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DRIER FELT SEAM CONSTRUCTION

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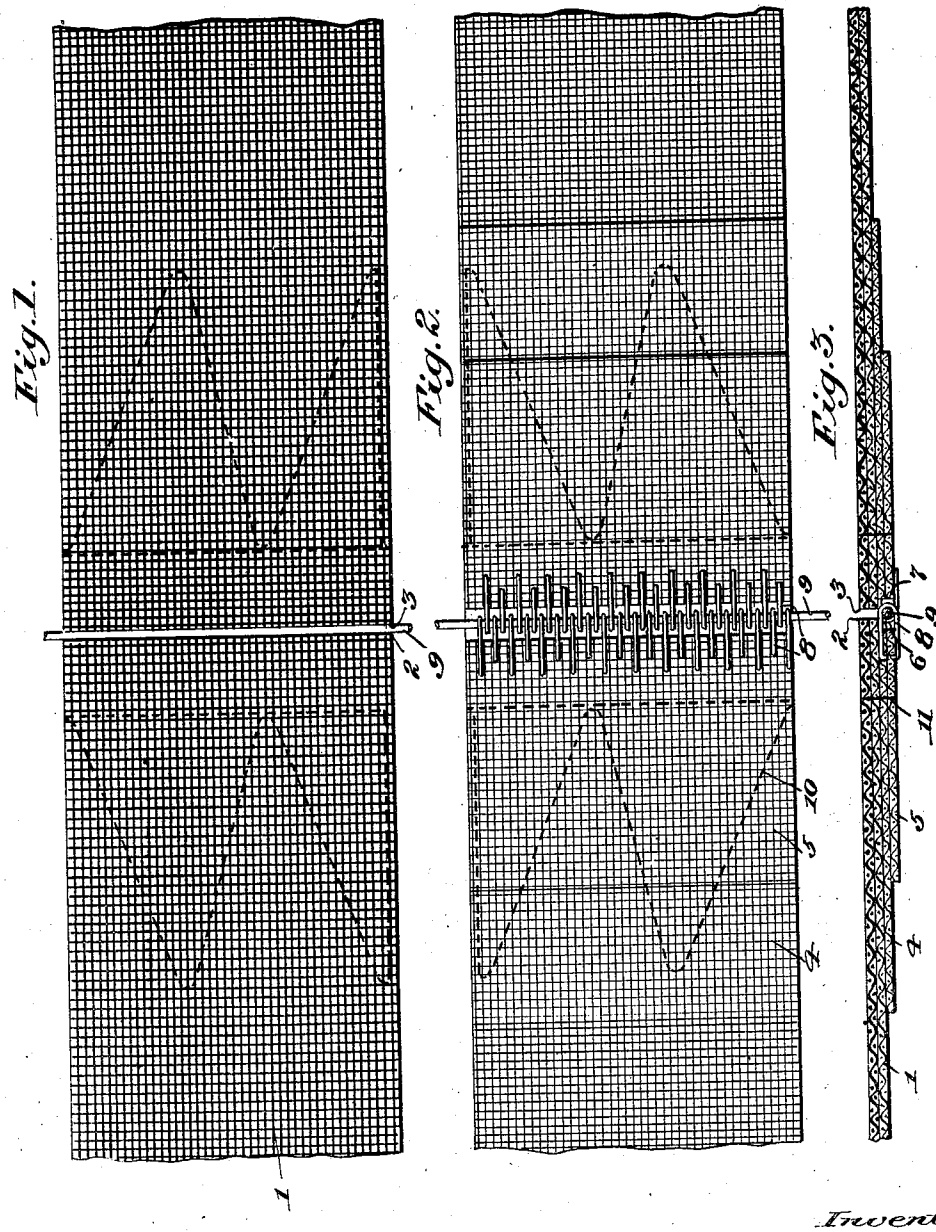

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DRIER-FELT SEAM CONSTRUCTION

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This invention relates to drier felt seam constructions.

The principal object of the invention is to provide a seam construction for drier felts which will eliminate marking or marring of paper by the felt in a drying machine by providing means for joining the ends of a drier felt below the working surface thereof, whereby the felt presents a smooth, continuous working surface.

Another object of the invention is to provide a seam construction for drier felts which will materially facilitate the installation of the felt at a great saving of time and labor.

A further object of the invention is to provide a drier felt with means for joining the ends thereof, the said means being supplied with the felt by the manufacturer, and which can, therefore, be shipped to the user all ready to be installed, and which does not require sewing of the felt or other expensive and time-consuming operations.

As is well known to those skilled in the art, drier felts are large belts or aprons made of canvas or other suitable material. They are generally from six to twenty-two feet in width, and vary in length up to three hundred feet. The purpose of a drier felt is to lead, support, and press a wet sheet of paper as it passes around a series of drying cylinders after the web of paper has been former on a Fourdrinier or other paper making machine.

In installing such drier felts, it has heretofore been the practice to pass the felt between the cylinders of a drying machine and then to lap the ends of the felt and to secure the ends together by stitching to thereby form a continuous, endless belt. While this means of joining the ends of the felt is simple, it is objectionable in that an uneven surface is formed at the seam which, therefore, tends to mark the paper when it is pressed against the drying cylinder by the felt. Such a seam, furthermore, has been found in actual practice readily to burn out and must therefore be replaced at frequent intervals.

Some of the disadvantages of a seam of the type just described have been overcome by the installation of endless felts. Such endless felts are, however, impractical due to the difficulty of installation. It will readily be appreciated that such a felt cannot be installed in a machine without the removal of some of the heavy drying cylinders, thus necessitating expenditure of a good deal of time, with a resultant loss in production. In the larger machines, employing very heavy drying cylinders, such a procedure is practically impossible.

The drier felt seam construction of my invention effectually overcomes the difficulties of the prior constructions heretofore described, in that I provide means for joining the ends of a felt in such a manner that a smooth, endless working surface is provided and, at the same time, the joinder of the ends of the felt may readily be made upon the machine at a minimum expenditure of time and labor.

Other objects and advantages of the invention will in part be obvious and in part be more fully brought out as the description proceeds.

In the accompanying drawings, I have illustrated a practical embodiment of my invention; but it is to be understood that the drawings are illustrative merely and are not to be construed as limiting the invention to the details of construction therein disclosed. It will be readily appreciated by those skilled in the art that the invention is capable of a wide range of modification and equivalency, and that it is susceptible of utilizations different from that herein set forth.

In these drawings:

Fig. 1 is a plan view of a portion of the surface of a drier felt provided with a seam construction made in accordance with my invention;

Fig. 2 is a bottom plan view of the section of drier felt illustrated in Fig. 1, and shows particularly the means for joining the ends of the drier felt; and

Fig. 3 is a sectional view, showing particularly the construction of the drier felt seam of my invention.

Referring, now, to the drawings, the reference numeral 1 indicates a drier felt which may be of any well known construction, the

ends 2 and 3 thereof being brought together in abutting relation, as clearly illustrated in Fig. 1. It may be remarked that, in the drawing, the space between the adjacent edges 2 and 3 of the felt is somewhat exaggerated in order to more clearly illustrate the invention, and that in practice these edges will actually abut. Fig. 1 also shows that no portion of the joining means protrudes to the working surface of the felt, and hence there is nothing upon the working surface of the felt which would tend to mar or mark the sheet of paper supported thereon when the said sheet is pressed against a drying cylinder.

As best illustrated in Fig. 3, each end of the drier felt 1 is provided with a backing in the form of a strip of canvas or other material, folded upon itself to form superposed portions 4 and 5. This backing is secured to the drier felt by stitching, as at 10, although any other suitable means may be provided, such as stapling, riveting, etc. The stitching by means of which the backings are secured to the drier felt terminates at the line 11, thus leaving a portion of the backings free. It will also be noted from Fig. 3 that the edges 6 and 7 of the respective backings terminate short of the edges 2 and 3 of the drier felt.

Each of the backings is provided with a series of links 8 which, when the ends of the felt are brought together, assume an interdigitating relation, as clearly illustrated in Fig. 2. When the links are in the position described, a suitable wire 9 is passed therethrough, thus connecting all of said links and thereby joining the backings. It will be readily understood that by leaving the ends of the backings free from the line 11 to the edges, will materially facilitate the application of the wire links to the backings. Also, if after the belt has been installed, any one or a number of the links should break, a new link may readily and with great facility be substituted therefor. The links may, however, be inserted in the backings before the said backings are secured to the felt, the result being the same in either case.

It will now be seen that I have provided a seam construction for drier felts in which no part of the seam projects to the working surface of the felt and, hence, there is nothing on the working surface which will cause injury to the paper supported thereon. The seam as thus described is easily constructed, permits the ready installation of the felt on the drying machine, and is of such sturdy construction as to give it long life in actual use.

I claim:

1. In a drier felt, a seam construction including flexible backings secured to abutting ends of the felt, and means for joining the adjacent ends of the backings.

2. In a drier felt having free abutting ends, a seam construction including flexible backings secured to said abutting ends, and means for joining the adjacent ends of said backings.

3. In a drier felt having abutting ends, a seam construction including flexible backings secured to said abutting ends, and means independent of the felt for joining the adjacent ends of the backings.

4. In a drier felt having its ends disposed in abutment, a seam construction including flexible backings secured to the under-side of the felt at said abutting ends, and means joining the ends of the backings below the working surface of the felt.

5. In a drier felt, a seam construction including flexible backings secured to the under-side of the felt at the ends thereof, and means joining the ends of said backings without projecting to the upper side of the felt, whereby a smooth, continuous working surface is provided.

6. A drier felt having its ends disposed in abutment, flexible backings secured to said felt below the drying surface thereof, the ends of said backings terminating short of the ends of said felt, and means for joining the ends of said backings.

In testimony whereof, I affix my signature.

HAROLD N. HILL.