C. VAN HOUTEN.

Wire-Cloth for Fourdrinier Paper-Machines.

No. 211,444. Patented Jan. 14, 1879.



Fig. 1.

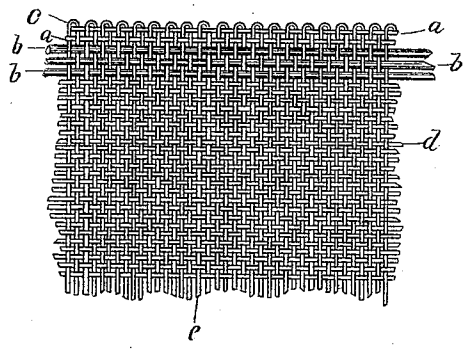


Fig. 2.

Attest:

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UNITED STATES PATENT OFFICE.

CORNELIUS VAN HOUTEN, OF BELLEVILLE, NEW JERSEY.

IMPROVEMENT IN WIRE-CLOTH FOR FOURDRINIER PAPER-MACHINES.

Specification forming part of Letters Patent No. **211,444**, dated January 14, 1879; application filed March 1, 1878.

To all whom it may concern:

Be it known that I, C. VAN HOUTEN, of Belleville, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Fourdrinier Wire-Cloth, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to an improved method of forming a metallic edge upon the Fourdrinier wire-cloth commonly used in paper-making machines, and possesses advantages over other metallic edges both in being thinner, and in having the selvage-wires so secured in the edge of the Fourdrinier wire-cloth that pieces of the same are not liable to work out when broken by wear in the paper-machine.

The ordinary metallic edge consists of several wires, (often larger than the rest of the warp,) which are laid in the edge of the cloth together in the loom, being passed through the same dent or opening in the reed, which beats up the filling, and are thus held together to resist the tension of the filling-wire, which tends to draw in and narrow the cloth at each edge where it turns to form the selvage.

These wires have always been so laid in the cloth that they escaped the alternate bend impressed upon all the other warp-wires by the working of the harnesses during the weaving, and, being therefore left straight and parallel, were liable to draw out at any time if broken by the continued wear of the paper-machine.

My improvement consists in so introducing the wires needed to form the selvage (for turning the filling over) that they shall lie in the same dent of the reed, and be thus held together to resist the tension of the weft in making the edge, while they shall receive such a bending that no piece can pull out of the selvage when in use, no matter how near together the breaks in the same may occur. This I accomplish by passing the wires, (if two are employed,) not through the same harness, as has hitherto been uniformly done, but one of them through a heddle in the front harness, and the other through a heddle in the rear harness, the wires still being laid in the same dent or opening in the reed, as has been described above. The two wires thus still possess the needful stiffness to turn the filling over, being held together in the reed when beating up the filling, while, owing to their positions in the harness, they are bent back and forth at each stroke of the weaver, and are firmly locked in their place in the selvage.

Figure 1 of the drawings shows the alternate bends in one of the selvage-wires, and makes it plain that no piece can work out of the edge of the cloth if broken at two points when in use. Fig. 2 shows the appearance of the same wire in the edge itself, the letter *a* applying to the selvage-wires.

As a few silk threads are universally woven into Fourdrinier wire-cloth near the edge to strengthen it, I have shown several such threads at *b b b* in Fig. 2; but they have no connection whatever with my improved method of form the metallic edge.

a a are the wires, two or more in number, woven into the selvage in the manner described above. *c c* are the loops formed by the filling-wires *e* as they are twisted over the selvage-wires in the body of the cloth.

If more than two wires *a* are preferred, they may be employed by working part in each of the harnesses, as described above, and carrying two or all of them through the same dent in the reed, to be used for turning the filling-wires *e* over, as described.

I do not limit myself, therefore, strictly to the use of two wires laid in the edge, in the manner described, as three or more can be worked in opposite heddles in the same manner, and the same effect will be produced—namely, the bending of the selvage-wires *a* to prevent their working out of the edge, as herein set forth.

I claim—

The wire-cloth for Fourdrinier paper-machines, having for its extreme edge or selvage warp two or more wires, *a a*, bent substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I hereto subscribe my name in presence of two witnesses.

CORS. VAN HOUTEN.

Witnesses:

C. C. HERRICK,

THOS. S. CRANE.