MACHINE FOR THE MANUFACTURE OF PAPERS SIMILAR TO DIPPED WATERMARK PAPERS

Inventor:
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by Attorney.
To all whom it may concern:

Be it known that I, Paul Erekens, manufacturer, citizen of the German Republic, residing at Niederau, near Duren, Rhd., Germany, have invented certain new and useful Improvements in Machines for the Manufacture of Papers Similar to Dipped Watermark Papers, of which the following is a specification:

The invention relates to a machine for the manufacture of papers similar to dipped water-mark papers and consists in this that a Fourdrinier wire or a skeleton drum carrying the water-mark-types is arranged above the Fourdrinier wire of a normal paper-machine, in such a manner that the upper Fourdrinier wire or the skeleton drum and the normal Fourdrinier wire below are shaken in conformity at the point where they meet. A web of paper is formed on the upper Fourdrinier wire or the skeleton drum in the usual manner and transferred to the normal Fourdrinier wire.

In the drawings I have shown by way of example one mode of carrying out the invention the upper Fourdrinier wire or the skeleton drum, carrying the water-mark-types is provided with a deckle strap or any other means for protecting the web thereon.

The most essential feature of the new machine for the manufacture of papers similar to dipped water-mark papers is the fact that the meeting reaches of the normal Fourdrinier wire and the upper Fourdrinier wire, or the skeleton drum, move in the same direction while the pulp is fed to that reach of the upper wire or of the drum which is moving in opposite direction to that of the normal Fourdrinier wire.

In the drawings I have shown by way of example one mode of carrying out the invention.

The frame 1 of the machine and the means for actuating the normal Fourdrinier wire B and for supporting it on its way through the machine from the breast roll C to the suction boxes 2, 2, the driving sheave 3 and back to said breast roll form no part of the present invention and so are not described in detail.

At a short distance to the rear of the breast roll C, a frame 4 is arranged above the frame 1. D and E are skeleton drums rotatably carried in said frame, A is a Fourdrinier wire placed on said drums, and F is a pulley which imparts motion to the wire A. A roller H at the rear of the breast roll C slightly raises the wire B so as to hold it in contact with the drum D. The meeting reaches of the two wires A and B move in the same direction, that is, to the rear of the breast roll C. Paper pulp is supplied to the upper wire A by the feed-table K in a direction opposite to the movement of the normal Fourdrinier wire B. A deckle strap 5 may be provided above the upper reach of the wire A. The upper Fourdrinier wire A receives the pulp, drains andfelt it by a continuous to-and-fro-shaking movement, and in the course of the advancing movement finally transfers the paper-web on the wire B. The draining to which the paper-web is subjected on the wire A may be regulated at will and according to the requirements by the action of the suction box J. In operation the wires A and B are shaken so as to move in conformity at the point G. The means by which this is effected are well known in the art and therefore are not shown and described.

In order to provide the paper-web with the water-marks, elevated and sunk types are provided on the wire A. Preferably the wire A consists of two parts one of which contains the water-marks, whilst the other serves as a protection for same. The two parts are interwoven with each other to a degree suitable for the purpose in question.

The liquid paper-pulp is supplied to the wire A by means of the feed-table K, the water being drained off through the wire, and the fibres of the pulp having sufficient time to perfectly settle in thicker or thinner layers according to the elevated or sunk portions provided on the wire, so that the water-marks are reproduced with clear and sharp lines, showing even the most delicate shadows, so that the work is equal to the best hand-work. This is obtained particularly by that feature of my machine that the shaking wire A copies exactly any and all movements of the pulp-vat, which is handled by the vat-man. Owing to this feature the machine according to the invention is particularly suitable for making bonds, banknotes, cashier-bills, shares and other similar papers of that kind, which principally must have an extraordinary strength and the same extensibility and tearing module both in the longitudinal direction and in the transverse
direction and which besides this on account of the water-mark cannot be falsified. Those requirements are fulfilled to perfection in the paper manufactured according to the before described process.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described for obvious modifications will occur to a person skilled in the art.

What I claim as my invention is:

1. Machine for making water-mark paper comprising a frame, a Fourdrinier wire adapted to be shaken, means on said frame for moving and supporting said Fourdrinier wire on said frame, a second Fourdrinier wire arranged above said first wire, provided with markings and adapted to be shaken in conformity with said first wire at the point where said wires meet, means for supplying pulp to said second wire and means for moving said second wire in the same direction as said first wire.

2. Machine for making water-mark paper comprising a frame, a Fourdrinier wire adapted to be shaken, means on said frame for moving and supporting said Fourdrinier wire on said frame, a second Fourdrinier wire arranged above said first wire, provided with markings and adapted to be shaken in conformity with said first wire at the point where said wires meet, means for supplying pulp to said second wire and means for moving that second wire in the same direction as said first wire.

3. Machine for making water-mark paper comprising a frame, a Fourdrinier wire adapted to be shaken, means on said frame for moving and supporting said Fourdrinier wire on said frame, a skeleton drum arranged above said Fourdrinier wire, provided with markings and adapted to be shaken in conformity with said Fourdrinier wire at the point where said drum and said wire meet, means for supplying pulp to said skeleton drum and means for rotating said skeleton drum so that its periphery moves in the same direction as said Fourdrinier wire where it is meeting said wire.

In testimony whereof I affix my signature.

PAUL ERKENS.