

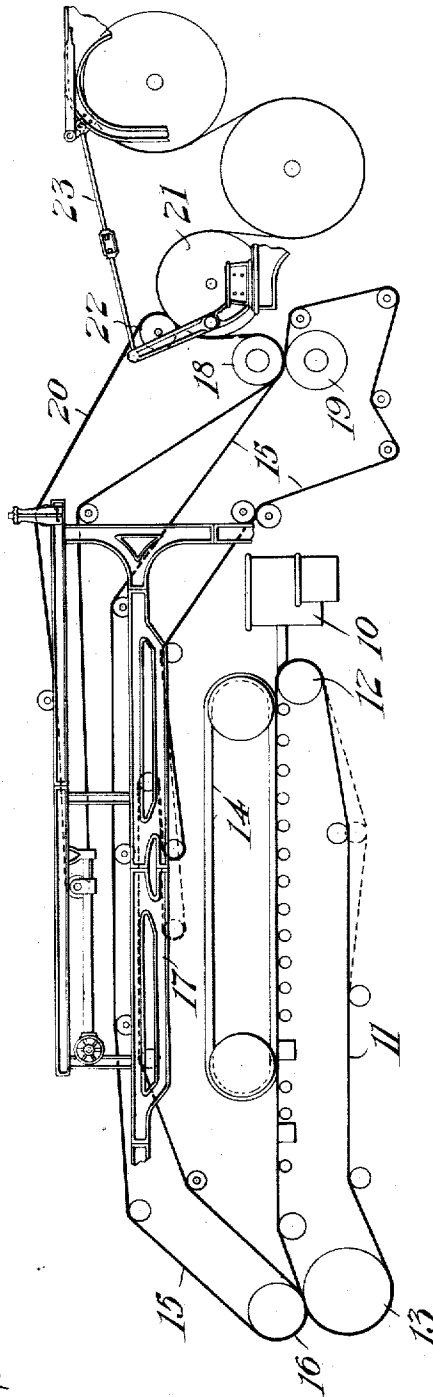
F. H. FULLER.
PAPER MAKING MACHINE.
APPLICATION FILED MAY 16, 1910.

1,013,288.

Patented Jan. 2, 1912.

2 SHEETS-SHEET 1.

Fig. 1.



WITNESSES

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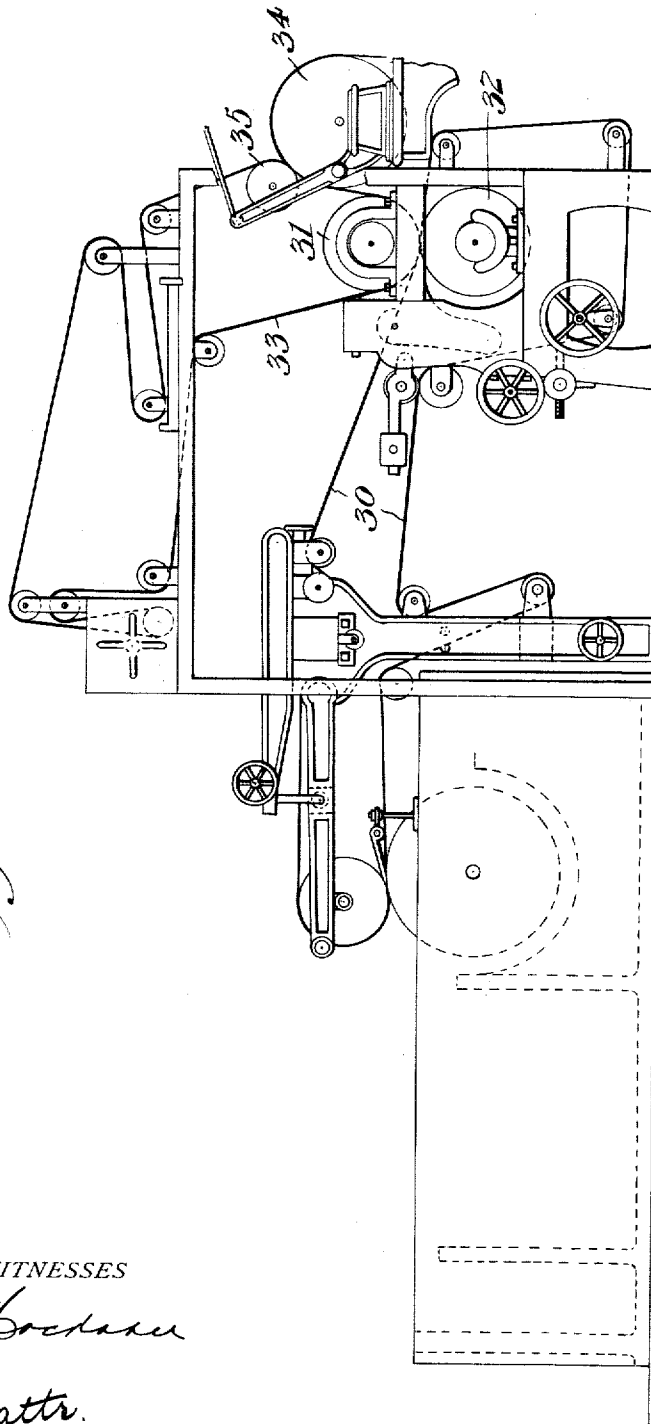


Fig. 2.

WITNESSES

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UNITED STATES PATENT OFFICE.

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PAPER-MAKING MACHINE.

1,013,288.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed May 16, 1910. Serial No. 561,561

To all whom it may concern:

Be it known that I, FREDERICK H. FULLER, a citizen of the United States, residing at Camas, in the county of Clarke and State of Washington, have invented certain new and useful Improvements in Paper-Making Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to paper machines, and especially to machines for handling tissue or other thin papers. Its object is to prevent such papers from sticking to the upper metal press-roll and to cause the sheet of tissue or other thin paper to be carried by a felt running under the top press-roll immediately to and around a large part of the circumference of the first drier.

This invention is especially applicable to the Harper-Fourdrinier type of machine, but is also applicable to other paper machines as, for example, to those of the cylinder type.

In the accompanying drawings, Figure 1, while in some respects a side elevation and section is, in effect, a diagrammatic illustration of my invention as applied to a Harper-Fourdrinier machine; and Fig. 2 is a similar illustration of my invention applied to a cylinder machine.

In Fig. 1, 10 represents a head-box from which the pulp flows to the making-wire 11, having the usual tension devices, suction-boxes, etc., and traveling around a breast-roll 12 and a couch-roll 13, and the width of the pulp course being, as usual, regulated by deckle-straps 14. The layer of pulp is transferred from the making-wire to the press-felt 15, which travels around an upper couch-roll 16 and over customary tension-rolls, etc., located on a frame 17, and elsewhere. The press-felt, pursuing the course indicated in the drawing, passes between an upper metal-surfaced press-roll 18 and a lower rubber-faced press-roll 19, and thence outward, downward and back to the starting point. 20 is a top felt running to or through adjusting and tensioning devices in the frame 17, and thence between the press-rolls 18 and 19 above the press-felt 15 and from the press-roll 18 almost directly

upward against the circumference of the first drier, this drier being of a series as illustrated. The felt 20 passes from the circumference of the drier 21 around a rubber-covered roll 22, which may be adjustably regulated by means of a hand-lever device 23.

In Fig. 2 the familiar features of a cylinder machine are illustrated, and a press-felt 30 is shown as running between a metal-surfaced press-roll 31 and a lower rubber-covered press-roll 32, and thence down and back to the front of the machine. The top felt is illustrated at 33 as passing about various tensioning and guiding devices in the upper part of the machine and running between the press-rolls 31 and 32, and thence directly upward against the circumference of the drier 34, and thence around the rubber-covered adjustable roll 35 to the upper frame.

In both figures the paper is indicated as passing around and from the driers.

I have not detailed the connection between the adjusting means 23 and the rolls 22 or 35, as that connection is mechanically obvious; and does not require an additional view. It will be observed that in these constructions the paper passes between two felts as they run between the press-rolls so that no opportunity is given the tissue or other thin paper to stick to the upper press-roll. This is possible because of the relative arrangement of the felts, the press-roll, the first drier, and the roll 22 or 35 running against the first drier. This arrangement also permits the paper from the press to be taken almost immediately to the first drier.

In addition to the marked advantages of preventing the paper from sticking to the upper press-roll and carrying it on the under side of the top felt immediately to the first drier I secure also the advantage of using a common and familiar equipment, while at the same time obtaining the full benefit of the first drier by carrying the paper in contact with a large part of its area. In fact, the paper as it passes up from the press-rolls hugs the adjacent portion of the circumference of the first drying cylinder, before it passes over the upper and outer part of the circumference, or, in other words, first contacts with the drier and leaves it at

substantially diametrically opposite points, or at points below the line of a horizontal diameter of the drier.

I claim:—

5 1. In a paper-making machine, the combination of couch-rolls, press-rolls, a drier, and a pair of felts, one felt passing around a couch-roll and between the press-rolls and conveying the paper from the couch-roll to
10 the press-rolls, the other felt also passing between the press-rolls and conveying the paper from the press-rolls or from the first felt into contact with the drier.

15 2. In a paper-making machine, the combination of couch-rolls, press-rolls, drier, a bottom felt and a top felt, the bottom felt passing around the couch-roll and between the press-rolls, the top felt passing

between the press-rolls and conveying the paper from the press rolls or from the bottom felt into contact with the drier. 20

3. In a paper-making machine, the combination of press-rolls, a bottom felt and a top felt, a drier and an adjustable roller bearing on the drier, the top felt carrying 25 the paper immediately to the drier from the press-roll or from the bottom felt and between the adjustable roller and drier.

In testimony whereof I have hereunto signed my name in the presence of two sub- 30 scribing witnesses.

FREDERICK H. FULLER.

Witnesses:

O. F. JOHNSON,
E. BAUMAN.