

J. E. JOHNSON.
Surgical-Splint.

No. 221,568.

Patented Nov. 11, 1879.



Fig. 1

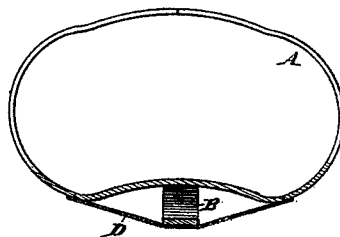


Fig. 2

Attests
Sylvester A. Schmitt

Inventor
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by his Attorney *Joshua Pusey.*

UNITED STATES PATENT OFFICE.

JOHN E. JOHNSON, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN SURGICAL SPLINTS.

Specification forming part of Letters Patent No. **221,568**, dated November 11, 1879; application filed July 23, 1879.

To all whom it may concern:

Be it known that I, JOHN E. JOHNSON, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Surgical Splints, of which the following is a specification.

My invention relates to an improvement on surgical splints similar to those described in Letters Patent No. 23,996, issued May 17, 1859, to David Ahl; Letters Patent No. 33,470, issued October 15, 1861, to said Ahl; and Letters Patent No. 216,680, issued to me June 17, 1879.

The said patented splints are made of a porous felted fabric treated with a stiffening-solution possessing certain properties mentioned in said patents. Although they suffice admirably for the treatment of ordinary fractures and sprains where a considerable degree of rigidity is requisite, I find that occasions frequently arise when they fall short of producing the best results, as in many orthopedic cases wherein it is desirable to have an enlarged scope of elasticity of the splint at certain points of support, depending upon the nature of the deformity. This is particularly the case in the treatment of torsions of the limbs, hip-disease, and in curvature of the spine.

My improvement consists in combining with the said felted splint springs of steel or other suitable material, so attached to the splint and applied as to operate as an elastic auxiliary support for the particular part undergoing treatment at such point or points requiring such assistance. These springs may be riveted to the felt; but the precise mode of fastening is not material. In some cases where the splint fabric is constructed of felted layers, as described in my said Letters Patent No. 216,680, flat springs may be inserted between two of the layers during the process of manufacture.

My improvement is, perhaps, most useful in

the treatment of curvature of the spine, lateral or angular, such, for example, as that represented by the accompanying elevation drawing, Figure 1, in which S is the abnormally-curved spine; A, the stiffened felt splint or jacket molded to the patient's form, and to which a flat spring or springs, B, is attached by rivets R, touching and giving support to the back at C, where most required. D is a layer of felt or cloth, partially removed in the drawing, Fig. 1, covering the spring and the space between the latter and the back of the patient, as seen in the transverse section, Fig. 2.

Although the felt splint or jacket A serves as a suitable and sufficient support for the greater portion of the back and spine in the case illustrated, and although it is generally flexible enough for the comfort of the patient, yet at C, where it is evident that, owing to the superincumbent weight, the support is specially required to be maintained, the felt, not having sufficient strength and elasticity, soon loses its tendency to resist the effects of the continued pressure, and is liable to break down.

It is plain that the defect is remedied by the conjunction of what may be termed the "reinforcing-spring" B with the stiffened but comparatively inelastic felted fabric.

The form of splint, the length, stiffness, and points of attachment and support of such springs vary with the cases to be treated, and they may be either free at the point of support or fixed, as in the drawings, as circumstances may require.

Having thus described one method of carrying out my invention, I claim—

The auxiliary springs B, attached and applied to the stiffened felt splint or jacket A, substantially in the manner and for the purposes specified.

JOHN E. JOHNSON.

Witnesses:

GEORGE RUSSELL,
JOHN EDMUNDSON.