

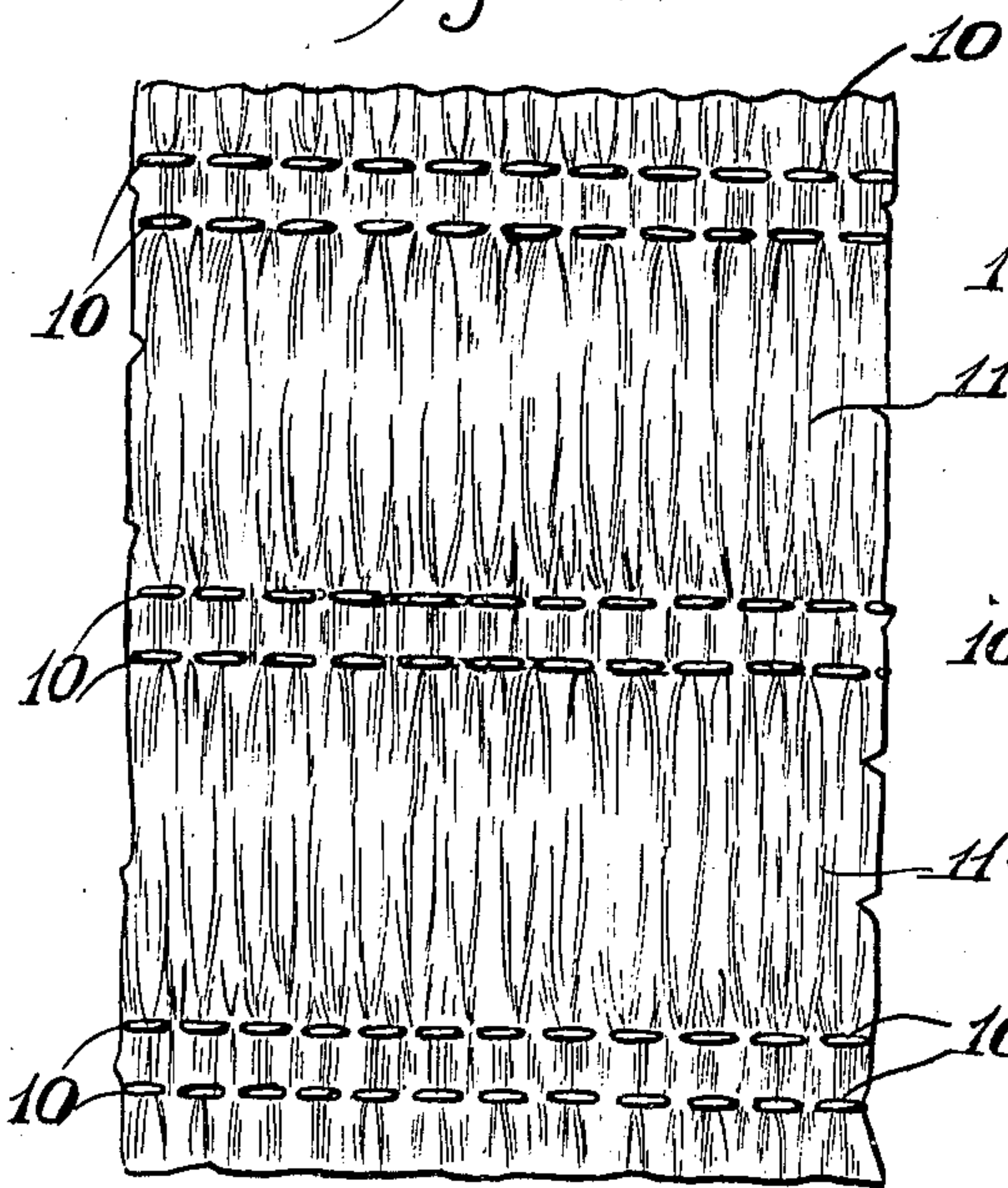
**March 7, 1944.**

1944. W. J. HARPHAM  
METHOD OF MAKING FABRIC AND DRESS ORNAMENTATION,  
AND THE PRODUCT THEREOF  
Filed Dec. 2, 1940 2 Sh

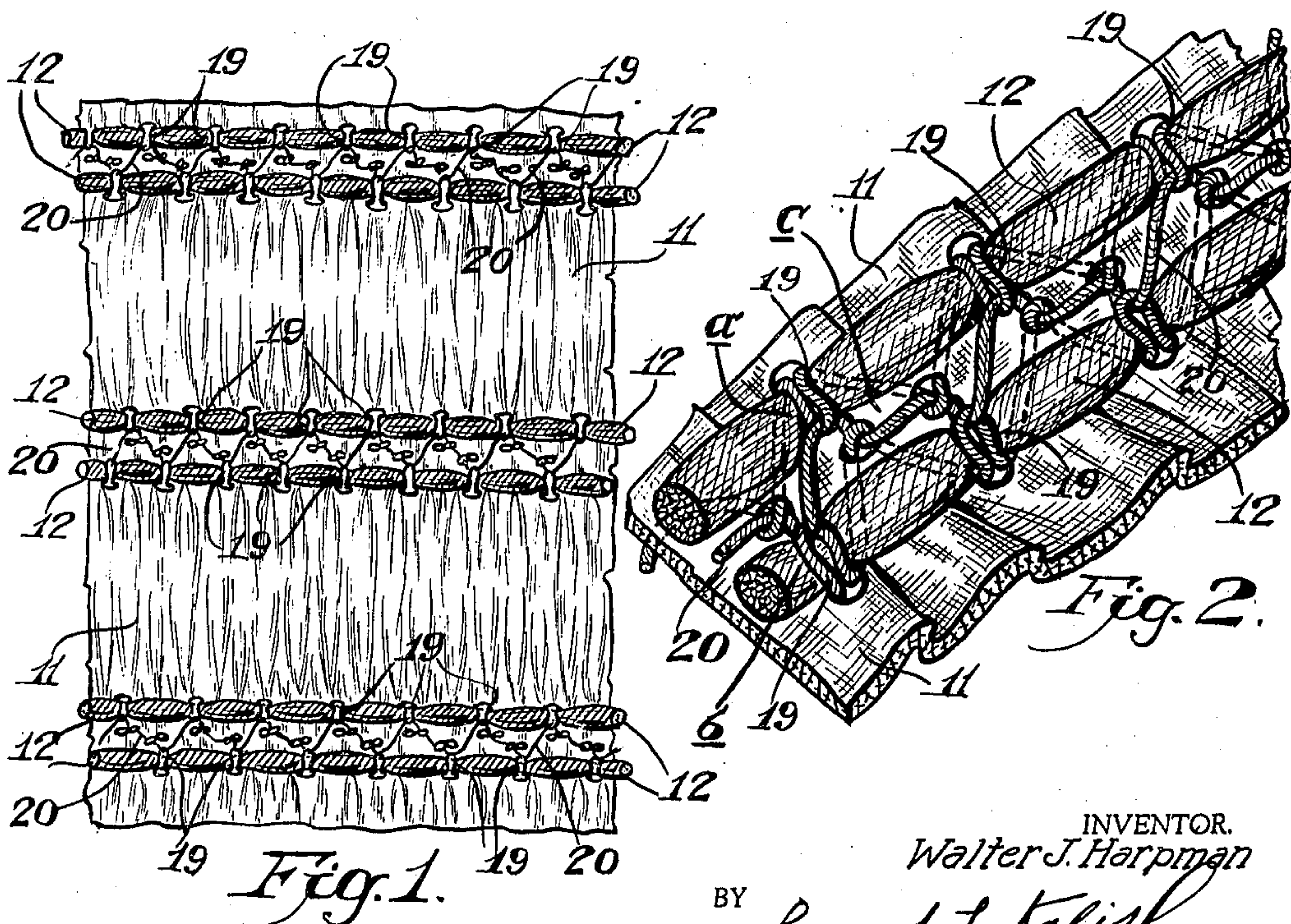
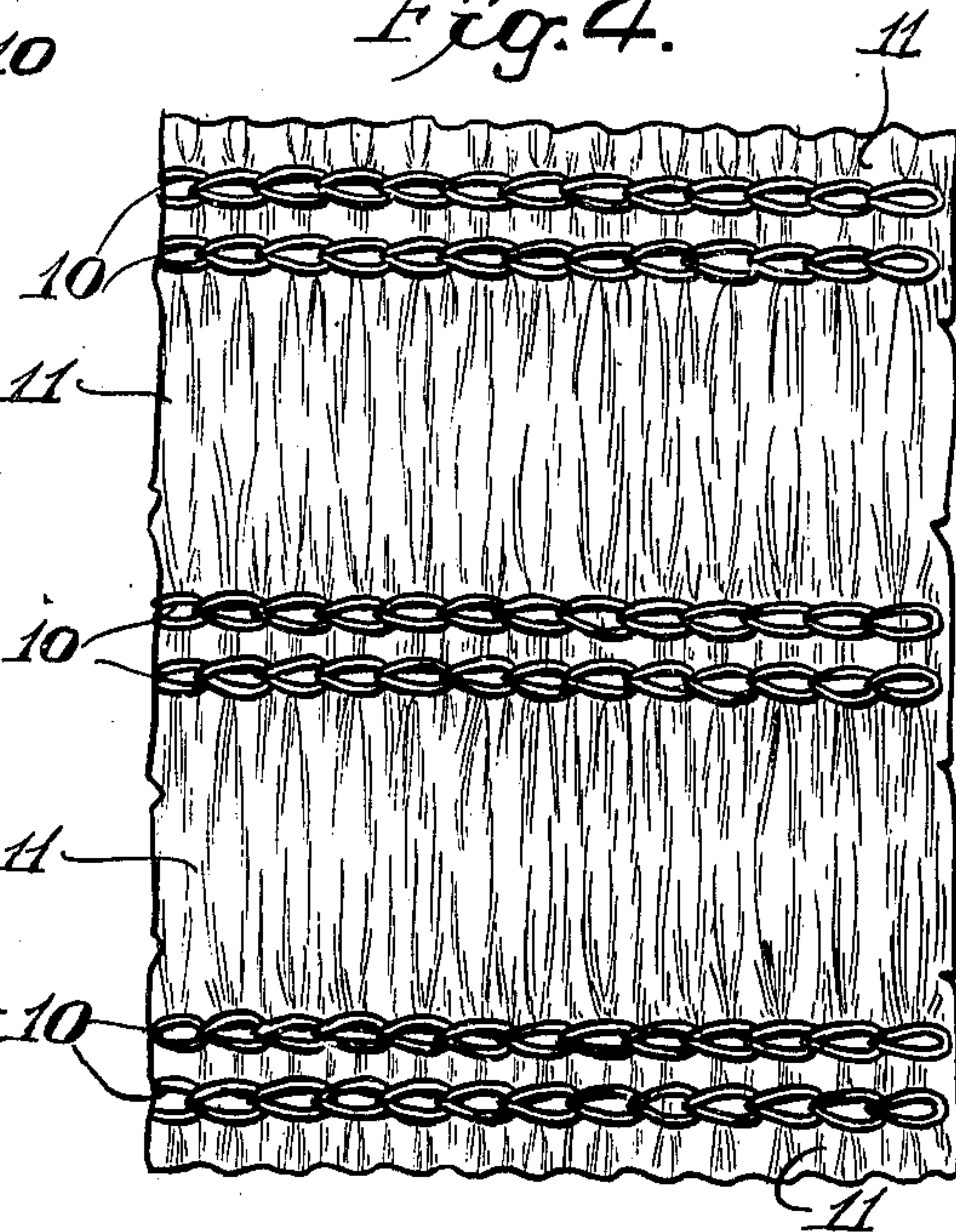
**2,343,614**

2 Sheets-Sheet 1

Fig. 3.



*Fig. 4.*



INVENTOR,  
*Walter J. Harpman*

BY

BY *Leonard L. Kalish*  
ATTORNEY.

ATTORNEY.



March 7, 1944.

W. J. HARPHAM  
METHOD OF MAKING FABRIC AND DRESS ORNAMENTATION,  
AND THE PRODUCT THEREOF  
Filed Dec. 2, 1940

2,343,614

2 Sheets-Sheet 2

Fig. 6.

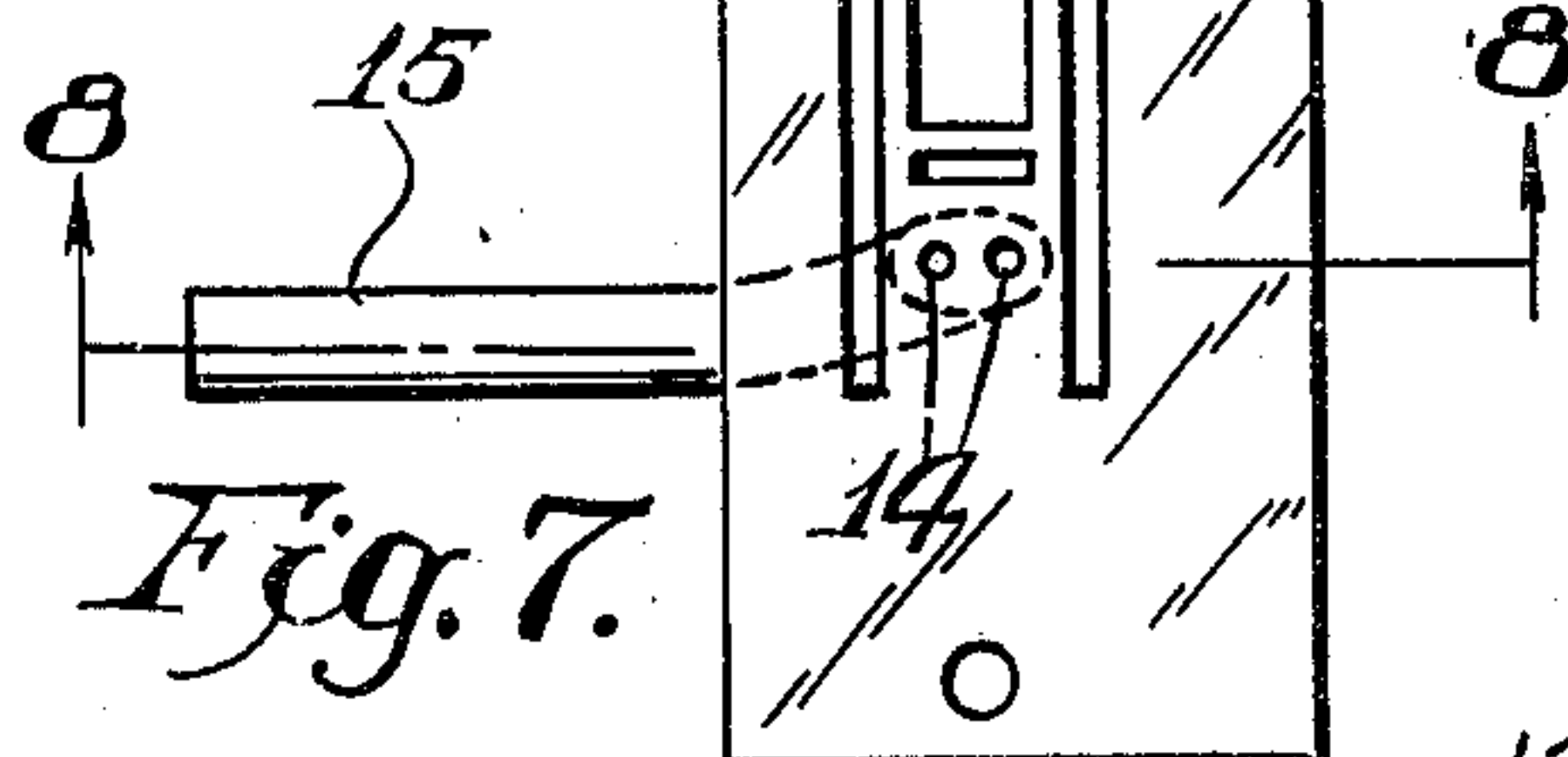
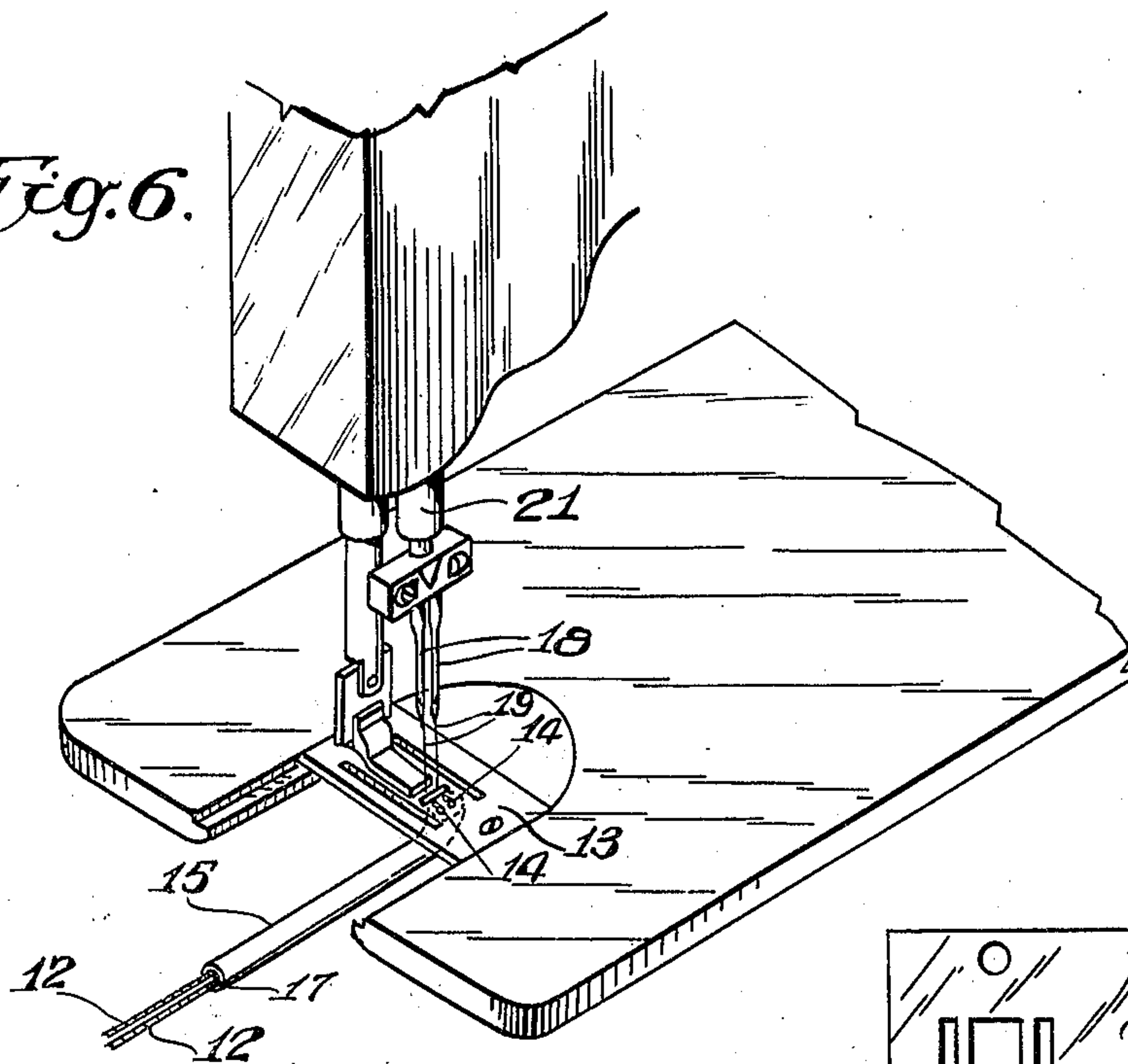


Fig. 9.

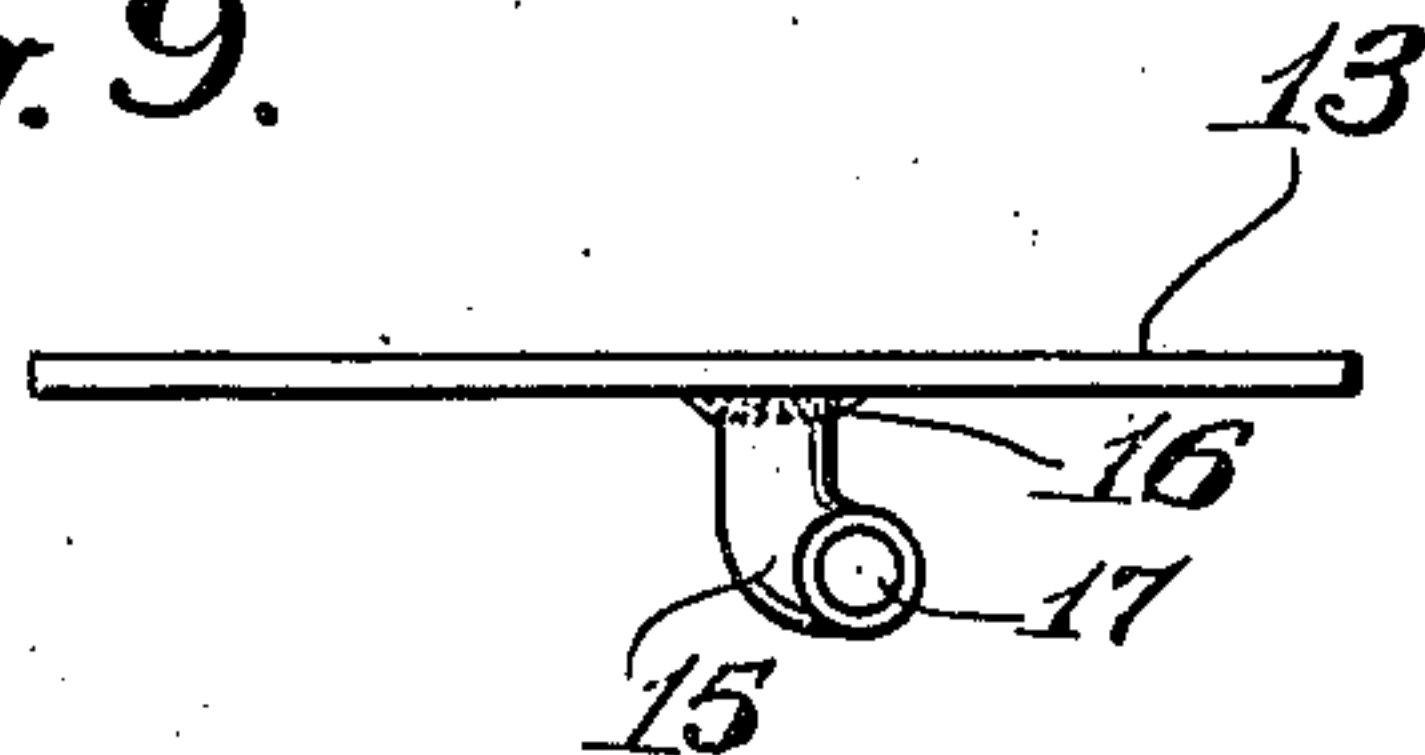


Fig. 7.

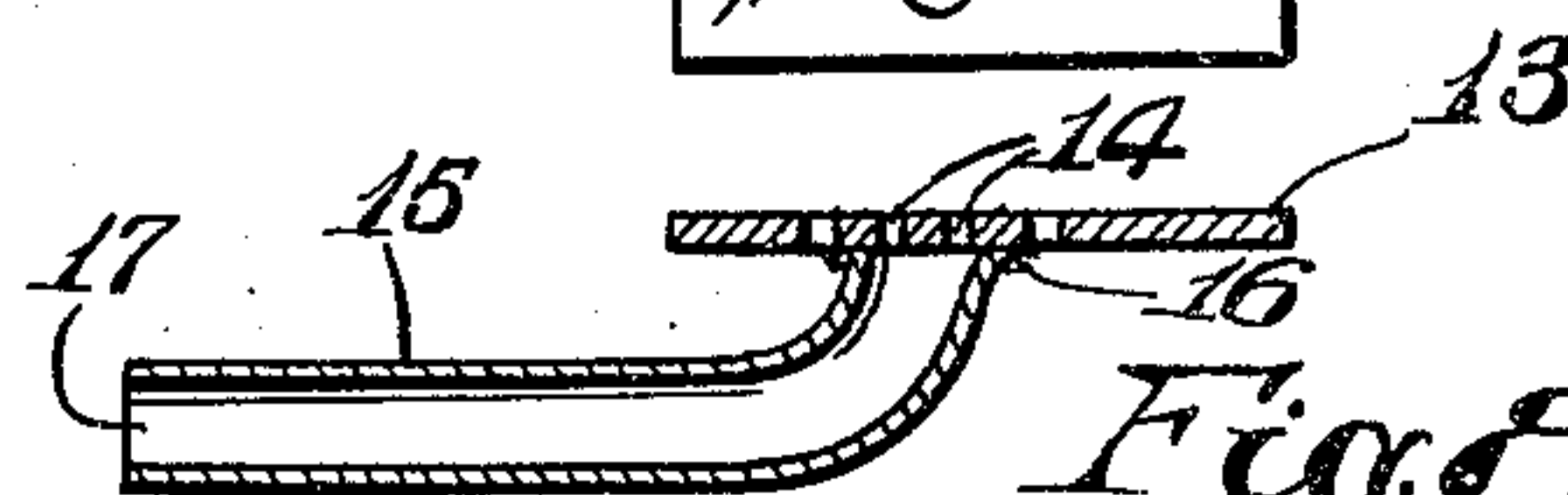
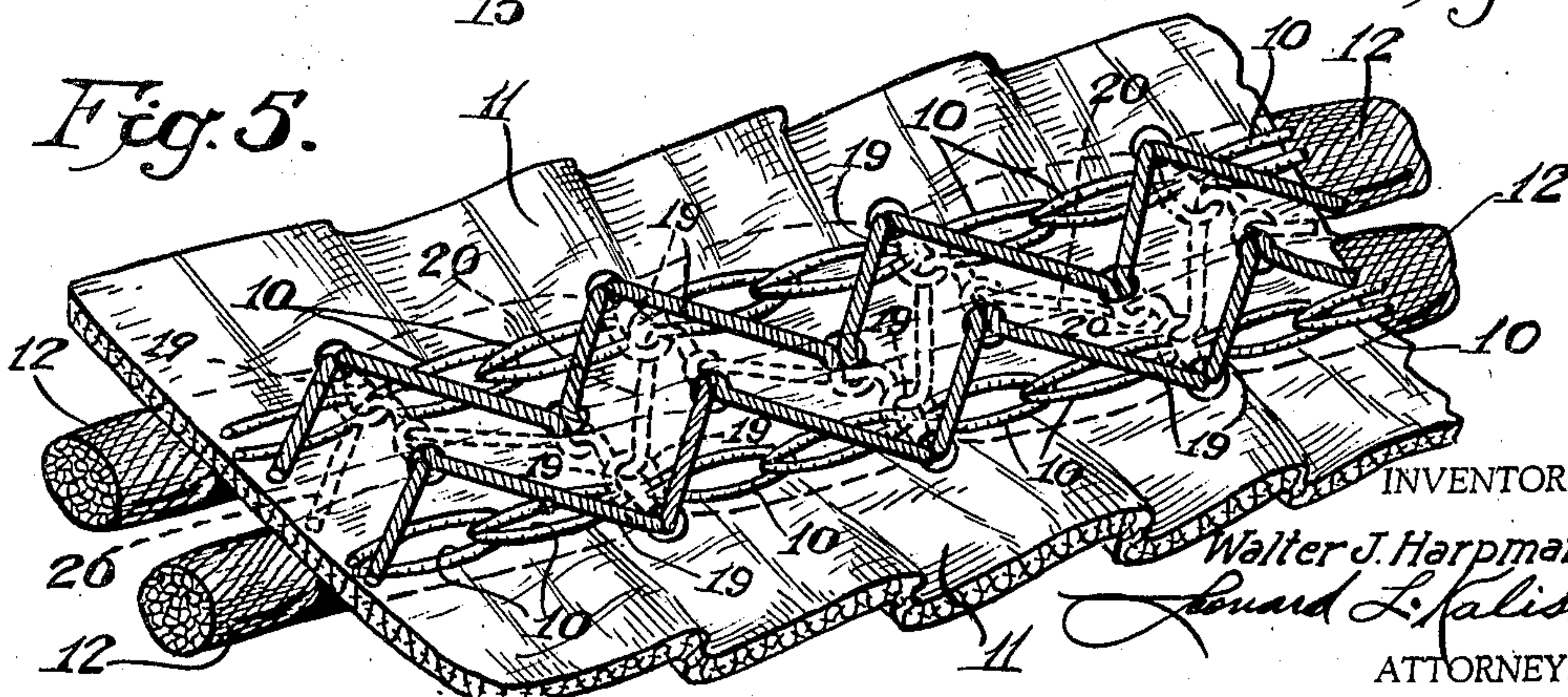


Fig. 5.



INVENTOR.

Walter J. Harpman.

ATTORNEY.



## UNITED STATES PATENT OFFICE

2,343,614

## METHOD OF MAKING FABRIC AND DRESS ORNAMENTATION, AND THE PRODUCT THEREOF

Walter J. Harpham, Hartford, N. J., assignor to  
L. Nachman & Sons, Philadelphia, Pa., a partnership

Application December 2, 1940, Serial No. 368,196

2 Claims. (Cl. 112-266)

The present invention relates to a certain new and useful method of making fabric and dress ornamentation, and to the product thereof, whereby an ornamental effect may be produced upon dresses, blouses and fabrics therefor, similar to what is now known as a smocking stitch or a smocking-stitched fabric, but which will be more durable and not subject to be pulled out or unravelled upon the accidental breakage of a thread, and which will indeed be of a more attractive appearance than the heretofore conventional "smocking stitch."

Thus, in making the smocking stitch, the cord is held in place only by a chain stitch which can be pulled out through its entire length if a thread of the chain is pulled, thus releasing both the cord as well as the pleat of the fabric, beneath the cord. As any sudden tension on the pleat, that is, any pull on the fabric transversely of the pleat, tends to break the chain stitch which holds both pleat and cord in the conventional smocking stitch, the danger of breaking the thread of the chain stitch is ever present, and any such breakage at once releases the whole length of cord as well as the pleat in the zone of the released cord.

The weakness of the conventional smocking stitch is further accentuated by the fact that the cord in the conventional smocking stitch does not extend in a straight line but zig-zags back and forth or is arranged in a series of closely alternating more or less sinuous curves with the chain stitch extending across a straight median line intersecting the successive transverse portions of these curves, so that the cord itself, in the conventional smocking stitch, is incapable of offering any resistance to the stretching of the fabric transversely of the shirring; for the reason that the cord does not extend in a straight line transversely across the shirring, but instead extends across the shirring in a zig-zag course.

One of the objects of the present invention is to form an ornamental and structural effect on dresses, blouses and the fabric therefor by which a shirred fabric zone is overlaid by one or more parallel sets of cords which extend in a straight line transversely across the shirring, and which are held in place by threads extending across the cords transversely; whereby the cords will effectively resist any tendency to stretch out the pleats or to undo the pleats, and whereby they will at the same time possess an ornamental value as great as, if not greater than that of the heretofore conventional smocking stitch.

With the above and other objects in view, 55

which will appear more fully from the following detailed description and accompanying drawings, the present invention consists of a certain novel method of making an ornamental effect on dresses, blouses and on the fabrics therefor, and also consists of the product of such method and certain novel features of method and structure, all of which will appear more fully from the following detailed description and accompanying drawings.

For the purpose of illustrating the invention, there is shown in the accompanying drawings one form thereof which is at present preferred, since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized and that the invention is not limited to the precise arrangements and organizations of the instrumentalities as herein shown and described.

Referring to the drawings in which like reference characters indicate like parts throughout:

Figure 1 represents a plan view of the front face of a fabric according to one phase of the present invention.

Figure 2 represents a fragmentary perspective view of the front face of the embodiment shown in Figure 1 but on a much enlarged scale.

Figure 3 represents a plan view of the front face of a fabric similar to that shown in Figure 1 wherein the fabric is shirred and held in shirred position by chain stitches but before the superimposition of the straight-line cords.

Figure 4 represents a plan view of the back face of the fabric as shown in Figure 3; that is, prior to the application thereto of the cord-retaining, zig-zag lock stitches.

Figure 5 represents a fragmentary perspective view of the back face of the embodiment shown in Figure 2, on the same scale.

Figure 6 represents a fragmentary perspective view of a standard Singer sewing machine, showing the application thereto of an attachment which may be used in carrying out the method of the present invention.

Figure 7 represents a top plan view of the attachment of Figure 6, shown detached from the sewing machine table, and shown in approximately full size.

Figure 8 represents a section on the line 8-8 of Figure 7.

Figure 9 represents a side elevational view of the attachment of Figures 6, 7 and 8, shown on the same scale as Figure 7.



In carrying out the present invention I first shirr the fabric by any suitable or conventional shirring apparatus as for instance any conventional shirring attachment on a chain-stitch sewing machine, preferably a multi-needle chain-stitch sewing machine capable of sewing two or more parallel lines of chain stitches. Thus for instance, I may shirr the fabric on a 52 class Singer shirring machine, with shirring of any suitable depth, and with parallel lines of chain stitches sewn across the shirring to hold them in place. Thus for instance, as shown in Figures 3 and 4, I apply the successive parallel lines of chain stitches 10 across the shirring 11. The lines of chain stitches 10 are preferably located in the same lines as the lines over which the cords 12 are to be laid, so that in the finished product the cords 12 will entirely conceal from view, on the outer face of the fabric, the underlying chain stitch formation.

Thereafter, the fabric is fed through a standard zig-zag sewing machine with the outer face of the fabric facing downwardly, and with the throat plate 13 of the sewing machine provided with a pair of holes 14 corresponding in spacing to the spacing between the adjacent lines of chain stitches 10 of each pair. Beneath the throat plate a feed tube 15 is disposed, as shown in Figures 6, 8 and 9, terminating directly beneath the holes 14 and there fastened to the under side of the throat plate 13 by soldering 16 or by any other suitable means. A pair of cords 12 are fed from any suitable source (spools, bobbins, reels, etc.) into the entrance opening 17 of the guide tube 15, and extend through said guide tube and finally each one of the cords 12 is threaded through one of the holes 14 so as to emerge directly beneath the face side of the pre-shirred fabric at a point in advance of the sewing needles 18 carrying the upper threads 19 of the zig-zag stitches.

The fabric, together with the cords, is so fed to the machine indicated in Figures 6 and 7, that the lines of pre-sewn chain stitches 10 as well as the cords 12 will be in line with the center of the lateral oscillation irrespective of the corresponding needles 18, so that each needle will just straddle one of the cords 12 on its lateral zig-zag oscillations, so that each needle will pierce through the fabric, first on one side of the corresponding cord and then on the other side of the corresponding cord;—each needle piercing the fabric once on the outside of the double-cord row and then just in between the two cords, as indicated particularly in Figures 2 and 5.

The lower single bobbin thread or shuttle thread 20 is shuttled through the loops and thus interlaced with the loops of the double zig-zag stitch produced by the two needles 18 carried by the needle bar 21 (or by a double needle bar, as in some machines), so that each pair of adjacent cords 12 will be tied down and firmly anchored to the fabric by double threaded loops 19 staggered in relation to each other on the two cords 12, as indicated in Figure 2. The loops 19 which are projected thru the fabric on the outer sides *a* and *b* of the cords 12 are drawn toward the center *c* of the pair of cords by the shuttle thread 20 which draws them tightly together towards the center along with the center loops of the upper threads in the manner indicated in Figure 2.

In this manner, the staggered loops bridging the face of the cord threads 12, along with the shuttle thread extending along the center line *c* between the two cords 12, form a surface configuration over the cords and at the same time firmly anchor the cords 12 in a straight line across the shirring 11, in such a way as to fixate the shirring virtually independently of the lines of chain stitches 10 by which the shirring was initially held in place, so that even if any of the chain stitches 10 should break or pull out, the shirring would be held intact by the cords 12, while the cords 12 at the same time greatly reduce, if not indeed eliminate, the practical likelihood of breaking the chain stitches 10 by reason of the fact that the cords 12 are comparatively thick and strong and extend in a straight line.

The cords 12 may be of silk, cotton, mercerized cotton, rayon, nylon or the like, and preferably formed of 3-ply yarn intertwisted to form a pronounced cord-like effect having, however, comparatively few twists per inch, so as not to have any successive free stretch.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and it is therefore desired that the present embodiment be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

Having thus described the invention, what I now claim as new and desire to be secured by Letters Patent is:

1. A method of making ornamented fabrics which comprises shirring the fabric and superimposing upon the face of the shirred fabric spaced pairs of more or less inelastic cords transversely across the shirred face of the fabric in generally straight lines, and more or less immovably anchoring the said pairs of cords to the said shirred fabric with relatively inelastic thread by double zig-zag lock stitches with the needle-applied zig-zag threads disposed on the back surface of the fabric and with needle-produced loops projected through the fabric adjacent to the cords of each pair in staggered spaced relation, said loops being disposed alternately intermediate of and outside of said pairs of cords, and with the outer loops extending across said cords towards the center and with the ends of all the loops held in said center by the shuttle-applied bottom thread.

2. An ornamented reinforced shirred fabric including spaced pairs of closely adjacent straight-line more or less inelastic cords extending across the face of the fabric generally transversely of the shirring and more or less immovably anchored to the shirring at close intervals with relatively inelastic thread by double zig-zag lock stitches disposed on the back surface of the fabric and with needle-produced loops projecting through the face of the fabric adjacent to said pairs of cords, said loops being disposed alternately intermediate of and outside of said pairs of cords with the outer loops extending inwardly across said cords toward the center, all of said loops being held intermediate said pairs of cords by shuttle-applied thread passing through said loops.

WALTER J. HARPHAM.