said specification and drawings, and in which—

Figure 1 is a rear perspective view of a patient disclosing my improved support applied thereto;

Fig. 2 is a front view of a patient wearing my improved support;

Fig. 3 is a side elevation of a support as applied to the human figure, the dotted lines being used to indicate approximately the abnormal or mal-position;

Fig. 4 is a front elevation of the support removed from the person; and

Fig. 5 is a rear elevation of the support.

Referring to the drawings the numeral 1 is used to designate a pair of rigid steel stays arranged to conform to the normal curvature and contour of the spinal column. The stays 1 are suitably incased in pockets 2 of a corset 3 provided with a lower abdominal pad 4 connected to the lumbar region of the stays 1 by means of suitable elastic connections 6 by means of which the stays 1 may be held rigidly and securely against or adjacent to said lumbar region.

The stays 1 are held rigidly against the dorsal vertebrae by means of a belt or strap 7 which encircles the person and engages the chest in the region of the sternum. To further retain the upper ends of the stays 1 adjacent the dorsal vertebrae a pair of arm-loops 8, having padded portions 9, are secured to the upper portion of the corset 3.

A pair of extensions 11 are provided with slots 12 to engage screws 14 screwed into the stays 1 whereby said extensions, preferably of metal, are slidably mounted upon the upper portions of said stays 1.

Secured to the upper portion of the extensions 11 is a padded annular member 16 arranged to engage and retain the occiput. The annular member 16 is provided with a series of buckles 17.

An apertured mask 18, having a chin support 19, is provided with suitable straps 21 to engage the buckles 17 of the annular member 16, and is arranged to engage and support the chin in a normal position relatively to the occiput when the straps 21 are properly adjusted.

The operation is as follows:

A mal-position of the person is disclosed in dotted lines in Fig. 3 of the drawings.

To correct this position the stays 1 are rigidly secured adjacent the lumbar region of the spinal column by means of the abdominal pad 4 and elastics 6 secured thereto.

5 The upper portions of the stays 1 are rigidly held adjacent the dorsal region by means of the belt 7 which engages the sternum and the arm loops 8 with their padded portions 9.

10 If the position or contour of the spinal column is abnormal it may be returned to nearly normal by adjusting the belt 7 and pad 4 to press the said spinal column into the contour of the stays 1.

15 The occiput is next placed within the annular member 16 after said member has been correctly adjusted relatively to the stays 1 by means of the extensions 11 and the slots 12 and screws 14.

20 The occiput is secured within the annular member 16 by means of the mask 18 which engages the chin of the person and rigidly retains said occiput within said annular member 16. By means of the straps 21 and buckles 17 of the annular member 16 the position of the occiput relatively to said member may be readily adjusted.

25 By tightening the straps 21 the complexus and erector spinæ are extended to further restore the spinal column and particularly the dorsal vertebræ to normal position.

30 Reference to the dotted lines in Fig. 3 of the drawings will disclose that the skull or occiput and the cervical vertebræ, when in normal position, are somewhat lower than normal while the upper dorsal vertebræ are deflected in the reverse direction.

35 It is evident from this figure that when the chin and occiput are drawn into the annular member 16 that the complexus and the erector spinæ are extended and the cervical as well as the upper dorsal vertebræ are returned to normal position.

40 Retention of the person in the improved support for regular periods will tend to return the parts to normal position and the

mal-position will eventually be permanently corrected.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is—

1. A support of the character described 50 comprising a rigid support to engage the person along the entire length of the spinal column; an annular member slidably mounted upon the support to engage the 55 occiput; means for rigidly retaining the support adjacent the spinal column; and adjustable means to engage the chin to retain the occiput rigidly within the annular member to retain the alinement of said occiput 60 relatively to the spinal column.

2. A support of the character described comprising a rigid support to engage the person along the entire length of the spinal column; means for rigidly retaining the 65 support adjacent the spinal column; an annular member slidably mounted upon the support to engage the occiput; and an apertured mask secured to the annular member to engage the chin to retain the occiput 70 rigidly within the annular member whereby said occiput may be retained in alinement with the spinal column.

3. A support of the character described 75 comprising a rigid support to engage the person along the entire length of the spinal column; means for rigidly retaining the support adjacent the spinal column; an annular member slidably mounted upon the support to engage the occiput; and an aper- 80 tured mask secured to the annular member to engage the chin to retain the occiput rigidly within the annular member whereby said occiput may be retained in alinement 85 with the spinal column; and means for adjusting the apertured mask relatively to the annular member.

In witness whereof I hereunto set my signature.

MARY M. KROETZ.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."