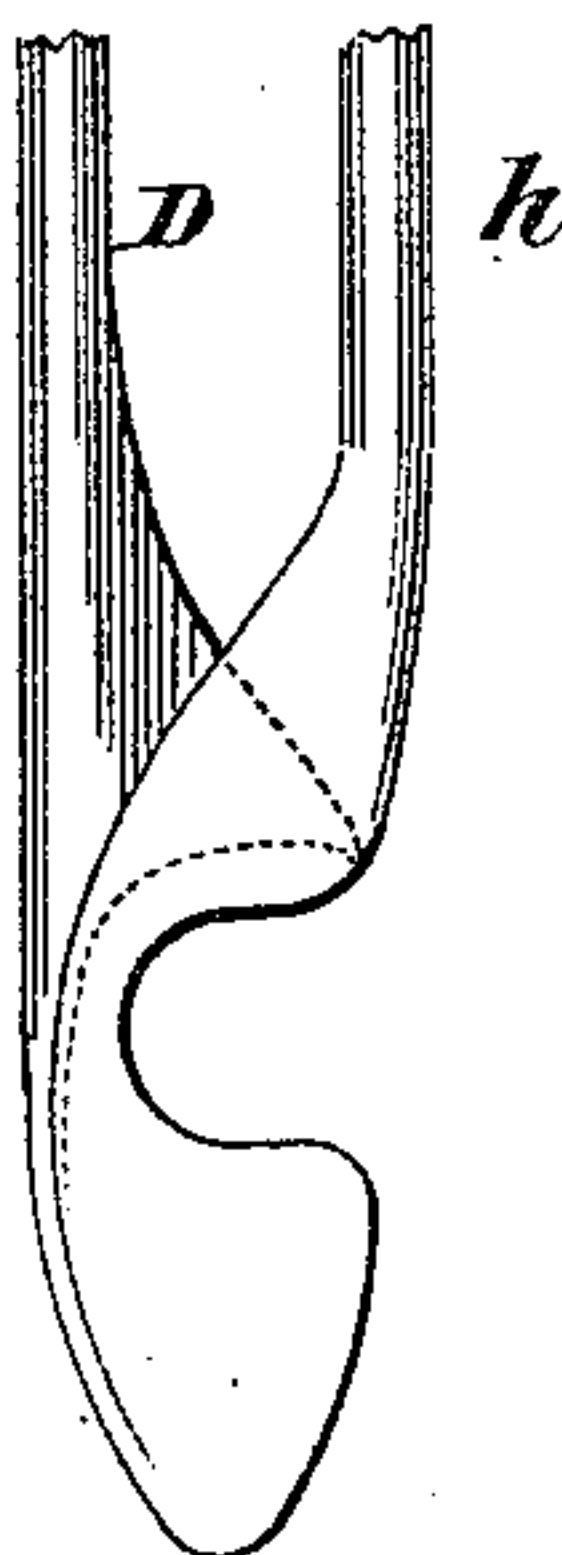
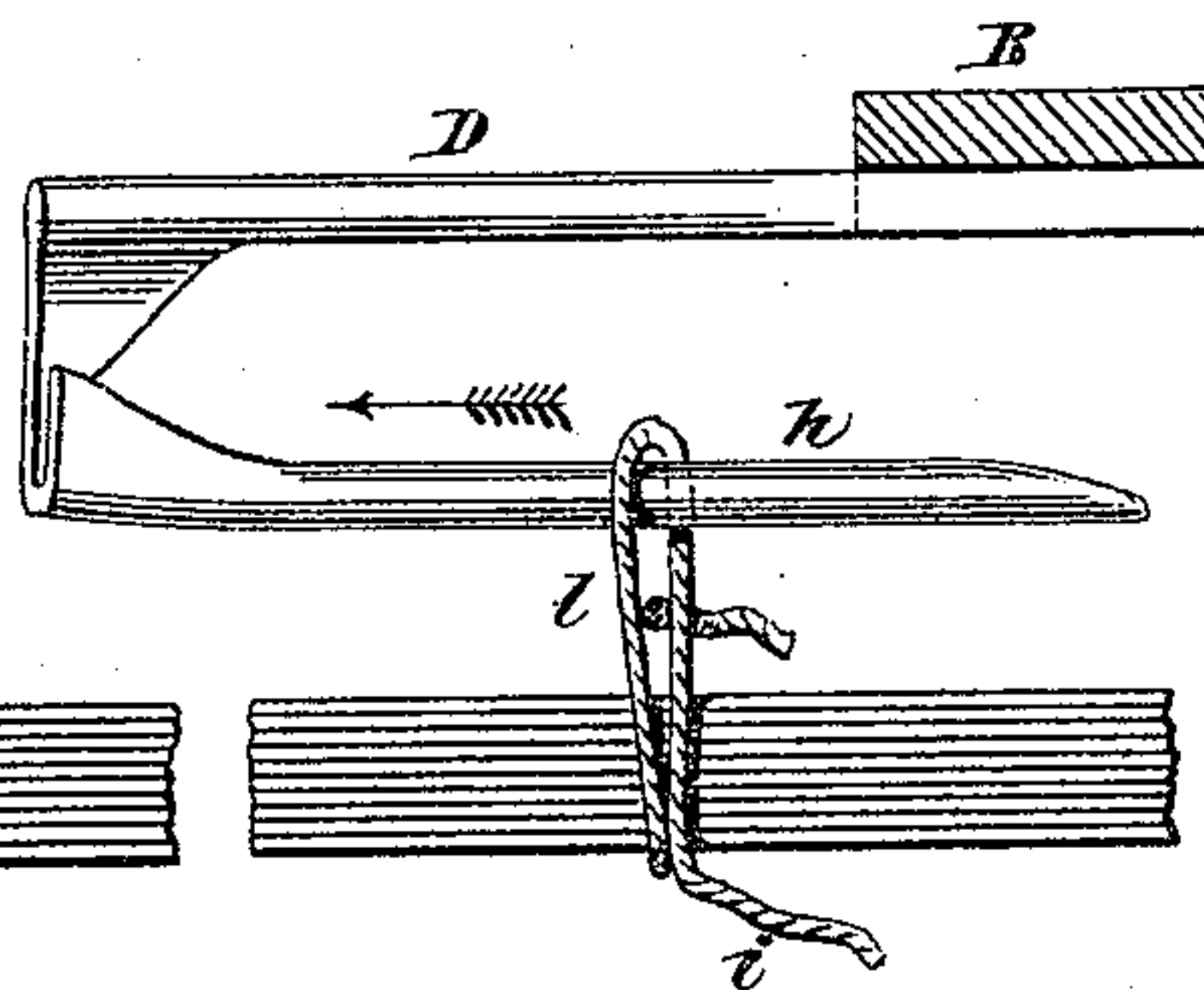
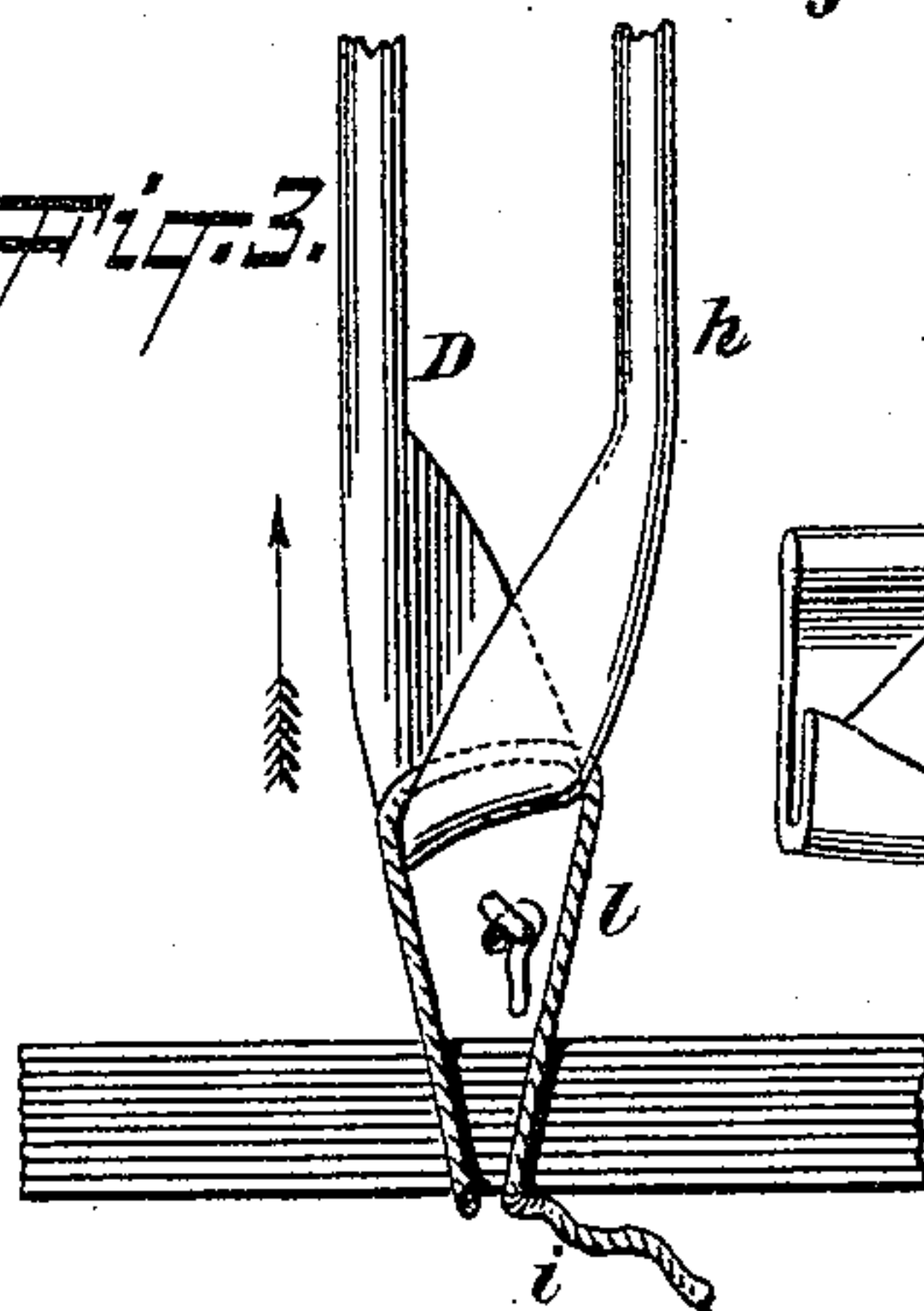


2 Sheets—Sheet 1.

No. 460,665.

Patented Oct. 6, 1891.



**WITNESSES:**

Gustav Dieterich  
R. Mitchell

**INVENTOR.**

INVENTOR.  
Robert Simon  
BY *Briese & Knauth*  
his ATTORNEYS.

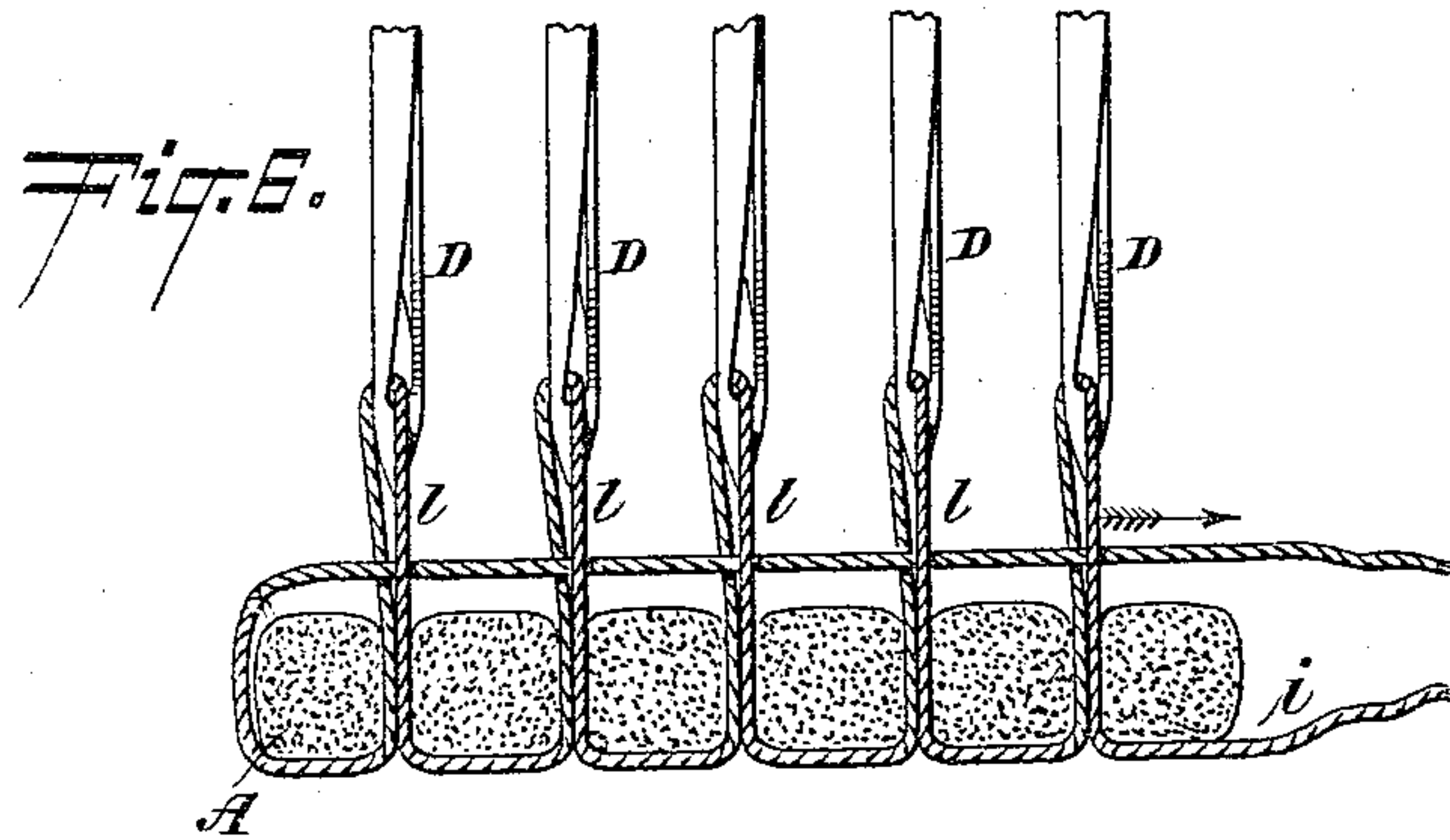
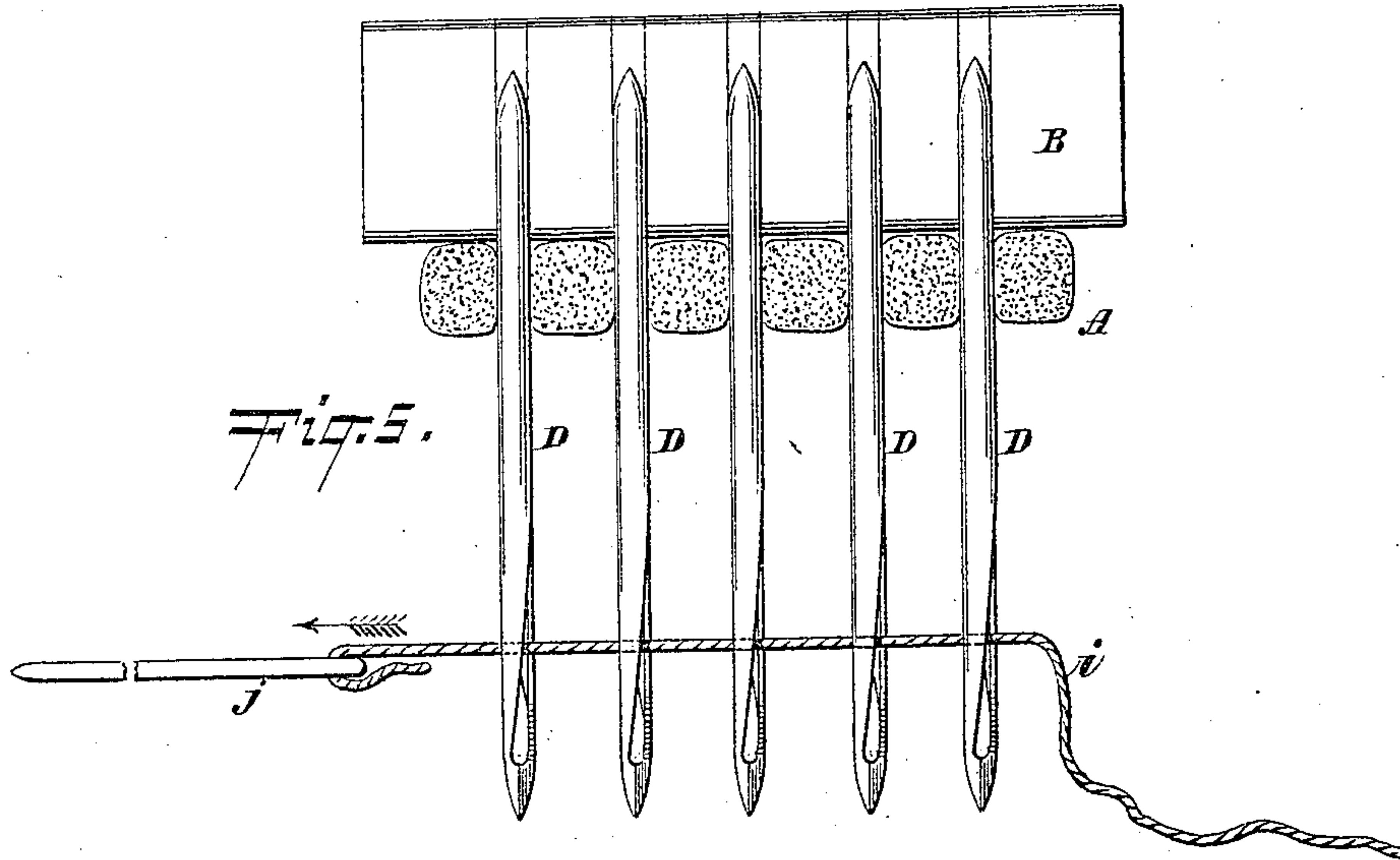
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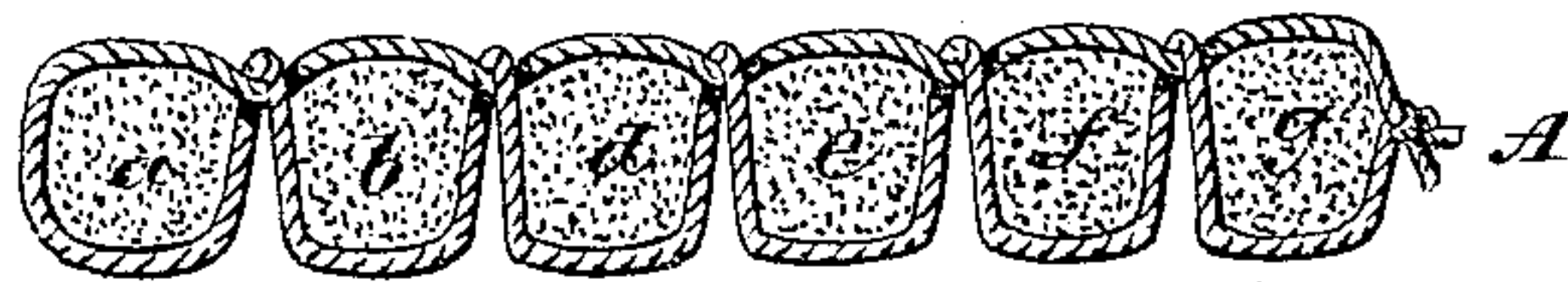
R. SIMON.  
SKEIN LACER.

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*Fig. 7.*



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

ROBERT SIMON, OF UNION HILL, NEW JERSEY.

## SKEIN-LACER.

SPECIFICATION forming part of Letters Patent No. 460,665, dated October 6, 1891.

Application filed March 30, 1891. Serial No. 386,933. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT SIMON, a resident of Union Hill, Hudson county, and State of New Jersey, have invented an Improved Skein-Lacer, of which the following a specification, reference being had to the accompanying drawings, forming part hereof, in which—

Figure 1 represents a top view of a skein laced according to my invention, with the apparatus for doing so also in top view. Fig. 2 is a side view, partly in section, of the apparatus, showing it inserted in the skein and in its first position. Fig. 3 shows the same parts in the second position; Fig. 4, the same in the third position. Fig. 5 is a face view of the parts in the first position; Fig. 6, a face view of the parts in the second position; Fig. 7, a cross-section of the skein laced according to my invention; and Fig. 8 a side view of a modified form of apparatus.

This invention relates to a new mechanism for and process of lacing skeins for the purpose of keeping the threads in position; and it consists in the employment of a fingered bar, of which each finger has a hook formed thereon, as hereinafter more fully specified.

In the drawings, the letter A represents a skein of yarn which it is the intention to lace, so as to keep its threads in position. In order to quickly lace the skein, I employ the apparatus shown in Figs. 2, 3, 4, 5, and 6, which consists of a bar B, from which projects a series of fingers D D, there being as many fingers as there are to be ties in the lacing-cord and the said fingers being as far apart as it is desired to have the ties spaced in the skein. Each of the fingers D is in form of an elongated hook, as clearly shown in Fig. 2, the beak of which hook *h* projects upward to a point higher than the operative part of the shank of said finger, as shown in Fig. 2.

In using this apparatus I proceed as follows: Taking the skein A, I first push the fingers D

D through it, as in Figs. 2 and 5, so that they will form loops beneath the skein. In this position the shank and also the elongated beak of the finger extend through the fabric, as in Fig. 2. I then insert a thread *i*, with the assistance, if desired, of a needle or carrier *j*, through all these loops beneath the skein, as clearly shown in Figs. 2 and 5. I then pull the bar B, with its fingers D D upward, so as to clear the skein entirely of the fingers, thereby pulling the cord or thread *i* in the form of doubled loops through the skein A, as in Figs. 3 and 6, the doubled loops to which I refer being indicated by the letters *l* in the said figures. I now throw the cord or thread *i* above the skein through these loops *l* in the direction of the arrow shown in Fig. 6 and as shown in Figs. 3 and 6. Next I turn the fingers D into a horizontal position, as in Fig. 4, and pull them out of the loops *l* by moving them in the direction of the arrow shown in Fig. 4, and then I draw the ends of the cord *i* sufficiently tight and tie the same, as in Fig. 7, thus producing a complete division of the skein A into sections *a b d e f g*. It will be observed that in my construction the point of the beak *h* never passes through the skein.

Instead of making the lower ends of the hooks D *h* of the form shown in Fig. 2, they may have the form indicated in Fig. 8 or any analogous form.

Having now described my invention, I claim—

The bar B, having fingers D D projecting therefrom, each of said fingers having the elongated beak *h*, which extends above the operative portion of the shank of each finger, all arranged for use in lacing skeins, substantially as specified.

ROBERT SIMON.

Witnesses:

GUSTAV SCHNEPPÉ.

HARRY M. TURK.