A. J. DAVIES.

FOURDRINIER MACHINE.

APPLICATION FILED MAR. 8, 1917.

1,260,878.

Patented Mar. 26, 1918.

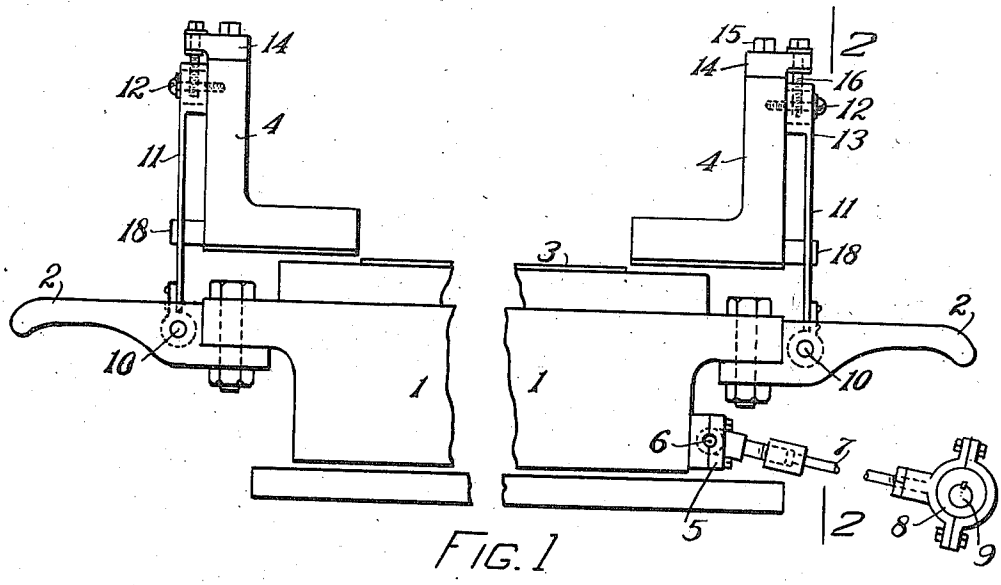


FIG. 1

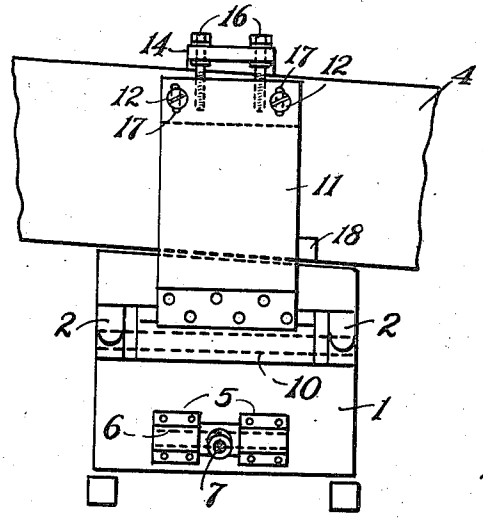


FIG. 2

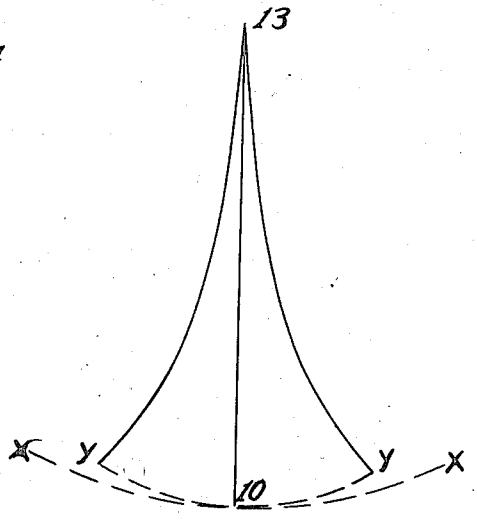


FIG. 3

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FOURDRINIER MACHINE.

1,260,878. Specification of Letters Patent. Patented Mar. 26, 1918.

Application filed March 8, 1917. Serial No. 153,523.

To all whom it may concern:

Be it known that I, ALBERT J. DAVIES, a citizen of the United States, residing at Kenogami, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Fourdrinier Machines, of which the following is a specification.

This invention relates to paper-making machines of the Fourdrinier type and has particular reference to the method of reciprocating the suction-box, in order to prevent the wire apron from grooving the top of same.

In this application, I accomplish this result by a motion that is neither rectilinear nor oscillatory, as will be described by reference to the accompanying drawings, which form part of this specification, and in which—

Figure 1 is a cross-elevation of a portion of a Fourdrinier machine showing both ends of one box with my device applied.

Fig. 2 is an end elevation of Fig. 1, in section on line 2—2, Fig. 1.

Fig. 3 is a diagram.

The box 1 is equipped with handles 2, 2 and, as usual, contacts beneath apron 3. The side rails 4, 4 are stationary and may be of any desired shape. At one end of box 1 I mount a bearing 5 for a pin 6 which carries one end of an adjustable eccentric rod 7, the other end of which carries the eccentric 8, fast on shaft 9, which is the source of reciprocating power.

Between handles 2 and at joint 10, I mount, pivotally by preference, one end of a vertical, elastic bar or plate 11 which forms the suspending means for box 1. Plate 11 is preferably fast at 12 to rail 4 in such a manner that when shaft 9 is rotated, box 1 will swing about the point 13 as a fulcrum. This action is best illustrated, in exaggerated form, by Fig. 3, where 10 and 13 represent the same relative positions as seen in Fig. 1. If the movement of box 1 was to be truly oscillatory, the path of point 10 would be the curve X—10—X, concentric with point 13. As, however, the suspending radius 10—13 gradually shortens as it departs from the vertical, the real path of motion of point 10 is, approximately, the curve Y—10—Y, with the plate 11 taking the form of an irregular curve, as 13—Y, by reason of its elasticity. This motion I characterize as an "elastic curve" and it is this that forms the main essential of my invention.

The amplitude of motion required for box 1 is extremely small and there is no practical departure from the rectilinear movement of box 1 which is the most desirable and, at the same time, most expensive to maintain.

For purposes of vertical adjustment of box 1, I provide a block 14, fast at 15 on rail 4, and mount therein threaded rods 16 which are connected with the upper end of plate 11. Slots 17 permit the necessary vertical movement of the latter.

To guard against the dragging tendency of apron 3, I provide guides 18 to preserve the alinement of box 1.

I do not limit myself to the precise form illustrated.

What I claim is,—

1. In a Fourdrinier machine, a suction-box; elastic suspending means for said box; and mechanism for causing limited reciprocating movements of said box.

2. In a Fourdrinier machine, a suction-box; elastic suspending means for said box; and mechanism for causing said box to swing on said means with a varying radius.

3. In a Fourdrinier machine, a suction-box; suspending means for said box comprising a vertically disposed elastic bar, and a fixed support for one end of said bar; in combination with mechanism for causing limited reciprocating movements of said box.

4. In a Fourdrinier machine, a suction-box; suspending means for said box comprising a vertically disposed elastic member, and an adjustable, fixed support for one end of said member; in combination with mechanism for causing limited reciprocating motions of said box.

5. In a Fourdrinier machine, a suction-box; elastic suspending means for said box; and adjustable mechanism for causing limited reciprocations of said box.

6. In a Fourdrinier machine, a suction-box; suspending means for said box comprising a vertically disposed elastic member; a pivotal connection between said box and said member; and a fixed support for the opposite end of said member.

7. In a Fourdrinier machine, a suction-box; mechanism for causing limited reciprocations of said box; and suspending means for said box; in combination with means for causing said box to reciprocate on a varying radius.

8. In a Fourdrinier machine, a suction-box; elastic suspending means for said box; reciprocating mechanism for moving said box; and means for guiding said motions.

9. In a Fourdrinier machine, a suction-box; elastic suspending means for said box adapted to permit reciprocating movements thereof and further adapted to cause said box to reciprocate on an arc of varying radius when the proper impulse is applied; and means for guiding such reciprocations.

In testimony whereof, I hereto affix my signature, in presence of two witnesses, this 2nd of March, 1917.

ALBERT JOHN DAVIES.

Witnesses:

FRANK HANEY,

WILLIAM WISHART.