

No. 647,056.

Patented Apr. 10, 1900.

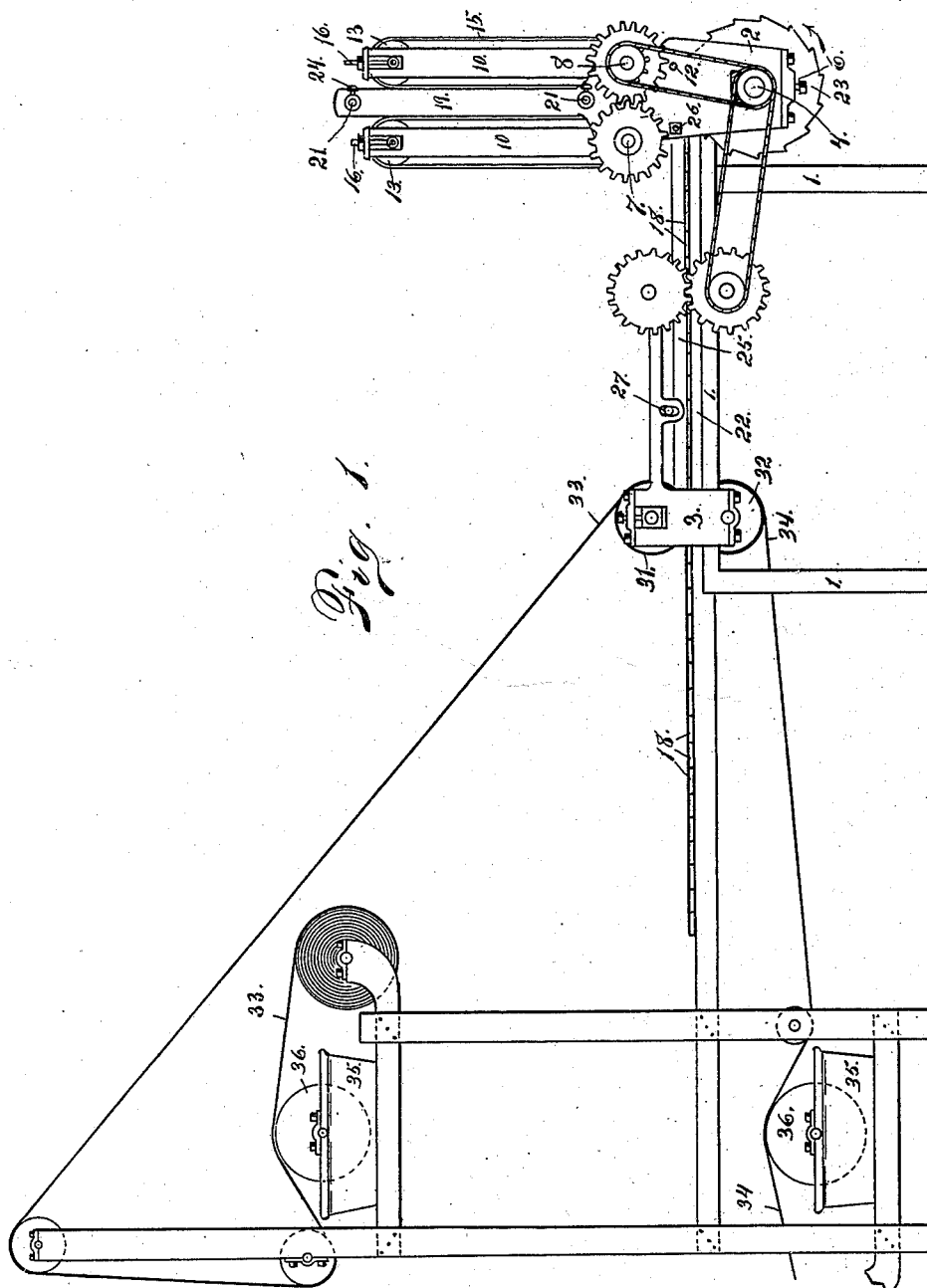
F. C. WARD.

MACHINE FOR MANUFACTURING BACKING.

(Application filed June 5, 1899.)

(No Model.)

5 Sheets—Sheet 1.



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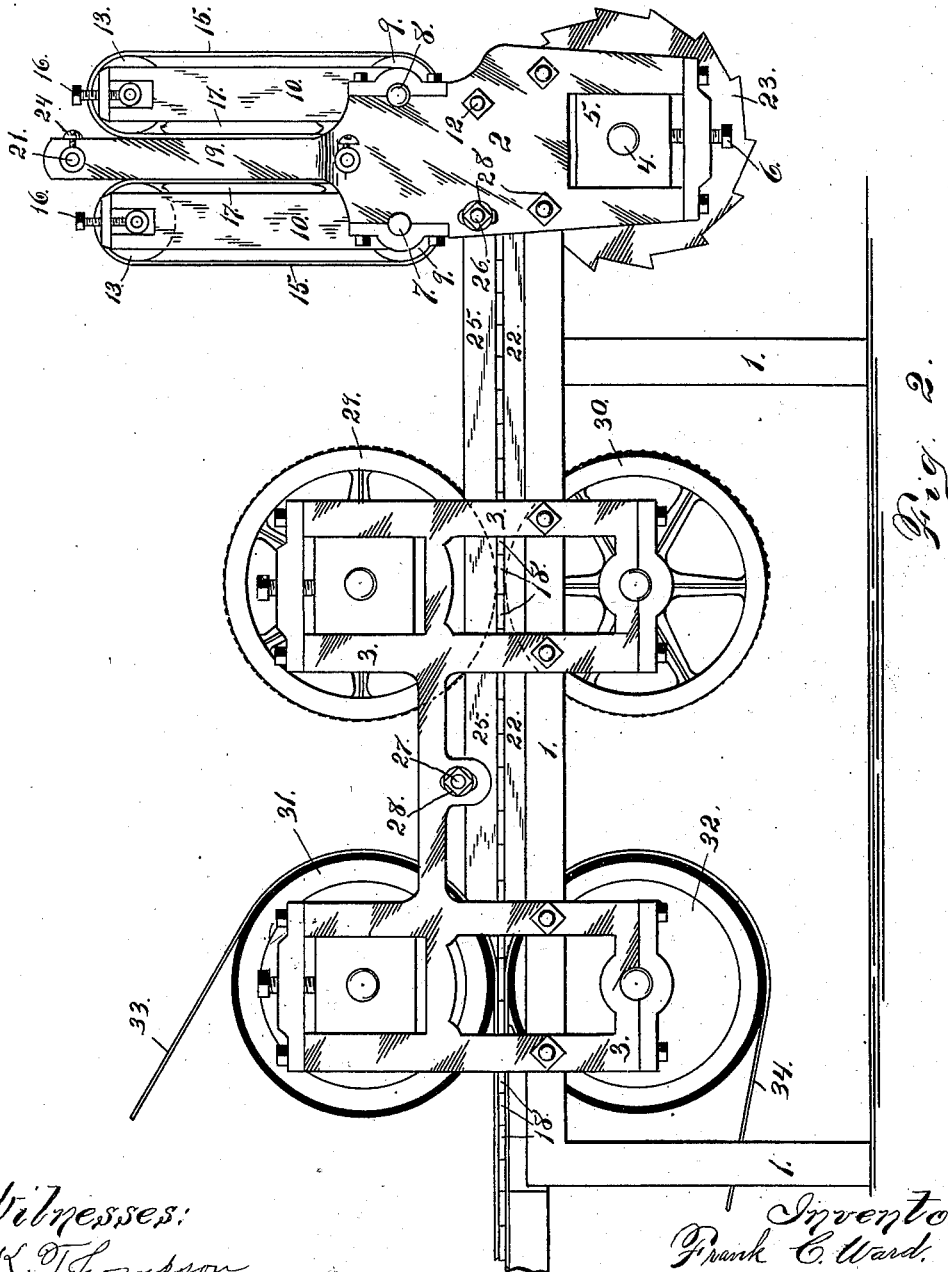
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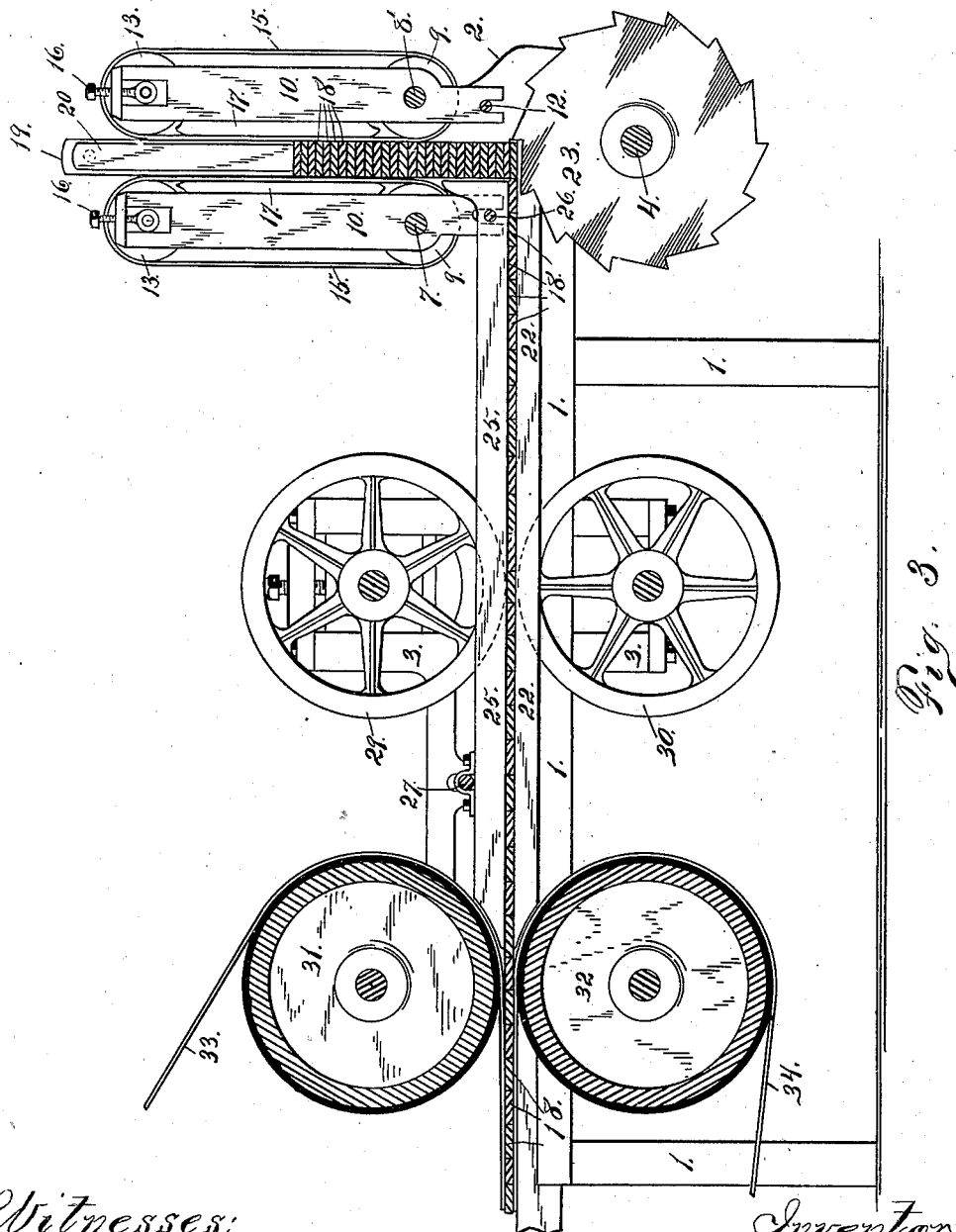
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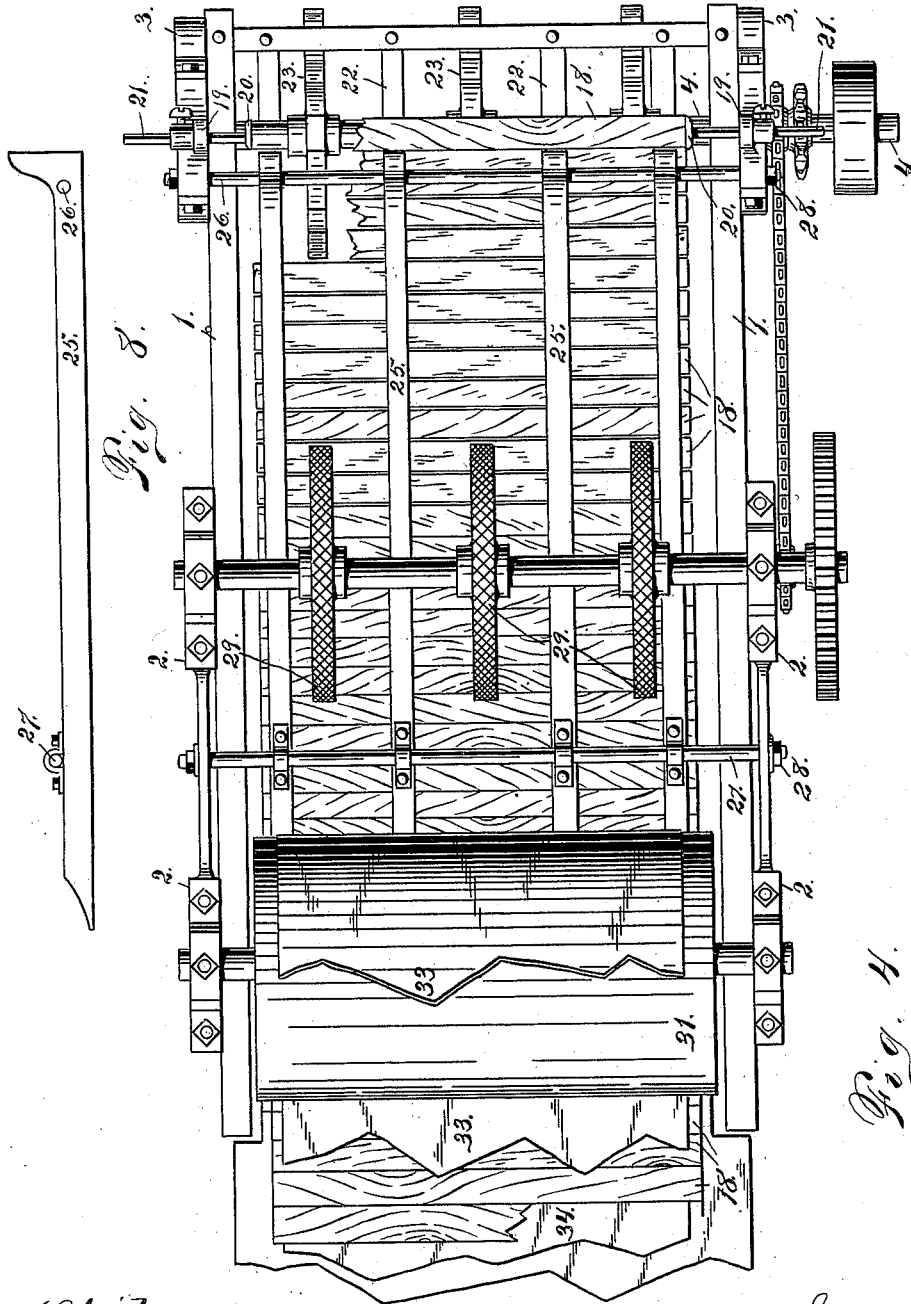
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5 Sheets—Sheet 5.

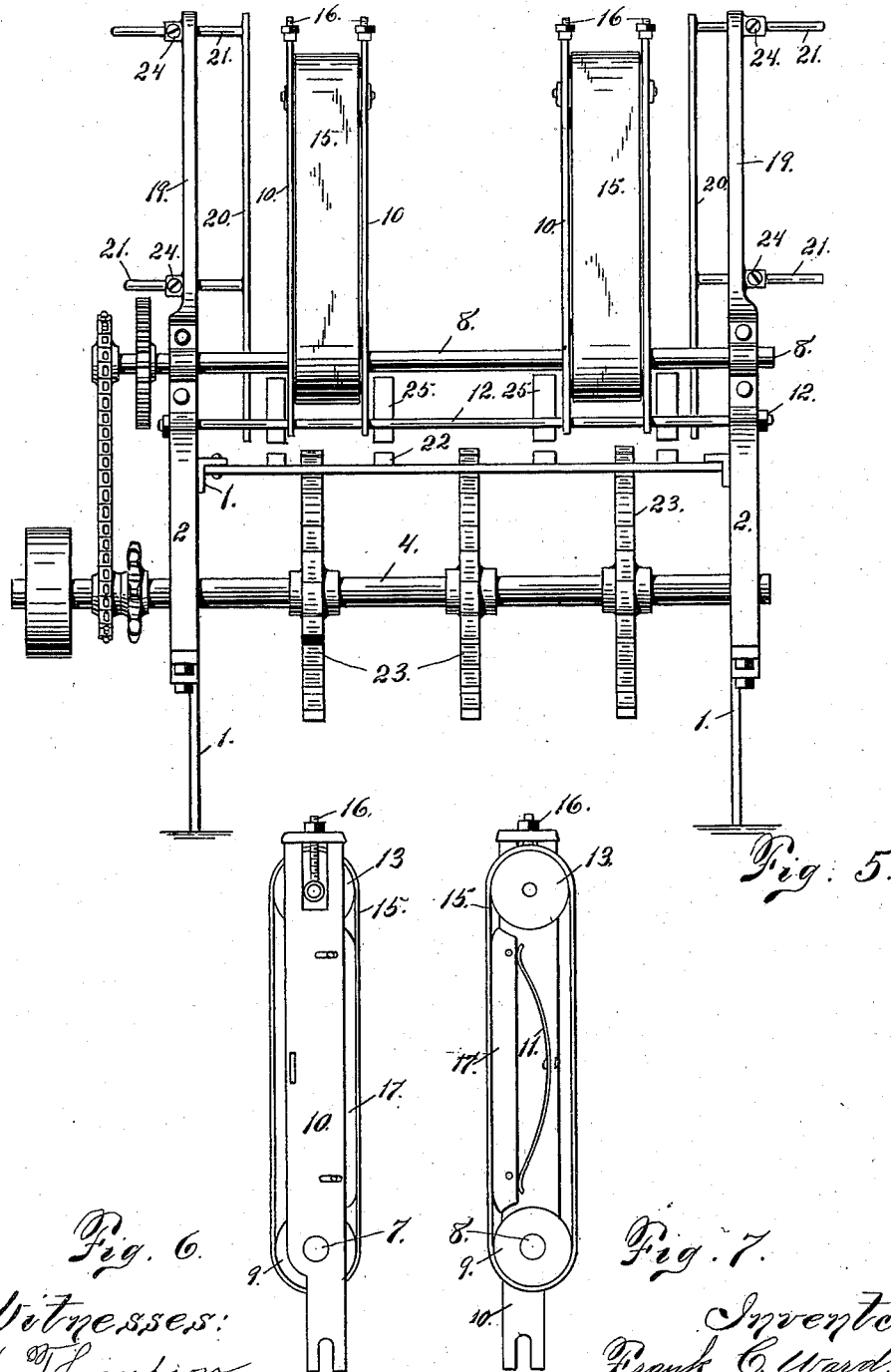


Fig. 6.
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Fig. 7.
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UNITED STATES PATENT OFFICE.

FRANK C. WARD, OF BUFFALO, NEW YORK.

MACHINE FOR MANUFACTURING BACKING.

SPECIFICATION forming part of Letters Patent No. 647,056, dated April 10, 1900.

Application filed June 5, 1899. Serial No. 719,383. (No model.)

To all whom it may concern:

Be it known that I, FRANK C. WARD, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Machines for the Manufacture of Backing; 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 figures of reference marked thereon, which form a part of this specification.

This invention relates to a machine for the manufacture of backing.

It has been the practice for many years to manufacture what is known in the trade as "backing." This consists of a number of thin slats or strips of wood, which are glued between two sheets of paper, thus forming a single board from the several laminations of wood, which will not warp or become displaced. My present invention relates to a machine for the manufacture of this class of anti-warping backing. Its object is to produce a machine for the purposes as above outlined, with which large quantities of backing may be manufactured in a comparatively short time, is practically automatic in its operation, simple in its construction, and in which the several laminations of wood or slate are so fed and secured between the paper as to produce a stiff antiwarping backing.

To that end it consists; first, in the arrangement for feeding the slats to the machine; second, in the manner of spreading the slats evenly upon a plane, and, third, in means for feeding the slats between the glued paper, so as to form a firm board when completed.

The invention further consists in the details of its construction and combinations of its operative parts, all of which I will now proceed to describe more definitely and then point out in the claim that which I believe to be novel.

In the drawings, Figure 1 is a view showing the general arrangement of my improved machine. Fig. 2 is an enlarged side elevation of the machine with the communicating gearing removed. Fig. 3 is a longitudinal section taken in side elevation. Fig. 4 is a top plan

view with the slat-receiving rolls and belts removed. Fig. 5 is a front face view of the machine. Figs. 6 and 7 are detail views of the endless belts for feeding the slats to the machine, and Fig. 8 is a detail view of one of the guides employed for retaining the slats in a horizontal position.

Referring to the drawings, 1 is the frame of the machine, to the sides of which are secured the hangers 2 and 3. In these hangers 2 and 3 are mounted the several communicating shafts, the shaft 4 being mounted in the lower end of the hangers 2 at the forward end of the machine and journaled in the boxes 5 and may be adjusted vertically by the adjusting-screws 6. In the upper ends of the hangers 2 are loosely mounted the shafts 7 and 8, upon which the pulley-wheels 9 are rigidly mounted. Stationary plates 10 are arranged on each side of the pulley-wheels 9. These plates 10 are loosely mounted on the shafts 7 and 8 and extend down to and engage the cross-bars 12 and 26 at their lower ends, thus causing them to be held in a vertical position. At the upper ends of the plates 10 are mounted the adjustable pulley-wheels 13, which communicate with the pulley-wheels 9 through the endless belts 15, the pulleys 13 being adjustable vertically by the adjusting-screws 16, so as to take up any slack in the belts 15. There are two sets of pulleys 9 and 13, with belts 15 on each of the shafts 7 and 8, and the slats are fed into the machine between these belts 15, as will be hereinafter described. Within the loops of the belts 15 and movably secured between the stationary plates 10 are the spring-pressed shoes 17, the springs 11 holding the shoes against the belts 15, which are in turn pressed against the slats 18, resting between them, a detail of which is shown in Figs. 6 and 7.

19 19 are two vertical arms extending from the brackets 2. These arms 19 are on a line between the belts 15 and are the ends to the receptacle thus formed to receive the slats 15. In making backing of a given width it is desirable to use slats cut just as long as the width of board desired. To retain these slats in alinement when placed between the belts 15, I have provided the vertical gage plates or strips 20, having the horizontal pins 21, adjustably secured in the arms 19 of the

brackets 2 by the set-screws 24. The slats when placed between the belts 15 rest upon cross-strips 22 and over the toothed feeding-wheels 23, the toothed feeding-wheels 23 being so adjusted in the bearings 5 as to have their teeth engage the lower slat only of the stack resting between the belts 15, and as the toothed wheels 23 are revolved in the direction indicated by the arrow the slat is carried from under the stack and is pushed between the guides 22 and 25, the lower guides 22 running parallel with the machine, forming a bed which receives the slats from the stack as they are successively fed to it by the toothed wheel 23 and the adjustable guides 25, which are secured to the cross-rods 26 and 27 and are rigidly held in place by the nuts 28, just sufficient space being left between the guides 22 and guides 25 to permit the slats to pass loosely between them, as shown in the drawings. As the slats are carried from the stack and between the guides 22 and 25 they pass between the feed-wheels 29 and 30, mounted in the hangers 3. As many of these wheels 29 and 30 may be used as desired, and these are mounted parallel with the slats 18 passing between them, and as they engage each slat they force it forward to the depression-rollers 31 and 32. These depression-rollers 31 and 32 are mounted directly over each other, similar to the feeding-wheels 29 and 30, and the paper sheeting 33 and 34, which is to be glued to the backing, is fed to the machine over these rollers 31 and 32, the pressure-rollers causing the paper to firmly adhere to the slats. In operation, 35 are reservoirs for holding the liquid glue, in which are mounted the supply-rollers 36'. 33 and 34 are the paper sheetings, which are spread with glue as they pass over the supply-rollers 36, (see Fig. 1,) from whence the paper passes over guide-rollers, as seen in the drawings, and to the depression-rollers 31 and 32. The slats 18 are fed into the machine between the belts 15, as above described, and stacked over the toothed feeding-wheels 23, where they are successively carried between

the guides 22 and 25, and passing between the feed-wheels 29 and 30, where they are forced forward to the depression-rollers 31 and 32. These rollers 31 and 32, over which the glued paper passes, are loosely mounted in the hangers 3 and are caused to revolve by the slats 18 being forced between them, thus causing the slats to press closely against each other as they are forced along by the wheels 29 and 30, and the glued paper sheeting 33 and 34, which is now pressed upon the slats as they pass between the rollers 31 and 32, holds the slats firmly in place, thus forming a stiff antiwarping backing.

It is found in practice that a slightly-milled surface given to the wheels 29 and 30 and a coating of vulcanized rubber 38 given to the rollers 31 and 32 greatly adds to the effectiveness of the machine, and this construction is preferred.

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

In a machine for the manufacture of laminated backing, a plurality of endless belts mounted within a frame and arranged to exert a downward pressure upon a stack of slats placed between them, toothed feeding-wheels mounted beneath said slats and adapted to successively engage the lower slat, and carry it upon the bed of the machine, a series of secondary feeding-wheels adapted to press the slats closely together upon the bed and force them between depression-rollers, said depression-rollers being arranged to exert a pressure upon glue-coated paper fed over them and adhered to each side of the slats as they pass between the depression-rollers, substantially as shown and described.

In testimony whereof I have signed my name to this application in the presence of two subscribing witnesses.

FRANK C. WARD.

Witnesses:

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R. P. WIGHTMAN.