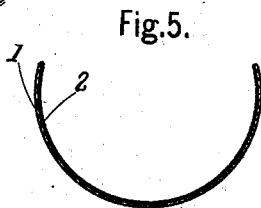
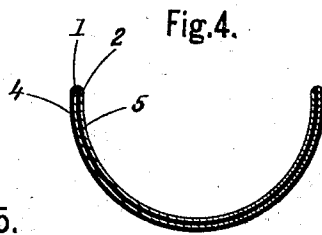
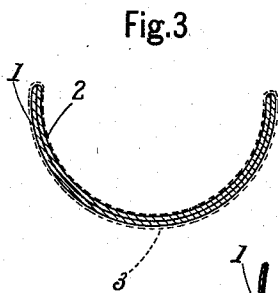
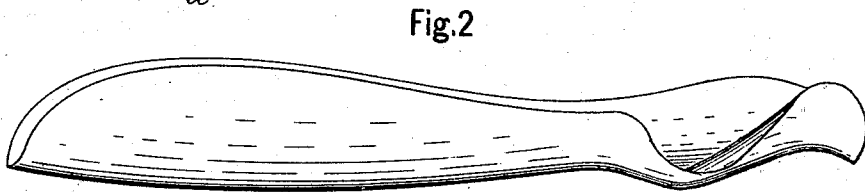
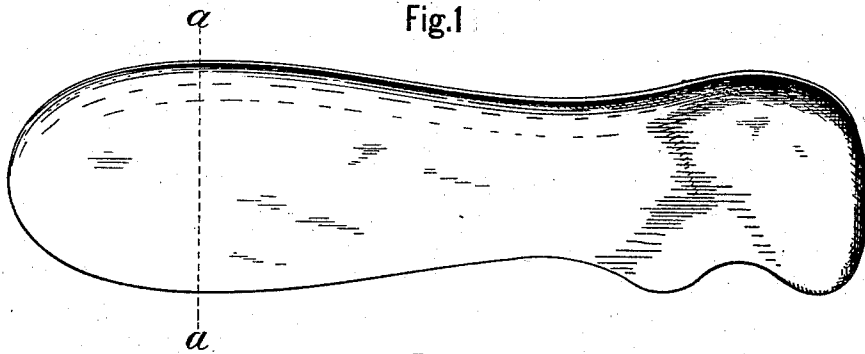


(No Model.)

L. A. DEUTHER.
SURGICAL SPLINT.

No. 525,046.

Patented Aug. 28, 1894.



Witnesses.

J. M. Caldwell.
A. J. Sangster.

Lorenz A. Deuther, Inventor.
By James Sangster, Attorney.

UNITED STATES PATENT OFFICE.

LORENZ A. DEUTHER, OF BUFFALO, NEW YORK.

SURGICAL SPLINT.

SPECIFICATION forming part of Letters Patent No. 525,046, dated August 28, 1894.

Application filed December 11, 1893. Serial No. 493,291. (No model.)

To all whom it may concern:

Be it known that I, LORENZ A. DEUTHER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Surgical Splints and the Mode of Constructing the Same, of which the following is a specification.

The object of my invention is to provide a surgical splint for broken limbs, or for other purposes for which it may be adapted, having the qualities of lightness and strength combined with great simplicity of construction and cheapness, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1, is a front elevation of one of the splints as adapted for the fore arm of a person, showing the inside or hollow side of the splint. Fig. 2, is a side elevation of the same, showing one of the forms as adapted for the fore arm. Fig. 3, is a transverse section on or about line *a a*, Fig. 1, all other parts beyond the section being omitted, showing the construction when two thicknesses of material are used. Fig. 4, represents a similar section, showing the construction in which four thicknesses of material are used. Fig. 5, also represents a cross section in or about line *a a* Fig. 1, approximating more nearly to the thickness of a splint for actual use, Figs. 3 and 4 being exaggerated in thickness so as to show the different thicknesses of material composing the splint more clearly.

I construct my splint of a plurality of layers of paper and a layer of wood veneering on one or both outer sides, the whole secured together by glue or other suitable cement; the layers of paper and wood veneering are first glued or cemented together while they are flat, then before becoming quite dry dipped for an instant into boiling hot water and immediately after put into a die and pressed into shape, after which they are allowed to dry and are then covered with a coat of waterproof enamel paint or varnish.

The glue between the several layers of material is only thick enough to cause the parts

to adhere firmly when put together and dry, consequently the surfaces practically come together. The object in dipping them in hot water is to soften the still wet glue so as to allow the several surfaces of the material to slip over each other while being pressed into the proper shape and thereby avoid the breaking of any parts while in the forming die, and as they are withdrawn from the die they almost immediately set and hold their proper form until they become dry.

One thickness of paper alone, when pressed up into the proper shape and allowed to dry does not form a splint having sufficient strength or inflexibility for practical use, it is too flimsy and easily bent out of shape, whereas when two or more thicknesses of paper and an outer covering of wood veneering are pressed together in a die or mold, with a thin layer of glue or cement interposed between them, the surfaces of the several thicknesses slip over each other until the proper form is reached, or until the dies or other mechanism that forms the splints into shape have completed it. A splint formed in this way as it leaves the die and cools becomes very much stronger and more rigid when allowed to dry, than if made of a single thickness as above described, even if the thicknesses of both kinds are equal.

Referring to the drawings, Fig. 3, represents a splint constructed of two thicknesses of material, paper 2, and wood veneering 1 for instance, pressed and glued together and covered on the outside with a water proof enamel or varnish or paint, or other water proof material the enamel or paint being represented by the dotted lines 3, in said Fig. 3.

The two thicknesses of material may be paper, straw board or other similar material, or one thickness may be of paper and the other of wood veneering, or as in Fig. 4, there may be two inner layers of paper, 1 and 2, and two outer layers of wood veneering 4 and 5, the whole being pressed together with interposed layers of glue or cement and the wood veneering then covered with water proof enamel varnish.

In Fig. 5, I have shown more nearly the

thickness of the finished splint for actual use although for some purposes it may be made much thicker.

5 In the drawings I have shown a form of splint adapted for the fore arm but I do not confine myself to this form alone, as the splint may be made to fit any part of the human body where a splint is used.

10 I am aware that felt has heretofore been used in the construction of surgical splints, but felt is objectionable on account of its cost and heat retaining qualities. It is also thick and clumsy and alone without the aid of some material to give it stiffness it is too flexible to
15 hold its shape properly, and it is not adapted

to receive and hold a veneering of any kind to give it the required strength. I therefore do not claim such construction, but

What I do claim is—

A surgical splint, consisting of layers of paper united by cement or glue with a veneering of wood cemented to the outer sides of the same, and the whole pressed into shape and covered with a water-proof coat of enamel varnish, substantially as described.

LORENZ A. DEUTHER.

Witnesses:

CHAS. STODDARD,
J. M. CALDWELL.