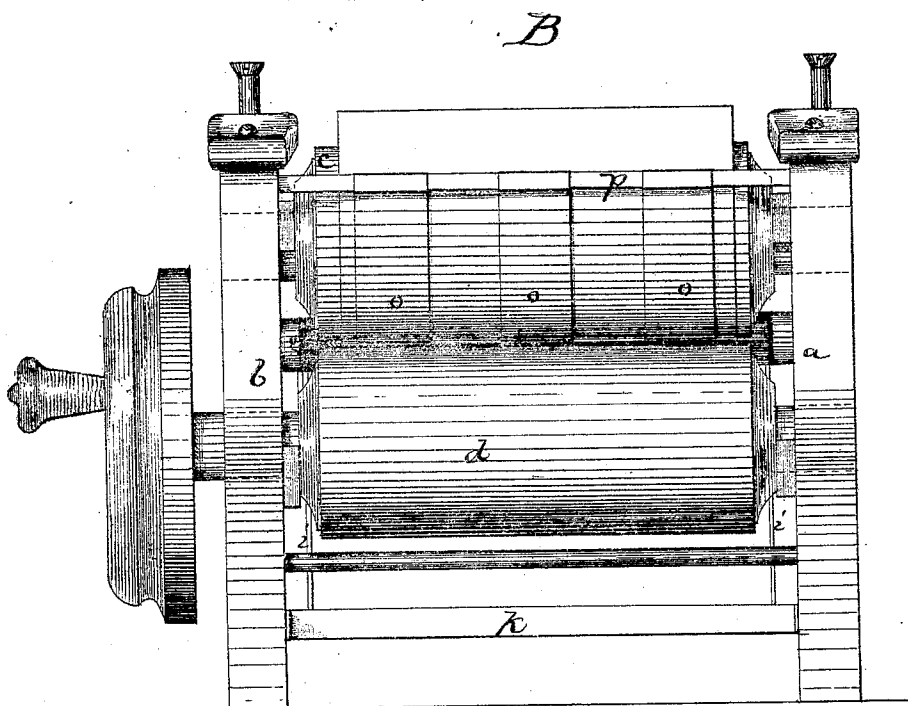
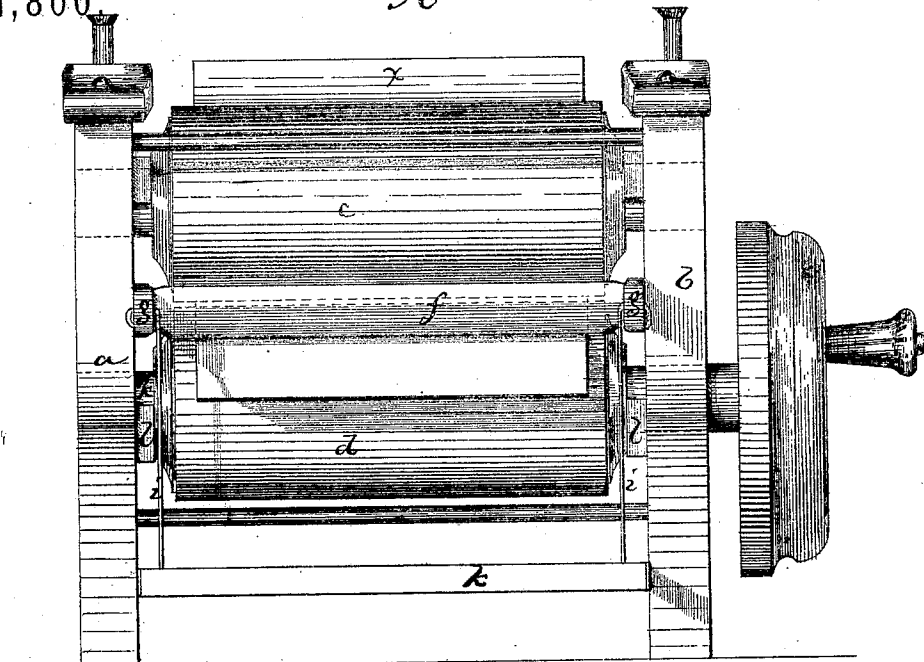


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2 Sheets--Sheet 1.

STEPHEN MOORE.
Improvement in Paper Calendering Machines.
No. 121,800. *A* Patented Dec. 12, 1871.



Witnesses. } M. W. Frothingham.
 } L. H. Latimer.

Stephen Moore.
By his Atty.
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(108.)

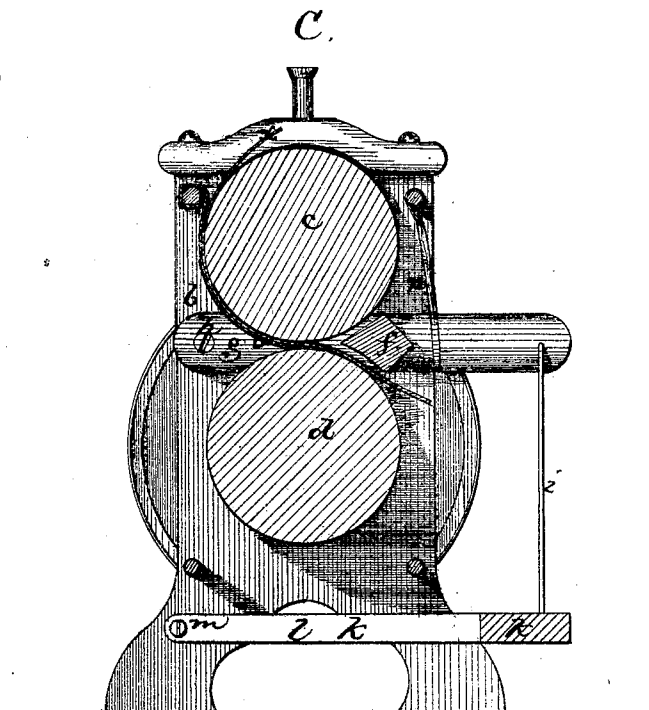
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Improvement in Paper Calendering Machines.

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UNITED STATES PATENT OFFICE.

STEPHEN MOORE, OF SUDBURY, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND HOMER ROGERS, OF SAME PLACE.

IMPROVEMENT IN PAPER-CALENDERING MACHINES.

Specification forming part of Letters Patent No. 121,800, dated December 12, 1871.

To all whom it may concern:

Be it known that I, STEPHEN MOORE, of Sudbury, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Calendering-Machines; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My invention relates to an improvement in calendering pasteboard, card-board, leather board, and other thick coarse paper. The invention consists in combining with a pair of calendering-rolls a straight-edge or gauge-bar hung in a treadle-frame, said frame having a spring which holds the bar normally away from the lower roll so as to leave a free entrance for the board to and between the rolls, depression of the treadle after the edge of the board has been entered between the rolls pressing the bar upon the board and to the surface of the lower roll, and acting as a straightener to remove the wrinkles from the board prior to the bite and calendering action of the rolls upon it, thereby preventing the wrinkles from being calendered into the surface of the board.

In operating these machines for calendering pasteboard and similar stock two attendants are generally necessary, one to feed the stock into the machine and another to take the calendered stock and hand it back to the first, that he may again run through if not sufficiently calendered, the back of the machine not being accessible to the feeder-in at the front of the machine for him to take the calendered stock.

In my construction I combine with the rolls guides, so arranged as to lead the calendered board from the rolls up and back over the top roll into position to be taken by the feeder-in, thereby obviating the necessity of a second attendant. This improvement constitutes another feature of my invention.

The drawing represents, at A, B, and C, respectively, a front elevation, a rear elevation, and a vertical cross-section of a machine embodying the invention.

a b denote two housing-stands, having suitable boxes or bearings, in which are journaled the shafts of two calender-rolls, *c d*, the lower bear-

ings being stationary and the upper ones movable, the latter being forced down by the stress of suitable springs having their pressure adjustably regulated by suitable screws. In front of the rolls *c d* is a bar, *f*, extending from two opposite arms, *g g*, each of which is pivoted, as seen at *h*, these two arms being connected, by rods *i i*, with a treadle-bar, *k*, which is fixed to the front ends of two arms, *l l*, each pivoted, as seen at *m*. Suitable springs *n* raise the arms *g g* and normally hold the bar *f* up so as to leave an open and free space between the bottom of the bar and the surface of the lower roll, into which space the front edge of the board to be rolled is entered to bring it between and to the bite of the rolls. The under surface of this bar is preferably made concave to conform and fit to the surface of the roll, and by forcing down the treadle the bar *f* is forced down to the roll *d*.

In operating the machine the edge of the board *x* is passed under the bar *f* and between the rolls, and as the rolls begin to bite upon it the bar is forced down by the treadle hard against the board, and as the bar is then practically stationary with respect to the rolls, it acts as a gauge or throat-piece to remove all wrinkles or obstructions from the board, taking out the wrinkles instead of crushing them; the subsequent action of the rolls then calendering a uniform surface instead of a surface more or less wrinkled, which wrinkles, but for the bar, would have more or less pressed into the surface of the board. As the bar is normally held away from the roll it may be brought into action by the operator in accordance with the quality of the board; or, in other words, the bar is brought against the board as the condition of the surface thereof may render desirable. When the calendered edge emerges from the rolls it strikes upon the ends or points of guide-fingers *o*, (which extend in between the rolls almost to their plane of contact,) these fingers extending up and partially around the upper roll, as seen at B and C, the upper ends being fastened upon a cross-bar or rod, *p*. As the board is pressed forward these fingers guide the edge, so that it runs up and partially over the roll, as seen at C, thus reaching a position where it can be readily seized by the attendant who presented it to the rolls, he then reintroducing it, if necessary, or laying it on one side if sufficiently calendered.

I claim—

1. In combination with the calender-rolls or cylinders *c d*, the presser and gauge-bar *f*, automatically held above the roll *d* by a spring or springs and forced down to the surface thereof by the treadle, substantially as shown and described.
2. In combination with the rolls *c d*, the guide-fingers, arranged to conduct the edge of the cal-

endered sheet to or toward the front of the machine, substantially as shown and described.

Executed the 2d day of September, A. D. 1871.
STEPHEN MOORE.

Witnesses:

H. H. GOODNOUGH,
BENJ. H. RICHARDSON.

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