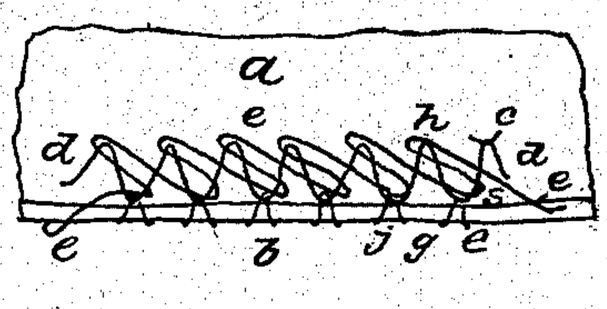
A. HARROUN, Jr.

Machine Made Stitch.

No. 90,045. Patented May 11, 1869.



Witnesses.

Geo. Stanton.

Major J. Hopkins

Inventor

Alexander Harroun Jr.

UNITED STATES PATENT OFFICE.

ALEXANDER HARROUN, JR., OF ONONDAGA COUNTY, NEW YORK.

IMPROVEMENT IN MACHINE-MADE STITCH.

Specification forming part of Letters Patent No. **90,045**, dated May 11, 1869.

To all whom it may concern:

Be it known that I, ALEXANDER HARROUN, Jr., of the county of Onondaga and State of New York, have invented a new and Improved Machine-Stitch for Button-Holes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My stitch is formed by combining, with the usual shuttle or lock stitch, a third thread, as follows: The letter *a* of the drawings refers to the cloth in which a button-hole is to be made. The letter *b* refers to the edge of the button-hole. The letter *c* refers to the shuttle-thread, drawn to the upper surface of the cloth. The letter *d* refers to the needle-thread. The letter *e* refers to the third thread.

I use but one needle in making my stitch, which I cause to reciprocate laterally, in such a manner that at one descent it will pass through the cloth at a suitable distance from the edge of the button-hole, and at the succeeding descent pass down within the button-hole; or, if more convenient, I give the cloth a motion which will answer the same purpose. And between these two parallel lines in which the needle enters the cloth, and on the surface of the cloth, I cause the third thread to be laid, in combination with the other threads, as shown.

To commence a stitch, the needle may be supposed to pass down through the cloth at the letter *p* of the drawings. After making the usual connection with the shuttle-thread it rises, and at the next descent it passes within the button-hole at *g*. Before the needle descends a second time or within the hole, a loop of the third thread is thrown out in such a manner that the needle will pass entirely over it. This loop is referred to by the letter *h*, and the places at which the needle-thread crosses it are referred to by the letter *s*.

At the next or third descent the needle goes within this loop and through the cloth at the place referred to by the letter *i*. Before the next or fourth descent of the needle, another loop is thrown out like the preceding one, after which the needle descends at *j*, and these motions are repeated as long as it is desired to make the stitch. At each descent of the needle the usual connection with the shuttle-thread is made.

The needle-thread, in its passage from within the button-hole to its connection with the shuttle-thread through the loop, as from *g* to *i*, crosses the third thread once, and in passing from within the loop to within the button-hole it crosses the third thread three times.

The machine for making the above-specified stitch may be found set forth and described in my application for a patent under date of March 19, 1868, in which the third thread is laid by means of a rotating reciprocating hook and certain holding-points.

I claim—

The machine-made stitch herein described and shown, formed by the three threads *c d e*, when combined as and for the purpose set forth.

ALEXANDER HARROUN, JR.

Witnesses:

GEO. STANTON,

MAJOR Z. HASKINS.