March 4, 1941. G. J. SNYDER 2,233,854

MEANS FOR SMOOTHING THE EDGES OF COATED BOARDS

Filed May 1, 1939

FIG. 1

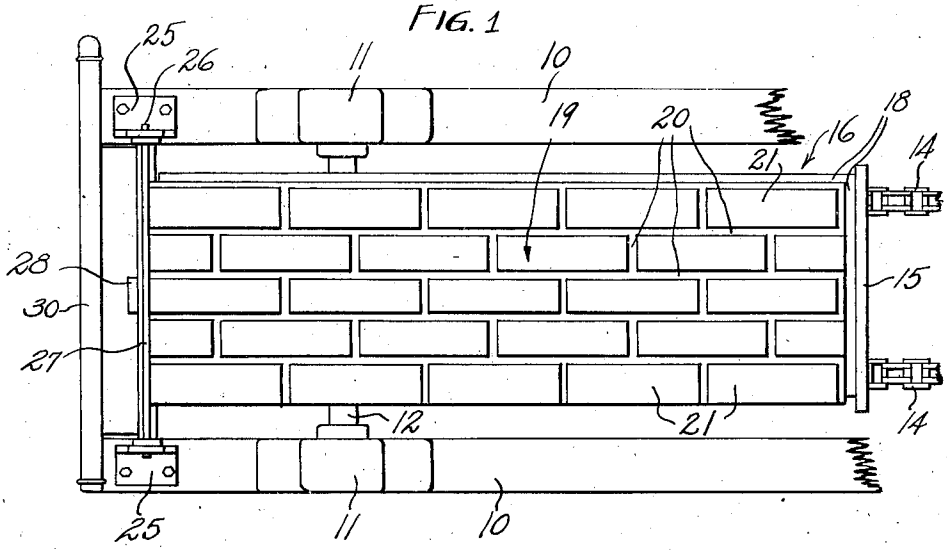


FIG. 2

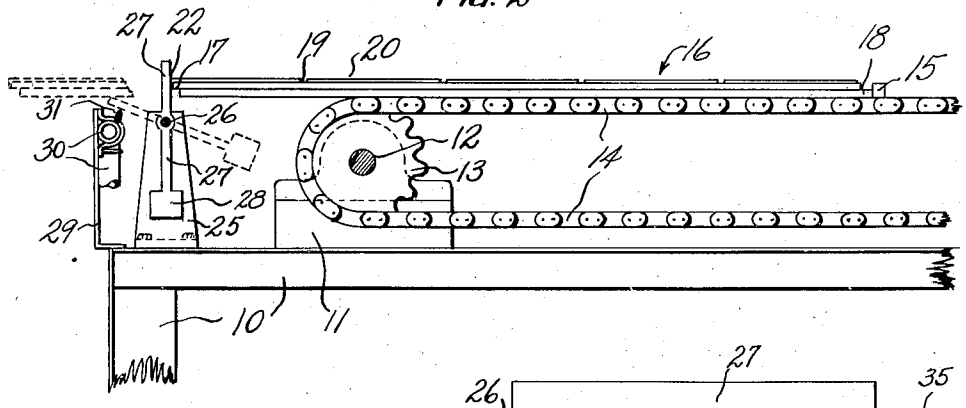
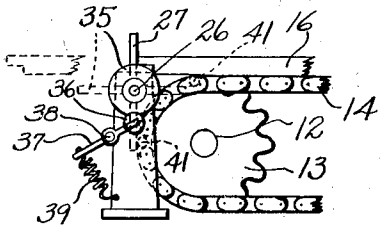


FIG. 3



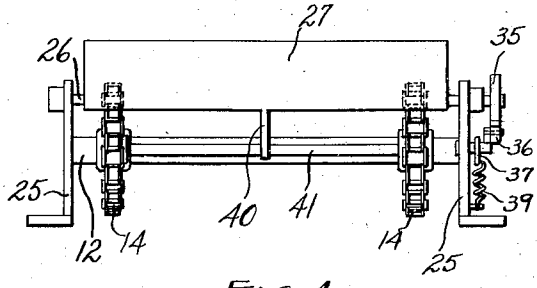


FIG. 4

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MEANS FOR SMOOTHING THE EDGES OF COATED BOARDS

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10 Claims. (Cl. 91—18)

This invention relates to means for smoothing the edges of coated boards, and particularly to means for smoothing the edges of composition board coated with plastic waterproofing material and surfaced with mineral particles or grit to form building covering material.

In the manufacture of building covering material, composition board units are moved in horizontal position mounted on a conveyor to be coated, thence to have the coating spread and leveled thereon, thence covered with grid, and thence pressed to imbed the grit and imprint the coated surface. The operations result in uneven edges of coating sticking to the board. The composition board, especially in the manufacture of siding, is preferably provided with reduced thickness marginal ship-lap flanges or edge portions adapted to fit snugly relative to complementary flanges of adjacent board units to insure a tight sealed joint between coplanar boards. It is thus essential that the edges of the coated boards be smooth, since rough edges will prohibit a tight sealed joint as above described. Heretofore the operation of smoothing the edges has been manually performed, as by scraping the excess material from the edges. The manual operation is time-consuming, and results in removal of coating which, if smoothed, would facilitate formation of a sealed joint. Also, coating will frequently flow around the edges of the board and adhere to the uncoated bottom face thereof during processing, and thereafter cause contiguous boards in a package to stick together and thus ruin the masonry-simulating coating.

It is therefore the primary object of this invention to provide means for automatically smoothing at least the leading edge of a coated panel.

A further object is to provide a board processing machine having a conveyor, with a flat shiftable member normally positioned transverse of and intersecting the path of movement in which said board is carried by said conveyor, and adapted to be shifted to inoperative position by said board.

A further object is to provide novel means for scraping the bottom uncoated face of a board to remove overflow coating therefrom.

Other objects will be apparent from the description and appended claims.

In the drawing:

Fig. 1 is a fragmentary top plan view of a machine provided with my improved device.

Fig. 2 is a fragmentary side elevation of the machine and my improved device, with parts in section.

Fig. 3 is a fragmentary side elevation of a modified embodiment of my invention.

Fig. 4 is a fragmentary side elevation of the modified embodiment shown in Fig. 3.

Referring to the drawing, numeral 10 designates the frame of a board processing machine which mounts a bearing 11 journaling a shaft 12 mounting sprockets 13 over which run a pair of substantially horizontal chains 14. The opposite ends of a pusher bar 15 are secured to opposite chains 14, and said bar 15 extends transversely of said chains.

The composition board 16 processed in said machine has reduced thickness marginal flange or edge portions of which the overlapping flange 17 is preferably positioned foremost and the underlapping or rearwardly off-set flange 18 is positioned rearmost. Board 16 is provided with a suitable waterproof decorative coating 19 as it passes through the processing machine. For example, coating 19 may comprise a layer of asphalt surfaced with mineral particles or grits. To form a masonry-simulation, coating 19 is preferably provided with a plurality of narrow elongated grooves or depressions 20 which outline a masonry pattern, such as brick faces 21. Incident to applying and impressing coating 19, a certain amount of the coating generally runs over the edges of the board at 22 and produces an irregular or uneven edge surface which must be smoothed.

My improved device is intended primarily to smooth the irregular edge 22 at the leading panel edge, preferably that of overlapping flange 17. Base 10 projects beyond bearing 11, and on this projecting end I mount a pair of upright supports or brackets 25 adapted to journal the ends of a shaft 26 extending transverse of the frame 10 and positioned below the level of the upper runs of chains 14. Fixedly mounted on shaft 26 is a flat metal plate 27 which carries a weight 28 normally holding said plate 27 in vertical position. Plate 27 is of a length greater than the width of board 16, and its upper end projects above the level of the path of movement of board 16 on chains 14.

Rearwardly of brackets 25 I mount upright brackets 29 on frame 10 to terminate below the path of movement of board 16. On these brackets 29 I mount a burner 30, preferably a gas pipe having a plurality of jets or openings directed angularly upwardly toward plate 27, as illustrated by the flame 31 in Fig. 2.

The operation of the device is as follows:

As board 16 is propelled to a discharge point by conveyor chains 14 and pusher 15, it strikes the upper end of plate 27 which has been heated. The weight 28 resists the pivoting of plate 27, so that the heated plate smooths out the irregular edge coating 22, the heat of plate 27 preventing sticking of the coating thereto. Then, as movement of pusher 15 continues, board 16 is propelled thereby and tilts or pivots plate 27 to the dotted line position in Fig. 2, whereupon the board slides over said tilted plate. Thus the heated plate also serves to scrape the bottom of board 16 to remove any coating which may have adhered thereto incident to flow of coating from the board during its coating, leveling and impressing by the machine. The parts are so positioned that the upper end of plate 27 overlies the heating element 30 when tilted. Thus the plate is directly subjected to heating during each tilting thereof, and the plate also serves as a barrier preventing the heating element from burning or injuring board 16 while said board passes over the heating element. When the board has moved past the device, as onto a juxtaposed conveyor, the plate is free to resume its normal vertical position until the succeeding board strikes it. The boards are preferably spaced apart on the conveyor chains 14 a distance greater than the distance between shaft 26 and the upper edge of plate 27 to permit resumption of normal position of plate 27. The character of weight 28 is such that it will produce its desired positioning function, and yet be substantially lighter than the board so that it will not cause displacement of the board or prevent full positioning thereof over the heating element to be heated thereby and to perform its function of protecting the board from burning or injury by the heating element.

In the modified embodiment in Figs. 3 and 4 the same function of edge smoothing is obtained by a modified construction. The brackets 25 journal shaft 26 mounting normally vertical plate 27 in the same manner as in the preferred construction, but are spaced closely adjacent the sprocket 13. At one end of shaft 26 in laterally spaced relation to the path of movement of slab 16 on conveyor chains 14 is fixedly mounted a disc 35 having a notch therein. A roller 36 normally seats in the notch of disc 35 when plate 27 is vertically positioned. Roller 36 is mounted on one end of an arm 37 which is pivoted intermediate its ends at 38 by a member carried by one of the brackets 25. The opposite end of arm 37 has a coil spring 39 connected thereto at one end, with the opposite end of said spring connected to bracket 25. Plate 27 terminates adjacent shaft 26, and has only an arm 40 projecting therebelow, and this arm is adapted to extend into the path of movement of a bar 41 connecting chains 14 as it passes adjacent sprockets 13.

The operation of this modified embodiment is as follows: In normal position of the parts, plate 27 extends vertically upright and is held in upright position by spring pressed seating of roller 36 in the notch of disc 35. As a coated board 16 is propelled by the chains 14 its leading edge strikes plate 27 to be smoothed thereby upon impact therewith. Continued movement of the board by the conveyor pivots the plate 27 by overcoming the locking tension of spring 39 on roller 36. Thereafter the roller rolls on disc 35 to restrain free rotation thereof. After the board 16 has been propelled past plate 27, and before the next succeeding board is conveyed in adjacent relation thereto, bar 41 carried by chains 14 rearwardly of each pusher 15 engages the arm 40 and pivots the same and plate 27 back to normal vertical position. The heating element 30, as shown in Fig. 2 also may be employed with this modified embodiment, as will be obvious.

I claim:

1. The combination with apparatus for coating a rigid board including means for conveying a board, of a plate, pivot means mounting said plate below the path of movement of said board, and means for normally positioning said plate vertically to intersect the path of movement of said board.

2. The construction defined in claim 1, wherein said positioning means constitutes a counterweight lighter than said board to permit said board to tilt and ride over said plate.

3. The construction defined in claim 1, and a heating element positioned adjacent said plate and below the path of movement of the board to be overlaid by the upper end of said plate when tilted by a board passing thereover.

4. The combination with apparatus for coating a rigid board including a board conveyor, of a normally vertical abutment member pivoted to said apparatus and intersecting the path of movement of said board on said conveyor to smooth the leading edge of said board and means for normally positioning said abutment member vertically.

5. The combination defined in claim 4, and heating means carried by said apparatus, said abutment member being tilted adjacent to said heating means by said board when propelled by said conveyor.

6. The combination with board coating apparatus including a horizontal conveyor and a frame, of a pair of brackets mounted on said frame adjacent the end of said conveyor, an abutment member extending transversely of said frame and pivoted by said brackets, said abutment member intersecting the path of travel of a board on said conveyor, and means for normally operatively positioning said abutment member but yielding to permit pivoting thereof upon impact of said board therewith.

7. The construction defined in claim 6, and heating means positioned adjacent to and rearwardly of said pivot, said abutment member being positioned adjacent to and within the influence of said heating means when pivoted.

8. The combination with board coating apparatus including a frame and a conveyor, of an abutment member extending transversely of and pivoted to said frame and normally intersecting the path of travel of a board on said conveyor, spring pressed means normally releasably locking said member in operative position, and means carried by said conveyor for intermittently shifting said member from tilted to operative position.

9. The combination with board coating apparatus having a frame and a conveyor, of a member pivoted on said frame and adapted to be abutted by a board on said conveyor, a notched disc carried by said member concentric with its pivot, a spring pressed element normally seated in the notch of said disc to releasably lock said member in operative position, said board being adapted to tilt said member to inoperative position against the action of said element, and means on said conveyor engaging said member to return the member to operative position.

10. The combination with board coating ap-

paratus having a frame and a conveyor, a normally vertical plate, means carried by said frame for pivoting said plate transversing of and below and adjacent said conveyor, said plate having a downwardly projecting arm, a disc concentric with said plate and fixed relative to said plate, said disc having a notch, a spring pressed lever pivoted to said frame and journaling a roller adapted to seat in said notch, and means carried by said conveyor and engaging said arm when said plate is in inoperative position to return the same to operative position.

GILBERT J. SNYDER.