

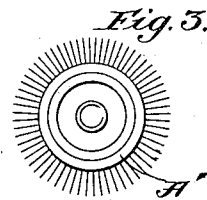
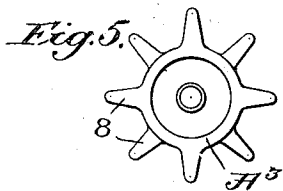
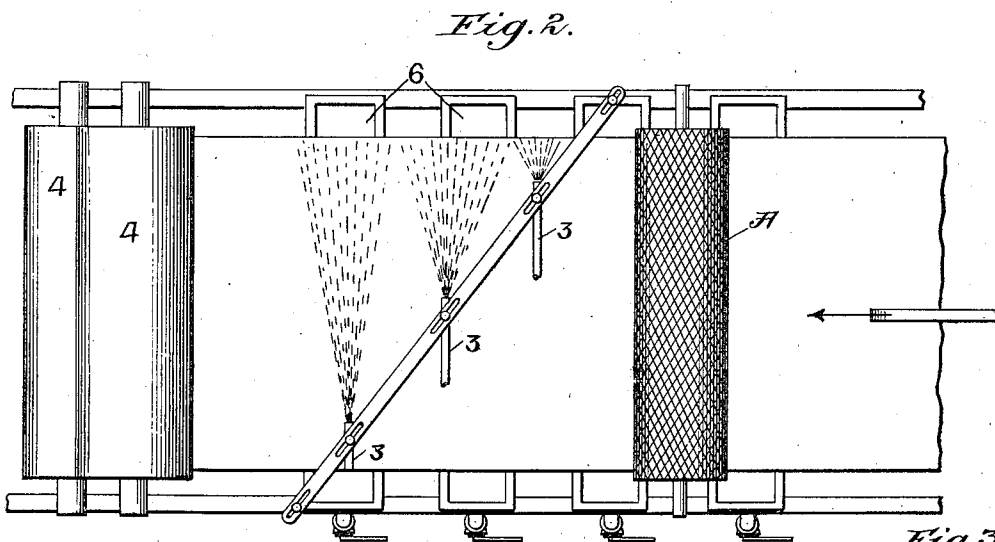
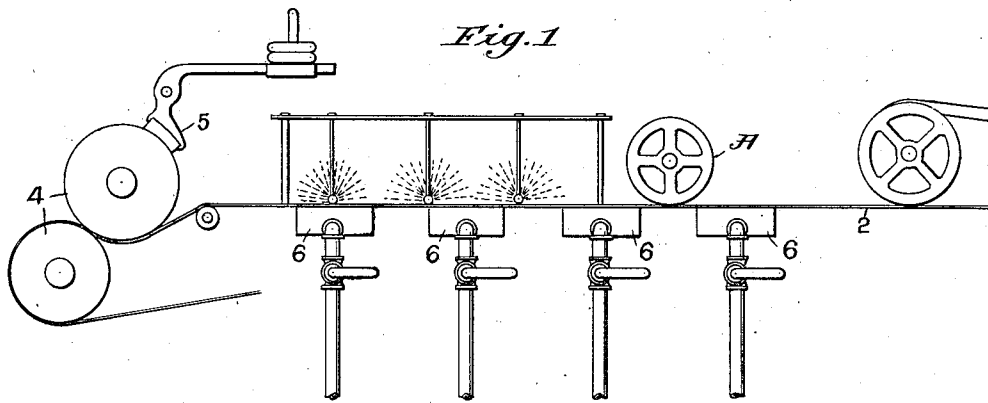
K. FRANZ.

MANUFACTURE ON THE PAPER MACHINE OF PAPER HAVING RELIEF LIKE EFFECT.

APPLICATION FILED JULY 12, 1909.

1,052,716.

Patented Feb. 11, 1913.



Witnesses:
Robert S. Hulsizer.
C. H. Potter.

Inventor:
Kuno Franz
By Barnes Townsend & Bruckenstein
Att'ys.

UNITED STATES PATENT OFFICE.

KUNO FRANZ, OF FRANKFORT-ON-THE-MAIN, GERMANY, ASSIGNOR TO FARBWERKE
VORM. MEISTER LUCIUS & BRÜNING, OF HÖCHST-ON-THE-MAIN, GERMANY,

MANUFACTURE ON THE PAPER-MACHINE OF PAPER HAVING RELIEF LIKE EFFECT.

1,052,716.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed July 12, 1909. Serial No. 507,136.

To all whom it may concern:

Be it known that I, KUNO FRANZ, a citizen of the Empire of Germany, residing at Frankfort-on-the-Main, Germany, have invented certain new and useful Improvements in the Manufacture on the Paper-Machine of Paper Having Relief Like Effect, of which the following is a specification.

My present invention relates to a modification of the process described and claimed in U. S. Patent No. 918525, according to which there is produced on the paper-machine paper having a relief-like effect by impressing the paper-web while on the wire-cloth or on the wet-felt with figured elevations and depressions by means of rollers which are embossed with relief patterns, by then dyeing the paper web thus prepared in the usual manner either by means of felts which dip at one end in a color trough and trail on the paper web, or by means of nozzles by which dye-solutions are sprayed on the web at an acute angle, and by finally finishing the paper in the usual manner. I have found that papers with such relief-like effects can also be produced by a modification of the above mentioned process, which consists in using instead of the figured rollers, simpler means for producing elevations and depressions on the paper-web while it is still on the wire-cloth or on the wet-felt. For instance, cloths, brushes, sieve-rollers (dandy rollers), felts and the like may be caused to trail on the paper web or to rotate on it in a suitable manner. Or compressed air may be blown by suitable devices onto the wet paper-web, or the unevenness on the surface of the paper-web may be produced by other means (scratching it with nails and the like). If the paper-web so prepared is then dyed and finished in the manner indicated in U. S. Patent No. 918525, relief-like effects are produced. Apart from the fact that the new method of carrying out the process in question is simpler and causes less expenses—owing to the figured rollers being dispensed with—it permits the production of irregular patterns according to the means chosen, whereas when figured rollers are used, the patterns naturally show a certain regularity.

Referring to the drawings; Figure 1 is an elevation of a portion of a paper-making machine; Fig. 2 is a corresponding plan

view; Fig. 3 is an end elevation of a brush roll; Fig. 4 is a side elevation of a trailing felt device; and Fig. 5 is an end elevation of a roll.

Referring to the drawings; 2 is a wire cloth or wet felt carrying the layer or web of paper; A is a device for mechanically producing directly on the web of paper haphazardly arranged elevations and depressions, which in this instance may be a dandy roll mounted in suitable journals but not driven except by its contact with the web; 3, 3, 3 are suitably arranged jet pipes supported above the web for spraying color on the elevations of the web; 4, 4 are finishing rolls; 5 is a brush for cleaning the upper roll; 6, 6 are the usual suction boxes.

As shown in Fig. 3, the means to form the elevations and depressions is a brush roll A'. In Fig. 4 is shown another means for producing the same effect, comprising a cross-bar 7 to which is attached a trailing felt A². In Fig. 5 is shown another modification which consists of a roll A³ provided with projections 8, this roll being mounted in the same manner as the roll A, to be rotated by its contact with the web.

In operation, whichever form of device be used, a series of haphazardly arranged elevations and depressions are produced in the partly desiccated paper web, which, after being colored and finished, produces a sheet having thereon irregularly arranged shaded designs.

Having now particularly described my invention what I claim is:

1. The process of manufacturing paper having a relief-like effect which consists in mechanically producing directly on the paper web by haphazard occurrence, while in a partly desiccated condition on the wire cloth or wet felt, elevations and depressions, applying color to the elevations only of the web and finally finishing the paper in the usual manner.

2. The process of manufacturing paper having a relief-like effect which consists in subjecting the paper web, while in a partly desiccated condition on the wire cloth or wet felt to the action of yielding means arranged to produce haphazardly elevations and depressions, applying color to the elevations only of the web and finally finishing the paper in the usual manner.

3. The process of manufacturing paper having a relief-like effect which consists in subjecting the paper web, while in a partly desiccated condition on the wire cloth or
5 wet felt to the action of rotating sieve-rolls arranged to produce irregularly elevations and depressions, applying color to the elevations only of the web and finally finishing the paper in the usual manner.
- 10 4. The process of manufacturing paper having a relief-like effect, which consists in subjecting the paper web, while in a partly desiccated condition on the wire cloth or wet felt, to the action of mechanical means
15 arranged to produce directly on the web haphazard elevations and depressions, applying color to the elevations only of the web and finally finishing the paper in the usual manner.
5. A paper web having in its upper surface a colored design having a relief-like effect, such design being produced by impressing on the paper web while in a partly desiccated condition on the wire cloth or wet felt, haphazard elevations and depressions, applying color to the elevations only
20 of the web and finally finishing the paper in the usual manner.
- In testimony whereof, I affix my signature in presence of two witnesses.
- KUNO FRANZ.
- Witnesses:
JEAN GRUND,
CARL GRUND.