

(No Model.)

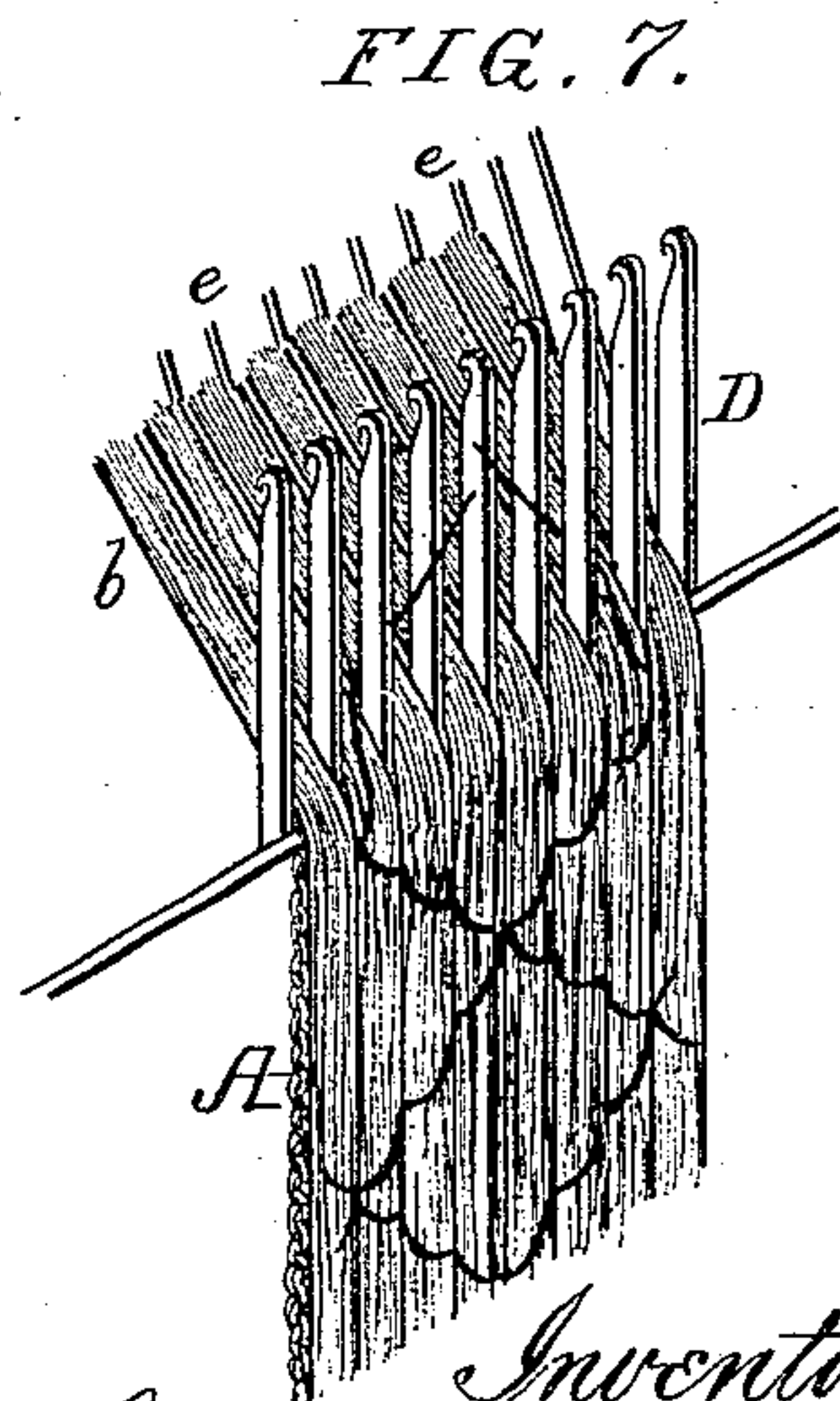
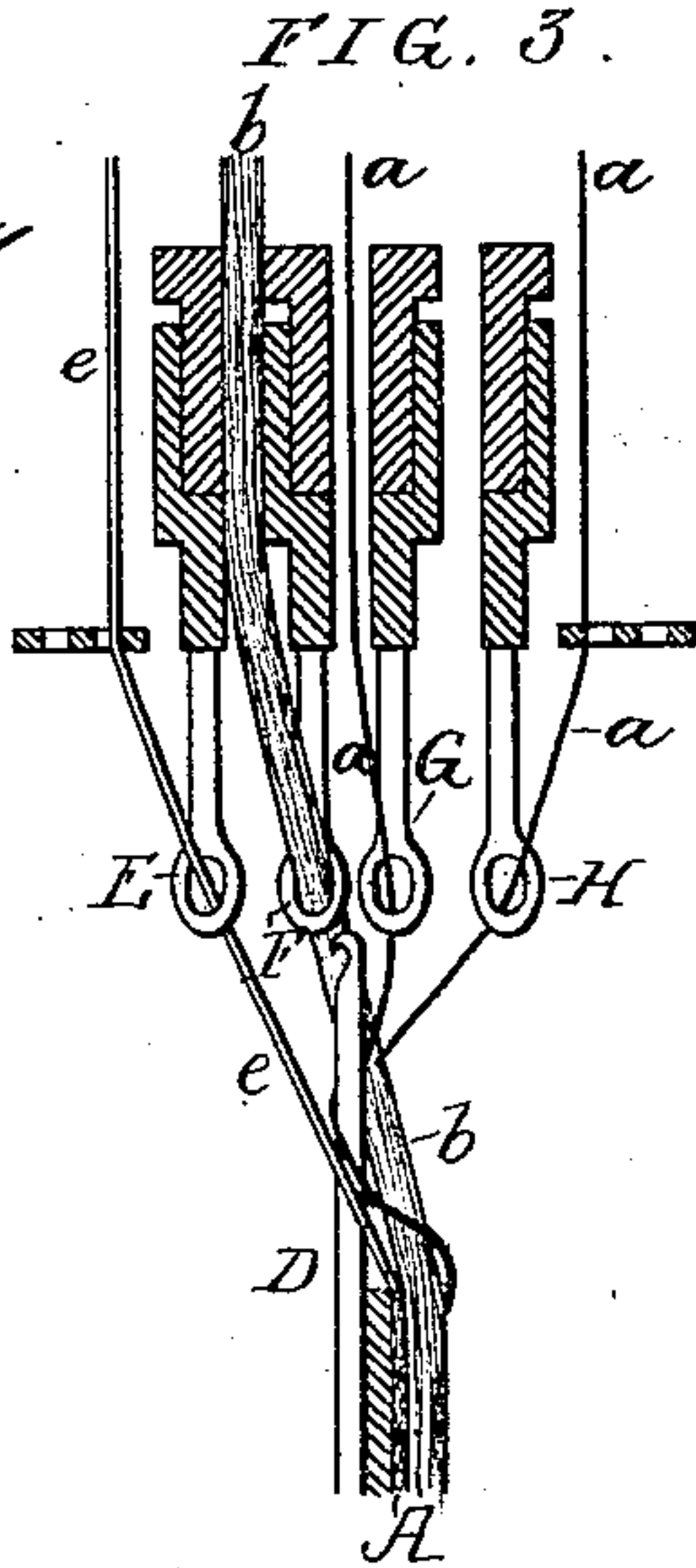
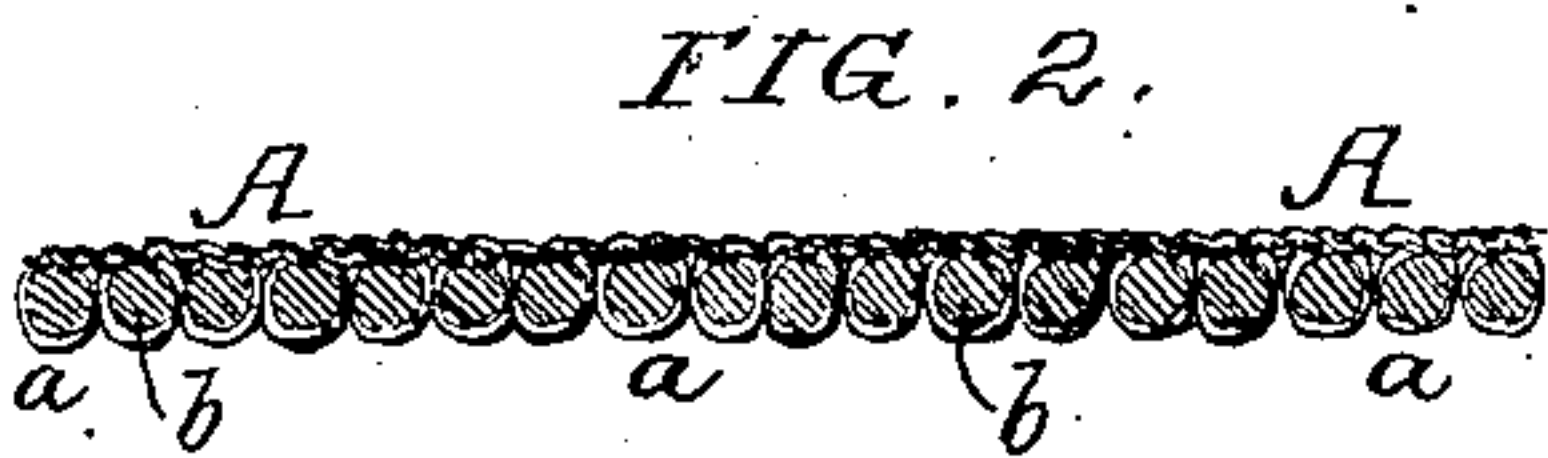
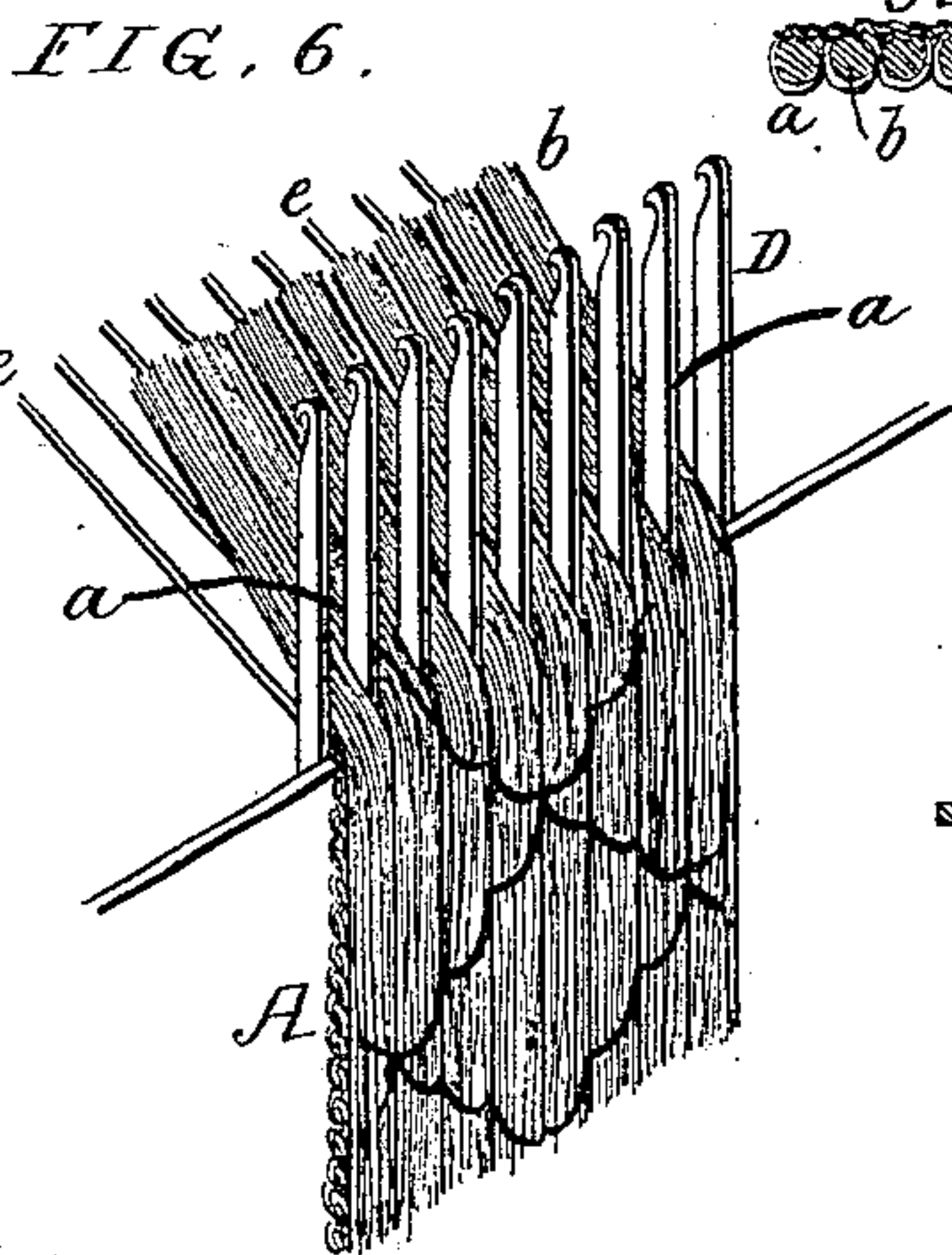
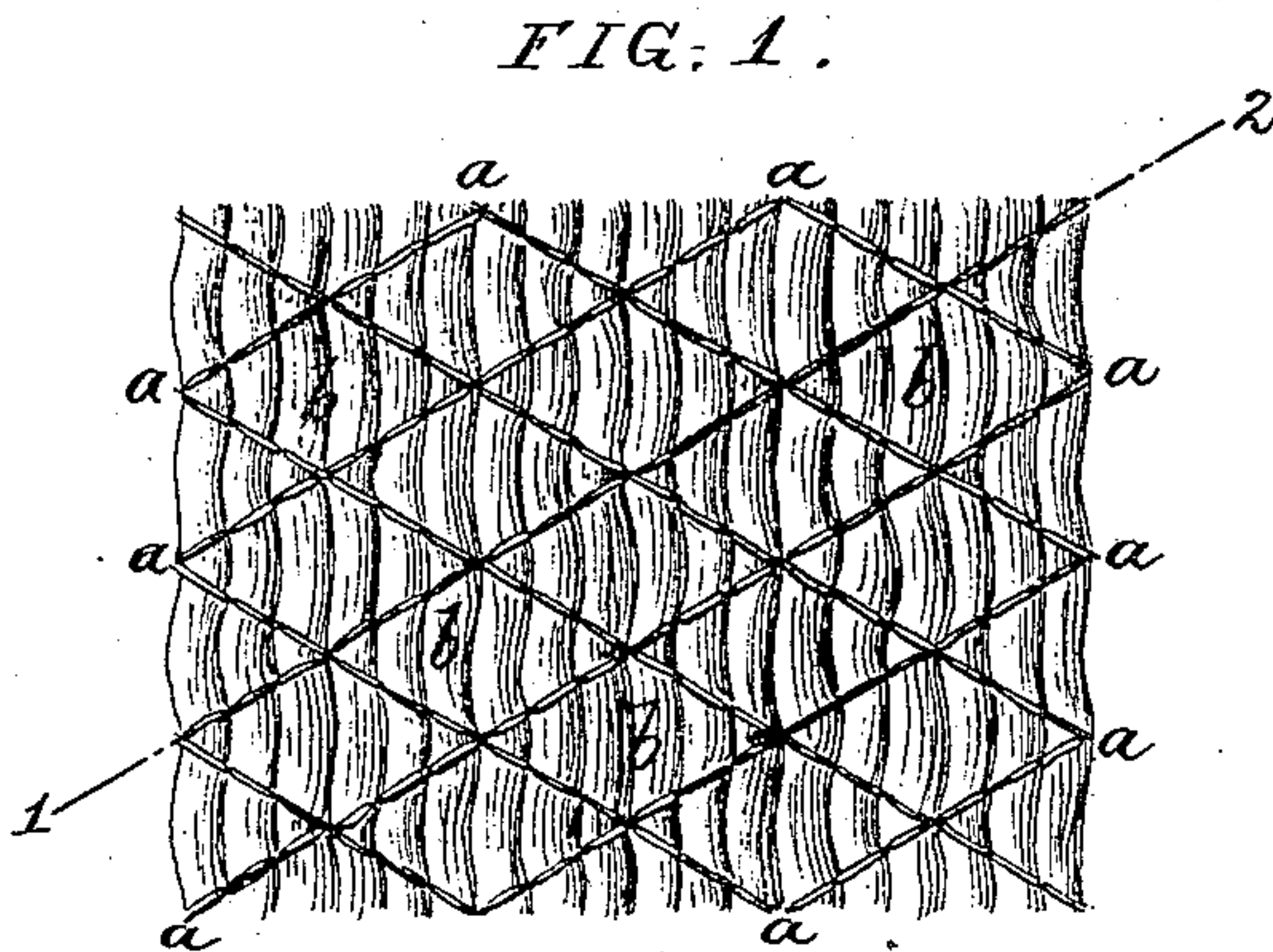
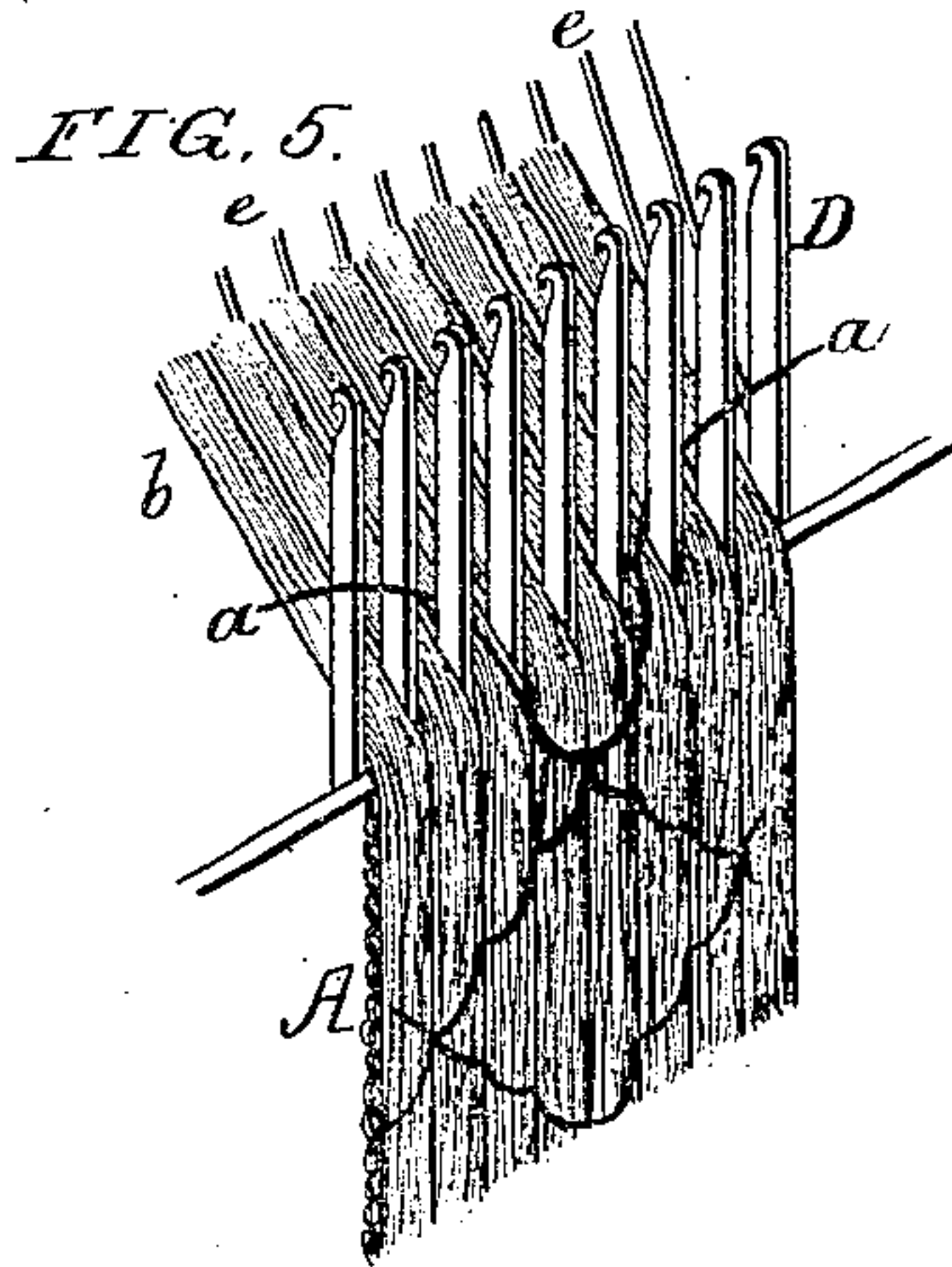
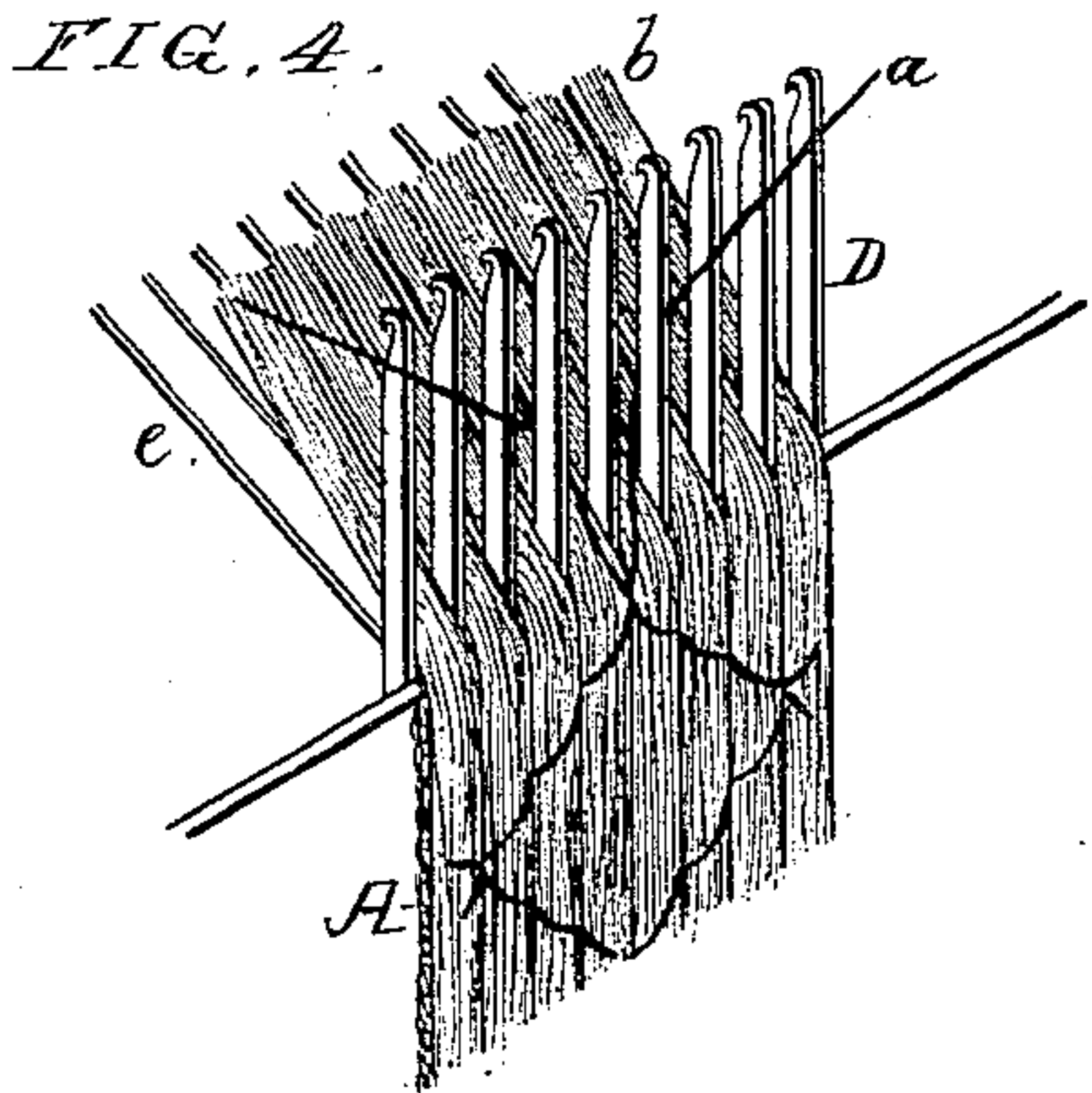
3 Sheets—Sheet 1.

G. UPTON.

KNITTED FABRIC AND MACHINERY FOR MANUFACTURING THE SAME.

No. 246,248.

Patented Aug. 23, 1881.



Witnesses:
James F. Tobin.
Harry Smith.

Inventor:
Gabriel Upton
by his Attorney
Howson and son

(No Model.)

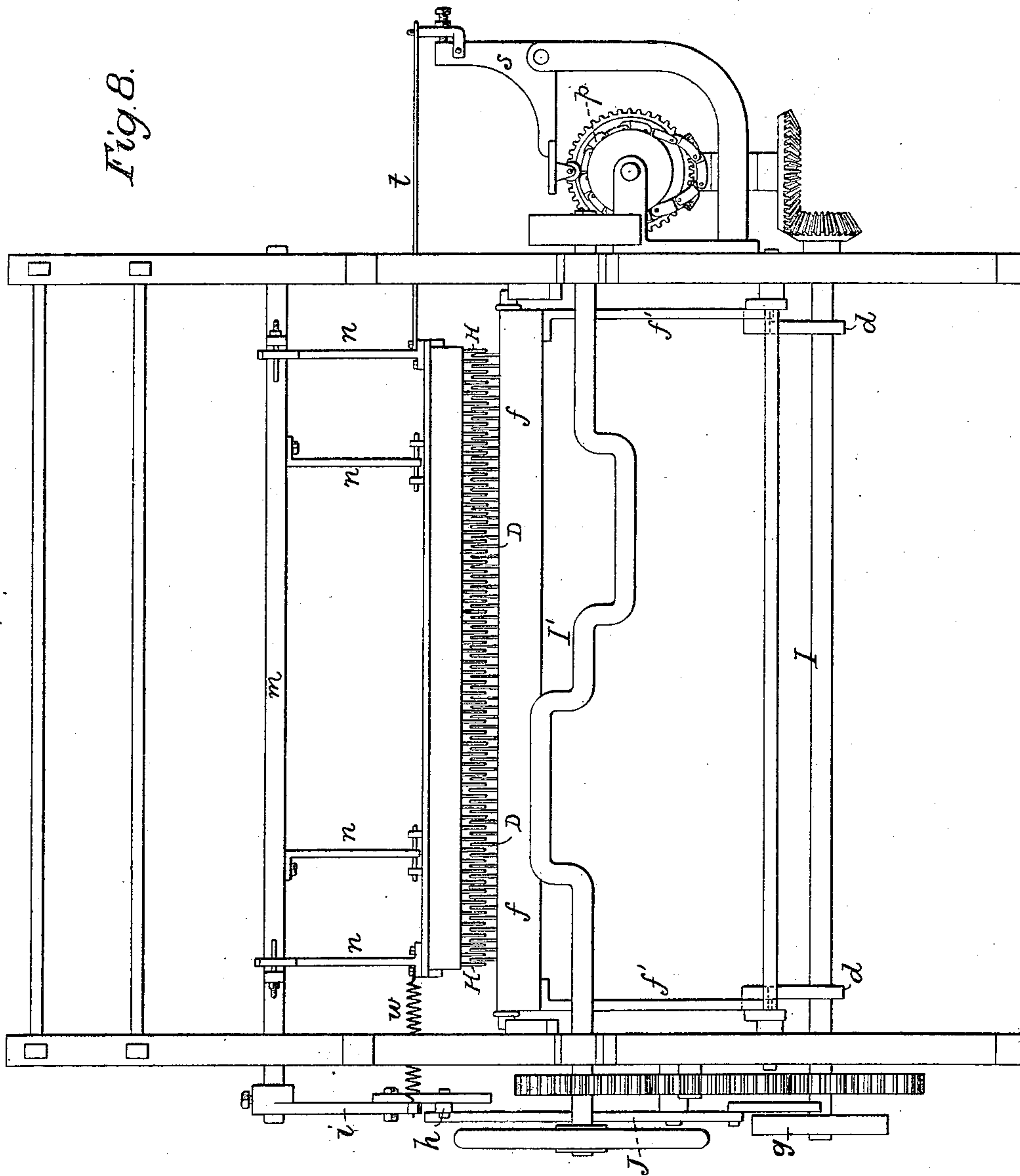
3 Sheets—Sheet 2.

G. UPTON.

KNITTED FABRIC AND MACHINERY FOR MANUFACTURING THE SAME.

No. 246,248.

Patented Aug. 23, 1881.



Witnesses
James F. Tobin
Harry Smith

Inventor
Gabriel Upton
by his attorneys
Hewson & Sons

(No Model.)

3 Sheets—Sheet 3.

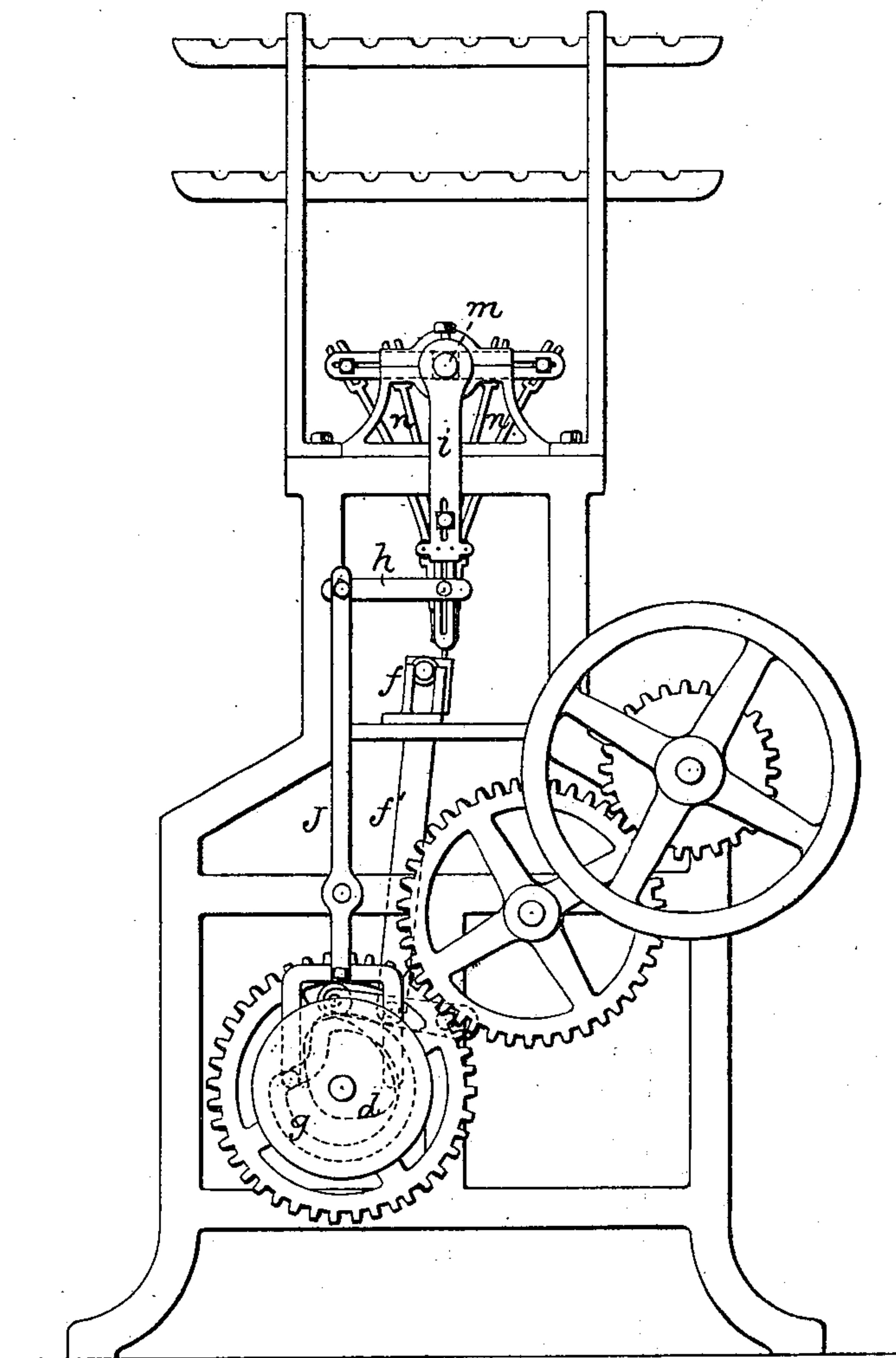
G. UPTON.

KNITTED FABRIC AND MACHINERY FOR MANUFACTURING THE SAME.

No. 246,248.

Patented Aug. 23, 1881.

Fig. 9



Witnesses
James F. Tobin.
Harry Smith

Inventor
Gabriel Upton
by his Attorneys
Houson & Sons

UNITED STATES PATENT OFFICE.

GABRIEL UPTON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO CONYERS BUTTON AND THEODORE A. FLEU, BOTH OF SAME PLACE.

KNITTED FABRIC AND MACHINERY FOR MANUFACTURING THE SAME.

SPECIFICATION forming part of Letters Patent No. 246,248, dated August 23, 1881.

Application filed November 29, 1880. (No model.)

To all whom it may concern:

Be it known that I, GABRIEL UPTON, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented an Improvement in Knitted Fabrics and in Machinery for Manufacturing the Same, of which the following is a specification.

The object of my invention is to produce an attractive knitted fabric for hoods, nubias, and similar articles; and this object I attain in the manner and by the means which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1, Sheet 1, is a face view of a piece of my improved knitted fabric; Fig. 2, a sectional plan on the line 1 2; Fig. 3, a sectional view of part of a straight-frame knitting-machine which I use in manufacturing the fabric; Figs. 4, 5, 6, and 7, diagrams illustrating the process of manufacture; Fig. 8, Sheet 2, a front view, and Fig. 9, Sheet 3, an end view, of the machine for producing the fabric.

On reference to Figs. 1 and 2 it will be observed that my improved fabric consists of a closely-knitted web, A, forming a backing for the face of the fabric, which is secured to said backing by means of threads *a*. The face of the fabric consists, preferably, of untwisted slivers *b*, of wool or worsted, laid closely side by side, and each loop of binding-thread is caused to embrace one of said surface-slivers and confine it to the backing A. The binding-threads are worked in zigzag courses and interlocked at the points of meeting. The method of making the fabric, however, will be understood on reference to Figs. 3 to 7 of the drawings. In Fig. 3, D represents a row of ordinary guided latch-needles, and E, F, G, and H four rows of guides. The guides E carry the threads *e*, which form the backing-fabric A, and of which there is one for each needle, D, the number of slivers *b* also corresponding with the number of needles, and each sliver being carried by a guide, F. The threads *a* are carried by the guides G and H, and there is, in the present instance, one of said threads *a* for every three needles D of the set.

The threads are worked as follows: The threads *e* are worked on alternate needles D, so as to produce a continuous fabric, A, of con-

nected chain-stitches. The slivers *b* are simply vibrated between the needles, but are not wrapped around the same, and the binding-threads are first worked to the right and then to the left on the desired number of needles, each thread, when working on the extreme needles of its set, being interlocked with the adjoining threads working on the same needles. The fabric is fed forward after the formation of each stitch, thereby causing the zigzag course of the binding-threads and producing the quilted effect shown in Fig. 1.

The binding-threads may take courses different from that shown, the latter not being absolutely necessary to the function of the threads—namely, the securing the slivers *b* to the backing-fabric A.

In Figs. 8 and 9 I have shown the machine whereby my improved fabric is manufactured. This is an ordinary straight-frame knitting-machine, and is operated in the usual manner.

I is the main shaft, which receives motion by means of gearing from the counter-shaft I'. The shaft I carries cams *d*, which impart a vertical reciprocating motion to the needle-frame *f* through the medium of suitable arms and connecting-rods, *f'*. On the shaft I is a cam, *g*, which serves to impart a vibrating movement to a lever, J, and the latter is connected by a link, *h*, to an arm, *i*, on a rock-shaft, *m*, from which the various bars carrying the guides E, F, G, and H are suspended by means of rods *n*. Each guide-bar is free to move longitudinally independent of the rock-shaft, and this longitudinal movement is effected by means of pattern-chains *p*, which act upon bell-crank levers *s*, the latter being connected by means of rods *t* to the guide-bars, there being one pattern-chain, lever, and connecting-rod for each guide-bar; but the pattern-chain of the bar carrying the guides F is blank, so that no longitudinal movement is imparted to this bar.

In order to keep the levers *s* properly in contact with the pattern-chain *p*, the ends of the bars opposite to those to which the rods *t* are connected are furnished with springs *w*.

I claim as my invention—

1. The within-described knitted fabric, consisting of a backing, A, of continuous knitted

5 fabric, the surface-threads B, laid closely side by side, and the threads *a*, looped over the surface-threads and interlocked with the threads of the backing between said surface-threads, so as to secure the latter to the backing, as set forth.

2. The combination of the needles D and guides E, F, G, and H with means, substantially as described, for vertically reciprocating
10 the needles, laterally vibrating the guides F,

and laterally vibrating and longitudinally reciprocating the guides E, G, and H, as set forth.

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

GABRIEL UPTON.

Witnesses:

HENRY HOWSON, Jr.,
HARRY SMITH.