Jan. 1, 1935. E. J. WILSON 1,986,490

PAPER DRIER FELT

Original Filed Sept. 22, 1932

Fig. 1.

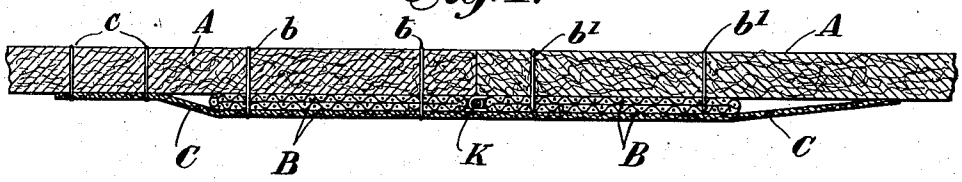



Fig. 2.

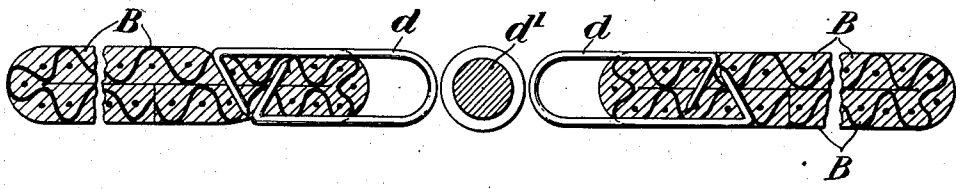



Fig. 3.

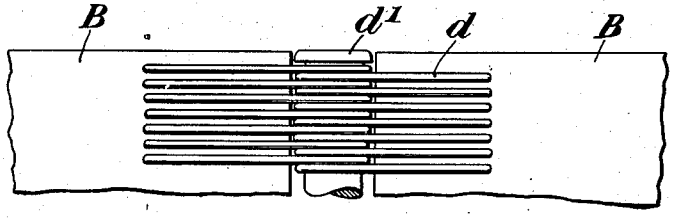
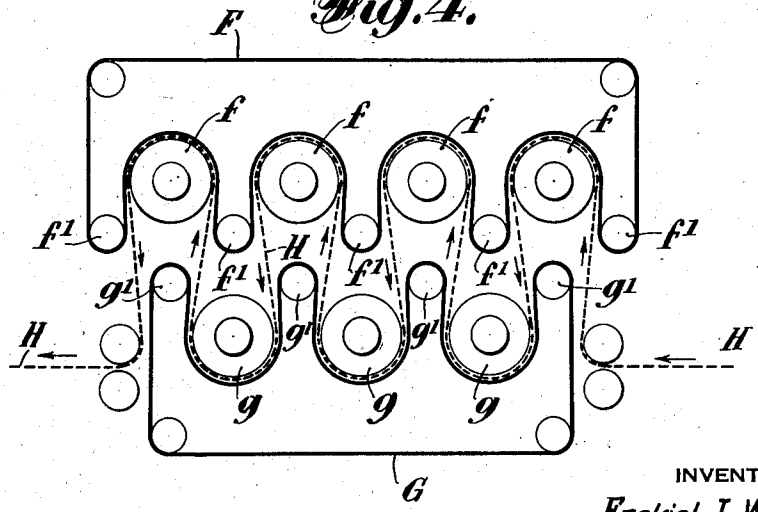



Fig. 4.




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## PAPER DRIER FELT

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Application September 22, 1932, Serial No. 634,444
Renewed May 25, 1934

6 Claims. (Cl. 24—33)

For a detailed description of the present form of my invention, reference may be had to the following specification and to the accompanying drawing forming a part thereof, wherein

Fig. 1 shows a cross section of the belt at a joint;

Fig. 2 shows, on a larger scale, a section of the linking hooks and the belt;

Fig. 3 is a plan view of Fig. 2 and

Fig. 4 is a diagram of a belt in action.

My invention relates to paper drier felts and particularly to means for forming such a felt into an endless belt, with a simple and safe joint that will avoid the formation of humps in the felt and permit it to travel smoothly over the cylinders, thereby avoiding marks on the paper or injuries thereto by coming in contact with the metal parts.

In the drawing, F and G (see Fig. 4) represent two endless belts. These belts, as indicated in Fig. 4, each run over a set of drying cylinders *f* and *g*. Thus belt F runs over an upper set of cylinders *f*, *f*, *f*, *f*, and intermediate guide pulleys $f^1$, $f^1$, $f^1$, $f^1$, $f^1$, while belt G runs over a lower set of cylinders *g*, *g*, *g* and intermediate guide pulleys $g^1$, $g^1$, $g^1$, $g^1$. Between each belt and the cylinders on which it runs is a strip or line of paper H, which is shown in Fig. 4, by a dotted line. It is important that these endless belts F and G while in contact with the paper strip H, should run smoothly over the cylinders, although that smoothness is not required where the belt passes over the guide pulleys $f^1$ and $g^1$. To provide for such smooth running of the belts is the purpose of this invention.

Referring to Fig. 1, which represents the abutting ends A, A, of the belt, I extend, across the underside of said abutting ends, a two-ply layer of cotton fabric, such as canvas or drilling, B, B, made in two sections which are hinged to each other on an axis K lying just below the meeting ends of the belt. The aforesaid belts, F and G, are, as usual, made of felt in contrast to the cotton employed for the sections B, B. This cotton is doubled over to form a fold on each end of each section and such section is securely stitched to the respective belt-ends A, A, as indicated at *b*, $b^1$ in Figs. 1 and 2. This stitching, it should be observed, only goes through the layers A and B at the right of the joint, as shown at the points $b^1$, $b^1$, but at the left of the joint, at the points *b*, *b*, it also goes through the third felt layer C, which will be described in detail later. The meeting ends of sections B, B are hinged together by means of wire hooks *d*, *d*, as shown in Figs. 2 and 3. Each hook *d* is separately set into the canvas of a section B inside the fold therein nearest to the axis, while its opposite end projects beyond the end of the canvas, as shown in Fig. 2. These hooks *d* are made of a rustless metal and through their projecting loop-ends is passed a hinge pin $d^1$ of softer non-corrodible metal, which acts to eliminate wear on the hooks. It will be noted that the hooks *d* are each constructed of a single piece of wire bent into U-form, with their end portions bent inwardly so as to penetrate the fabric B. One arm of each hook is longer than the other, and the end portions are bent to inclined positions and are angularly disposed with respect to each other, so that they penetrate the fabric in slanting directions and in overlapping relation. In this way a firm connection is provided, and likelihood of the pointed extremities of said hooks projecting through the fabric is prevented. The layer C, above referred to, is a layer of felt underneath the canvas layers and the metal hinging hooks *d*. Its function is to keep the said canvas and the hooks from contact with the paper on the cylinders. At its left-hand end this layer is fastened to the main belt A, A, by the aforesaid stitching at *b*, *b* and also by stitching at *c*, *c*. But at its right hand end this layer C is left unattached. Assuming that the belt in Fig. 1 is moving from right to left this unattached end will be in the rear and will overlap the joint above described and protect it from contact with the metal drying cylinders. Assuming that the foregoing description applies to the joints of belts F and G of Fig. 4, the result is that each one moves smoothly and easily over the cylinders *f* and *g*, without bumping or jarring and without any danger to the paper.

What I claim as new and desire to secure by Letters Patent is:

1. A joint for drier felts comprising two canvas sections secured to the back of a drier felt adjacent the ends thereof, metal members pivotally connecting said sections, a felt protector section covering said canvas sections and said metal members, said felt protector section having one end secured to the drier felt and the other end free and bearing against the drier felt.

2. In a joint for drier felts, the combination with a drier felt, of two canvas sections respectively secured to the felt adjacent the ends thereof, metal members pivotally connecting said canvas sections, and a felt protector section secured at one end to the drier felt, said protector

felt extending over the canvas sections and said metal members and having its other end free.

3. In a joint for drier felts, the combination with a drier felt of two canvas sections, metal members pivotally connecting said canvas sections, means securing one canvas section to the felt adjacent an end thereof, a felt protector section extended over both canvas sections and said metal members, and a common means securing the other canvas section and the adjacent portion of the felt protector section to the drier felt, the portion of said protector felt section covering the other canvas section being free.

4. A joint for drier felts comprising two canvas sections secured to the back of a drier felt adjacent the ends thereof, hooks formed with loop portions and having oppositely bent end portions embedded in the fabric of the respective canvas sections and so positioned that the loop portions secured to one canvas section overlap similar loop portions secured to the other canvas sections, the end portions of said hooks being angularly disposed with respect to each other and disposed in slanting directions within the fabric, and a pivot pin connecting the loops.

5. A joint for drier felts comprising two canvas sections secured to the back of a drier felt adjacent the ends thereof, hooks formed with loop portions and having oppositely bent end portions embodied in the fabric of the respective canvas sections and so positioned that the loop portions secured to one canvas section overlap similar loop portions secured to the other canvas sections, the arms forming the loop portions of each hook being of different lengths and said bent end portions being arranged in overlapping relation, and a pivot pin connecting the loop portions of said hooks.

6. A joint for drier felts comprising two canvas sections secured to the back of a drier felt adjacent the ends thereof, hooks formed with loop portions and having oppositely bent end portions embedded in the fabric of the respective canvas sections and so positioned that the loop portions secured to one canvas section overlap similar loop portions secured to the other canvas sections, the end portions of said hooks being angularly disposed with respect to each other and disposed in slanting directions within the fabric, a pivot pin connecting the loops, and a protector felt covering the canvas sections, the hooks and the pivot pin, one end of said protector felt being secured to the drier felt and a canvas section, the rest of said protector felt being free.

EZEKIEL J. WILSON.