G. KANT.

LACE INSERTION.

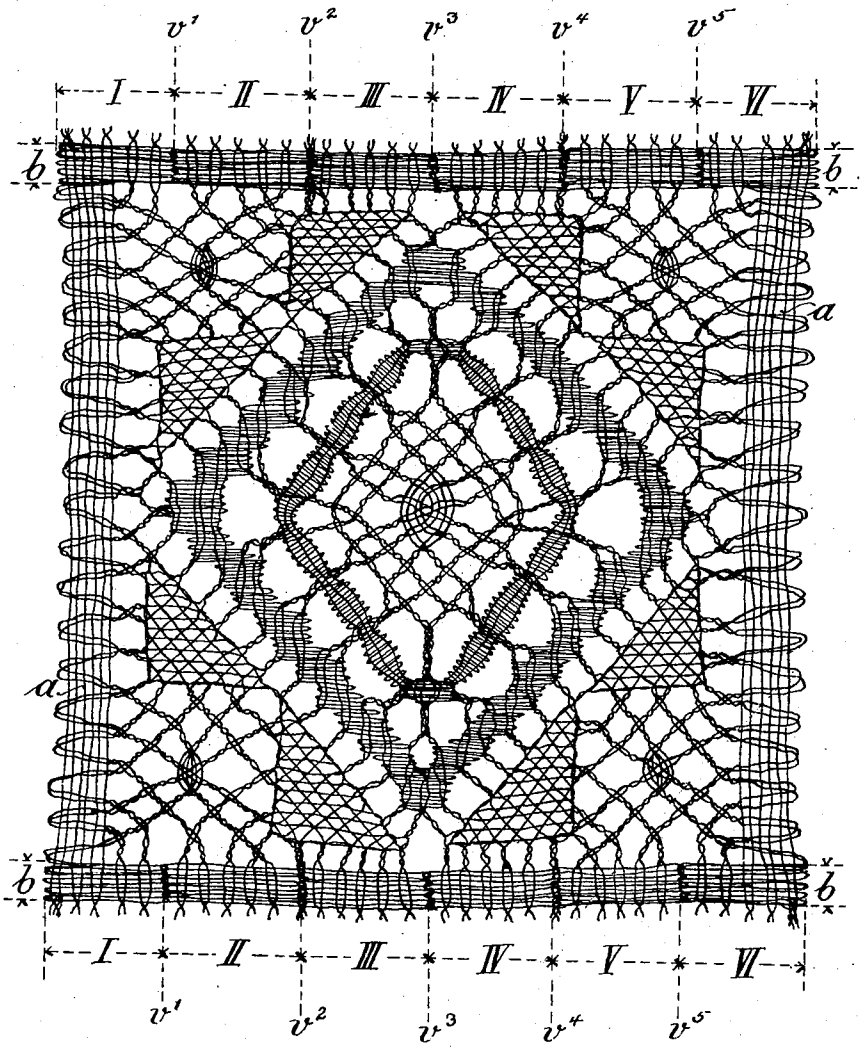
APPLICATION FILED JULY 21, 1910.

1,033,178.

Patented July 23, 1912.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

Chas. J. Wright

Alfred Henkel.

Inventor:

Gustav Kant

G. KANT.

LACE INSERTION.

APPLICATION FILED JULY 21, 1910.

1,033,178.

Patented July 23, 1912.

3 SHEETS—SHEET 2.

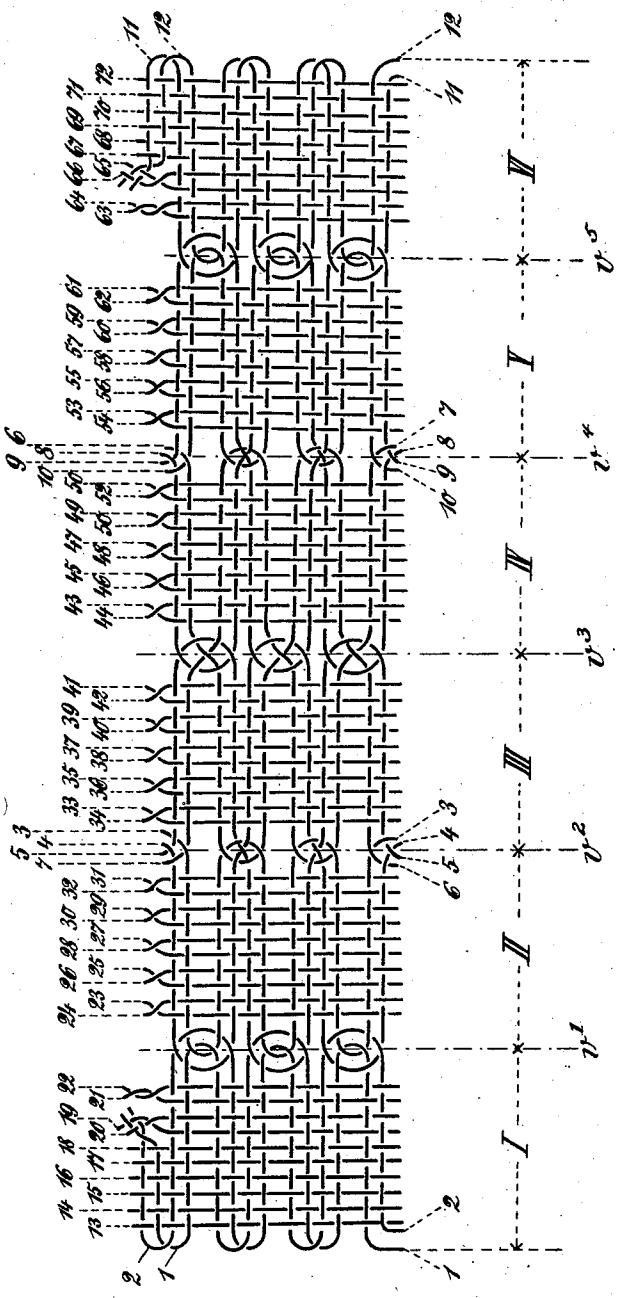


Fig. 2.

Witnesses:

Chas J Wright

Alfred Hentzel

Inventor:

Gustav Kant

G. KANT.

LACE INSERTION.

APPLICATION FILED JULY 21, 1910.

1,033,178.

Patented July 23, 1912.

3 SHEETS—SHEET 3.

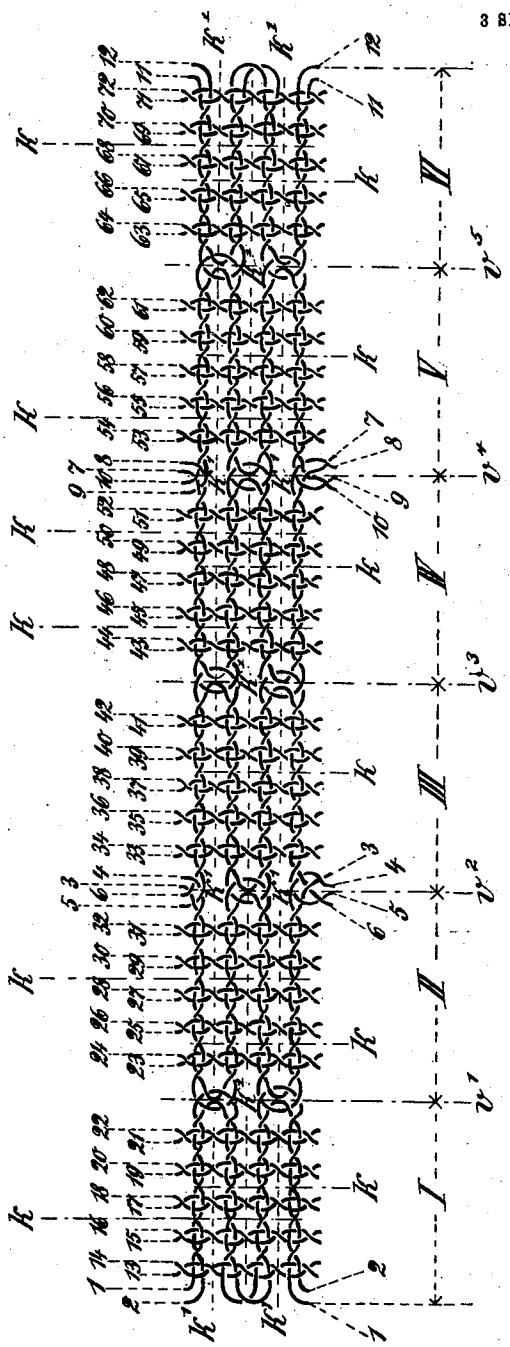


Fig. 3.

Witnesses:
Chas. J. Wright
Alfred Henkel.

Inventor:
Gustav Kant

UNITED STATES PATENT OFFICE.

GUSTAV KANT, OF BARMEN, GERMANY, ASSIGNOR TO THE FIRM OF A. W. NAGEL, OF BARMEN, GERMANY.

LACE INSERTION.

1,033,178. Specification of Letters Patent. Patented July 23, 1912.

Application filed July 21, 1910. Serial No. 573,067.

To all whom it may concern:

Be it known that I, GUSTAV KANT, a subject of the German Emperor, and residing at Barmen, Germany, have invented certain new and useful Improvements in Lace Insertion, of which the following is a specification.

My invention relates to the manufacture of lace insertion on lace-braiding machines, and a primary object is to provide machine-made lace comprising strips like a woven tape or braid located at definite intervals at right angles to the lateral edges of and running the entire breadth of the lace. These strips form together with the lateral strips of the fabric made in the customary manner the frame of a square inclosing a closed lace pattern which when separated from the remainder of the fabric may be employed as insertion for covers, table-cloths, cushion-covers and the like.

According to my invention the transverse braid-like strip is made of a plurality of parts, the number of which depends on the breadth of the lace and in which the number of threads, hereinafter called the weft threads, requisite for the breadth of the strip are interwoven, owing to the bobbins turning back, with a corresponding number of threads, hereinafter called the warp threads, running lengthwise of the fabric, whereby owing to the returning threads of one of said parts becoming interlaced with the returning threads of the adjacent part, the parts of the strip are connected together. This braiding process enables the square of the lace fabric to be provided with limiting strips which run at right angles to the sides, have the appearance of a woven tape and, in consequence of their closeness and durability, can serve as sewing edges.

In the accompanying drawings, Figure 1 shows by way of example a separated square of lace insertion made according to my invention; Fig. 2 illustrates diagrammatically and on a considerably enlarged scale the mode of braiding a transverse strip according to my new process, and Fig. 3 is a like view showing a modified strip.

The lace fabric, from which the square shown in Fig. 1 has been separated, is made in the usual manner in the form of tube on a lace-braiding machine, of the type in which the number of bobbins is equal to the number of heads or plates, by connecting the edges by means of auxiliary threads, and is provided with the lateral strips *a*, *a*. In the example selected 72 bobbins which run on 72 plates are used for making the lace fabric. Two additional plates for each edge of the fabric are used, as is known, for two auxiliary or extraction threads. Each of these threads is interlaced, as is known, with loops formed at the edge of the fabric. The transverse boundary strips *b*, *b* are made, according to my invention, of individual parts I to VI, a number of threads being distributed among the parts as warp threads, namely, according to the example illustrated, six sets of ten threads 13 to 22, 23 to 32, 33 to 42, 43 to 52, 53 to 62, and 63 to 72 while the remaining twelve threads 1 to 12 are interwoven in the parts with the warp threads as weft threads in order to connect the parts one with another by interlacing the returning threads. There are two weft threads to each part I to VI; as seen from Fig. 2, in the outside parts I and VI only the weft threads 1 and 2 and 11 and 12, respectively, bind and, by interlacing with the weft threads of the adjacent parts II and V, make the joins v^1 and v^5 respectively. Of the two weft threads in each of the parts II, III, IV and V one is transferred alternately to the adjacent part and crosses in the loops formed by other weft threads, as seen from the joins of Fig. 2 located at the lines v^2, v^3, v^4.

Owing to the transverse strips being made in a plurality of parts and to the parts being connected one with another in the described manner it is possible to interweave the threads serving as weft threads running at right angles to the longitudinal edges of the lace fabric with the threads serving as warp threads and to give to the entire transverse strip a close braid-like texture, in which the joins of the individual parts are scarcely perceptible.

In the arrangement described above the transverse strips which are at right angles to the lateral edges and run the entire breadth of the lace are made by the weft and warp threads being secured in the manner of web or woven fabric in the individual parts of the strip. Now according to my invention I may modify the above described mode of making lace insertion and interlace the weft and warp threads in a definite manner for the purpose of giving to the transverse strips a form which re-

sembles hand-made lace and consequently agrees with the mode of plaiting, in which the lace pattern of the square bounded by the strips is worked. To this end I cross the weft threads in pairs between each two warp threads and I likewise cross the pairs of warp threads between the pairs of weft threads, as will now be described with reference to the drawing.

Referring to Fig. 3, in each part I to VI of the strip ten weft threads 13 to 22, 23 to 32, 33 to 42, 43 to 52, 53 to 62 and 63 to 72 are plaited with the threads 1 to 12 serving as weft threads, and the parts are connected at v^1 to v^5 by looping the returning weft threads as described with reference to Fig. 2. Now the latter threads are interlaced among themselves in pairs in the parts I, II . . so that crosses k are made between each two warp threads. The pairs of warp threads simultaneously form crosses k^1 between the pairs of weft threads. There is then produced in the parts of the strip a plait similar to hand-made lace, in which the threads are placed less closely together than in the mode of plaiting described above with reference to Fig. 2, and a firm network is produced so that the strips closing the square of lace can serve as secure edges for sewing in the square as insertion.

I claim:—

1. As a new article of manufacture, a lace strip having longitudinally extending braid-like strips along its edges, a plurality of similar separated designs between said braid-like strips and a plurality of transverse braid-like strips connecting the longitudinal braid-like strips extending along the edges of the body between the designs of the body, such transverse strips coöperating with said longitudinal strips to form a continuous braid-like border around the edge of said design.

2. As a new article of manufacture, a lace fabric comprising a plurality of warp threads braided to form an ornamental body portion having longitudinally extending braid-like strips along the edges thereof, portions of said warp threads at spaced intervals across the fabric being provided with a plurality of laterally extended looped portions therein, the adjacent ends of the looped portions of said warp threads being interlocked with each other and the body portions of the looped portions of said warp threads being interlocked with the main warp threads crossed thereby, whereby there is formed a braid-like strip extending transverse of the fabric and connecting the braid-like strips along the edges thereof.

3. As a new article of manufacture, a lace fabric comprising a plurality of main warp threads arranged in pairs and a plurality of auxiliary warp threads arranged in pairs and distributed at spaced intervals throughout the body of the fabric, said main and auxiliary warp threads being braided to form an ornamental body portion having longitudinally extending braid-like strips along the edges thereof, said auxiliary warp threads being provided with a plurality of laterally extended looped portions therein, the ends of the looped portions of each of said pairs of auxiliary warp threads being interlocked with the ends of the looped portions of the next adjacent pair of auxiliary warp threads, and the body portions of each of said looped portions being interlaced with the pairs of main warp threads, and each pair of said main warp threads being crossed between the arms of the looped portions of the auxiliary warp threads transverse the same.

In testimony whereof, I affix my signature in the presence of two witnesses.

GUSTAV KANT. [L. S.]

Witnesses:
CHAS. J. WRIGHT,
ALFRED HENKEL.