(No Model.)

W. D. KEARNS.

FLEXED FRACTURE SPLINT.

No. 568,951. Patented Oct. 6, 1896.

Fig. 1.

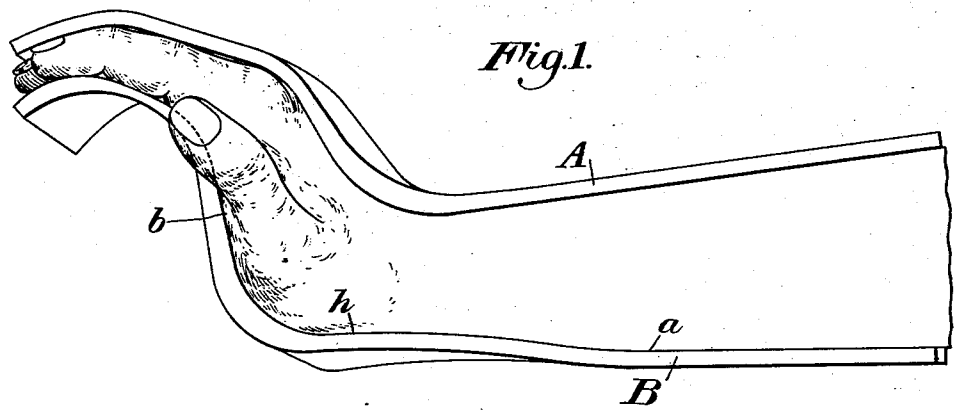


Fig. 2.

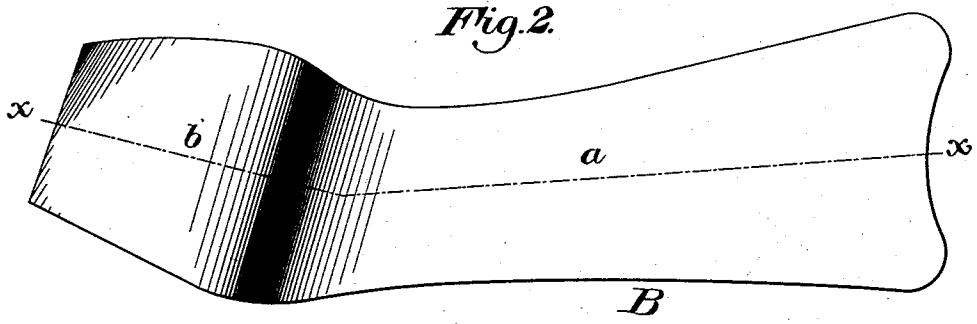
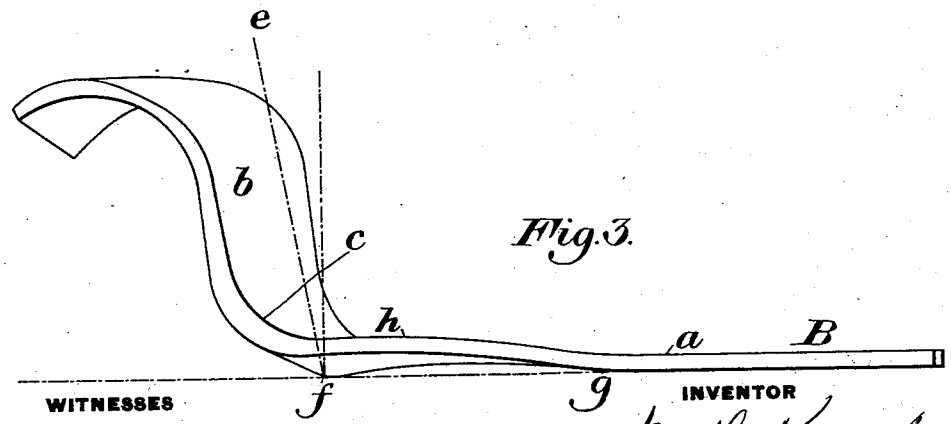


Fig. 3.



WITNESSES

Warren A. Swartz

W. F. Bakewell

INVENTOR

W. D. Kearns.

UNITED STATES PATENT OFFICE.

WILLIAM D. KEARNS, OF PITTSBURG, PENNSYLVANIA.

FLEXED FRACTURE-SPLINT.

SPECIFICATION forming part of Letters Patent No. 568,951, dated October 6, 1896.

Application filed June 13, 1895. Serial No. 552,646. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. KEARNS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Flexed Splints, of which the following is a full, clear, and exact description.

My invention consists in an improvement in splints for treating fracture of the forearm or wrist; and it consists in giving to the splints a peculiar conformation which is especially adapted to secure the greater comfort of the patient and to lessen the liability to displacement of the bones during the process of setting.

In the accompanying drawings, forming part of this specification, Figure 1 is a side view in perspective of a pair of my improved splints as applied to the forearm and right hand of a patient. Fig. 2 is a top view of the palmar splint. Fig. 3 is a side perspective view of the palmar splint of Fig. 2.

The splints represented in these figures and to which my improvement is applied form a pair, the upper one, A, in Fig. 1 being the dorsal splint, applied to the back of the hand and forearm, and the other splint, B, being the palmar splint, applied to the inside of the fingers, the palm of the hand, and the front side of the forearm.

In a former patent, No. 315,512, which was granted to me April 14, 1885, for retroflected splints, I described an improvement in which the form and flection of the dorsal splint, especially in that part which when in use is situate between the carpal joint and the extremities of the fingers, is such as to govern the position of the hand, while the shape of the palmar splint is that of a mere counterpart to the dorsal splint. My present invention, however, consists in an important improvement in the splints described in my former patent, and consists in certain characteristic differences which I will proceed to describe.

In my present invention, which I will proceed to describe, it is the palmar splint B which by its peculiar conformation is designed to govern the position of the hand, while the dorsal splint A serves merely to preserve the position of the bones of the arm, wrist, metacarpus, and fingers assumed by those parts when the palmar splint is applied to the hand.

In explaining my invention I shall confine the description chiefly to the palmar splint B, for the reason before stated.

The palmar splint B, instead of being straight longitudinally, is bent or twisted sidewise on its longitudinal axis, the angle of inclination being at the wrist, as shown by the dotted line *x x* of Fig. 2, so that when the splint is applied to the hand and arm, with the brachial portion *a* under the forearm, with the wrist of the patient's hand resting at the point of the splint marked *c* in Fig. 3, and the palm of his hand and fingers resting on the metacarpal portion *b* of the splint, the hand assumes a position of sidewise inclination outward when the palm of the hand is down, which, it will be observed, is the natural position of the human hand relatively to the forearm when the hand is at ease. This palmar splint has also an abrupt upward flexure or angle of retroflection between the brachial portion *a* and the metacarpal portion *b*. This angle of retroflection, as shown by the dotted lines *e f g* in Fig. 3, is from one hundred to one hundred and five degrees, being a considerably greater angle of retroflection than is given to the dorsal splint in my former patent. This secures a greater degree of upward flexure of the hand at the wrist relatively to the forearm, which I find to be very advantageous in practice.

At that portion of the palmer splint on which the wrist of the patient rests I make an upward swelling or projection *h* on the upper or inside of the splint, which extends a short distance up the brachial portion *a* and also transversely across the splint. This projection has the effect of supporting the wrist of the patient, thus relieving it of strain and producing a relaxation therein.

The dorsal splint A is so shaped as to conform to the contour of the patient's hand when placed in the palmar splint, as seen in Fig. 1, and corresponds with the palmar splint in having a corresponding retroflection at the wrist as well as an outward inclination relatively to the brachial portion, also at the wrist, as described.

It is hardly necessary to say that the splints

for the left hand and arm will have the same degree of upward retroflection, but that the outward sidewise inclination will be in the opposite direction.

My improved splints may be made of wood, paper-board, hard rubber, metal, or other convenient and suitable material.

What I claim as my invention, and desire to secure by Letters Patent, is—

A flexed palmar splint for treating fracture of the forearm or wrist, having a longitudinal brachial surface and a metacarpal palmar surface at a somewhat obtuse angle to each other, the metacarpal portion being retroflected or turned upward at the wrist, and also bent sidewise on its longitudinal axis and the brachial portion having a transverse upward swelling or projection to support the wrist; substantially as described.

In testimony whereof I have hereunto set my hand.

WILLIAM D. KEARNS.

Witnesses:
W. B. CORWIN,
H. M. CORWIN.