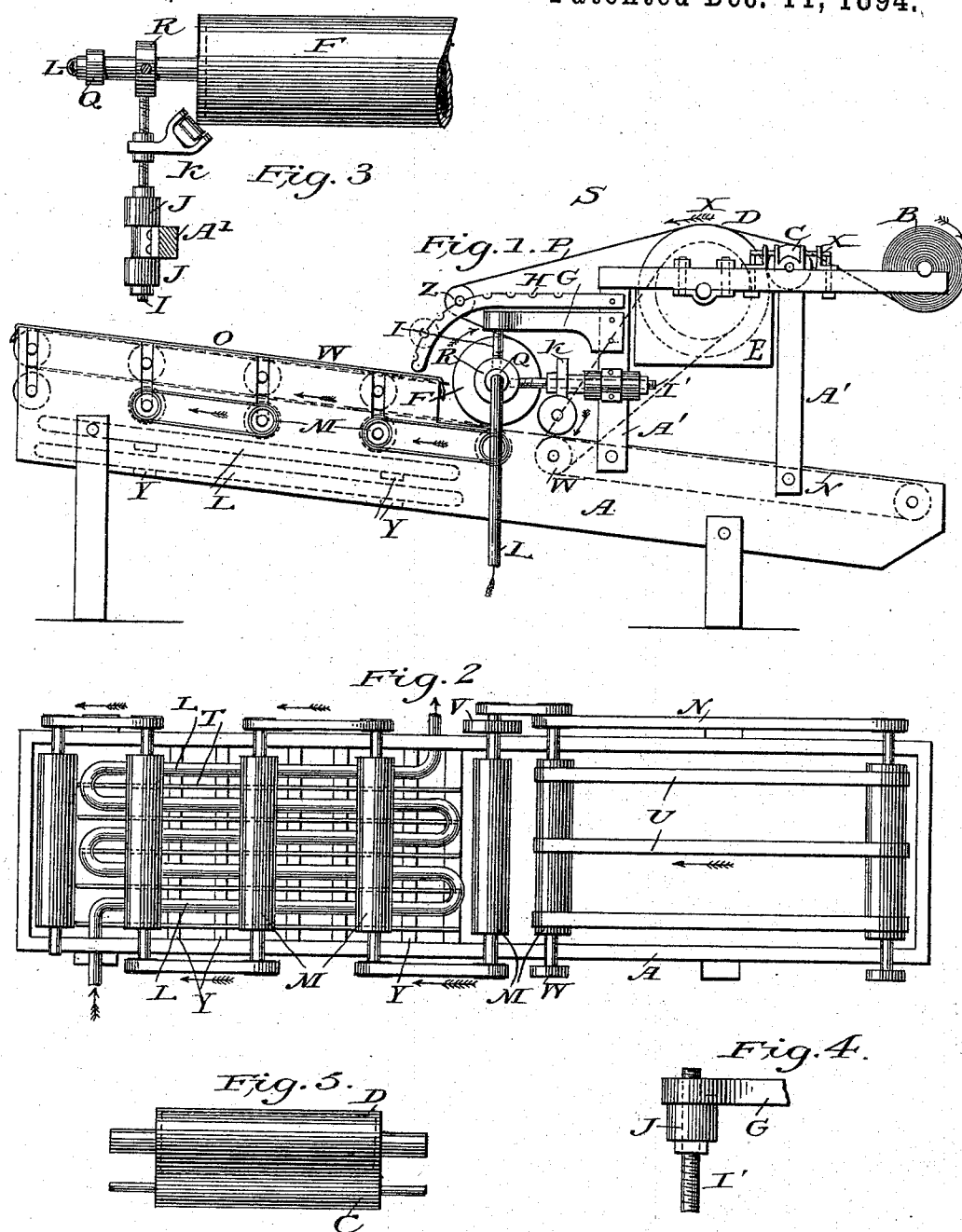


(No Model.)

L. BLESSING.  
STRAWBOARD LINING MACHINE.

No. 530,502.

Patented Dec. 11, 1894.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

LOUIS BLESSING, OF JACKSON, MICHIGAN.

## STRAWBOARD-LINING MACHINE.

SPECIFICATION forming part of Letters Patent No. 530,502, dated December 11, 1894.

Application filed May 31, 1893. Serial No. 476,192. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS BLESSING, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented a new and useful Strawboard-Lining Machine, of which the following is a specification.

My invention relates to improvements in strawboard lining machines, in which are used a paste composed of wheat flour, and water, which sticks the paper to the strawboard, which operates in conjunction with rotating pasting rolls, and steam heating drying, and propelling rolls. The strawboard and paper then passes over hot steam pipes, for the purpose of drying up the water used to make the paste, and the objects of my invention are, first, to make a machine that can be used in paper box factories, that will line straw board, in sheets, or a continuous piece; second, to afford facilities for the proper adjustment of the steam heated roller independently of the other rollers, in respect to the thickness of the straw board to be lined. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1. is a vertical side section of the entire machine. Fig. 2. is a top view of the machine as it appears after the removal of the paper roll, and paste trough, and paste rolls. Fig. 3. is a view of one end of the heated roll with its supporting devices. Fig. 4. is a broken section of the brackets, showing the perpendicular rods, and the rubber, or spiral springs. Fig. 5. is a plan view of the paste and cutoff rolls, removed from the machine. Similar letters refer to similar parts throughout the several views.

The sides A of the frame consist of pieces of timber running the whole length of the machine, with ends fastened to the side timbers, and having a tight bottom for the steam heated pipes, L, to rest on. The upright posts, A', are attached to the side timbers, A, and have plates attached to the top thereof. On these plates are located the roll of paper, B', the paste cutoff roll, C, the paste roll, D, and the paste trough, E. On the inside of the upright posts, A', the notched circle irons, H, and the brackets, G, are fastened. These circle irons H have round cavities on

their outer circle, for the purpose of receiving the journals of the roller, Z. The object of these circle irons, H, is to change the position of the roller, Z, which carries the pasted paper, P. By moving this roll forward, and down on the circle irons, it brings the pasted paper P, in contact with more of the surface of the hot roll, F. By moving the roller, Z, back, the pasted paper does not come in contact with so much of the surface of the hot roll, F. The more the paper laps on the hot roll F, the drier it is made.

Thick paper requires more hot surface than thin paper. I have found in practice, that it is necessary to dry the pasted paper, P, to a certain degree of dryness, before it comes in contact with the straw board to be lined.

In order to cause the pasted paper to adhere firmly to the straw board, and not blister, in drying, I employ the adjustable roller, Z, in combination with the steam heated roll, F, as shown in Fig. 1. The hot roll F, is a hollow roll having a steam pipe, L, inserted at one end, and an outlet at the other end. On the gudgeons of the heated roll F, there are two collars, R, R. On these collars, on the top side, the perpendicular rods, I, rest, and extend upward; the upper ends of these rods passing loosely through holes in the outer ends of the brackets, G. On these rods I, there are rubber (or spiral) springs, J. A thread is cut on these rods either from the top down, or from the bottom up, and a nut inserted on the thread, on the under side of the springs, J. The object of this thread and nut on these rods I, is to exert a downward pressure on the steam heated roll F. The horizontal rods I', have threads cut on them also, on the ends which are to be inserted in the collars, R. Holes are made in the collars, R, and threads cut in them. The rods, I', are then screwed firmly in the collars. These rods, I', extend back to the upright posts, A', and are held to the posts by boxes. The holes in these boxes are larger than the rods, I'. Therefore they have a chance to move therein and not bind. On these rods I', a thread is cut from the outer end, and three nuts inserted on the thread. Two of these nuts hold the arm, K, firmly in position. The other one is for the purpose of exerting pressure on the rubber or spiral springs, J, and for

adjusting the heated roll, F. It will be seen this heated roll F, by the use of the springs, J, on the rods, I, and I', is permitted a rising and falling, and backward and forward motion.

- 5 The guide arm, K, has a roller in it, for the purpose of guiding the steam heated roll, F, endwise.

Q is a stuffing box for the purpose of preventing the escape of steam.

- 10 N, is a belt, giving motion to the rolls having the carrier belts, U, which deliver the straw board to the feed rolls, M, which carry the straw board, and paper over the hot steam drying device, and out of the machine.

- 15 L, is the drying device, and is located as shown for the purpose of drying the lined straw board, and paper, which rests on supports, Y, Y, which are located crosswise of the frame.

- 20 The carrying rolls, M, and the heating device, L, are all located in an inclosed hot air chamber, W, made by the end, and sides, and bottom of the frame, A, and a heavy linen canvas, O, which is fastened to the top edge

- 25 of the side rails, A. The carrying rolls, M, are located crosswise in said heated chamber, and directly above the heating device, and inclosed in the hot air chamber, W. These rolls get very hot and greatly assist in drying  
30 the straw board and paper as it is passing through between the rolls, and out of the machine.

T, are supports for the paper to rest on as it is passing from one roll, M, to the other.

P, is the paper, indicating the course it travels passing through the machine. 35

E, is the paste trough.

D, is the paste roll.

C, is the paste cutoff roll, journaled in boxes, X. 40

S, is the belt passing around the pulley, V, by which the machine receives its motion.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a straw board lining machine the combination of the circle irons H, having journal notches on their convex surface, the roller, Z, journaled on said circle irons, and capable of adjustment thereon with the automatic adjustable steam heated roll, F, substantially as and for the purpose specified. 45 50

2. In a straw board lining machine, the combination of the steam heated roll, F, having collars, R, on the gudgeons thereof, the brackets, G, the perpendicular rods, I, located loosely therein, and resting on said collars, springs, J, held on said rods, the horizontal rods, I', screwed into said collars, R, and journaled loosely in the posts, A', guide arms K, secured upon rods, I', and having a guide roller adapted to engage roll F, springs, J, held on rods I', on each side of the post, A', substantially as and for the purpose set forth. 55 60

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Witnesses:

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