

(No Model.)

J. E. LEE.

MANUFACTURE OF SPLINTS.

No. 366,120.

Patented July 5, 1887.

FIG. 2.

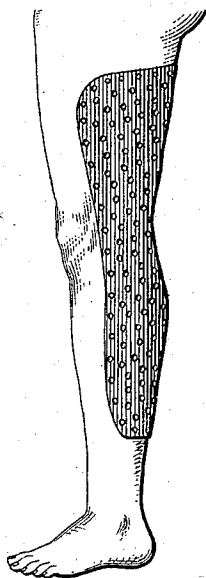


FIG. 1.

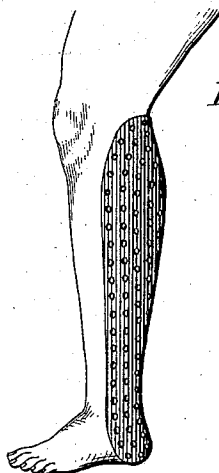


FIG. 4.

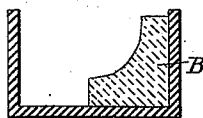


FIG. 3.

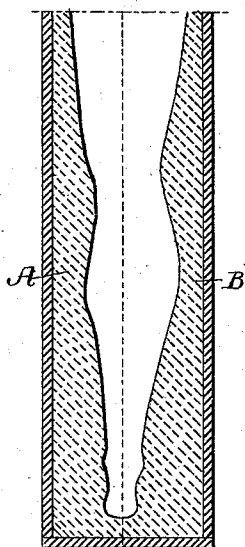


FIG. 5.

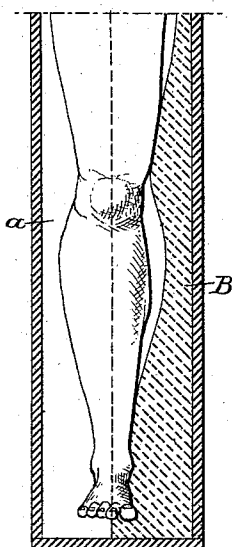
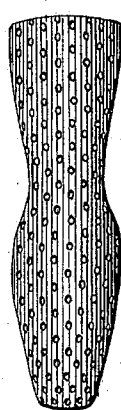


FIG. 6.



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MANUFACTURE OF SPLINTS.

SPECIFICATION forming part of Letters Patent No. 366,120, dated July 5, 1887.

Application filed February 7, 1887. Serial No. 226,836. (No model.)

To all whom it may concern:

Be it known that I, J. ELLWOOD LEE, a citizen of the United States, residing at Conshohocken, Montgomery county, Pennsylvania, have invented certain Improvements in the Manufacture of Splints, of which the following is a specification.

The main object of my invention is to so construct splints for surgical use that a less number of splints than heretofore will be required to make a complete set for the various different fractures of the limbs of the human body.

Sets of splints as heretofore made usually include different splints for the right and the left limbs. Ordinary splints which are made to fit the right leg, for instance, cannot well be used for the left leg, since they would not adapt themselves to the shape of the limb with that closeness and comfort which is essential for the proper knitting of the fractured bones. I so construct my improved splints that they may be applied with equal effect to the right or to the left limbs for which they are severally constructed, so that a complete set of my improved splints need not exceed twenty-one in number, even including two different sizes—one for adults and one for children.

In the accompanying drawings, Figure 1 is a side view of what is termed a tibia and fibula splint applied to the lower part of the leg for fractures and other injuries of the leg below the knee, especially those at or about the ankle-joint. Fig. 2 is a similar view of a patella-splint for fractures of the femur to the middle of the tibia and fibula. Figs. 3, 4, and 5 are sectional views of molds, illustrating the manner of making the splints; and Fig. 6 is a rear view of a patella-splint constructed in accordance with my improvement.

My invention may be carried into effect with splints made of different materials; but the kind I prefer to use are metallic and made of very thin copper—about one-eightieth of an inch in thickness—so that they are very light; and as they are made trough-shaped, they are flexible and pliable transversely and yet quite firm longitudinally. As shown in the drawings, perforations are formed in the metallic splints to allow of ventilation and to allow secretions and moisture to pass off through these

openings. A slight roughness is left on the outside of the splints in the formation of the perforations in order to prevent the bandages from slipping. The splints are also preferably nickel-plated, for purposes of cleanliness and to prevent oxidation.

To make the splints applicable to either the right or left limb, I proceed in the following manner: I first take a plaster cast of either the right or left limb for which the splint is to be used. For instance, to make either of the splints shown in Figs. 1 and 2, a cast is first taken of either the right or left leg—say of the left leg, as shown in Fig. 3. I then cut the plaster mold into two halves on the dotted line, Fig. 3, and remove that half, A, which has the less prominent curves or recesses formed in it by the contour of the leg. Into the box containing the remaining half, B, is placed the right leg; and plaster-of-paris is then poured into the space *a*, Figs. 4 and 5, left by the removal of the half A. There is thus formed a compound mold, shaped on one side by the most prominent projections or curves of the left leg and on the other side by the most prominent projections or curves of the right leg. From this mold a metal die is made by casting, and in connection with the die there is formed a corresponding matrix, by means of which the metallic splints are stamped up to the form of die—that is, with curves on one side to conform to the larger outline of the right limb and on the other side to conform to the larger outline of the left limb. These splints can thus be applied to either limb, for they are sufficiently flexible transversely, owing to the thinness and lightness of the metal, to be conformed closely to all parts of the limb by the bandage. In other words, they are sufficiently flexible and pliable to be closed in to fit the limbs accurately, with but little more pressure than is ordinarily used in binding on the bandage; but longitudinally the splints are quite stiff and rigid.

Instead of making the compound mold in the manner above described, I may take separate casts of the right and left limbs, and after cutting each cast in two halves those halves which have the largest recesses may be joined together to make the compound mold, to be used as before described.

Although I have illustrated my invention as applied only to splints for legs, it will be understood that splints for other parts of the body may be made in the same way.

5 I claim as my invention—

1. The mode herein described of making splints applicable to either the right or left limb, said mode consisting in first making a compound mold of the right limb on one side
10 and of the left limb on the other, forming dies from such compound mold, and pressing the splints into shape by the dies thus made.

2. As a new article of manufacture, a splint

shaped on one side to the larger outline of a right limb and on the other side to the larger
15 outline of a corresponding left limb, but flexible transversely to conform to either limb, substantially as set forth.

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

J. ELLWOOD LEE.

Witnesses:

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HARRY SMITH.