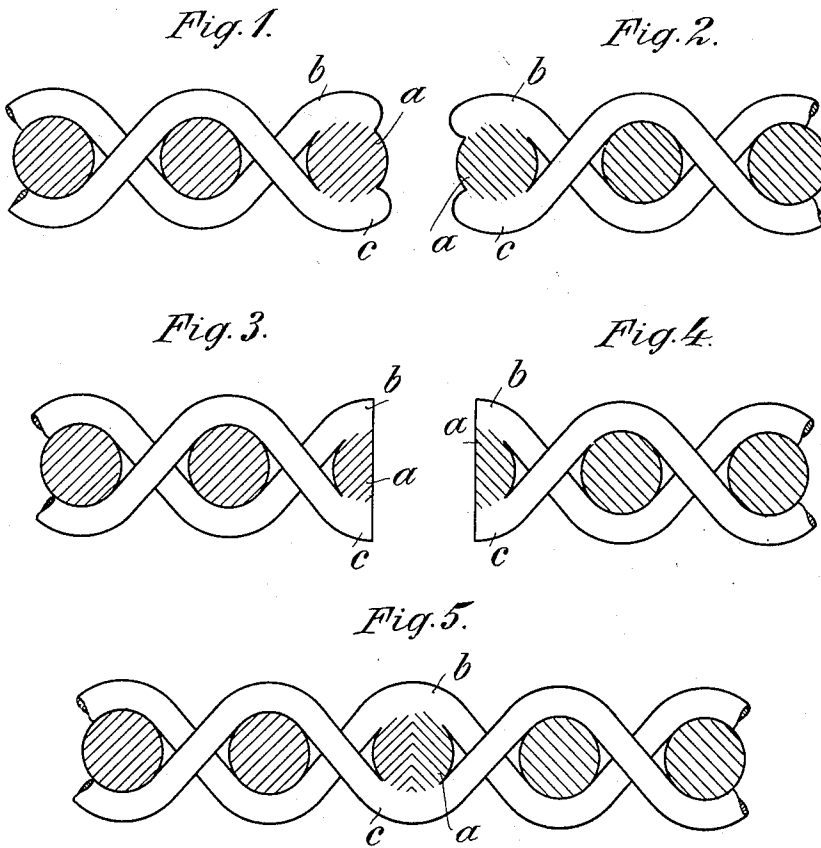


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ENDLESS WIRE FABRIC.
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1,017,662.

Patented Feb. 20, 1912.



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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RENÉ FRANCK, a manufacturer, and a subject of the German Emperor, residing at Schlettstadt, Alsace, Germany, have invented certain new and useful Improvements in Endless Wire Fabrics, of which the following is a specification.

The present invention relates to wire cloths or wire fabrics, such as are used in an endless form, in the manufacture of paper, card-boards, cellulose, wood and straw-pulp and for other technical purposes, either as machine wire-cloths or as drum cylinders, dropping or dandy roller- or other coverings.

I illustrate my invention in the accompanying drawings, in which Figures 1 and 2 are cross sections of the fabric sections showing the warp and weft wires secured together at the margin. Figs. 3 and 4 are similar views with the last weft wires reduced in section. Fig. 5 shows the completed fabric.

The new fabric is characterized by the fact, that the last weft wire, soldered, welded or fused to the warp wires at each end of the wire fabric, is partly reduced, preferably to one half of its cross section, and that the two end weft wires thus finished are soldered, welded or fused together to one single weft wire, in such manner that the wire fabric becomes endless.

It is true that endless wire cloths or fabrics are known, in which the overlapping or abutting ends of the fabric to be joined are directly welded together. Although this may afford an improvement in the wire-overcast or seam as against the formerly used over-sewing of the ends, nevertheless the direct welding of the mutually unsecured and unconnected weft and warp wires at the end of the fabric produced a seam or joint of considerable thickness, which on account of the clogging up of the different meshes was impervious to the passage of water or other liquids. It has also been proposed to weld the last weft wire or wires of each fabric end to the warp wires in order to allow of the fabric ends being joined together and then to produce a connection of these roughly welded fabric ends by lacing a spiral wire through the meshes at the ends of the fabric. Also with this method a thickening of the seam or joint

occurs, which on account of the spiral lace makes the joint more impervious to the passage of water and other liquids, than the rest of the fabric. Furthermore with this method of joining a breaking of the spirally wound lacing wire easily occurs in working through wear and tear, so that the entire cloth becomes useless.

The object of the present invention is to overcome the afore-mentioned drawbacks especially the clogging up of the meshes and the resulting imperviousness to water, without however decreasing the strength of the wire- or sifting cloth at the joint. To this purpose each end of the fabric to be joined is stiffened by connecting the end weft wire *a* with the warp wires *b c* by means of soldering, welding or fusing. The end weft wires *a a* thus secured to the warp wire *b c* are represented in Figs. 1 and 2. This stiffening is absolutely necessary as it has been found that with a direct welding together of the unsecured ends of the fabric the warp wires are not always directly opposite each other, but are shifted against each other, so that the welding of each warp wire with its corresponding opposite warp wire is not easily to be effected. A joining of the ends of the fabric in which the weft end warp wires are united in the manner shown in Figs. 1 and 2 by soldering, welding or fusing, by means of a spirally wound lace has the above mentioned disadvantage of thickening the joint, which in addition easily breaks through wear and tear. This disadvantage, according to the present invention, is overcome in a manner shown in Figs. 3 and 4, by partly reducing, preferably to one half of the cross section, the last weft wires of the ends of the fabric prepared as shown in Figs. 1 and 2 and by correspondingly shortening the warp wires *b c* connected to the end weft wire *a*. In spite of the shortening of the ends of the fabric and the reduction of the cross section of the end weft wire, operations generally effected by means of mechanical or other suitable means, the firm connection between the warp wires and the end weft wires of reduced cross section (by soldering, welding, fusing) remains. The thus prepared last weft wires *a a* of reduced cross section on each end of the fabric, are then brought together and united to one weft wire *a* by soldering, welding or fusing, a process

through which also the shortened warp wires, secured to the end weft wire are joined and strengthened again through the united end weft wire. The thus obtained

5 endless connection is represented in Fig. 5.

It is generally advisable to reduce the cross section of the end weft wire *a* of each end of the fabric to one half. A smaller or larger reduction is however possible and
10 would give to the joint of the end weft wire a flattened circular or oval cross section, but also in this case the uniting of the last weft wires at the joint affords a connection of the wire cloth, which offers considerable ad-
15 vantage as against the joints obtained by former methods of joining. In any case no weakening of the joint results from the uniting of the end weft wires reduced in their cross sections, and the joint obtained
20 can be made to a very intimate connection of the two ends of the fabric.

Wire cloths or fabrics such as are described in this specification may be called seamless.

25 One of the chief advantages of the improved endless fabric is that the meshes in proximity to the joint are in no way clogged up or thickened, the joint being effected almost along a mathematical line of seam, which can be perceived with the eye as a
30 somewhat darkened line only and which in no way can act detrimentally when using the fabric.

What I claim, and desire to secure by Letters Patent of the United States, is:—

35 1. An endless wire cloth formed from a strip woven of warp and weft wires, the warp wires being rigidly secured to the end weft wire at each end of the strip, said strip
40 having the last weft wire at one end secured to the last weft wire at the other end.

2. An endless wire cloth formed from a

strip composed of warp wires and weft wires, said warp wires being secured to the last weft wires at each end of the strip, the
45 last weft wires at each end of the strip being reduced in cross section, said last weft wires being united to one another.

3. An endless wire cloth formed from a strip composed of warp wires and weft
50 wires, said warp wires being secured to the last weft wires at each end of the strip, the last weft wires at each end of the strip being united to one another, said last weft
55 wires being reduced to such an extent that when the reduced wires are united the cross section of the united portions will be substantially the same as the cross section of the weft wires.

4. An endless wire cloth formed from a
60 strip woven of warp and weft wires, the warp wires being rigidly secured to the end weft wire at each end of the strip, said strip having the last weft wire at one end secured to the last weft wire at the other end,
65 and the ends of the warp wires at one end of the strip being united to the ends of the warp wires at the other end of the strip.

5. An endless wire cloth formed from a strip composed of warp wires and weft
70 wires, said warp wires being secured to the last weft wires at each end of the strip, the last weft wires at each end of the strip being reduced in cross section and the warp wires at each end of the strip being corre-
75 spondingly shortened, said last weft wires being united to one another and the ends of the warp wires at one end of the strip being united to the ends of the warp wires at the other end of the strip.

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Witnesses:

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