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PATENTED NOV. 19, 1907.

E. E. LINFOOT.

MANIFOLD PAPER AND PROCESS OF PRODUCING THE SAME.

APPLICATION FILED AUG. 8, 1906.

FIG. I.

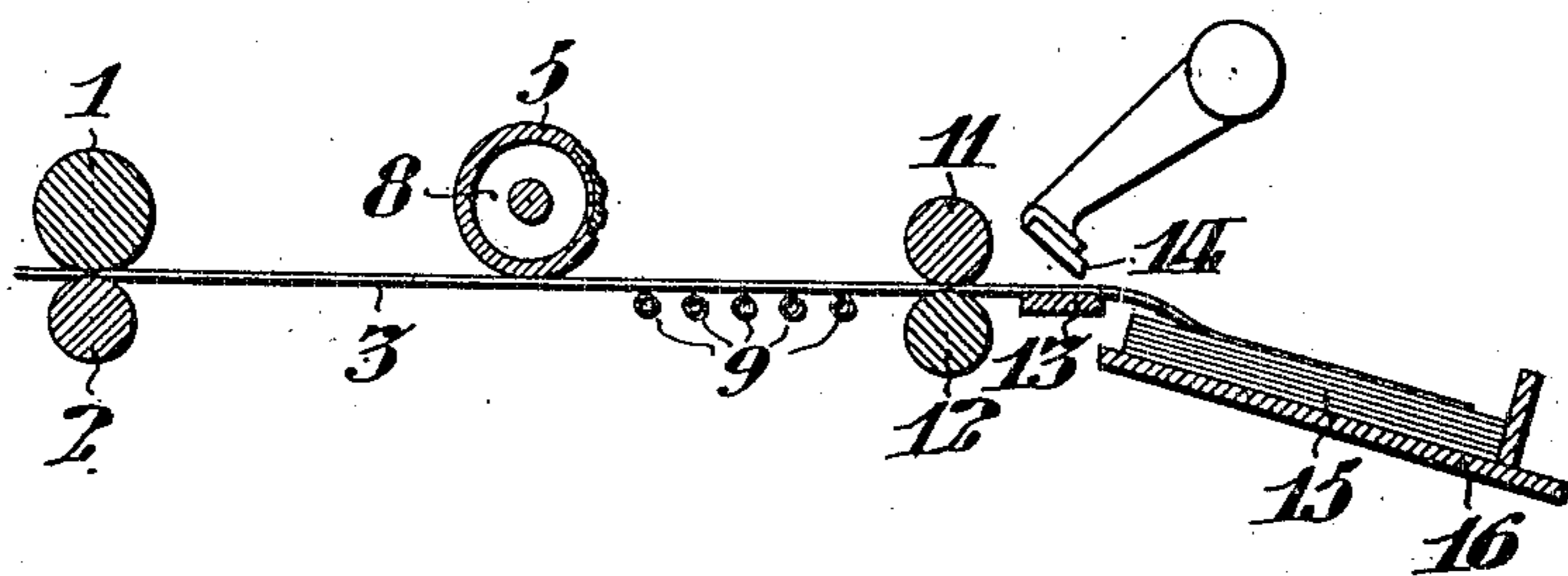


FIG. II.



WITNESSES:

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ERNEST E. LINFOOT, OF PHILADELPHIA, PENNSYLVANIA.

MANIFOLD PAPER AND PROCESS OF PRODUCING THE SAME.

No. 871,172.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed August 8, 1906. Serial No. 329,702.

To all whom it may concern:

Be it known that I, ERNEST E. LINFOOT, of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Improvement in Manifold Paper and Processes of Producing the Same, whereof the following is a specification, reference being had to the accompanying drawings.

It is the object of my invention to provide manifold or impression paper, the impression surface of which manifests a trade mark or other symbol of any desired character, which is local to said coating, and, to provide a process whereby the cost of such marking is rendered negligible.

The marking above contemplated is formed and completed exclusively in the impression coating of the paper, and is manifested by contiguous portions of the surface of said coating being of different luster or reflective capacity, because of difference in smoothness. Such paper may be made with all of the regions of the impression coating of equal capacity to transfer an impression, regardless of their different reflective capacity, and, all of said regions may be of equal opacity.

As hereinafter described, the essential characteristic of my improved process is the subjection of different regions of the impression coating to different temperatures before the coating is finally set or hardened and, as hereinafter described, a selected region of the impression coating is subjected to a higher temperature than the other regions thereof, after the paper has been provided with a coating of uniform temperature.

My invention comprises the various novel features of procedure hereinafter more definitely specified.

In the drawings, Figure I, is a diagrammatic view showing the relative arrangement of certain machine elements which may be conveniently employed in the conduct of my process. Fig. II, is a fragmentary sectional view of a wall of the marking roller shown in cross section in Fig. I.

A machine which may be conveniently utilized in a preferred process of manufacturing said paper, comprises a pair of rollers 1 and 2, between which a web of paper 3, is directed. The upper one of said rollers 1, may be the roller by which the coating of impression material is deposited on said web. The coated web 3, then passes beneath the marking roller 5, the wall of which, as indicated in Fig. II, comprises portions 6, which are re-

cessed with respect to the outer perimeter of the cylinder, and portions 7, which are flush with said perimeter. Said roller 5, is conveniently supplied through an axial opening 8, with a fluid, for instance steam, whereby it may be maintained at any desired temperature. Said paper then passes over a series of pipes 9, or other receptacle for a fluid, for instance steam, whereby the same is maintained at any desired temperature. Said paper then passes between the feed rollers 11 and 12, and over the ledger blade 13, which coöperates with the rotary blade 14, to sever the web in sheets 15, which are deposited in the holder 16.

With the arrangement above contemplated, the paper 3, passes from the rollers 1 and 2, with a coating of heated impression material, the temperature of said coating being uniform throughout its extent. However, when passing beneath the roller 5, the selected regions of the impression coating which register with the high portions 7, of the roller 5, are subjected to a higher temperature than the other regions which register with the recessed portions 6, of said roller so that the surface of the coating where its temperature is raised is disturbed and is rendered of different reflective capacity from that of the surface which is not thus reheated.

If the coating comes directly in contact with the marking roller 5, and is then permitted to cool rapidly, the surface has a stippled or mottled effect, as distinguished from the portions of said coating which have not come in contact with the marking roller, which have a uniform reflective effect. Moreover, the resulting effects of the reheating aforesaid, with respect to the finished article, may be modified by variation in the length of time during which the paper is allowed to attain its normal temperature. That is to say, different effects may be produced by varying the temperature of the coating as it passes from the marking roller to the place of discharge from the machine, and such variations may be effected by independently controlling the admission of fluid to said pipes 9.

The impression paper which has been subjected to the reheating process above described is not only characterized by contrasting surfaces in different regions, but such regions are separated by distinctive lines which are manifested by the coating being throughout the extent of said lines of

different opacity from the adjoining regions of said coating, for instance, impression sheets made by a machine arranged as in Fig. I have lines separating the regions which register with the recesses 6, from the regions which register with the high portions 7, of the cylinder 5, and said lines produced by the forward edges of the high portions 7, are less opaque than the lines produced by the rearward edges of said portions.

I do not desire to limit myself to the precise procedure above described, as typical of my invention.

I claim:—

1. An impression sheet having the surface of its impression coating of different reflective capacity in different regions, said regions being separated by distinctive lines manifested by the coating being less opaque throughout the extent of said lines, than in adjoining regions of said coating, substantially as set forth.

2. An impression sheet having the surface of its impression coating of different reflective capacity in different regions, said regions being separated by distinctive lines manifested by the coating throughout the extent of said lines, being of different opacity from

the adjoining regions of the coating, substantially as set forth.

3. The process of providing an impression sheet with contrasting surfaces in different regions which consists in providing said sheet with a coating of impression material of uniform temperature, then subjecting a selected region of said coating to a higher temperature, substantially as set forth.

4. The process of providing an impression sheet with contrasting surfaces in different regions, which consists in providing said sheet with a coating of impression material of uniform temperature, then subjecting a selected region of said coating to a higher temperature, and then maintaining said coating at an abnormal temperature for a predetermined time after being subjected to said higher temperature, substantially as set forth.

In testimony whereof, I have hereunto signed my name, at Philadelphia, Pennsylvania, this 7th day of August 1906.

ERNEST E. LINFOOT.

Witnesses:

ARTHUR E. PAIGE,
E. L. FULLERTON.