

(No Model.)

J. ALBEY.

STRAW BOARD LINING MACHINE.

No. 325,779.

Patented Sept. 8, 1885.

Fig. 1.

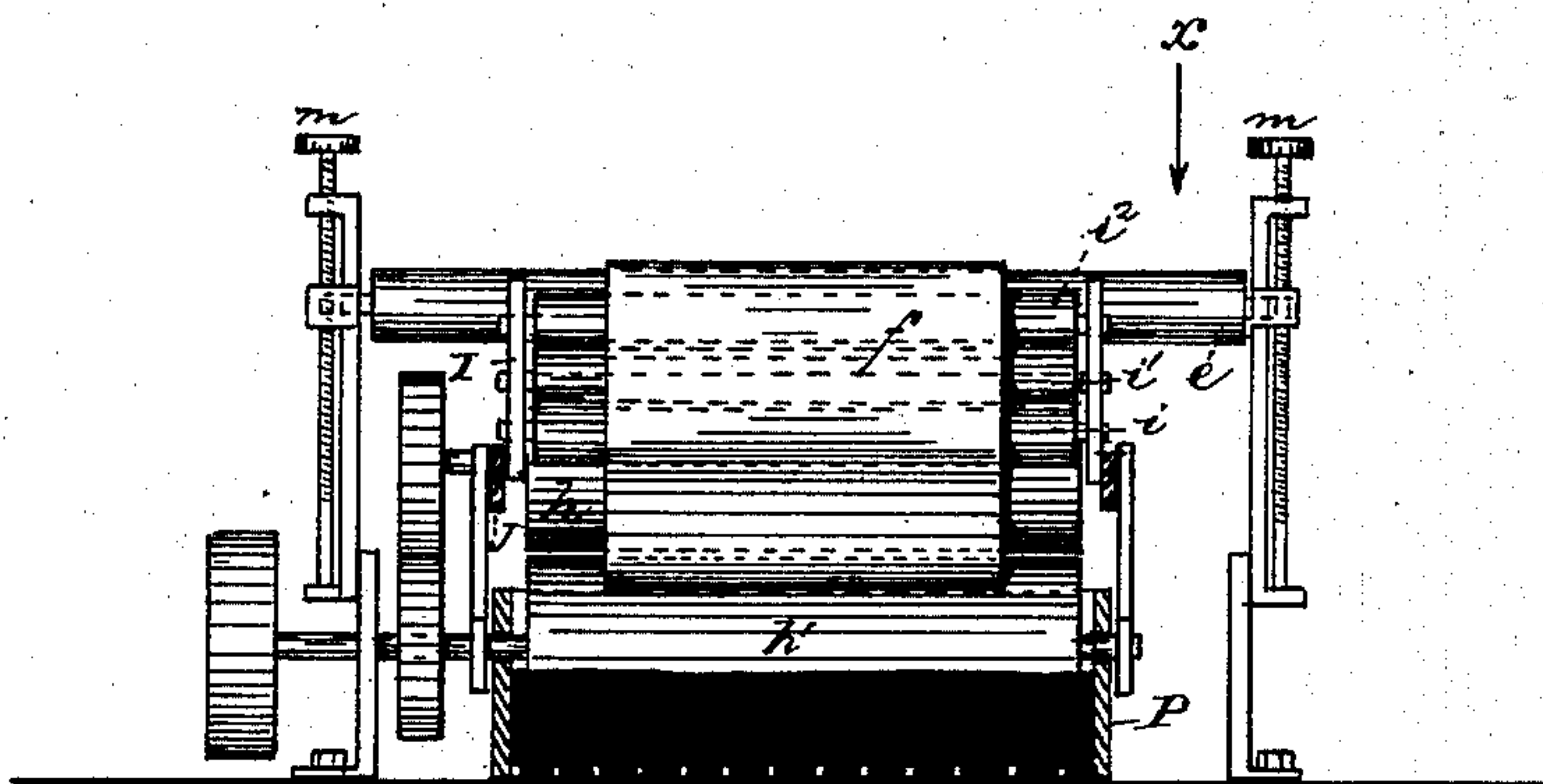
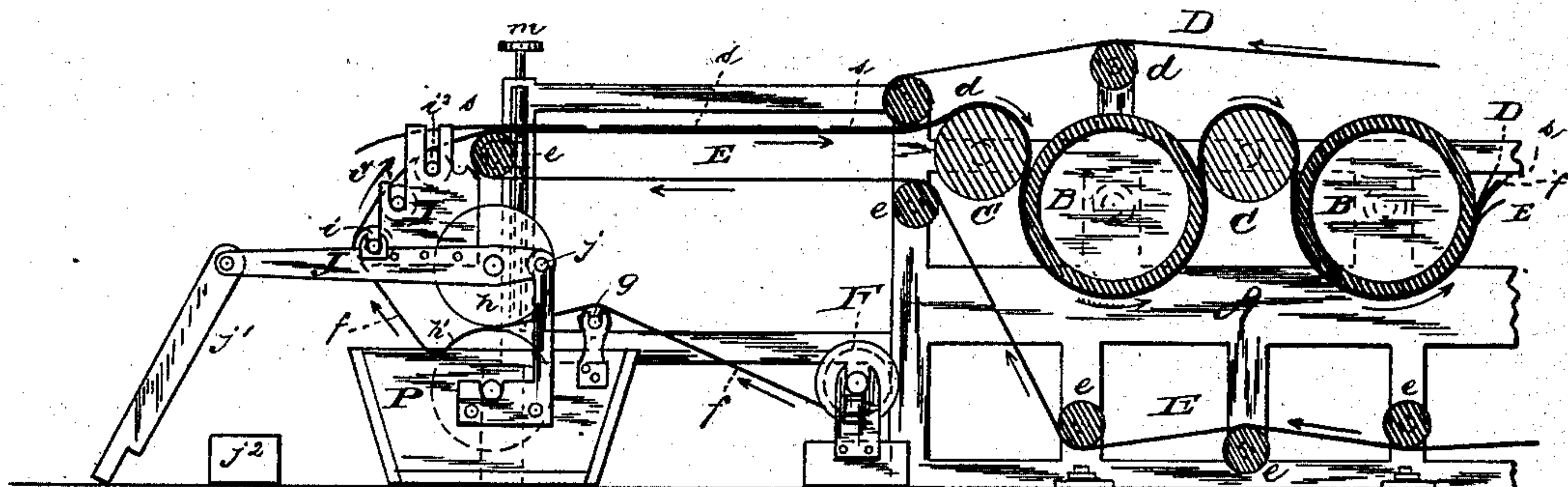


Fig. 2.

Attest:

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UNITED STATES PATENT OFFICE.

JOHN ALBEY, OF MONTCLAIR, NEW JERSEY, ASSIGNOR TO F. A. WHEELER & CO., OF SAME PLACE.

STRAW-BOARD-LINING MACHINE.

SPECIFICATION forming part of Letters Patent No. 325,779, dated September 8, 1885.

Application filed December 8, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN ALBEY, a citizen of the United States, residing at Montclair, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Straw-Board-Lining 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

In said drawings, Figure 1 is a section of a machine, one end of which is broken away, illustrating my invention, taken through line *x* of Fig. 2, which is an end elevation of Fig. 1.

The object of this invention is to provide a machine for more effectually lining straw or other board; and it consists of mechanism constructed, arranged, and operating substantially as illustrated in the drawings, and as described and claimed hereinafter.

A in the drawings is the frame of the machine.

B are the drying-rolls, and C C' the guide-rolls to the rolls B.

D is the upper and E the lower felt aprons, which come together at the roll C', and pass between and around the rolls B C, &c., out to the end of the machine, the continuation of which is but a reduplication of that shown at the right of the figure.

d are the guide-rolls for the upper felt, and *e* those for the lower felt.

The lining mechanism consists of a cylinder, F, around which the continuous sheet of lining-paper *f* is wrapped or rolled, a guide-roll, *g*, pasting-rolls *h h'*, of which the lower, *h'*, is the paste-roll, and guide-rolls *i i' i''*, by which the paper is fed upon the apron E.

P is the paste trough or vat.

The upper pasting-roll, *h*, has a bearing in the frame J, pivoted at *j* to an upright, *k*, secured to the vat. The lower portion of said upright furnishes a bearing for the journal of the paste-roll *h'*. The side frame, I, which receives the guide-rolls *i i' i''*, is bolted to the frame J, or may be constructed integrally therewith. By means of this construction the pasting-rolls can be separated by lifting the frame J and resting the arm *j'* upon the block

j'', thereby permitting the lining-paper to be inserted between the rolls or removed therefrom. As the guide-rolls and upper pasting-roll are raised they carry the paper with them and separate it from the lower paste-roll, so that when the machine is at rest the paper is free from the paste-roll and does not adhere thereto.

The felt apron E may be continued around the guide-rolls *i i' i''*, if desired, to assist the movement of the paper lining.

The power is communicated to the roll *h'*, as indicated in Fig. 2.

m are devices for adjusting the roll *e*.

The operation of the machine is as follows: The paste in the vat is taken up by the roll *h'* as it revolves therein, which, as the lining is drawn between the rolls, covers the under side with a sufficient quantity of the paste to cause the boards to adhere. After the paper leaves the paste-rolls it passes up over the guide-rolls *i i' i''*, the number of which may be increased or diminished, upon the apron E, thereby reversing the paper, bringing the pasted side uppermost, upon which the sheets of board *s* are laid one after another, as indicated in Fig. 1. The paper with the board thereon is then carried by the aprons D and E between the same, around the rolls C' B C B, &c., thereby pressing and drying the board and lining, and finally passing out of the machine, where the sheets are separated, either by cutting or tearing the lining between each sheet of board, or in any suitable manner.

To line both sides of a continuous sheet of pasted straw-board with a continuous sheet of lining-paper is old, as also lining one side of straw-board by applying the lining-paper in a dry condition to the board after the said board has been covered with paste; and, further, to apply straw-board, either in sheets or a continuous strip, to a continuous sheet of lining-paper previously pasted, or to apply the pasted lining-paper to the board, is also known to those acquainted with the progress of the art; but the peculiar process which I desire to cover is new, as well as the mechanism and the arrangement thereof employed to carry on the steps of the process, which consists in running the paper lining between rolls, one of which is adapted to transfer paste from the vat to the under side of the lining, the

upper roll being a presser, both of said rolls being placed below the felt apron B, and then carrying the lining upward upon a flat moving surface or felt, as B, reversing the said lining and bringing the pasted side uppermost, and finally laying the sheets of board upon the pasted paper and passing the united board and paper between two aprons or moving surfaces around and between pressing and drying rolls. By means of carrying the pasted lining-paper from beneath up over the guide-rolls *i i' i''*, the number of which may be increased or diminished, upon the felt apron the paper is kept smooth and free from wrinkles, and the paper is still further prevented from crinkling upon the board by employing two felt aprons, between which the united board and paper is pressed and held in close contact, and by which they—viz., the board and lining—are carried around and between the heating and pressing rolls.

Straw-board, being porous, absorbs the paste very soon after it is applied, so that when the dry paper and pasted board come together the board is quite dry, and a very imperfect union of the paper and board results; but when the paste is applied to the paper the surface of which is calendered all the paste remains on the surface, and when the boards are laid thereon and pressure applied a perfect union is caused over the entire contiguous surfaces. Moreover, the adhesion is made still more complete by the wetting or dampening of the paper by the paste, as the paper in shrinking as it is dried clings more tightly to the board. This method is also preferable, as the operator, in laying the board, when it is applied in sheets, directly upon the pasted paper, can so adjust them as to utilize all of the lining without wasting any, which is a point of considerable practical advantage, since under the old processes a great deal of material was rendered useless, and consequently destroyed, not only by the board and lining being beyond the control of the operator, but also by reason of the imperfect adhesion of the lining.

It is evident that a second continuous strip

of paper may be run through the paste-rolls shown, or independent rolls, and carried up over the top of the board and be united therewith on the uppermost side, thereby lining the boards on both sides.

By applying the board to the paper it is not necessary to cut the paper to separate the boards, as the edges of the sheets tend to cut the paper, a very slight effort on the part of the operator being sufficient to separate them.

I am aware that board-lining machines have been devised in which the paper is pasted and reversed and the board laid upon the pasted paper and united therewith by passing between the pressing-rolls, as in the patent to Dickerman, No. 124,258. Such machines, however, including Dickerman's, are not adapted to lift the paper from the paste-roll; neither have they the guide-rolls, pivoted frame, &c., which are distinctive features of my invention.

Having thus described my invention, what I desire to claim is—

1. In a board-lining machine, the combination, with the guide-rolls *i i' i''* and the upper and lower pasting-rolls, of mechanism for lifting said guide-rolls and the upper pasting-roll simultaneously, thereby separating the pasting-rolls, for the purpose specified.

2. In a board-lining machine, the combination, with the guide-rolls and upper pasting-roll, of a pivoted frame upon which said guide and pasting rolls are journaled, provided with a lifting-arm, all said parts being arranged and operating for the purpose set forth.

3. In a board-lining machine, the combination of a lining-roll, F, guide-roll to direct the lining-paper to the pasting-rolls, pasting-rolls, guide-rolls *i i' i''*, and aprons E and D, all said parts being arranged and operating for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 26th day of November, 1884.

JOHN ALBEY.

Witnesses:

FREDK. F. CAMPBELL,
JULIUS H. WHEELER.