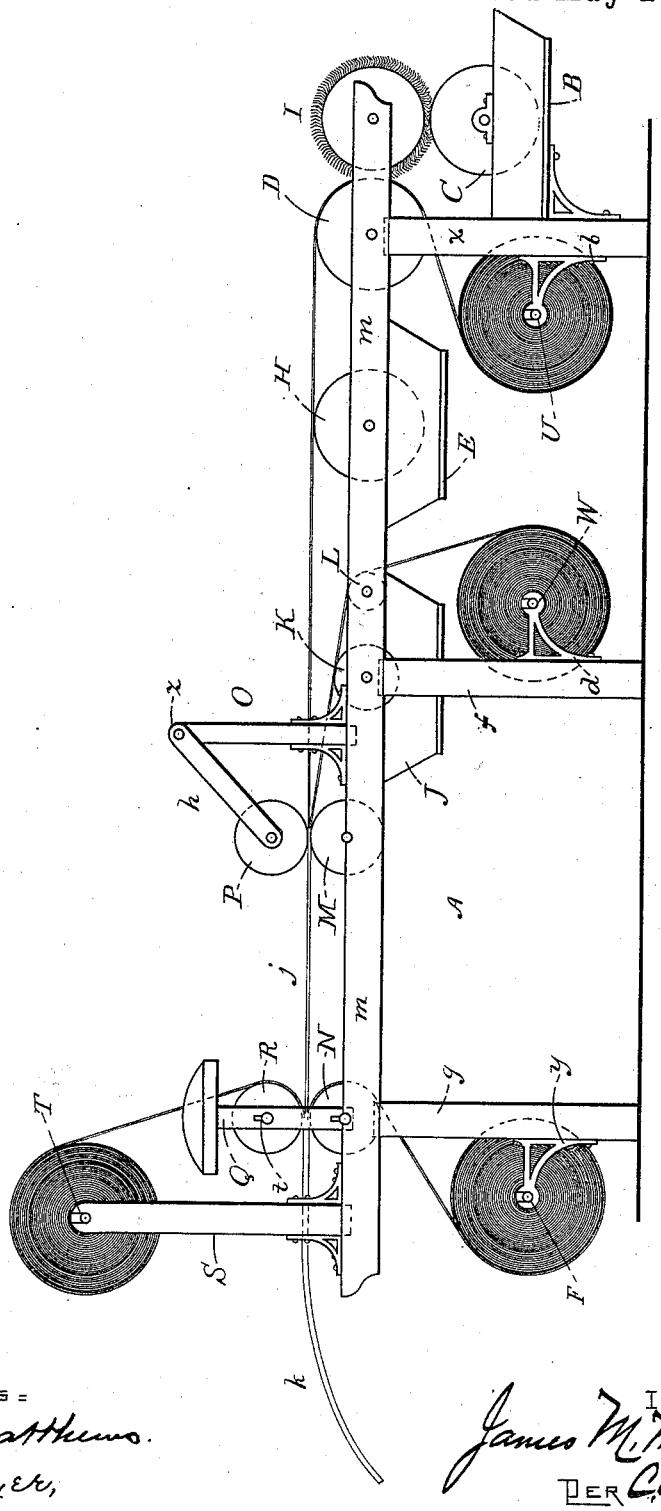
(No Model.)

J. M. McCAUSLAND.

PAPER BOARD MACHINE.

No. 383,744. Patented May 29, 1888.



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PAPER-BOARD MACHINE.

SPECIFICATION forming part of Letters Patent No. 383,744, dated May 29, 1888.

Application filed June 23, 1887. Serial No. 242,261. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. McCAUSLAND, of Pepperell, in the county of Middlesex, State of Massachusetts, have invented a certain new and useful Improvement in Paper-Board Machines, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which the figure is a side elevation of my improved machine represented as in use.

Like letters and figures of reference indicate corresponding parts in the drawing.

My invention relates to that class of machines for manufacturing paper-board in which a series of paste-troughs and rollers are employed for pasting the strips or layers of paper composing the board; and it consists in a novel construction and combination of parts, as hereinafter more fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawing, A represents the frame-work or body of the machine, which may be constructed of any suitable materials and of any suitable size or dimensions or in accordance with the kind and quality of board to be manufactured.

Mounted horizontally on the front legs, *x*, of the frame A there is a paste-trough, B, provided with a paste-roll, C, which is journaled horizontally therein, as shown at the right of the drawing. A guide-roll, D, is journaled horizontally in the side rails, *m*, of the frame-work immediately above the legs *x*.

Between the front legs, *x*, and central legs, *f*, there is a horizontally-arranged paste-trough, E, provided with a paste-roll, H, said trough being supported by the rails *m*, and said roll journaled horizontally therein. A paste-trough, J, is also supported horizontally on the rails *m* above the legs *f* and provided with a horizontally-arranged paste-roll, K, which is journaled in said rails.

Journaled horizontally in the rails *m*, at the front of the trough J, there is a guide-roll, L. A bed-roll, M, is journaled horizontally in the rails *m* at the rear of the trough J, and there is also a corresponding bed-roll, N, journaled in like manner immediately above the rear legs, *g*, of the frame-work, as shown at the left of the drawing.

Standards O are mounted on the rails *m* at the rear of the trough J, and pivoted at *z* to the upper ends of said standards there are arms *h*, in the lower ends of which a horizontally-journaled presser-roll, P, is mounted, said last-named roll being adapted to press on or work in conjunction with the bed-roll M.

Mounted on the rails *m*, immediately over the rear legs, *g*, of the frame-work, there are standards Q, in which a horizontally-journaled presser-roll, R, is mounted, said last-named roll being adapted to press on or work in conjunction with the bed-roll N and rendered vertically adjustable by slots *t* in said standards.

Mounted on the rails *m* at the rear of the legs *g* there are standards S, and journaled horizontally on a mandrel or spindle, T, in said standards there is a roll of paper.

Projecting from the rear side of the legs *x* there is a pair of brackets, *b;* from the front side of the legs *f* a pair of brackets, *d*, and from the rear side of the legs *g* a pair of brackets, *y*, rolls of paper mounted on mandrels or spindles U W F being respectively journaled in said brackets. A cylindrical brush, I, is journaled horizontally in the rails *m* at the front of the legs *x*, said brush being adapted to work in connection with the paste-roll C and convey paste from said roll to the paper passing over the guide-roll D.

In the use of my improvement and preparatory to starting up the machine the strip of paper from the roll on the mandrel U is carried around the guide-roll D, thence over the paste-roll H, and thence respectively between the rolls P and M and N and R. The strip of paper from the roll on the mandrel W is carried over the guide-roll L and paste-roll K, and thence respectively between the rolls P and M and R and N beneath the strip from the roll U. The strip of paper from the roll on the mandrel F is carried around the roll N from the front beneath the strip from the roll W, and the strip of paper from the roll on the

mandrel T is carried around the roll R from the front above the strip from the roll U.

The strips being inserted, as described, the machinery (not shown) for drawing the paper through the machine, and thereby turning the several rolls and the brush I by the friction of the paper moving against them, is started up, causing the strip from the roll U to be pasted on its upper side by the paste-roll C and brush I, and on its lower side by the paste-roll H and the strip from the roll W, to be pasted on its lower side by the paste-roll K. The strip from the roll U being pasted on both sides, and the strip from the roll W on its under side, these strips will be united by the rolls P M, forming a board, *j*, composed of two layers of paper and pasted on both sides, and as said board advances the strips from the rolls T F will be respectively united to it by the rolls R N, thereby forming a board, *k*, comprising four layers or strips of paper, in a manner which will be readily obvious without a more explicit description.

I do not confine myself to mounting the paste-troughs, guide-rolls, presser-rolls, or mandrels for the rolls of paper precisely at the points described and shown, as they may be arranged in any suitable positions with respect to each other that will enable them to perform their respective functions properly and in order set forth.

Having thus explained my invention, what I claim is—

1. A paper-board machine comprising the frame A, paste-troughs B E J, paste-rolls C H K, guide-rolls D L, brush I, bed-rolls M N, presser-roll P, pivoted arms *h*, presser-roll R, standards Q, and the mandrels U W F T, constructed, combined, and arranged to operate substantially as described.

2. A paper-board machine comprising a frame, brackets, mandrels, paste-troughs, and guide-rolls mounted on said frame, a paste-roll on each side of the guide-roll for the first sheet, supplying a coating of paste to both faces of such sheet, a paste-roll in rear of the guide-roll for the second sheet, supplying a coating of paste to the face thereof, which is remote from the first sheet, and presser-rolls for uniting said first and second sheets and for pressing the third and fourth sheets upon the outer faces thereof, substantially as described.

3. A paper-board machine comprising a frame, brackets, mandrels, paste-troughs, and guide-rolls mounted on said frame, a paste-roll on each side of the guide-roll for the first sheet, supplying a coating of paste to both faces of such sheet, a paste-roll in rear of the guide-roll for the second sheet, supplying a coating of paste to the face thereof which is remote from the first sheet, a pair of presser-rolls for uniting said first and second sheets, and a second pair of presser-rolls for pressing the third and fourth sheets upon the outer faces of the first and second sheets, substantially as described.

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Witnesses:

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