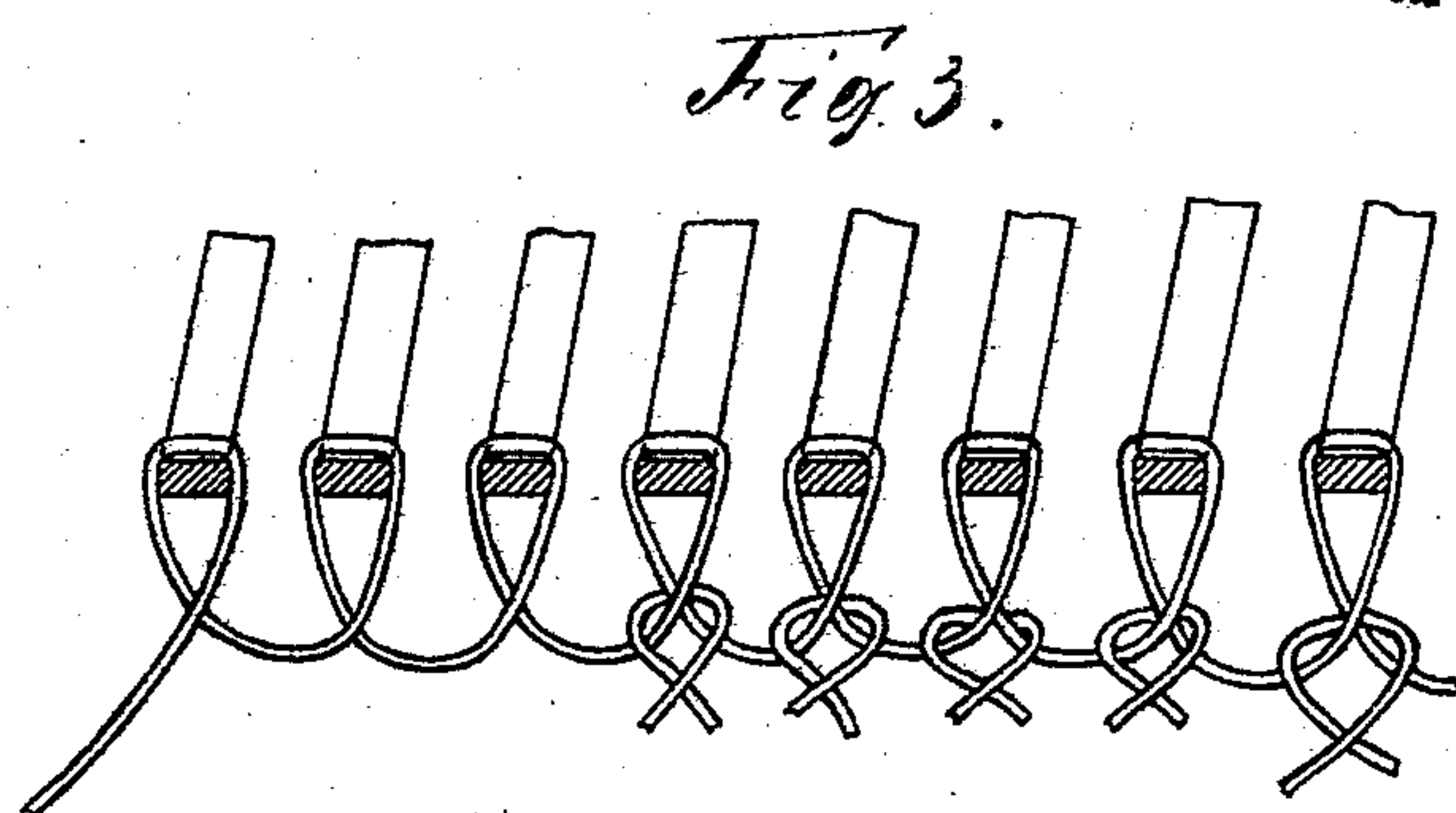
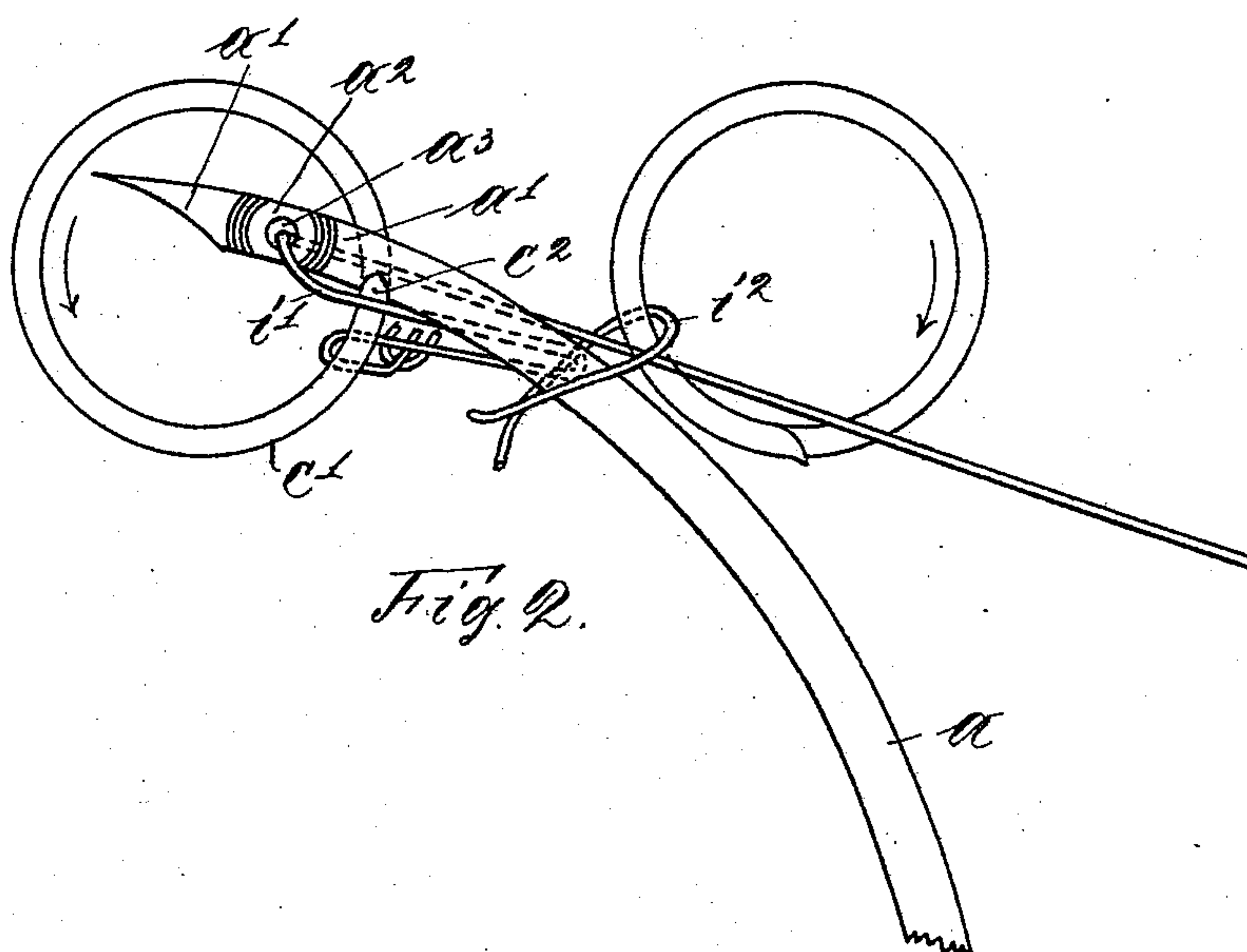
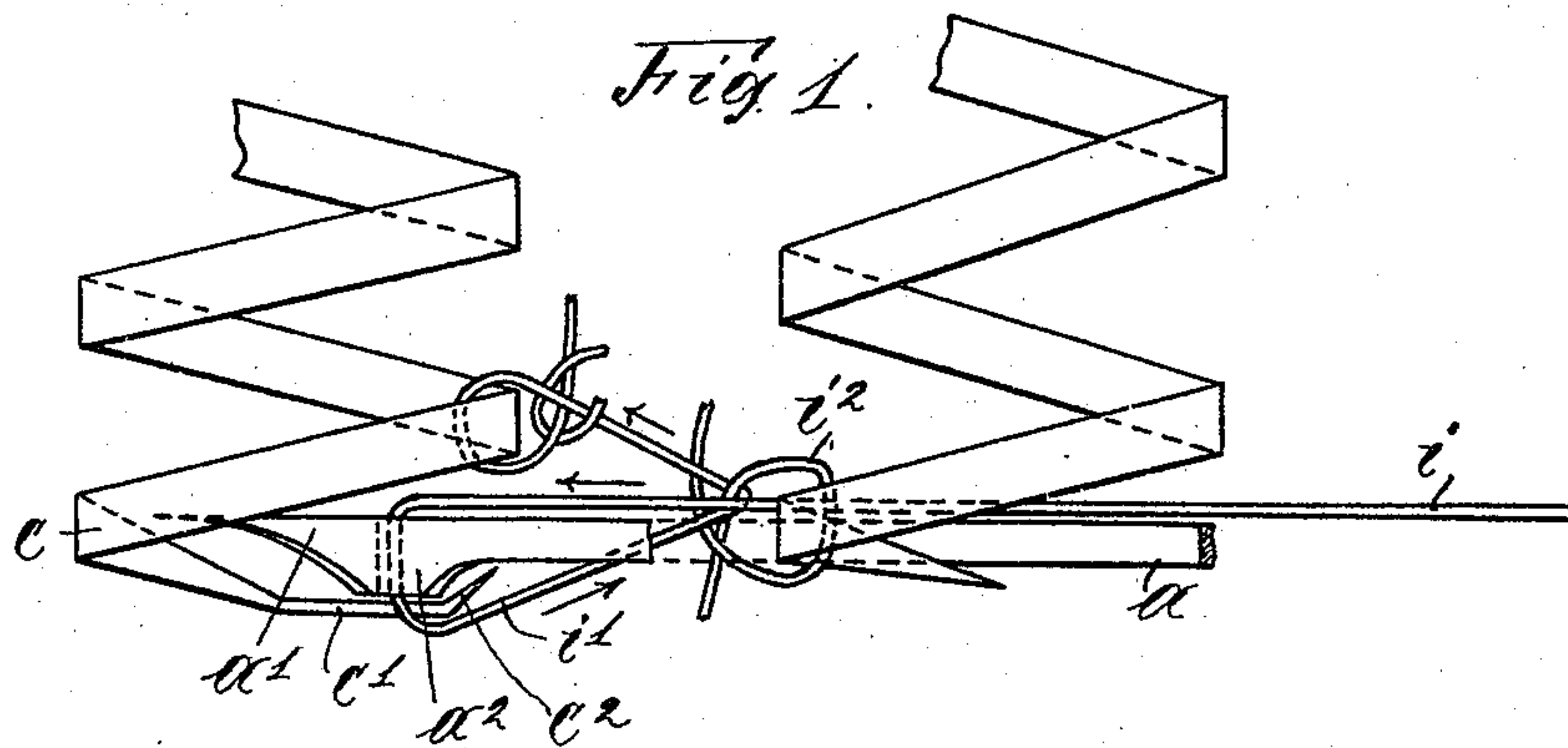


(No Model.)

J. SCHMITT.  
KNITTING MACHINE.

No. 575,760.

Patented Jan. 26, 1897.



Witnesses:  
Eugl. Kreyser  
Carl Harschneider.

Inventor  
Johann Schmitt  
by  
Karl Joseph  
Attorney.



# UNITED STATES PATENT OFFICE.

JOHANN SCHMITT, OF COLOGNE, GERMANY, ASSIGNOR OF TWO-THIRDS TO  
JEAN BAPTIST COBLENZER, OF COBLENZ, GERMANY.

## KNITTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 575,760, dated January 26, 1897.

Application filed September 25, 1896. Serial No. 606,973. (No model.) Patented in Germany May 21, 1894, No. 79,262; in Sweden June 7, 1894, No. 6,612; in France June 7, 1894, No. 239,111; in Belgium June 7, 1894, No. 110,323; in Switzerland June 27, 1894, No. 8,865; in Italy June 27, 1894, No. 36,671; in England June 27, 1894, No. 12,424; in Hungary September 11, 1894, No. 1,091; in Austria October 24, 1894, No. 44/5,607, and in Denmark March 26, 1896, No. 479.

*To all whom it may concern:*

Be it known that I, JOHANN SCHMITT, a subject of the King of Prussia, German Emperor, and a resident of Cologne, in the Province of the Rhine, Kingdom of Prussia, German Empire, have invented an Improved Knitting-Machine for the Production of Meshes with Crossed Threads, (for which patents have been obtained in Germany, No. 79,262, dated May 21, 1894; in Sweden, No. 6,612, dated June 7, 1894; in France, No. 239,111, dated June 7, 1894; in Belgium, No. 110,323, dated June 7, 1894; in Switzerland, No. 8,865, dated June 27, 1894; in Italy, No. 36,671, dated June 27, 1894; in Great Britain, No. 12,424, dated June 27, 1894; in Hungary, No. 1,091, dated September 11, 1894; in Austria, No. 44/5,607, dated October 24, 1894, and in Denmark, No. 479, dated March 26, 1896,) of which the following is an exact specification.

This invention refers to knitting-machines in which the meshes are formed on and held by a rotating spiral of horseshoe-like configuration, the two parallel ends or end windings of which rotate in opposite directions, so that the meshes are taken up by one end of the spiral and dropped by the other. A knitting-machine of such a kind is shown, for instance, in my United States Patent No. 421,526, dated February 18, 1890, and there is also shown a needle, or, more precisely, a thread-guide, which catches up the meshes falling off the one end of the spiral and which hangs new meshes onto the other end of the spiral. I therefore do not lay any claim upon said known parts; but what I claim and what my improvements in knitting-machines of the said kind consists in is, first, a special configuration of the first winding of the spiral, or of that end of the latter which catches the meshes up, respectively, and, second, a spiral configuration of the head of the thread-guide. The object of my invention is to produce on a knitting-machine of the kind in question meshes with crossed threads, or a knitted fabric consisting of such meshes, respectively.

In order to make my invention more clear, I refer to the accompanying drawings, in

which similar letters denote similar parts throughout the different views, and in which—

Figure 1 is a plan view of the two ends of the spiral of the knitting-machine aforementioned together with the main portion of the thread-guide. Fig. 2 is a front view of the parts shown in Fig. 1, and Fig. 3 represents a portion of the spiral together with some single meshes and some interlocked ones.

To produce meshes of the kind in question, I cause the thread to pass through the ear of the thread-guide not from the rear side of the latter, as hitherto done, but from the front side thereof, and also the meshes are consequently taken up not from the rear side of the thread-guides, but from the front side of the same. In order to enable the first winding of the spiral to catch the meshes up in said way, I have shaped the end portion or point of said winding, as well as the point or head of the thread-guide, in a manner as follows:

First. The head  $a'$  of the thread-guide  $a$  is provided with a projection  $a^2$ , situated upon the front side of the guide  $a$ . Said projection contains the eye  $a^3$ .

Second. The end portion  $c'$  of the first winding  $c$  of the spiral is situated in a vertical plane standing in front of the plane of the front surface of the projection  $a^2$ , aforementioned, and the point proper,  $c^2$ , of said end portion is directed rearward or bent in a direction to the front surface of the guide  $a$ , respectively. If, therefore, the thread  $i$  passes through the eye  $a^3$  from the rear side of the thread-guide  $a$  and if the thread is carried by said guide through the mesh  $i^2$  next to be dropped by the last winding of the spiral, there results from the presence of the projection  $a^2$  of the guide  $a$  a space between the thread portion  $i'$  and the respective opposite portion of the guide  $a$ . Said space is necessary for allowing the first winding of the spiral to catch the thread up, but for that purpose the end portion  $c'$  of said winding must have its point proper,  $c^2$ , bent so as to enable this latter to take behind the thread or into the said space, respectively.

Having thus fully described the nature of



this invention, what I desire to secure by Letters Patent of the United States is—

1. In a knitting-machine having a rotating spiral for holding and transporting the meshes, and a reciprocating thread-guide for catching up the meshes dropped by the one end of said spiral, and hanging new meshes upon the other end of the same, the combination with the said spiral, and with said thread-guide, of a projection  $a^2$  arranged at the head and upon the front surface of the same, and containing the eye for the thread; and of a rearwardly-bent-off portion  $c^2$  forming the point proper of the first winding of the spiral, and being situated in front of the said thread-guide, and adapted to take around the projection  $a^2$  of the same, substantially and for the purpose as described.

2. In a knitting-machine having a rotating spiral for holding and transporting the meshes, and a reciprocating thread-guide for catching up the meshes dropped by the one end of said spiral, and hanging new meshes

upon the other end of the same, the combination with the said spiral, and with said thread-guide, of a projection  $a^2$  arranged at the head and upon the front surface of the same, and containing the eye for the thread; and of a rearwardly-bent-off point  $c^2$  forming the end proper of the first winding of the spiral, and being adapted to take around said projection; an end portion  $c'$  forming the connection between said point  $c^2$  and the other portion of said first winding, and being situated in a vertical plane standing in front of the front surface of the said thread-guide, substantially and for the purpose as described.

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

JOHANN SCHMITT.

Witnesses:

SOPHIE NAGEL,

WILLIAM H. MADDEN.