H. R. ALLEN.

Body-Brace.

No. 164,706. Patented June 22, 1875.

Fig. 1

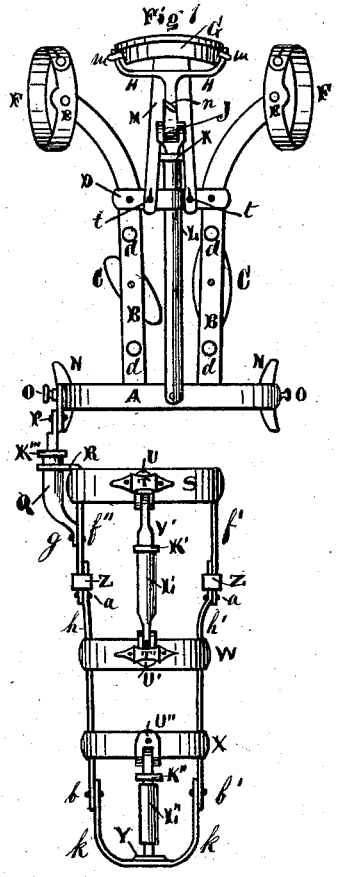


Fig. 2

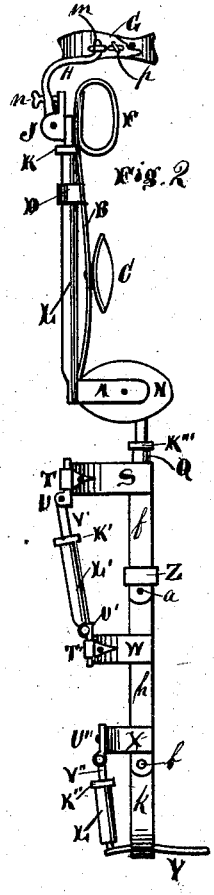
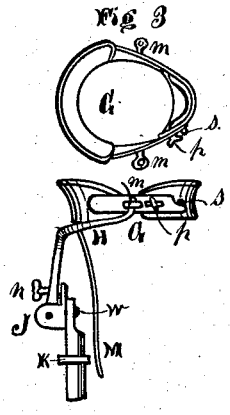


Fig. 3



Witnesses;

S. C. Frink

John W. Coons

Inventor.

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Per. S. C. Frink. Atty.

UNITED STATES PATENT OFFICE.

HORACE R. ALLEN, OF INDIANAPOLIS, INDIANA.

IMPROVEMENT IN BODY-BRACES.

Specification forming part of Letters Patent No. **164,706**, dated June 22, 1875; application filed February 24, 1875.

To all whom it may concern:

Be it known that I, HORACE R. ALLEN, of Indianapolis, Marion county, State of Indiana, have invented an Improvement in Braces for the Treatment of Deformed Portions of the Body, of which the following is a specification:

The object of my invention is to construct an adjustable brace, the upper half of which is made to buckle around the body above the thighs, with suitable pads to prevent irritation to the parts of the body that come in contact with the brace, the brace extending up the back, with adjustable pivoted pads on the uprights for the purpose of supporting the back. The upper end of each of the perpendicular back-braces is curved outward, so as to come to the shoulders, and is also provided with a curved cross-bar, pivoted at the ends of the curved portions of the back-braces. These curved cross-bars are also provided with shoulder-straps, all arranged to support the shoulders. Between the perpendicular back-braces is a tube or socket, secured to the cross-bars of the brace, in which is inserted an adjustable screw, having a swivel-joint at the upper end, with a fork attached, which holds the head-supporter, and allows it to be adjusted in any desired position. The upper and lower halves of the brace are connected together with an adjustable joint at the upper end of an adjusting-screw, the lower end of which is inserted in a tube which is secured to the side of the lower half of the brace. This is designed for the legs, and is so arranged as to be adapted to straighten any deformation of the knees and ankle-joint.

Figure 1 represents a rear elevation of the adjustable brace embodying my improvement. Fig. 2 is a side elevation of the same. Fig. 3 is a plan of the head-supporter. Fig. 4 is a side elevation of the same attached to the adjustable fork and screw.

The upper half of the brace is formed of a cross-bar, A, with curved uprights B B secured thereto. These bars B B extend upward and curved to the right and left shoulder, and are secured together near the shoulders by the bar D, which also forms a support for the adjusting screw-tube L. The bar D is also provided with two buttons, *t t*, riveted thereon, or buckles or other means of securing the lower ends of the elastic band M, which is secured at the upper end to the rear part of the head-supporter G, for the purpose of giving an upward pressure on the chin by holding the rear part of the supporter with a strain downward. In the tube L is an adjustable screw, provided with a nut, K. The upper end of the screw is flattened and pivoted to the hinge-joint J. The upper half of the hinge-joint forms the arm of the fork H H, that holds the head-supporter G. The arm of the fork H H is also provided with a thumb-screw, *n*, which is used to adjust the head backward or forward. On the ends of the fork H H are points turned up, that enter into the eyebolts *m m* on the sides of the head-supporter G. The supporter G is so constructed as to support the back of the head and chin, and is provided with pads to prevent irritation. It is also open at one side, as shown in Figs. 3 and 4, for the purpose of adjustment, and is secured together by the set-screw *p* and pin *s*. On the upright bars B B is pivoted the adjustable pads C C, arranged so as to adapt itself to any irregular places of the back. At the upper extremes of each of the upright curved braces B B are pivoted the curved cross-bars E E, which are also adjustable, and are provided with straps F to hold the shoulders. The upper or body part of the brace and the lower or leg part are connected together by an adjustable screw, V, and tube Q. The upper end of the screw V is flattened and pivoted to the joint P, which is secured to the outside of the lower bar A of the upper half of the brace. The screw V extends downward into the tube Q, with an adjusting-nut, K‴, on the screw. The tube Q is secured to the upper bar S and side brace *f* of the leg part of the brace by being inserted in the hole formed in the angular part of the plate *f*″. The lower half of the brace is also divided into three sections, all of which are pivoted together, as at *a a*′, for the upper and middle section, and at *b b*′ for the middle and lower section. The joints *a a*′ are provided with a sliding band, Z, so as to make a stiff joint, if necessary. The upper and middle sections are also connected together by an adjustable screw, V′, and tube L′, with an adjusting-nut, K′, on the screw. The lower end of the tube L′ is hinged to the hinge-leaf U′, which is held in the guide

bar T′, that is pivoted to the brace-bar W, and the upper end of the screw V is held in the same manner to the hinge-leaf U, secured to the bar S.

The upper and middle sections of the lower half of the brace are designed to treat deformities of the knee-joint.

The middle and lower sections are adjustable in the same manner for the purpose of treating deformities of the ankle-joint.

The upper and lower halves of the braces can be used separate or together, as may be required.

I do not broadly claim the braces, as they are old.

What I claim as new, and wish to secure by Letters Patent, is—

1. The swivel-joint J, in combination with the fork H H, adjusting-screw *n*, head-supporter G, and elastic band M, substantially as specified.

2. The rotating pivoted pads C C, in combination with the upright bars B B, substantially as described.

3. The curved bars B B, in combination with the lower cross-bar A and upper cross-bar D, substantially as specified.

4. The combination of the cross shoulder-bars E E and straps F F with the curved ends of the bars B B, substantially as specified.

5. The angle-plate *f‴*, riveted to the bar S and provided with a hole to receive the tube Q, substantially as specified.

6. The sliding band Z on the joints *a a′*, constructed and operated substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HORACE R. ALLEN.

Witnesses:
T. D. GRISWOLD,
FRANCIS S. CAREY.