June 25, 1946. W. JOHNSON ET AL 2,402,633

MACHINE FOR RABBETING AND COATING THE SHIPLAP EDGES OF SIDING PANELS

Filed Dec. 3, 1943 3 Sheets-Sheet 1

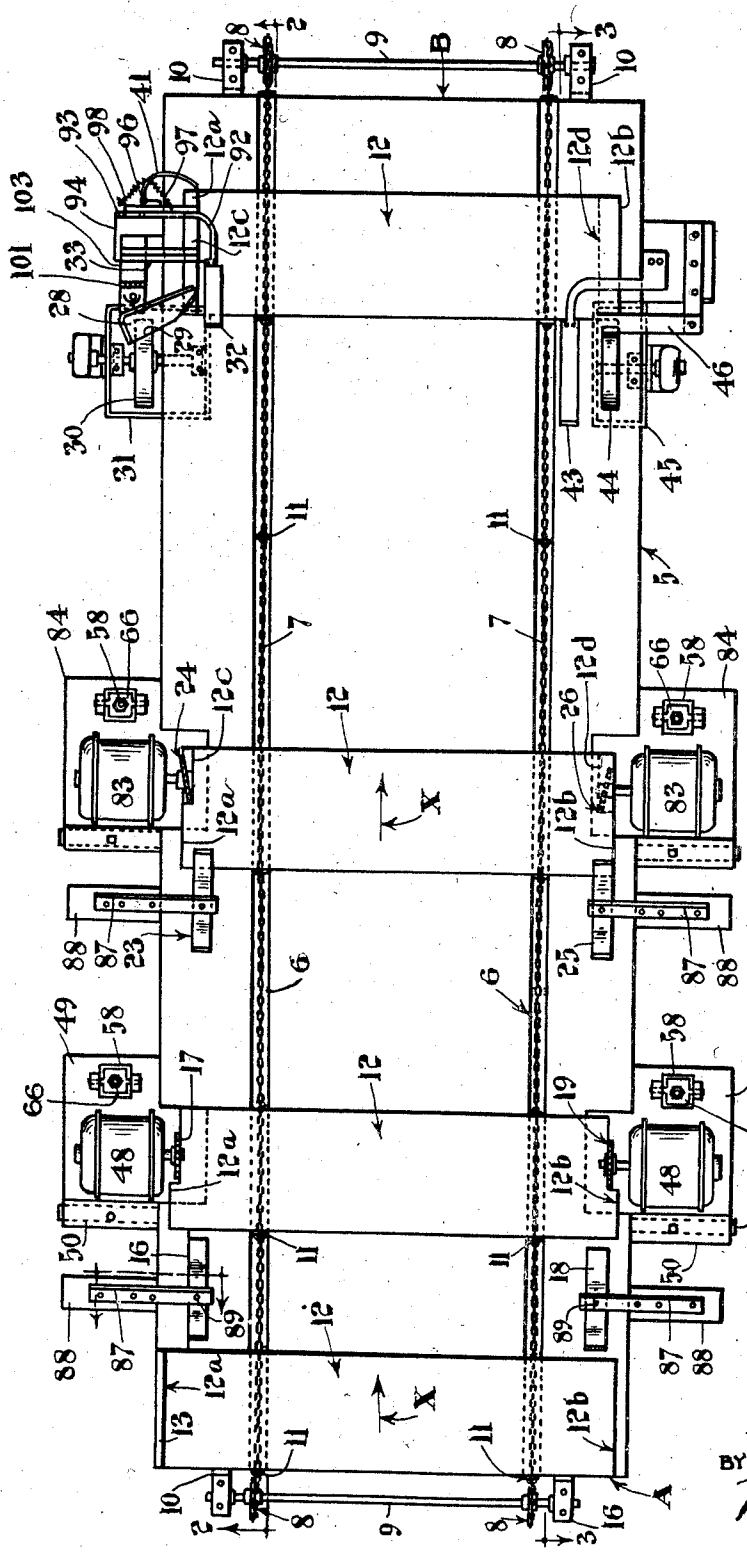


FIG. 1

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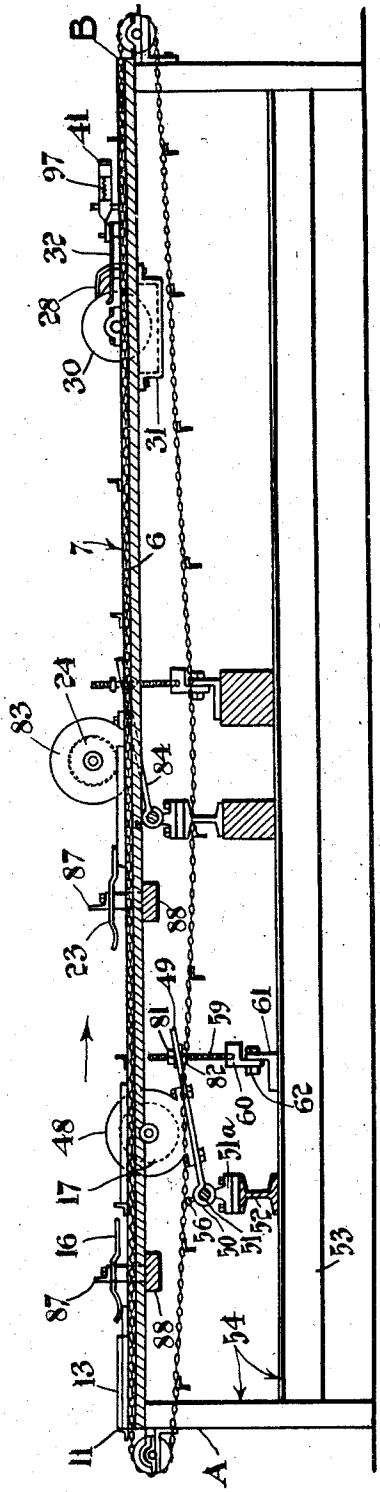


FIG. 2

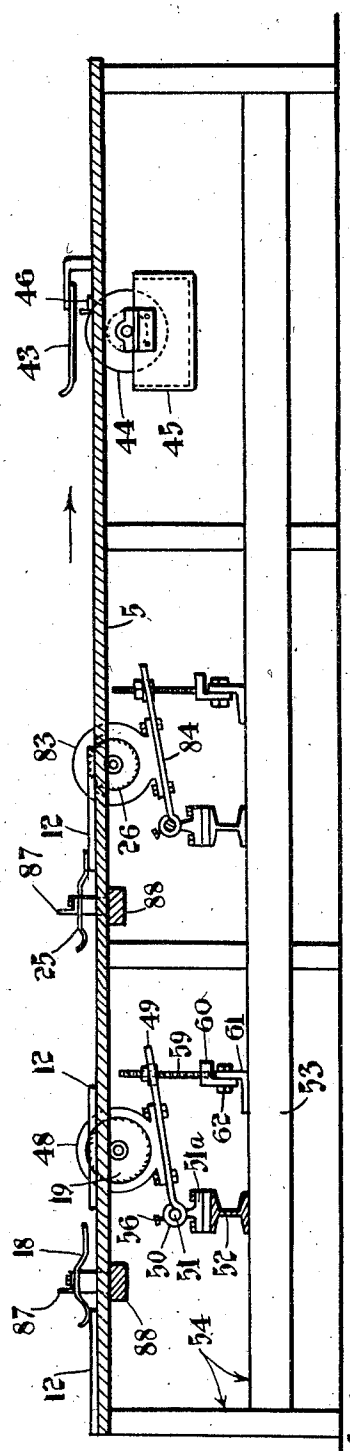


FIG. 3

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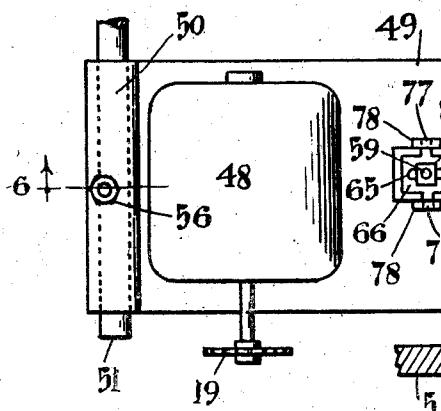


FIG.5

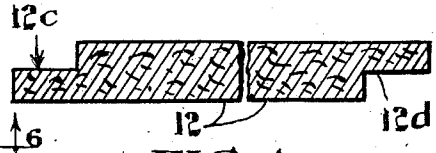


FIG.4

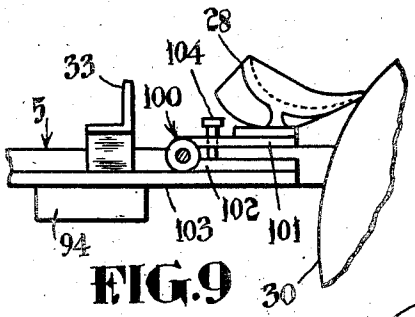


FIG.9

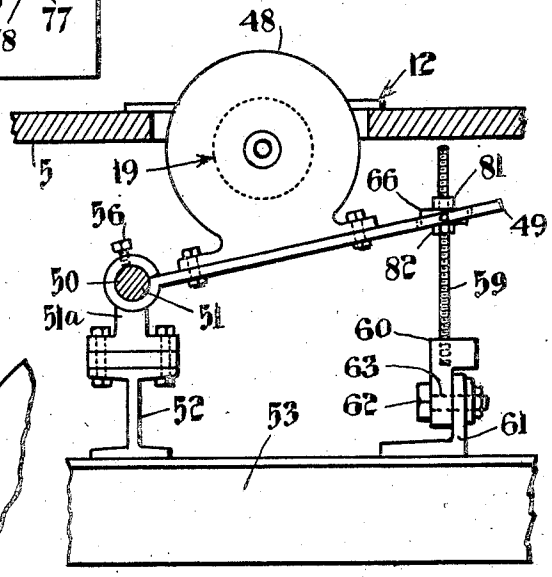


FIG.6

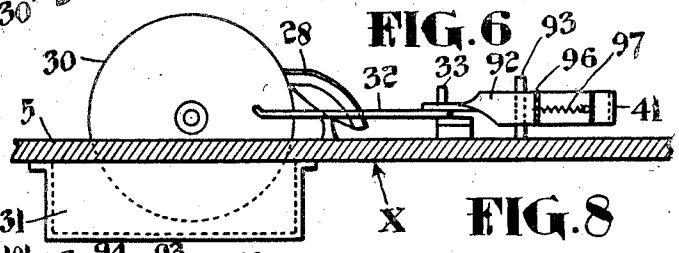


FIG.8

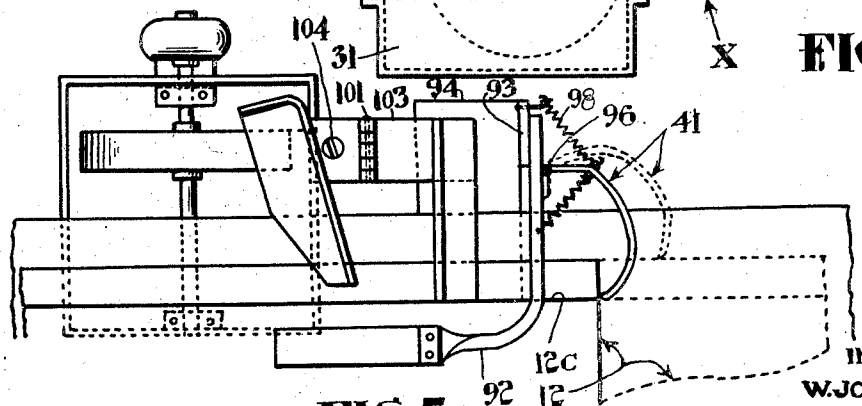


FIG.7

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UNITED STATES PATENT OFFICE

2,402,633

MACHINE FOR RABBETING AND COATING THE SHIPLAP EDGES OF SIDING PANELS

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Application December 3, 1943, Serial No. 512,820
In Canada September 30, 1943

2 Claims. (Cl. 144—198)

1

This invention relates to the manufacture of siding and other panels provided with rabbeted edges and the object is to provide an improved machine whereby the rabbeting of such panels and the application of asphalt or other coating materials to the rabbeted edges is accomplished in one continuous operation.

According to this invention, a plurality of panels are successively conveyed past a series of stations including (1) oppositely located cutting stations where end portions of the panels are cut off to reduce the panels to the proper length; (2) oppositely located rabbeting stations where the said end portions of the panels are grooved to provide rabbets extending the full width of the panels; and (3) oppositely located coating stations where a coating of asphalt is applied to the defining walls of the rabbets. Suitable scrapers are arranged adjacent the coating stations to smooth and level off the applied coatings.

Proceeding now to a more detailed description of this invention reference will be had to the accompanying drawings, wherein—

Fig. 1 is a plan view of our improved machine.

Fig. 2 is a longitudinal sectional view taken substantially along the line 2—2 of Fig. 1.

Fig. 3 is a longitudinal sectional view taken substantially along the line 3—3 of Fig. 1.

Fig. 4 is a transverse sectional view of a panel showing the manner in which the edges of the panel are rabbeted by the machine shown in the preceding figures.

Fig. 5 is an enlarged plan view of one of the adjustable motor supports embodied in said machine.

Fig. 6 is a side elevation of the assembly shown in Fig. 5.

Fig. 7 is an enlarged plan view showing the elements located at one of the coating stations forming part of said machine.

Fig. 8 is a side elevational view of the assembly shown in Fig. 7. In this figure the table along which the panels are moved past the coating station is shown in section.

Fig. 9 is a detail view of the means provided for mounting the trough shown in Figs. 7 and 8.

Referring more particularly to the drawings, 5 designates a table provided with two laterally spaced longitudinally extending guide grooves 6. A pair of endless panel-conveying chains 7 are trained around sprockets 8 located at opposite ends of the table so that the upper flight of each chain travels over the upper surface of the table in one of the guide grooves 6, while the lower flight travels below the table. The sprockets 8

2

at each end of the table are carried by a common shaft 9 journalled in suitable bearings 10. One of said shafts is driven in a suitable manner (not shown) so that the upper flights of the chains travel in the direction indicated by the arrows X, that is to say, from the feed end A to the discharge end B of the table.

Panel-engaging dogs 11 are suitably spaced along the length of each chain and are adjustably secured thereto in any suitable or desired manner so that the relative spacing of these dogs may be varied to suit different widths of panels.

The panels to be rabbeted and coated in accordance with this invention are shown at 12. Each panel is initially arranged in a position extending transversely across the upper surface of the table 5 immediately adjacent the feed end A, one end of the panel being butted against a guide stop 13 which extends from the feed end A a short distance along one side of the table. The panel 12 is laid in place so that the longitudinal edge facing toward the feed end A will be engaged by two aligned dogs 11 which serve to hold the panel at right angles to the longitudinal centre line of the table while pushing the panel toward the discharge end B.

As each panel 12 travels beyond the guide stop 13 one end 12*a* passes beneath a hold-down spring 16 and over a motor driven circular trimming saw 17 while the other end 12*b* passes beneath a hold-down spring 18 and over a motor driven circular trimming saw 19. The springs 16 and 18 serve to hold the panel against the upper surface of the table 5. As they pass over the saws 17 and 19 the ends of the panel are trimmed or cut off to reduce the panel to a length which is predetermined by the relative spacing of the saws.

As hereinafter described the saws 17 and 19 are mounted so that they may be adjusted toward or away from each other to vary the extent to which the length of the panel is reduced by the cutting or trimming action of these saws.

After passing the trimming saw 19 the end 12*a* of the panel travels beneath a second hold-down spring 23 and under a motor driven circular rabbeting saw 24. At the same time the end 12*b* travels beneath a hold-down spring 25 and over a motor driven circular rabbeting saw 26. As clearly shown in Fig. 3, the saw 24 cuts a rabbet 12*c* in the upper surface of the panel while the saw 26 cuts a complementary rabbet 12*d* in the lower surface of the panel.

After it leaves the saw 24 the end 12*a* of the panel passes beneath the delivery end of a trough 28 through which asphalt is supplied to coat the

defining walls of the rabbet 12c. The trough 28 is provided at one side with a scraper edge 29 by means of which asphalt is scraped into said trough from the periphery of a motor driven asphalt pick-up wheel 30 working in an asphalt pan 31. As it travels past the trough 28 the end 12a of the panel is held down by a spring 32. A scraper 33 extends over the table 5 at a point between the trough 28 and the discharge end B and serves to smooth and level off the asphalt coating previously applied to the defining walls of said rabbet. The asphalt has a tendency to run over the leading ends of the defining walls of the rabbet 12c and to form undesirable projecting beads of asphalt which, in the present instance, are automatically scraped off by a pivotally mounted scraper 41 mounted as herein after described.

During movement of the end 12a of the panel past the coating trough 28 the opposite end 12b travels beneath a hold-down spring 43 and over an asphalt pick-up wheel 44 which works in an asphalt pan 45, and serves to apply a coating of asphalt directly to the defining walls of the rabbet 12d. A scraper 46, located between the asphalt pick-up wheel 44, and the discharge end B of the table extends into the rabbet 12d and serves to smooth and level off the asphalt coating applied to the defining walls of said rabbet.

Each of the trimming saws 17 and 19 is driven by a motor 48 mounted on a base plate 49 having one marginal edge thereof rolled to provide a sleeve bearing 50 arranged to slide on a supporting shaft 51 which extends transversely beneath the table 5. Shaft 51 is supported in bearing bracket 51a mounted on an I-beam 52 carried by longitudinally extending side members 53 of the table supporting frame generally indicated at 54. The sleeve bearing 50 of each base plate 49 permits it to be moved longitudinally of shaft 51 and to be raised and lowered by vertical swinging movement relative to said shaft. Each sleeve bearing 50 is provided with a set screw 56 for holding it in adjusted position on shaft 51.

The opposite edge of each base plate 49 is provided with an opening 58 through which a vertically disposed threaded stud 59 extends. The lower end of stud 59 is fixed to a slide 60 which is adjustably secured to a supporting angle iron 61 by a bolt 62 working in a slot 63. Angle iron 61 extends transversely beneath table 5 and is supported by the aforesaid frame members 53. Stud 59 extends upwardly through an elongated slot 65 provided in a swivel plate 66 equipped with trunnions 77 journalled in bearings 78 carried by base plate 49 at opposite sides of opening 58. Nuts 80 and 81 are arranged on stud 59 above and below swivel plate 66. These nuts are adjusted on the stud 59 to raise or lower the base plate 49 to thereby change the elevation and cutting depth of the trimming saw mounted on said base pate. The sleeve bearings 50 and adjustable slides 60 also permit the base plates 49 to be adjusted toward or away from the longitudinal centre line of table 5 to vary the relative spacing of the saws 17 and 19.

The driving motors 83 of the rabbeting saws 24 and 26 are carried by base plates 84 which are adjustably mounted in the same manner as the base plates 49.

Each of the hold-down springs 16, 18, 23 and 25 is carried by a bracket 87 mounted on a transversely extending frame member 88. As herein shown each bracket 87 comprises an angle iron having its outer end fastened to frame member 88 and its inner end extending inwardly over the table, the said inner end of the bracket being upwardly offset with respect to the outer end and constituting the spring carrying portion of the bracket to which the associated spring is secured by rivets 89 or other suitable fastening means.

The spring 32 located in front of the delivery end of trough 28 is fastened, by a supporting arm 92, to a bracket 93 extending upwardly from a frame member 94. The arm 92 also carries a plate 95 to which one end of the curved scraper 41 is pivotally secured as indicated at 96. Scraper 41 is normally positioned by centering springs 97 and 98 so that its free end wipes across the leading end of the rabbeted portion 12c of the moving panel 12 and then drags along the full width of the adjacent end edge of said panel to remove the asphalt beads that would otherwise be left on these portions of the panel. The centering spring 97 is connected between the scraper 41 and the plate 95 and acts in opposition to the centering spring 98 which is connected between the scraper 41 and the bracket 93.

The trough 28 is preferably mounted on the upper leaf 100 of a hinge 101 whose lower leaf 102 is rigidly secured to a supporting arm 103 projecting laterally from member 94 of the table supporting structure. An adjusting screw 104 is threaded downwardly through leaf 100 so that its lower end engages the upper surface of leaf 102. By turning screw 104 it is possible to raise and lower leaf 100 and to thereby vary the pressure with which the scraping edge 29 of the trough bears against the asphalt pick-up wheel 30. The scraper 33 is carried by the arm 103 which supports the trough adjusting hinge 101.

Having thus described what we now consider to be the preferred embodiment of this invention it will be understood that various modifications may be resorted to within the scope and spirit of the appended claims.

Having thus described our invention, what we claim is:

1. A machine of the character described comprising a table, means for moving a panel over the upper surface of said table, a pair of rabbeting saws arranged at opposite sides of said table and serving to cut reverse rabbets in opposite edge portions of the panel as the latter is moved past said saws, and means for adjustably mounting each of said saws comprising a guide member extending transversely beneath said table, a saw supporting plate provided at one edge with a bearing slidably and rotatably mounting said guide member, a slide supporting the opposite edge of said plate and slide supporting means along which said slide is adjustable in the direction parallel to said guide member.

2. A machine as set forth in claim 1 in which the last mentioned edge of said plate is secured to said slide by adjusting means operable to swing said plate upwardly or downwardly about the pivotal axis afforded by said guide member.

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