

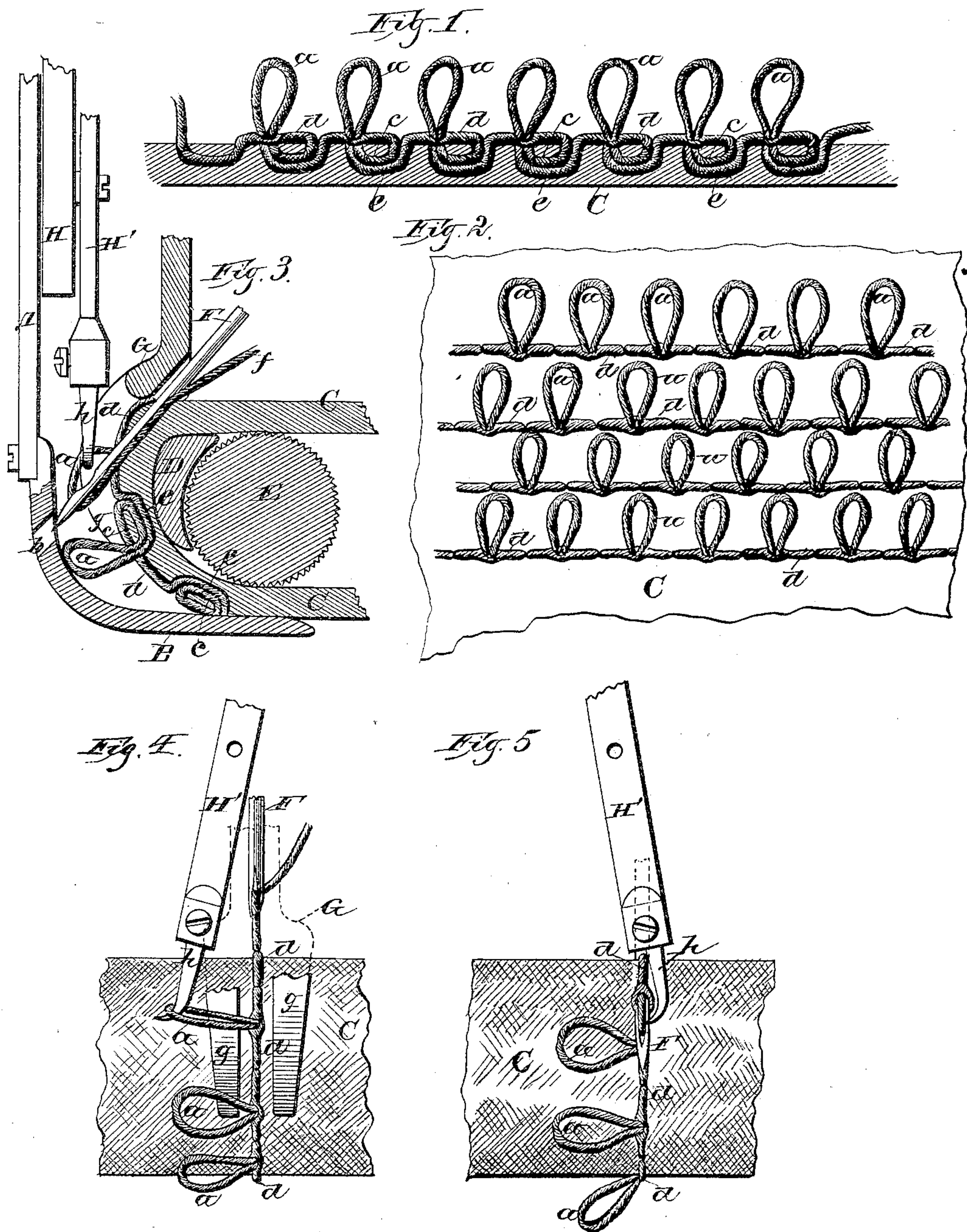
(No Model.)

H. HEINE.

TUFTED FABRIC AND METHOD OF FORMING THE SAME.

No. 433,242.

Patented July 29, 1890.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

HERMANN HEINE, OF MILWAUKEE, WISCONSIN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THOMAS LAMB, OF PHILADELPHIA, PENNSYLVANIA.

## TUFTED FABRIC AND METHOD OF FORMING THE SAME.

SPECIFICATION forming part of Letters Patent No. 433,242, dated July 29, 1890.

Application filed December 21, 1886. Serial No. 222,136. (No model.)

*To all whom it may concern:*

Be it known that I, HERMANN HEINE, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Tufted Fabrics and Method of Forming the Same; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to the lining of fabrics, particularly knit goods; and it consists in a novel method of forming and attaching loops on the surface of a fabric, as well as in the complete lined or tufted fabric so made, all as set forth more particularly hereinafter, and pointed out in the claims.

In the drawings, Figure 1 is a sectional view of fabric with my improved lining stitch and loops applied thereto. Fig. 2 is a plan view of the same. Figs. 3, 4, and 5 show the method of forming this stitch and loop.

In the present application I show only so much of my machine as is necessary to illustrate the construction of my peculiar stitch and loop and the method of forming the same, and hence it will suffice to explain the parts shown in Figs. 3, 4, and 5, as follows:

A is a bar suspended from the upper part of the machine (not shown) and bearing at its lower end a presser-foot B, said bar being capable of vertical motion, so as to be lowered, to enable the fabric C to be placed in position above it on the work-arm D, (shown simply in section in Fig. 3,) and to be raised to hold said fabric up against the feed-wheel E, and this presser-foot B is perforated at *b* for the passage therethrough of the inclined needle F.

G is a bifurcated guide, the forked ends *g* of which are curved, as shown, and serve to hold the fabric C against the work-arm D, and said guide G, like the arm A, is suspended from the upper part of the machine, (not shown;) from whence also extends another arm H, pivoted to which is the shank H' of a hook *h*.

The operation of forming my stitch is as follows: The fabric C is placed in position on the machine, as shown clearly in Fig. 3, and the needle F, threaded with the yarn *f*, plunges through the fabric at the upper corner over the work-arm, where it is bent or folded, as

shown, carrying the yarn with it, and then as the needle starts to retract the hook *h* (which is rocked back on its pivot as the needle advances) now begins to be rocked forward and catches in the loop *a* just formed, as shown in Fig. 5, and continues its forward movement with said loop and then stops and holds the loop, as shown in Fig. 4, while the needle withdraws, leaving two thicknesses or layers *c e* of the yarn side by side in the pathway just formed by the needle, the feed-wheel E meanwhile carrying the fabric C forward and leaving a certain length *d* of the yarn on the outer side of the fabric, and then as the needle plunges forward again its point passes directly through the center of the said length of yarn just laid on the outside of the fabric and the hook *h* catches the loop and holds it as before, and so on until a series of stitches are formed, as shown in Fig. 1, entirely round the fabric if it is a circular web or across it if a straight-web fabric, when a second row is similarly made, the exterior of the fabric showing it in detail, as indicated in Fig. 2, although the loops of one row need not alternate with the loops of the rows on each side unless desired, this construction being shown as affording a pleasing variety, but this being determined wholly by the point where the needle enters the fabric at the beginning of the second row.

The principal object of my loops and stitches is in lining or facing stockings, leg-gins, mittens, wristlets, gloves, and other garments, or fabrics for making the same thicker, heavier, or warmer, and for the purpose of trimming or beautifying the same, and for making borders or fringes, &c.

It will be understood that my invention is applicable to any kind of fabric, whether knitted, woven, or felted, and that while I speak of "yarn" I include by that term any thread whatsoever, whether of wool, cotton, flax, hemp, silk, jute, or any other suitable material.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The process of forming and attaching loops on the surface of a fabric with a single thread or yarn, consisting in supporting and

holding the fabric in a bent position about a  
finger, thrusting the thread through the an-  
gle of the fabric, the thread entering and  
passing out of the fabric on the same surface  
5 of the fabric, forming of the thread a loop on  
the surface of the fabric and a tight stitch  
alternately with the loop, and feeding the  
fabric forward alternately with the making  
of the loop and stitch, substantially as shown  
10 and described.

2. A lined or tufted fabric consisting of a  
body, one side of which is left plain, while the  
other side is provided with loops of a con-

tinuous yarn passed through the surface of  
the fabric and through the body of certain 15  
lengths of the said continuous yarn laid on  
the surface of the fabric on that side, sub-  
stantially as shown and described.

In testimony that I claim the foregoing I  
have hereunto set my hand, at Milwaukee, in 20  
the county of Milwaukee and State of Wis-  
consin, in the presence of two witnesses.

HERMANN HEINE.

Witnesses:

H. G. UNDERWOOD,  
N. E. OLIPHANT.