W. KELLER.

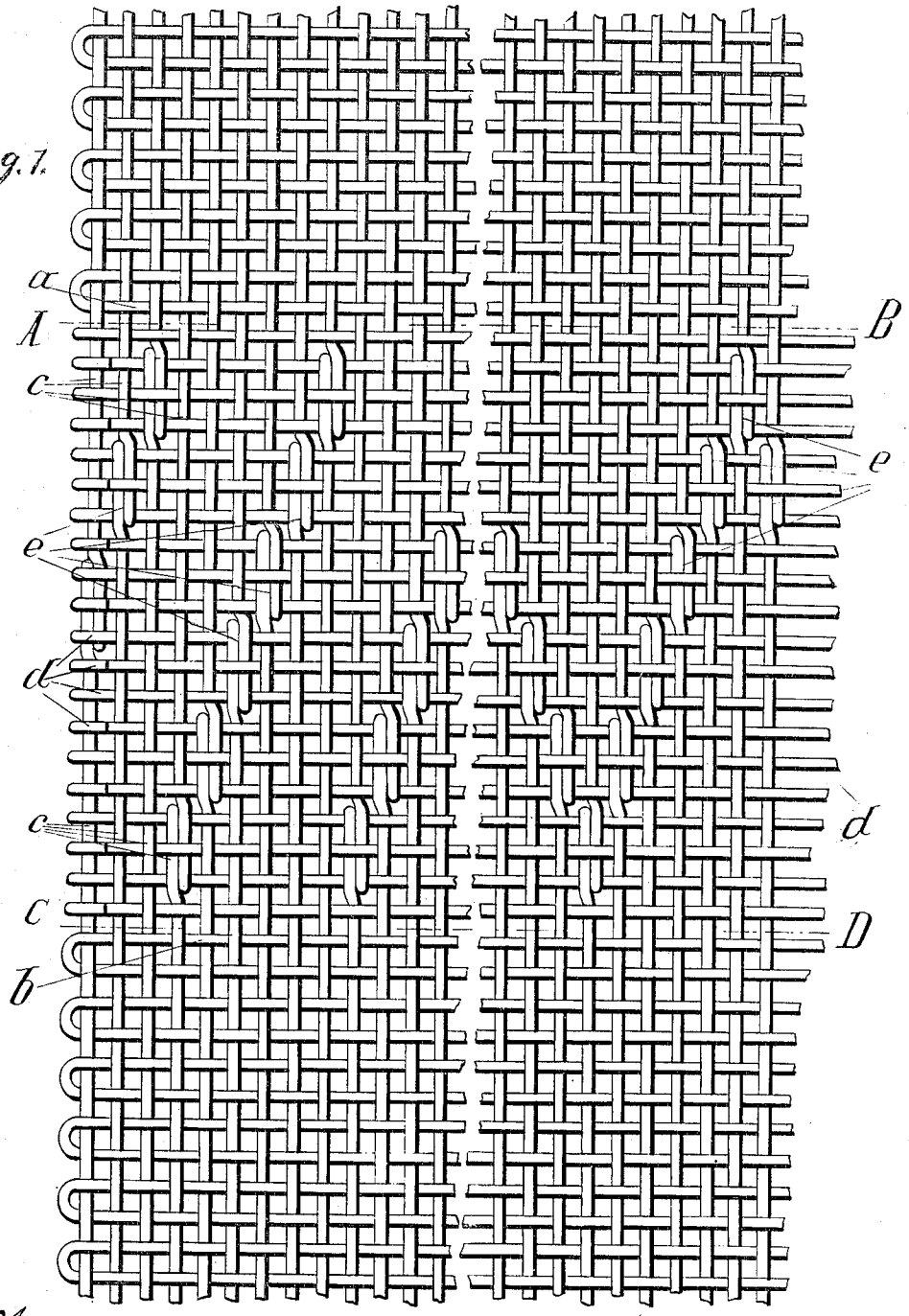
METHOD OF JOINING OR CONNECTING FABRICS.

APPLICATION FILED JAN. 6, 1908.

926,004. Patented June 22, 1909.

2 SHEETS--SHEET 1.

Fig. 1.



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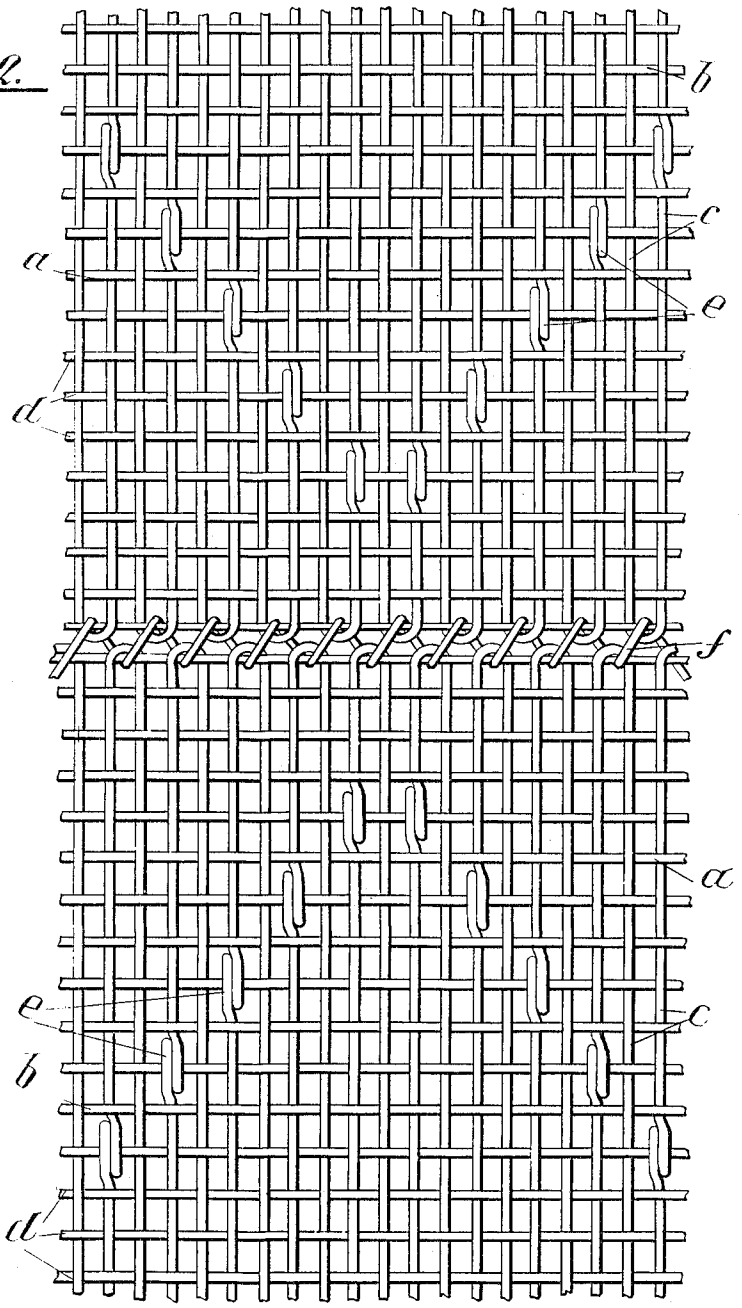
2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

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METHOD OF JOINING OR CONNECTING FABRICS.

No. 926,004. Specification of Letters Patent. Patented June 22, 1909.

Application filed January 6, 1908. Serial No. 409,531.

To all whom it may concern:

Be it known that I, WILHELM KELLER, a citizen of the German Empire, residing at Reutlingen, in the Kingdom of Würtemberg, Empire of Germany, have invented certain new and useful Improvements in Methods of Joining or Connecting Fabrics; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Hitherto endless fabrics, such for instance as are employed in the manufacture of paper, have been made by the ends of a cloth or fabric, made in the ordinary way, being joined by interweaving by hand and connecting the joints which resemble a self or independent edge thus formed, by sewing them together with wire. There thus resulted, even with the most careful workmanship, large continuous irregularities in the fabric. These places involve the great drawback that the meshes contracted by the interweaving are soon stopped up by the paper pulp, and thus produce an uneven action of the cloth on the paper and in particular require inconvenient cleaning.

Now this invention has for its object a method by means of which fabrics, more particularly those employed for making endless metal belts or cloths for the manufacture of paper, may be seamlessly connected with one another or self edges may be formed and connected with a releasable and hardly visible seam, so that a cloth which is uniform over its entire surface is formed, the joints of which have none of the drawbacks of the methods of connecting hitherto employed.

The invention consists in the projecting ends of the warp at the edges of the fabric which are to be connected together, being woven as weft into a warp corresponding to the weft of the fabric, with the object of making a seamless connection. In this manner any marking in the paper of the joints is avoided and also it is thereby rendered possible to insert an intermediate strip of any suitable length in the cloth belt in order to regulate exactly the length of the cloth, and to repair cloths which have become defective in the simplest and neatest manner possible.

As the connection can be made by mechanical means the invention is a considerable advance in view of the uniformity and the saving of expense as compared with the handwork hitherto employed.

Figure 1 is a plan view showing ends of a fabric secured together by my improved method. Fig. 2 is a plan view showing the ends of the fabric releasably secured together by my improved method.

In the accompanying drawings the joints of the encountering places of the warp of endless cloths made in accordance with this improved method are shown in two different arrangements, as examples.

The ends of the fabric made in the ordinary way viz. the edges *a b* at which the warp *c* projects to a suitable length, are transversely inserted in a loom which has a warp *d* of the same thickness and kind as the weft of the fabric, and also of the width of the strip which is to be inserted between the ends. In this warp *d* the projecting ends of the fabric warp *c* are interwoven as weft, so that between the lines A—B and C—D a complete fabric similar to the main fabric is formed. The places *e* at which the ends of the warps of the two edges *a* and *b* of the fabrics meet one another, may be suitably displaced relative to one another, and arranged so as to be uniformly distributed over the interposed fabric as shown in the drawings, so that there is no appreciable interruption in the uniformity of the fabric which is seamlessly connected in the manner mentioned. In a similar manner a piece of any suitable length may be interwoven between the ends of the fabric, by auxiliary weft of the thickness of the fabric warp *c* being also woven into the piece of fabric, which is to be inserted, in case the projecting warp ends of the fabric are not of sufficient length. By means of this improved method defective places in the fabric may also be repaired.

As shown in Fig. 2 the ends of the fabric are made with self edges formed by doubling back each alternate warp *c* to meet the adjoining warps, the warps *d* are then interwoven with these ends in the manner previously described. The places *e* where the ends of the warp meet are suitably displaced relative to one another.

The ends of the fabric thus formed with self edges are releasably connected to each other by means of the wire *f*. By the above method of connecting the ends of the cloth,

the sole interruption in the uniformity of the endless belt or cloth is extremely small and forms hardly an appreciable seam.

The projecting ends may in the case of metal cloths be bent around on the left hand side of the fabric.

I declare that what I claim is:—

1. An improved method of joining pieces of woven fabrics which consists in removing the transverse threads so as to provide projecting threads, interweaving said projecting threads as weft threads into a plurality of warp threads of substantially the same size as the weft threads of the fabric and cutting said added warp threads so that they may become a part of the joined fabrics.

2. An improved method of joining the ends of woven fabrics, which consists in removing the transverse threads so as to provide projecting threads bending said threads so as to form self edges, interweaving said projecting thread as weft threads into a plurality of warp threads of substantially the same size as the weft threads of the fabric and releasably connecting said self edges.

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

WILHELM KELLER.

Witnesses:
JEAN GULDEN,
HERM. HAYNES.