

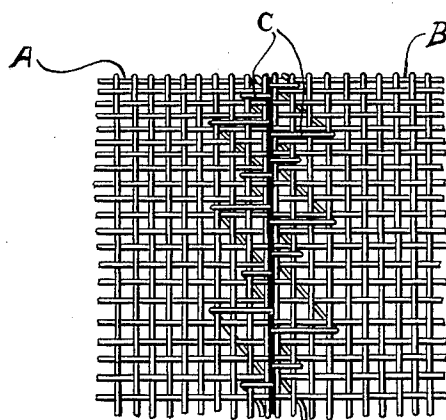
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METHOD OF MANUFACTURING WIRE CLOTH BELTS

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METHOD OF MANUFACTURING WIRE
CLOTH BELTSJohn Robert Buchanan and Thomas Michael
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10 Claims. (Cl. 245—10)

This invention relates to improvements in a method of manufacturing wire cloth belts such as the conventional Fourdrinier or paper machine wires and appertains particularly to the reinforcing of the ends of the cloth about to be joined.

The principal object of the invention is to reinforce the joined ends of the cloth immediately adjacent to the seam thereby taking part of the strain off and relieving the load on the warp wires in this area, since it has been found possible to provide an efficient seam to equal the life of the belt and the point of weakness appears now to lie along either side of the joint where the warp wires have shown a tendency to disintegrate.

A further object of the invention is to reinforce the ends of the cloth with a wire whipping, each individual stitch of which is anchored when the cloth ends are joined so that in the event of one stitch breaking the wire cannot run and only the reinforcement of the single broken stitch is lost.

A still further object of the invention is to produce an endless belt of the nature and for the purposes described provided with a fused or soldered joint with the adjacent parts of the cloth on both sides thereof reinforced by a whipping intermittently anchored in the joint, that offers a minimum of drainage resistance and lies smooth and thin so as not to mark the sheet of paper.

To the accomplishment of these and related objects as shall appear more fully as the description proceeds, the invention resides in the method of manufacturing this improved endless belt with a smooth reinforced seam so perfect that it will out-last the fabric in the body of the belt, leaving no perceptible mark on the sheet of paper and serving with as much efficiency and satisfaction as if the warp wires were manufactured in continuous unbroken loops.

The invention will be best understood and can be more clearly described when reference is had to the drawing forming a part of this disclosure wherein like characters indicate like parts throughout the several views.

In the drawing, a plan view of the improved reinforced seam is shown.

Our allowed patent application Number 515,490 that matured in Patent #1,909,914 on May 16, 1933, relates to a belt made from a sheet of wire cloth fabric by fusing or soldering the warp ends that are butted together and in our allowed patent application Number 532,803 that

matured in Patent #1,908,402 on May 9, 1933, we have disclosed a method of and apparatus for so joining the ends of the fabric. Wire cloth belts of the Fourdrinier or paper machine wire type thus produced have demonstrated a seam or joint in which drainage resistance has ceased to be a factor, the sheet of paper was unmarked, the very seam in the belt itself defying detection and yet of such strength that it stood up under actual working conditions to out-last the body of the fabric.

Practice has however suggested that reinforcement is needed adjacent the seam, in the immediate vicinity on both sides thereof. The fused or welded or soldered warp wires at their point of junction are probably more rigid, or the transverse seam as a whole a little stiffer than the rest of the fabric belt perhaps because of the added metal at the joint or because of the heating treatment employed so that the warp wires may not flex as freely. At any rate in some cases certain of the warp wires will disintegrate or break down under the extra load at this point on account thereof.

To remedy this possible weakness, we whip the ends of the wire cloth about to be joined, not to spread the load on the end shoot or weft wire back over the next three or four as in the old sewn seam since the weft wires take no part of the burden in our present seam, but to reinforce the warp wires at their weakest point at and near the seam and to distribute any added strain or load or flexing on them at this point back over the adjacent surrounding area. This whipping has new significance and takes on an added value in this belt over the old sewn ones for it is anchored at intervals in the seam so that should the whipping wire fracture at any point it could not run and no break would occur in the belt.

The two ends A and B of a wire cloth are each sewn with a whipping wire C extending back beyond the desired number of weft or shoot wires and then braised or soldered or welded or fused thereby anchoring the exposed end of each stitch of the whipping to the respective wire cloth end A or B. Preferably solder is used and applied in a continuous row of spots across the entire width of each end serving also to bind the warp wires to the last weft wire as described in our previous patents referred to above and in this relation the stitches of the whipping become as added or auxiliary warp wires. The ends of the wire cloth are then filed to clear off the tails or warp ends and provide flatted butting

surfaces that are then joined by the application of heat.

It is to be understood of course that if the whipping or sewing of the ends included stitches that did not reach to the exposed end of the wire cloth, these would not necessarily be soldered since the row of solder spots is primarily for the joining of the warp wires to the last weft or shoot and the warp ends butted together in the seam; nevertheless the solder effectively anchors each stitch rendering them individually independent and thereby strengthening the seam and greatly reinforcing the adjacent areas of the belt.

From the foregoing description taken in connection with the accompanying drawing, it will be apparent that an improved method of manufacturing wire cloth belts is provided by means of which more efficient and durable belts can be produced but as changes could be made in the description and variations in the exact letter of carrying out the method without departing from the spirit or scope of the appended claims it is intended that all matters contained in the foregoing shall be interpreted as illustrative and not in a limitative or restrictive sense.

Having thus described the invention, what is claimed as new is:—

1. A method of manufacturing wire cloth belts in which the warp ends are joined by brazing, soldering, welding or fusing consisting of first reinforcing the ends of the cloth.

2. A method of manufacturing wire cloth belts consisting of reinforcing the ends of the wire cloth and then joining the warp ends thereof.

3. A process of manufacturing wire cloth belts consisting of first reinforcing the ends of the cloth back beyond several woof wires and then joining the warp ends of same.

4. A method of manufacturing wire cloth belts consisting of first reinforcing the ends of the cloth, anchoring the reinforcing and then joining the ends of the cloth.

5. A method of manufacturing wire cloth belts consisting of first whipping the ends of the cloth to reinforce them, anchoring the whipping and then joining the ends of the cloth.

6. A method of manufacturing wire cloth belts consisting of whipping the ends of the cloth to be joined to reinforce them, anchoring each individual stitch of the whipping and then joining the ends of the cloth.

7. A method of manufacturing wire cloth belts consisting of first whipping the ends of the cloth to reinforce them, anchoring each individual stitch with a row of solder along the edges of the cloth to be joined and then joining the same.

8. A method of manufacturing wire cloth belts consisting of first whipping the ends of the cloth to reinforce them by sewing back beyond several of the woof wires, anchoring each individual stitch with a row of solder along the edges of the cloth to be joined and then joining them by the application of heat.

9. A process of manufacturing wire cloth belts consisting of first whipping the ends of the cloth to reinforce them, anchoring each individual stitch with solder along the very edge of each end of the cloth, filing the ends to clear off the warp tails and provide a flattened butting face and then joining the ends.

10. A method of manufacturing wire cloth belts, known as Fourdrinier or paper machine wires, by first whipping the two ends of the fabric to be joined to reinforce them by sewing back beyond several woof wires and then anchoring each individual stitch of the whipping with a row of solder along the edges or ends to be joined, filing the ends to remove tails or warp ends and to provide a smooth even surface on both edges, and then joining said edges or ends by the application of heat at the point where the same contact.

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