

(No Model.)

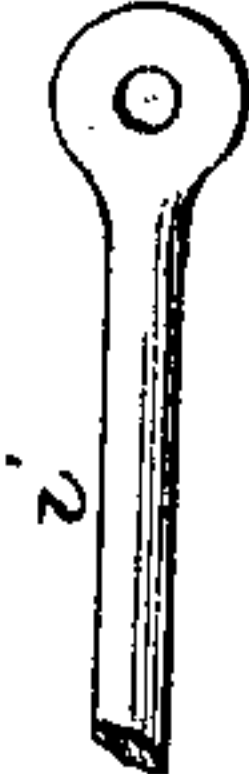
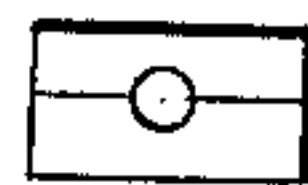
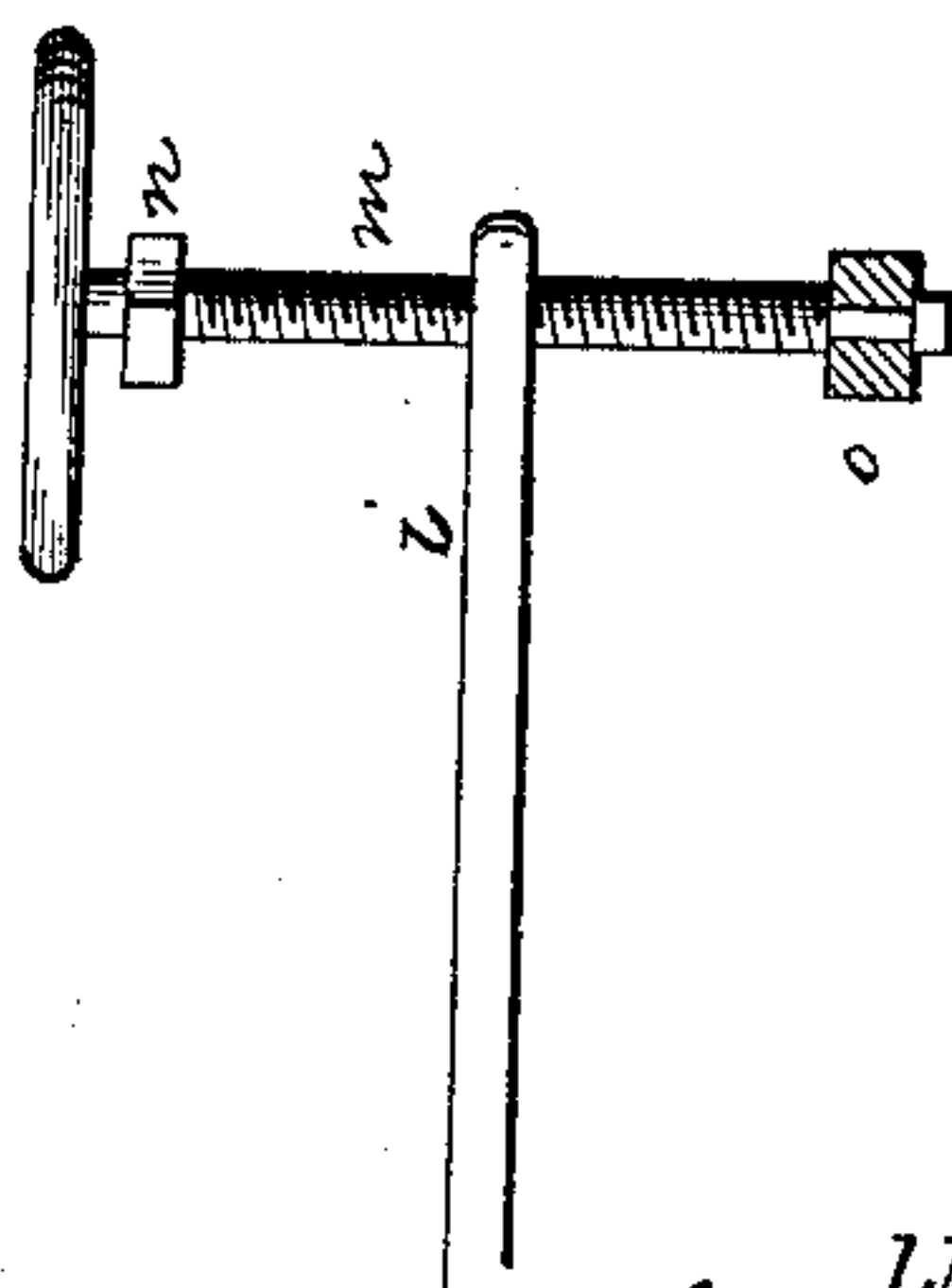
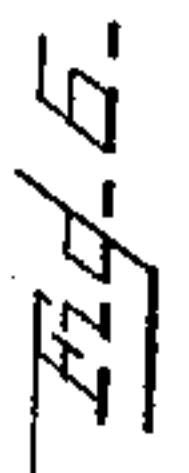
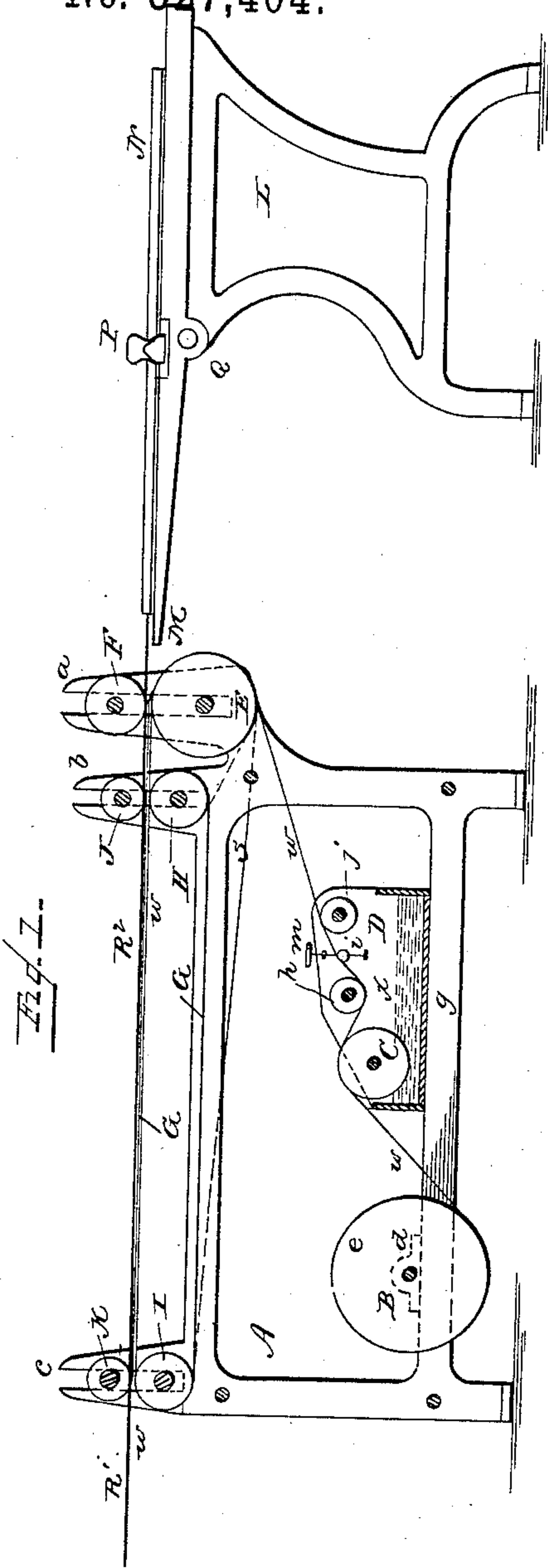
2 Sheets—Sheet 1.

G. MUNRO.

MACHINE FOR LINING STRAW AND OTHER BOARDS.

No. 327,404.

Patented Sept. 29, 1885.



WITNESSES

Frederick L. Osgood
Alex. M. Smith

INVENTOR

Gordon Munro
by A. M. Smith
Attorney

(No Model.)

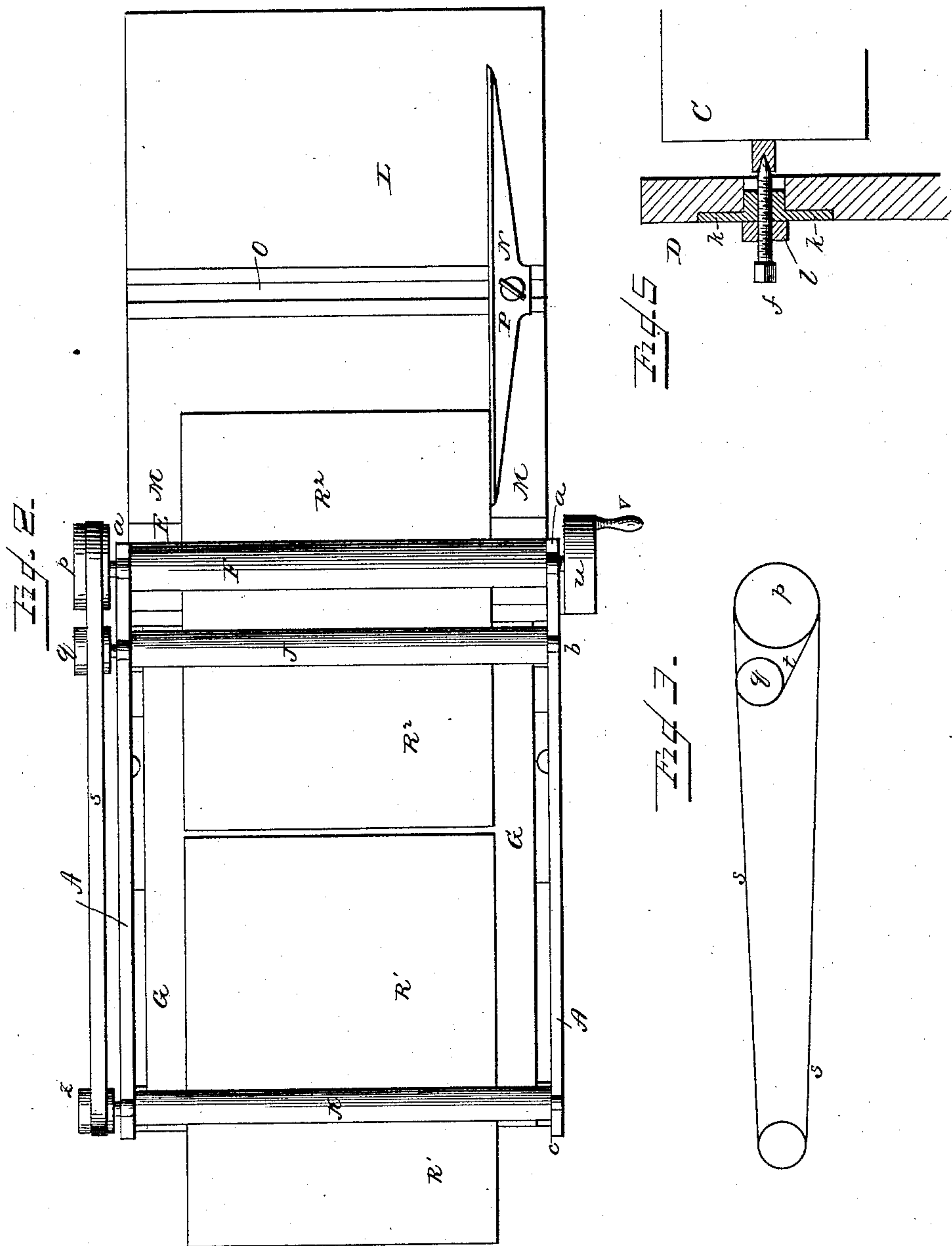
2 Sheets—Sheet 2.

G. MUNRO.

MACHINE FOR LINING STRAW AND OTHER BOARDS.

No. 327,404.

Patented Sept. 29, 1885.



WITNESSES

Frank L. Ogden
Rex M. Smith

INVENTOR

Gordon Munro
by A. L. Smith
Attorney

UNITED STATES PATENT OFFICE.

GORDON MUNRO, OF TROY, NEW YORK.

MACHINE FOR LINING STRAW AND OTHER BOARDS.

SPECIFICATION forming part of Letters Patent No. 327,404, dated September 29, 1885.

Application filed April 14, 1884. (No model.)

To all whom it may concern:

Be it known that I, GORDON MUNRO, a citizen of the United States, of Troy, county of Rensselaer, State of New York, have invented
5 a new and useful Improvement in Machines for Lining Straw and other Boards, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.
10

My invention relates to improvements in that class of machines for lining or facing straw board or other board, or cloth or other fabrics in which the paper, muslin, or other
15 flexible lining or facing material is supplied continuously from a roll of such lining or facing material.

My invention consists of the combination, with a suitable frame provided with suitable
20 bearing-boxes and projections for carrying or attaching the several parts, of a delivering-reel suitable for carrying a roll of lining or facing material, suitable devices for guiding the lining or facing material, and for spreading
25 ing paste, glue, or other suitable adhesive fluid upon the lower face of the lining or facing material, and a pair of revolving reversing feed-rolls, the axes of which are in the same vertical or nearly vertical plane, the line
30 of contact of the feed-rolls being at a suitable height above the level of the delivering-reel, the construction and arrangement of the several parts being such that when the machine is in operation the lining or facing material
35 passes around a part of the face of the lower feed-roll, and is thereby reversed, having its adhesive face turned uppermost before entering between the feed-rolls, where it comes in contact with the material to be lined, and is
40 caused to adhere to that material, the two materials being pressed together by the revolving feed-rolls while carried through between the said rolls.

My invention consists, further, of the combination, with a suitable frame provided with
45 suitable bearing-boxes and projections for carrying or attaching the several parts, of a delivering-reel, a spreading-cylinder, an adhesive-fluid box, and a pair of reversing feed-rolls, the spreading-cylinder being so located
50 between the delivering-reel and the reversing feed-rolls, in or over the adhesive-fluid box,

that when in operation its lower surface is in contact with or a little below the surface of the adhesive fluid contained in the box, and
55 its upper surface above any straight line that may be drawn from above or below the delivering-reel, where the lining material feeds off of that reel, to the under side of the lower reversing feed-roll, or to the under side of an intermediate guide-roll, when such a guide-roll
60 is employed, the line of contact of the reversing feed-rolls being at a suitable height above the roll of lining material and the spreading-cylinder, the details of construction and arrangement being such that if a roll of the lining material be placed upon the delivering-
65 reel and the end passed over the spreading-cylinder and around the under side of the lower reversing feed-roll, and in between the two feed-rolls, and power be applied to the lower feed-roll, causing it to revolve in the proper direction, the lining material will un-
70 wind from the roll, press upon and revolve the spreading-cylinder, receive on its lower surface the adhesive fluid, and pass below the lower feed-roll, and in between that roll and the upper feed-roll, with the adhesive surface uppermost, in such manner that the material
75 to be lined or faced entering with and above the lining or facing material, the two materials are brought in contact and caused to adhere together by the pressure of the feed-rolls, and are carried through between the feed-rolls
80 and delivered by them in a horizontal direction back, over, and above the delivering-reel.
85

My invention further consists of certain details of construction and arrangement, herein-
90 after described.

The drawings represent a straw-board-lining machine embodying my invention.

Figure 1 is part longitudinal section, part elevation, of such a machine and feed-table. Fig. 2 is a plan of same. Fig. 4 is a plan of
95 the adhesive-fluid box. Figs. 3, 5, 6, 7, 8, and 9 are details.

A is the frame, having slotted projections *a*, *b*, and *c* for carrying the journals of the respective rolls. *d* is a suitable bearing-box of
100 the delivering-reel B. The reel B is a simple axle with collars, or may be constructed in any manner suitable for carrying the roll *e* of lining-paper. C is the spreading-cylinder,

which should be as light as possible, well balanced, and revolve easily. I prefer to have it well made of sheet-tin, with a light steel or iron axle revolving on the conical points of screws *f* at either end, as shown in Fig. 5.

D is the adhesive-fluid box, which, for convenience in cleaning, is removable, simply resting when in use upon the longitudinal bars *g* of the frame A. The box D carries the guide-roll *h*, the scraper *i*, and the equalizing-roll *j*, when, as in the example shown in the drawings, the said guide-roll, scraper, or equalizing-roll are employed.

Rolls *h* and *j*, like cylinder C, revolve on the conical points of screws *f*, passing through nuts *k* in the ends of box D, and may be secured by jam-nuts *l*. The guide-roll *h*, by pressing down the paper, increases the surface of contact between the paper and cylinder C. The scraper *i* is a transverse rod, over which the paper passes, and by which any excess of the adhesive fluid is removed from the under side of the paper. The pressure of the scraper on the paper is regulated by two adjusting-screws, *m*, one in each end of the rod, passing through the enlarged ends of that rod, as through a nut, and held in position by bearing-boxes *n* and *o* attached to the ends of box D. The equalizing-roll *j* serves to equalize the distribution of the adhesive fluid on the lower surface of the lining-paper.

E F are the reversing feed-rolls. The endless apron G is carried by the two parallel rolls H and I.

J and K are the apron presser-rolls, which press the lined board down on the apron in passing over the rolls H and I, the pressure tending to cause the lining to adhere more smoothly and evenly to the board than if the reversing feed-rolls E F were exclusively employed for that purpose. The axles of the lower reversing feed-roll, E, and the apron-rolls H and I project on one side of the machine and carry belt-pulleys *p*, *q*, and *r*. The upper surface of the apron G is on a level with the top of the lower feed-roll, E. The apron is driven by two belts, *s* and *t*, one, *s*, overriding the other, *t*. The axle of roll E projects on one side or other of the machine to receive power, as from a belt applied to the pulley *u*, or from the hand applied to the crank-handle *v*. L is a feed-table, the projecting edge M of which is placed as near as possible to the feed-rolls, the upper surface of the table being on a level with the top of the lower feed-roll. Upon the upper surface of the table is a guide, N, working in a suitable transverse guide-slot, O. The inner or working edge of the guide is placed at a suitable distance from the edge of the table to guide the straw-board, and is secured in any desired position by turning the clamp-screw P. As the table may be in the way when it becomes necessary to insert the end of the paper between the feed-rolls, the top is hinged at Q by a suitable hinge, Q, and the rear end

or edge, M, may be pushed or tilted down. The front end being the heavier, the top will regain its horizontal position when left to itself.

R¹ and R² are sheets of straw-board. The lining-paper after it leaves the roll *e* is indicated by the letter *w*. It passes over the spreading-cylinder C, the lower part of which is slightly immersed in the adhesive fluid *x*, causes that cylinder to revolve, and receives from it a coating of the fluid. From the cylinder C the lining-paper passes under the guide-roll *h*, over the scraper *i* and equalizing-roll *j*, under and around the lower reversing feed-roll E, in between the two feed-rolls E F, and back horizontally over the apron and under the apron presser-rolls J and K, and out at the rear of the machine. The straw-board is pushed, sheet after sheet, from the table, guided by the guide N in between the feed-rollers, where the contact with and pressure against the adhesive surface of the lining-paper causes the board and paper to adhere to each other and to move on together toward the rear, where each successive board, with its lining, is received and removed by an attendant, who cuts or tears the lining-paper across between the consecutive sheets of straw-board.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for lining straw-board, the combination, with the delivering-reel located beneath the table, of the paste-box extending transversely across the machine, and provided with bearings for the reception of a pasting-roller, and guiding-rollers for regulating the path of the lining material, also journaled in the side walls of the paste-box, all located beneath the table, substantially as and for the purpose specified.

2. In a machine for lining straw-board, the delivering-reel and paste-box extending transversely across the machine, and located beneath the table, in combination with a pasting-roller, and guiding-rollers for regulating the path of the lining material, said rollers being journaled in the side walls of the paste-box, and an adjustable scraper-bar, substantially as and for the purpose described.

3. In a machine for lining straw-board, the combination of the delivering-reel B and paste-box D, located beneath the table, paste-roller C, guide-rollers *h* and *j*, and scraper *i*, located within said box, and the reversing feed-rolls E and F, all arranged in the manner substantially as and for the purpose described.

4. The feed-table L, suitable for a straw-board-lining machine, having a tilting top with suitable hinges, Q, and the movable guide N, substantially as described and set forth.

In testimony whereof I have hereunto set my hand this 7th day of April, A. D. 1884.

GORDON MUNRO.

Witnesses:

DAVID R. SMITH,
JOHN MCCREARY.