

C. H. WAITE & G. WALKER.
METHOD OF PRODUCING MOTTLED OR VARIEGATED PAPER.
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1,017,931.

Patented Feb. 20, 1912.

Fig. 1.

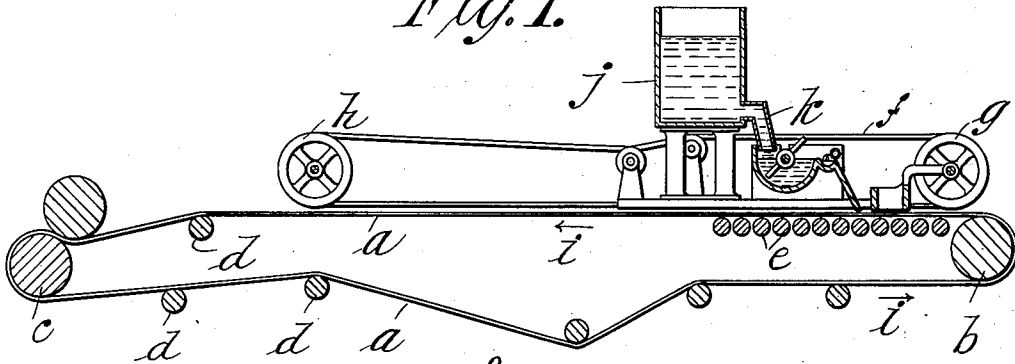


Fig. 2.

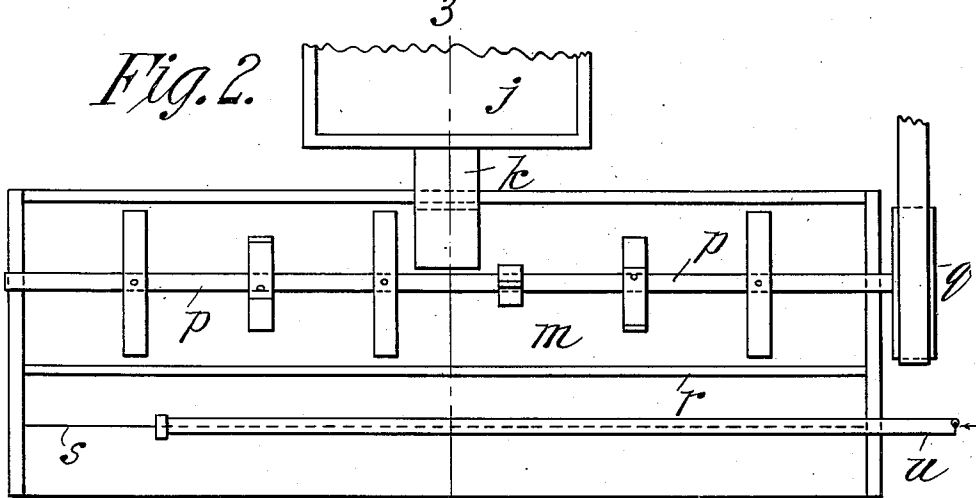


Fig. 3.

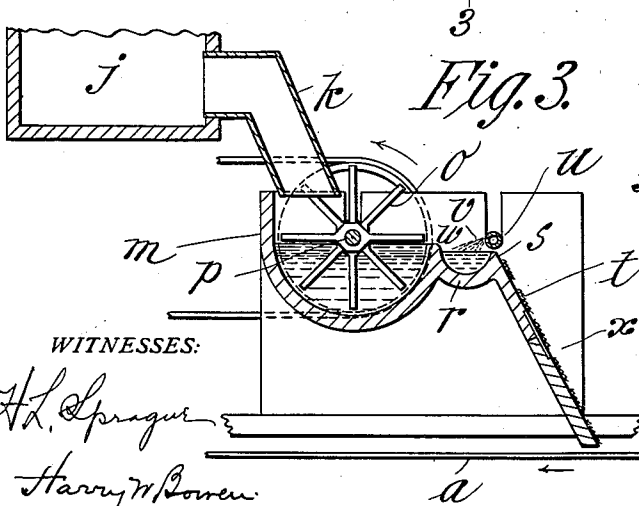
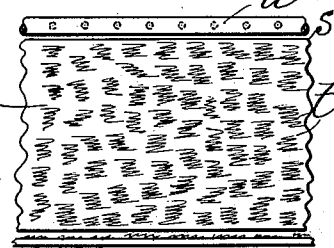


Fig. 4.



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METHOD OF PRODUCING MOTTLED OR VARIEGATED PAPER.

1,017,931.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, COLEMAN H. WAITE and GEORGE WALKER, citizens of the United States of America, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Methods of Producing Mottled or Variegated Paper, of which the following is a specification.

15 This invention relates to an improvement in paper making, and is especially concerned with the method of producing paper with a mottled or variegated appearance known as a "cloud" effect.

20 Broadly, the invention consists in flowing onto the soft pulp, (which is being conveyed through the paper making machine on the usual Fourdrinier wire) a suitable additional quantity of pulp of any desired color, whereby the intermingling of the two charges of pulp of different colors will produce the effect desired.

25 The invention further consists in subjecting the upper surface of the additional supply of colored pulp to a plurality of streams of water, in a spray like form, in order to break up the continuity or even upper surface of this pulp before it is allowed to flow down onto the pulp which is upon the Fourdrinier wire.

30 In order to fully and clearly understand the nature of the invention we have illustrated one form of apparatus whereby the invention may be carried into effect.

35 In the drawings forming part of this application,—Figure 1 is a longitudinal, sectional view, in side elevation, of a portion of a paper making machine showing the manner in which the invention is carried out. Fig. 2 is a plan view of the operative parts of the machine showing the agitator and the perforated pipe for spraying the pulp before it escapes onto the Fourdrinier wire, and Fig. 3 is a transverse, detail, sectional view on the line 3—3, Fig. 2, showing the tank for containing the colored pulp, and the means for agitating the same before it flows down onto the Fourdrinier wire, also the pipe for furnishing the spray for diluting the colored pulp. Fig. 4 is a view illustrating the manner in which the colored pulp flows down the incline and onto the endless wire conveyor.

Referring to the drawings, in detail, *a*

designates the usual Fourdrinier wire of a paper making machine with the ordinary supporting means therefor, as the rollers *b*, *c*, and *d*, and the tube rollers *e*.

f designates the deckle-strap which runs over the wheels *g* and *h*, and is in contact with the wire *a*. The pulp or "half stuff" as it is called, is flowed onto the Fourdrinier wire *a* in the usual manner, and is then conveyed through the paper making machine in the direction of the arrows *i*.

Located above the wire *a* is a tank *j* for containing the source of supply of colored pulp that is to be distributed and intermixed with the pulp on the traveling wire *a*.

k indicates the outlet for the contents of the tank *j*, which leads to a trough-shaped receiving receptacle *m* in which are located the agitator-arms *o* that are mounted on a shaft *p* to which a driving pulley *q* is attached. Located adjacent the trough *m* is a supplemental trough *r* having an overflow edge *s*, and across which the colored pulp flows onto and down the inclined member *t*, the lower edge of which terminates adjacent, and close to the wire *a*.

In order to cause the colored or tinted pulp in the tank *r* to flow down the inclined member *t* in a separated or flake-like condition, a pipe *u* is located adjacent the edge *s* and is provided with a series of outlet openings *v* for producing a spray of water, as indicated at *w*. This spray, after it strikes the upper surface of the pulp in the trough *r*, causes the same to be diluted, separated or scattered into small flakes or patches. In this condition the colored pulp flows down the inclined surface *t*, as shown in Fig. 4 at *x*, and when it comes into contact with that on the Fourdrinier wire *a* it will become intermixed therewith by reason of the side shaking action which is imparted thereto in the usual manner. The result is, that the finished product possesses the mottled or variegated appearance of a "cloud" effect, as it is termed.

It should be understood that we do not limit ourselves to the use of any particular apparatus for producing the results mentioned above; but the structure herein illustrated and described is merely one way of producing the kind of paper referred to; nor do we limit ourselves as to the particular location of the tanks or troughs which

contain the colored pulp, but in general it should be located near the tube rollers *e*.

By reason of the continuous flow of the colored pulp from the tank *j* into the
5 troughs *m* or *r* and over the edge *s*, after being thinned or diluted by means of the spray of water *w*, it flows in a steady stream in a separated condition down the inclined surface *t* onto the pulp which is being conveyed through the machine on the wire
10 belt *a*.

What we claim, is:—

The method of producing paper with a mottled or variegated surface which consists in conveying a mass of paper-pulp

through a paper making machine on the Fourdrinier wire and simultaneously causing a paper-pulp of different color to flow onto the pulp on said wire in a scattered and diluted condition by subjecting the upper
20 surface of the colored pulp to a spray of water which scatters and dilutes the same into small flakes before it flows onto the pulp on the Fourdrinier wire, whereby the variegated effect is produced.

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