Jan. 17, 1961 A. G. MYERS 2,968,326

SCORING MACHINE FOR PLYWOOD

Filed June 30, 1958 3 Sheets-Sheet 1

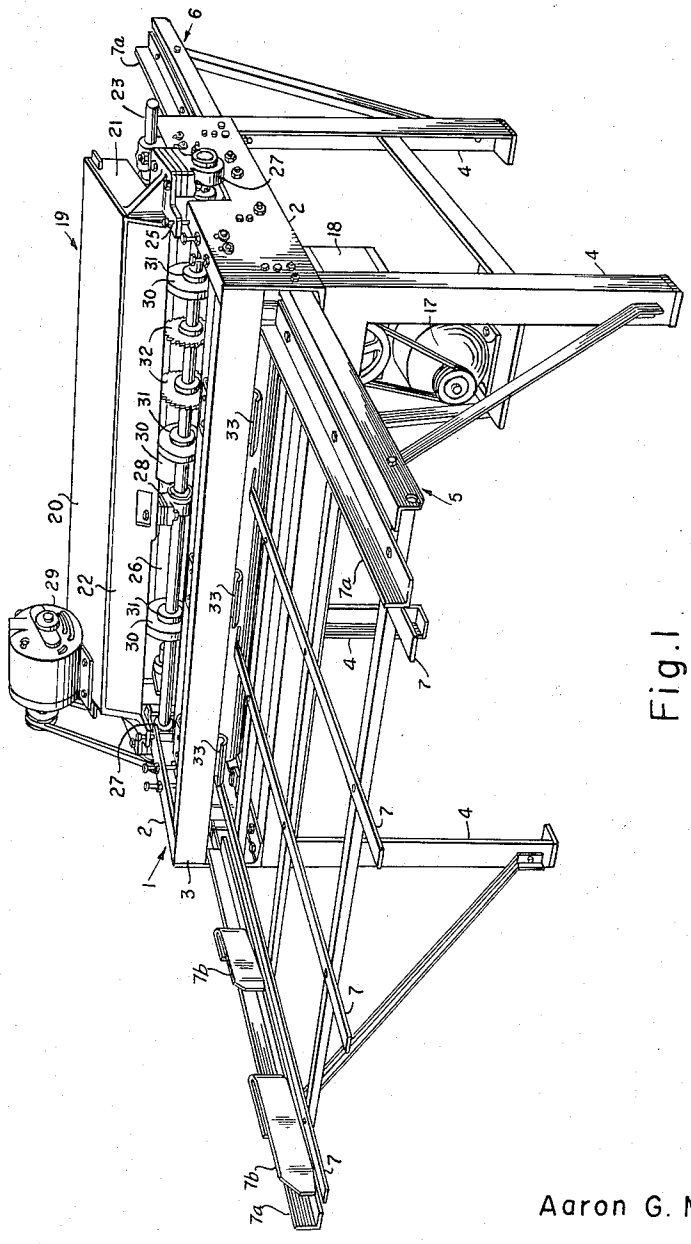

Fig. 1

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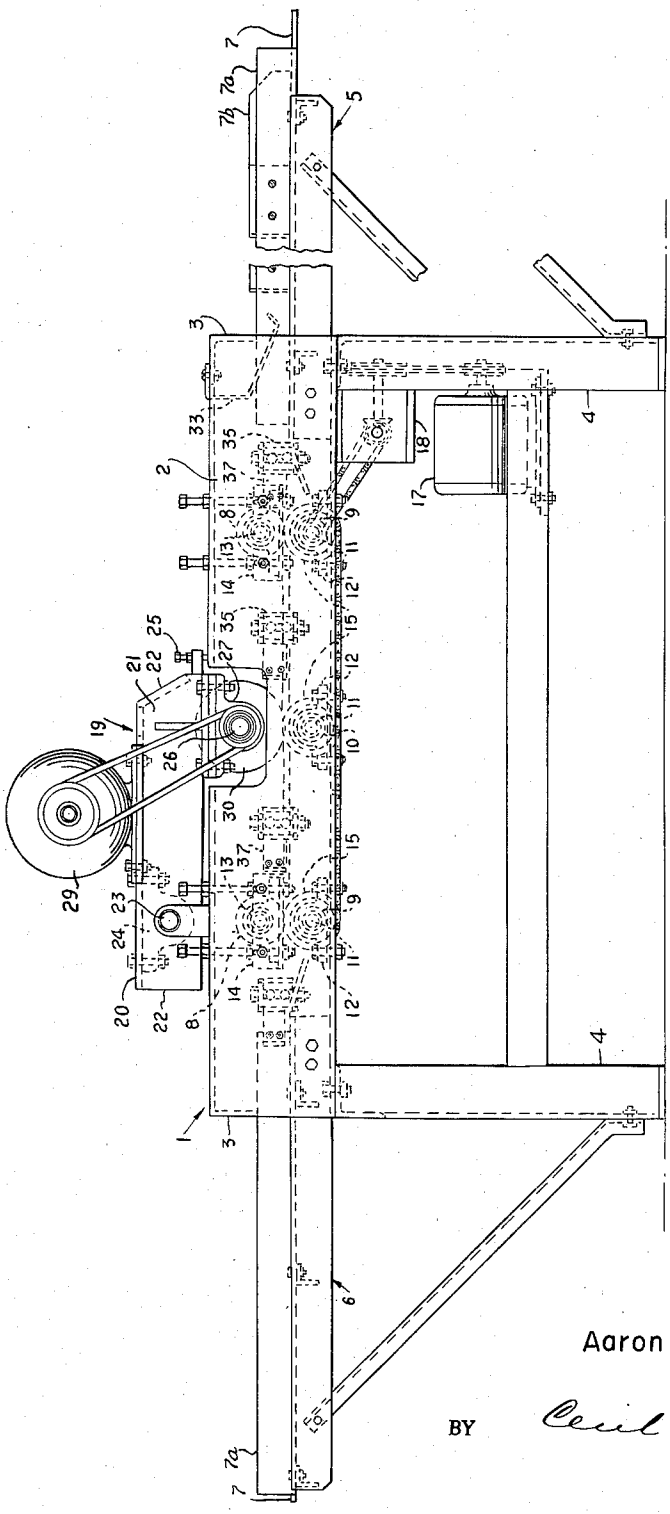

Fig. 2

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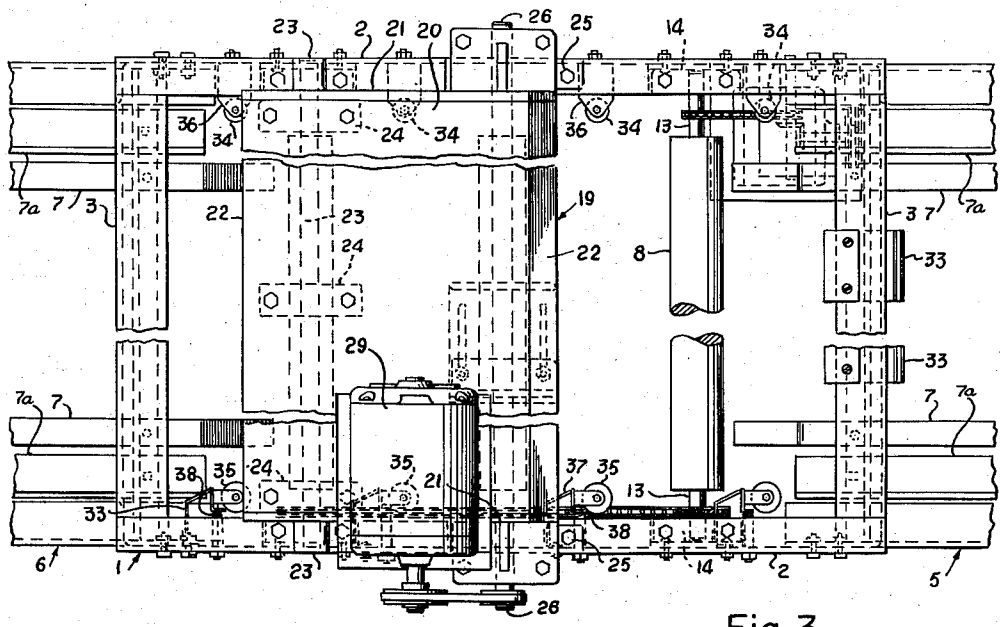

Fig. 3

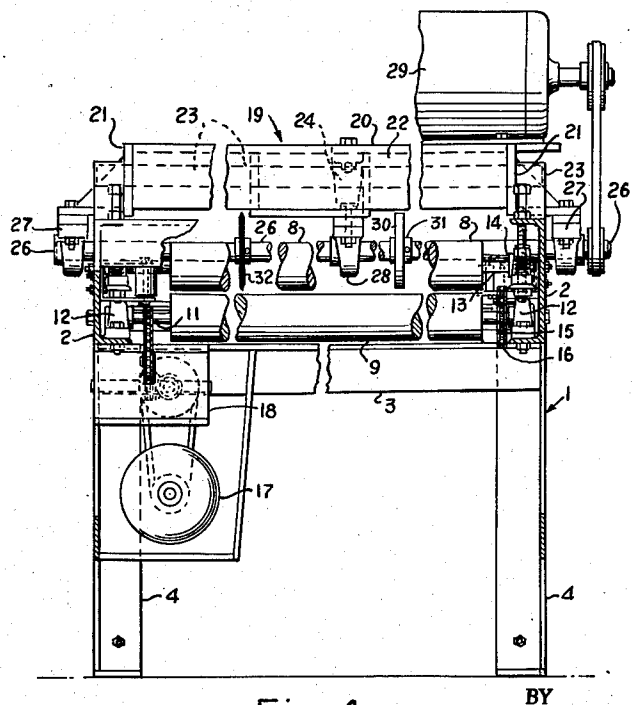

Fig. 4

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SCORING MACHINE FOR PLYWOOD

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4 Claims. (Cl. 144—136)

This invention relates to a grooving machine, and it concerns more particularly a machine for use in cutting grooves in the surfaces of sheet materials, for the purpose of ornamentation.

An object of the invention is to provide a machine for use in cutting parallel grooves in the surfaces of sheet materials, such as plywood, to simulate separate boards formed of like materials and arranged in side by side relation to each other.

In the construction of paneled walls and the like of sheet material, such as plywood, it is common practice to form a plurality of irregularly spaced parallel beveled grooves, which are V shaped in transverse section, in the sheet material, to simulate separate boards, of different widths, arranged parallel to each other. The principal object of this invention is to provide a machine for use in forming such grooves, for the purpose described.

The invention will be readily understood by referring to the following description and the accompanying drawing, in which:

Fig. 1 is a perspective view of a grooving machine embodying the invention;

Fig. 2 is a side elevational view;

Fig. 3 is a top plan view; and

Fig. 4 is an elevational view, partly in section, taken at right angles to the view shown in Fig. 2.

Referring to the drawing, the grooving machine of the invention includes a rectangular table-like frame, designated generally by the numeral 1, which has parallel sides 2 and ends 3 and is supported upon legs 4. A pair of shelf-like end platforms, numbered 5 and 6, which extend longitudinally outwardly from the ends 3 parallel to the sides 2, are provided for use in feeding sheet material to the machine and discharging it therefrom.

The end platforms 5 and 6 each include a plurality of runners 7 and a pair of side rails 7*a*. A plurality of resilient guides 7*b*, each of which consists of a strip of spring steel which is bent substantially 180 degrees intermediate its ends, are attached to one of the side rails 7*a* of the feed platform 5 whereby the sheet material, which may not be of uniform width, is yieldably urged against the opposite side of the machine as it is fed into it.

Two pairs of feed rolls, numbered 8 and 9, are provided at opposite ends of the machine for use in feeding sheet material through the machine. The rolls 8 and 9 of each pair are positioned one above the other, and the lower roll 9 of each pair is driven. A third driven roll 10 is positioned between the rolls 9 for use as hereinafter described.

The rolls 9 and 10 are connected at their ends to stub shafts 11 which are journaled in bearings 12. The bearings 12 are mounted on opposite sides 2 of the machine, in fixed position relative thereto. The rolls 8 are connected at their ends to stub shafts 13 which are journaled in bearings 14. The bearings 14 are mounted on opposite sides 2 of the machine, and are adjustable vertically with respect thereto.

Each of the rolls 9 and 10 has a chain sprocket 15 connected to one of the stub shafts 11 thereof for engagement by a chain belt 16, whereby the rolls 9 and 10 are driven simultaneously and at the same rate of speed. One of the shafts 11 is driven by a motor 17, through speed reducing gears 18.

A box-like sub-frame 19, which has a top 20, sides 21 and ends 22, the width of which is coextensive with that of the frame 1 and is substantially greater than its length, is supported above the frame 1 as hereinafter described. A shaft 23, which is arranged transversely with respect to the frame 1 and is connected to opposite sides 2 thereof, is received in bearings 24, which are connected to the sub-frame 19 and positioned on opposite sides and in the center thereof, adjacent its rearward end, whereby the sub-frame 19 is pivotally connected to the frame 1. The forward end 22 of the sub-frame 19 rests upon the sides 2 of the frame 1, and is adjustable vertically with respect thereto by means of set screws 25.

A shaft 26, which is arranged transversely with respect to the frame 1, is journaled in a pair of end bearings 27 and a center bearing 28 carried by the sub-frame 19, and is driven by a motor 29 mounted on the sub-frame 19. The center bearing 28 is adjustably connected to the sub-frame 19 whereby it is adjustable longitudinally with respect to the shaft 26.

The shaft 26 is positioned above the roll 10 and is separately driven, as above described, whereby it is capable of being rotated at a higher rate of speed. A plurality of wheels 30 are rotatably mounted on bearings 31, which are adjustably connected to the shaft 26 and are adjustable longitudinally with respect thereto, whereby the wheels 30 turn freely with respect to the shaft 26. The wheels 30, in conjunction with the roll 10, assist in feeding the sheet material through the machine.

A plurality of rotary cutters 32 are adjustably connected to the shaft 26, whereby they are adjustable longitudinally with respect thereto, and turn with it. The opposite faces of the cutters 32 are beveled adjacent the peripheral edges thereof, which are toothed, whereby the cutters 32 are capable of forming a V shaped groove in the surface of the sheet material as it is passed between the cuters 32 and the roll 10.

One or more resilient guides 33 are attached to the forward end 3 of the frame 1, above an opening therein opposite the feed platform 5, and extend downwardly therefrom for engagement with the upper surface of the sheet material as it is feed into the machine.

A plurality of guide rollers, numbered 34 and 35, are attached to opposite sides 2 of the frame 1, and extend inwardly therefrom for engagement with the side edges of the sheet material as it is fed through the machine. The guide rollers 34 are journaled on pins carried by fixed brackets 36. The guide rollers 35, which are positioned on the opposite side of the machine from the guide rollers 34, are journaled on pins carried by hinged brackets 37, which are acted upon by compression springs 38 whereby the guide rollers 35 are yieldably urged inwardly from the adjacent side 2 for engagement with the adjacent edge of the sheet material to position the sheet material against the guide rollers 34.

The invention may be modified in various ways without departing from the spirit and scope thereof.

What is claimed is:

1. In a machine for use in cutting parallel grooves in the surfaces of sheet materials, such as plywood, for the purpose of ornamentation, the combination of a frame, two pairs of feed rolls carried by the frame, the rolls of each pair being positioned one above the other and one of the rolls of each pair being driven, a third driven roll carried by the frame and positioned between the driven rolls of the two pairs, a motor carried by the

frame and operatively connected to the driven rolls, a sub-frame supported above the frame and pivotally connected adjacent one end to a shaft arranged transversely with respect to the frame, whereby its opposite end may be raised and lowered, a shaft carried by the sub-frame and positioned above the third driven roll, in alignment therewith, a plurality of rollers rotatably mounted on the last mentioned shaft, and capable of turning freely relative thereto, for use in conjunction with the third driven roll as feed rollers, a plurality of rotary cutters connected to the last mentioned shaft and capable of turning therewith, and a motor carried by the sub-frame and operatively connected to the last mentioned shaft.

2. The structure of claim 1, the rotary cutters and the last mentioned rollers being adjustable longitudinally relative to the last mentioned shaft, the shaft being supported intermediate its ends by a bearing carried by the sub-frame, and the bearing being adjustably connected to the sub-frame whereby it is adjustable longitudinally relative to the shaft.

3. The structure of claim 2, two sets of guide rollers connected to opposite sides of the frame and extending inwardly therefrom for engagement with the side edges of the sheet material, one set of guide rollers being rotatably mounted on fixed brackets connected to the adjacent side of the frame and the other set of guide rollers being

rotatably mounted on hinged brackets connected to the adjacent side of the frame and acted upon by compression springs whereby they are yieldably urged inwardly for engagement with the adjacent edge of the sheet material.

4. The structure of claim 3, a feed platform and a discharge platform each aligned with the feed rolls and comprising a plurality of runners and a pair of side rails, resilient guide means attached to one of the side rails for engagement with the adjacent side edge of the sheet material, and resilient guide means attached to the adjacent end of the frame above an opening therein opposite the feed platform for engagement with the upper surface of the sheet material.

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