June 18, 1940. J. IWANIW 2,205,201

MACHINE FOR MAKING WALL STRIPS

Filed Oct. 5, 1939

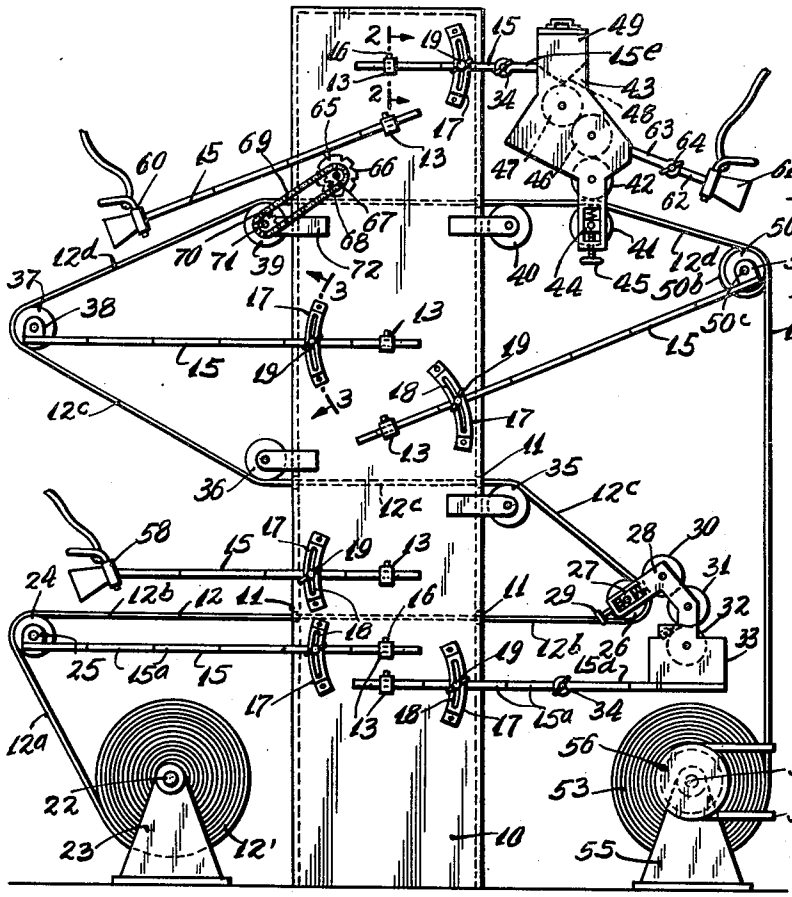


Fig. 1.

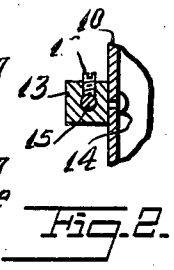


Fig. 2.

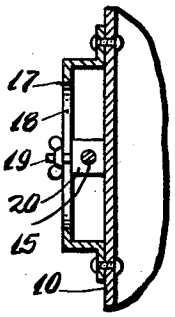


Fig. 3.



Fig. 4.

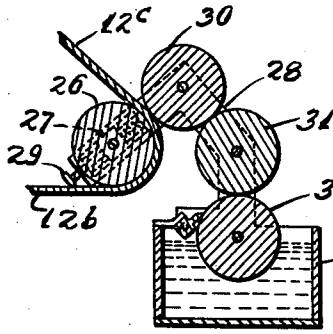


Fig. 5.

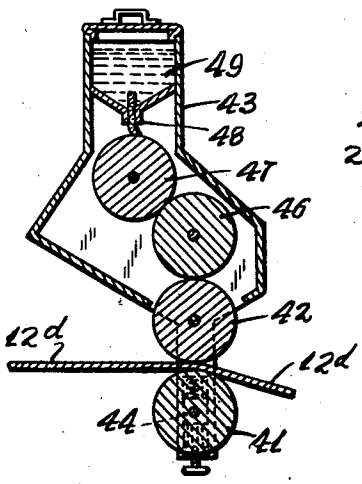


Fig. 6.

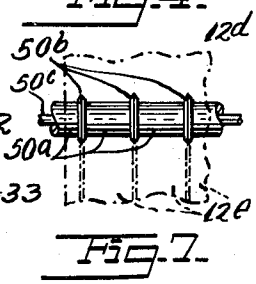


Fig. 7.

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MACHINE FOR MAKING WALL STRIPS

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12 Claims. (Cl. 91—16)

This invention relates to new and useful improvements in a machine for making wall strips.

The invention particularly relates to wall strips formed of flexible material adapted to be pasted or cemented upon a wall to simulate the molding of panels, and the like.

The invention contemplates decorating the wall strips in accordance with various designs and surface ornamentations.

More specifically the invention proposes a machine capable of making wall strips as mentioned which may subsequently be cut into lengths varying from one to twenty yards, and of widths varying from ⅛'' to 2'' so as to be usable as desired.

The invention contemplates to so arrange the machine that wall strips may be manufactured of different colors, and in different designs, and be of fine thin paper, or other material such as heavy paper, rubber sheets, Cellophane, and the like.

The wall strips may be used for decorating walls to simulate panels, and other similar parts, at a such lower cost than molding and other objects previously used for this purpose.

Still further the invention proposes to construct the machine for making wall strips, and characterize it by a drying chamber and a plurality of strip guiding units for guiding sections of a continuous strip, in different stages, through the drying chamber in zigzag path. It is proposed also to provide a means for applying adhesive material, waterproofing material, paints, inks, etc., upon the strip of material at the different stages as it passes through the drying chamber.

Still further the invention proposes the construction of a device as mentioned which is simple and durable and which may be manufactured at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a side elevational view of a machine for making wall strips constructed in accordance with this invention.

Fig. 2 is a fragmentary enlarged vertical sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary enlarged vertical sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a fragmentary sectional view of one of the rods used in the strip guiding units.

Fig. 5 is a fragmentary sectional view of a portion of the machine illustrating particularly the adhesive applying device.

Fig. 6 is a fragmentary vertical sectional view of another portion of the machine illustrating particularly the printing portion of the device.

Fig. 7 is a fragmentary vertical view taken on the line 7—7 of Fig. 1.

The machine for making wall strips in accordance with this invention includes a drying chamber 10 which may be constructed in any desirable manner, according to present day practices. Such drying chambers are generally known, and for this reason details thereof will not be given in this specification. The drying chamber 10 is provided with a plurality of slots 11 arranged in the end walls through which the continuous strip 12 may be threaded. A plurality of strip guiding units are provided for guiding sections of the continuous strip 12, in different stages, through the drying chamber 10, in a zigzag path.

Each guiding unit mentioned in the previous paragraph includes a bearing block 13 pivotally supported by a pintle rivet 14 in a way so that the bearing block may pivot in one direction or the other. A rod 15 slidably engages through the block 13. A set screw 16 threadedly engages through the block and abuts the rod 15 for holding it in various longitudinally adjusted positions. An arcuate bracket 17 is fixedly mounted, and provided with an arcuate slot 18 through which a clamp bolt and nut 19 engages. This clamp bolt and nut is mounted on a block 20 through which the rod 15 passes.

The arrangement is such that the nut may be loosened and the rod 15 pivoted to various annular positions about the pintle 14 as a pivot, and fixed in any of the annular positions. The outer end of each rod 15 is provided with a strip guiding element or other device. Each rod 15 is formed from a plurality of sections 15^a which are removably connected together. Each section 15^a has a threaded portion 15^b at one end, engageable in a threaded opening 15^c in the adjacent end of the adjacent sections. The arrangement is such that rod sections may be removed, or additional ones added to retract or extend the guiding means.

The strip 12 is shown coming off of a supply roll 12'. This supply roll is supported upon a shaft 22 rotatively mounted in a suitable supporting bracket 23. The web portion 12^a coming

off of the roll 12' is engaged over a roller 24 which is rotatively supported on a bracket 25 mounted upon the outer end of one of the rods 15. The web 12^a continues into a web portion 12^b which extends through one of the slots 11 into the drying chamber 10 and then comes out at another slot 11 and engages over another guide element, in the form of a roller 26. This roller 26 is supported in a bearing 27 which is adjustably mounted on a bracket 28. Adjustment screws 29 threadedly engage the bracket and engage with the bearing 27, in a conventional way, so that the bearing may be adjusted upon the bracket. The bracket 28 is provided with a plurality of additional rollers 30, 31 and 32 which engage each other in a series.

The roller 30 is opposed to the roller 26 and engages the bottom side of the strip 12. The roller 32 extends into a tank 33 which is mounted upon the outer end of another one of the rods 15. This particular rod 15 has an auxiliary end portion 15^d connected with the rod by a suitable screw and clamp nut 34. The web portion 12^b after passing around the roller 26 continues into a web portion 12^c which engages over the guide element 35 mounted upon the body of the drying chamber 10. The web portion 12^c then extends through the drying chamber and comes out of the other side engaging against another guide roller 36 which is also mounted on the body of the drying chamber. From this point the web portion continues over a guiding element 37, in the form of a roller, mounted upon a bracket 38 mounted upon the outer end of another one of the rods 15.

The web 12^c then continues into a web portion 12^d which extends upwards over another guiding roller 39 mounted on the body of the drying chamber 10. The web 12^d then passes through the drying chamber and comes out from the other side engaging against the guide roller 40. From this point the guide roller engages between the roller 41 and a counter-roller 42. These latter rollers are mounted upon a bracket 43 mounted upon an auxiliary outer end 15^e of another one of the rods 15. The roller 41 is supported in a bearing 44 which is adjustably mounted on the bracket 43 and is controlled by an adjustment screw 45. The roller 42 is one of a series of rollers which include rollers 46 and 47. The roller 47 engages against the doctor blade edge 48 of a container 49 adapted to hold suitable ink, paint, and the like.

The web section 12^d then continues over another guide element 50, in the form of a roller rotatively supported on a bracket 51 in turn supported on another one of the rods 15. The web 12^d after passing over the roller 50 continues into a web section 12^e which engages upon a roll 53 upon which the material of the strip is drawn. This roll 53 is mounted upon the shaft 54 supported on a bracket 55. A drive pulley 56 is also mounted on the shaft 54 and is adapted to be driven by a belt 57 or other driving element receiving its motion from an electric motor or other convenient prime mover.

The roller 58 consists of a plurality alternating spacer sections 58^a and disc knives 58^b, rotatively held on horizontal bar 58^c. The disc knives 58^b are provided to cut the web 12^d to parallel strips 12^e. The width of these strips may be varied as desired by changing the width of the corresponding spacer section on bar 58^c.

The left hand end of the web section 12^b is adapted to be sprayed with a waterproofing substance or other desirable substance. For this purpose an air operated sprayer 58 is provided, manually controlled, and supported upon another one of the rods 15. This sprayer 58 preferably is for the purpose of spraying shellac upon the top face of the strip 12. The left hand section of the web 12^d is adapted to be colored with printing ink, paint, or other desirable substances which may be applied with a spraying gun 60. This spraying gun is supported on another one of the rods 15. The gun 60 may be manually operated. Another sprayer 61 is adapted to spray heated paraffin or other substance upon the right hand section of the web 12^d past the rollers 41 and 42. This sprayer gun 61 is shown supported on a rod 62 which is adjustably connected with a support rod 63 by a wing screw and nut device 64.

A means is provided for reciprocating the spray device 60 so as to vary the application of color to the strip. This means includes a follower 65 mounted upon the rod 15 which supports the spray device. This follower 65 engages a cam 66 of a predetermined shape and design. The cam 66 is mounted upon a spindle 67 which is provided with a gear 68 engaged by a chain 69 in turn engaging over a pinion 70 shown mounted on a shaft 71 coaxial with the roller 39. The roller 39 is fixedly mounted on the shaft 71 which in turn is rotatively supported in a bracket 72 mounted upon the body of the drying chamber 10.

The operation of the machine for making wall strips is as follows:

The drive pulley 56 turns the roll 53 and draws the strip 12 through the machine. The path of the strip may be followed by starting at the roll 12'. From the roll, the web 12^a passes upwards over the guide roller 24 and continues into the web section 12^b. At this point the top of the web section 12^b is sprayed with shellac or other fluid from the spray gun 58. The position of the spray gun may be varied by varying the position of the rod 15 so that the shellac or other substance is applied upon the strip 12 in a satisfactory way. The shellacked web portion then passes through one of the openings 11 into the drying chamber 10. Due to the drying atmosphere within the chamber the shellac readily dries.

The shellacked web then passes out through another one of the openings 11 and continues into the right hand portion of the web portion 12^b. This web portion then passes between the rollers 26 and 30 and at this point the bottom side of the strip is coated with shellac material such as the usual gum material, obtained from the container 33 and transferred by the various transfer rollers. The web section 12^c which is now coated with adhesive substance on its bottom side then passes through the drying chamber 10 so that the adhesive material quickly dries.

The web section 12^c then continues into the section 12^d which is ornamented with printers ink, paint, or the like, from the spray gun 60. This spray gun 60 is mechanically reciprocated upwards and downwards to various distances from the strip section 12^d so as to vary the coloring of the strip. The shape of the cam 66 controls the particular design produced by the spray gun 60. The position of the spray gun 60 may be varied by changing the position of its supporting rod 15 in a way as previously described. The web section 12^d then passes

through the drying chamber 10 and the ink, paint, and the like then dries.

The web then continues to a point between the rollers 41 and 42 and then this area is imprinted with a design. The roller 42 preferably is engraved with a suitable design which is printed by a printing fluid supplied from the container 49. The web section 10d is sprayed with a protective paraffin or other desirable substances by the spray gun 61. The ornamented strip is then drawn upon the roll 53 and from this roll it may be subsequently unwound and cut into lengths of various sizes.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

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

1. A machine for making wall strips, comprising a drying chamber, a plurality of strip guiding units for guiding sections of a continuous strip in different stages through said drying chamber in a zigzag path, means for moving said continuous strip forwards, means for applying shellac on the top side of said strip at one point before the drying chamber, means for applying an adhesive substance on the bottom of said strip at a point past the first of said stages, means for applying ink or paint on the top of said strip at a point past the second stage of drying, and means for printing the top of said strip at a point past the third stage of drying.

2. A machine for making wall strips, comprising a drying chamber, a plurality of strip guiding units for guiding sections of a continuous strip in different stages through said drying chamber in a zigzag path, means for moving said continuous strip forwards, means for applying shellac on the top side of said strip at one point before the drying chamber, means for applying an adhesive substance on the bottom of said strip at a point past the first of said stages, means for applying ink or paint on the top of said strip at a point past the second stage of drying, and means for printing the top of said strip at a point past the third stage of drying, each of said guiding elements comprising a bearing block pivotally mounted, a rod engaging through bearing block, means for fixedly holding said rod in various positions upon said bearing block, and a guiding element on the outer end of said rod.

3. A machine for making wall strips, comprising a drying chamber, a plurality of strip guiding units for guiding sections of a continuous strip in different stages through said drying chamber in a zigzag path, means for moving said continuous strip forwards, means for applying shellac on the top side of said strip at one point before the drying chamber, means for applying an adhesive substance on the bottom of said strip at a point past the first of said stages, means for applying ink or paint on the top of said strip at a point past the second stage of drying, and means for printing the top of said strip at a point past the third stage of drying, each of said guiding elements comprising a bearing block pivotally mounted, a rod engaging through bearing block, means for fixedly holding said rod in various positions upon said bearing block, and a guiding element on the outer end of said rod, said rod being formed from a plurality of connected sections adapted to be disconnected so that sections may be removed or other sections added to vary the length of the rod.

4. A machine for making wall strips, comprising a drying chamber, a plurality of strip guiding units for guiding sections of a continuous strip in different stages through said drying chamber in a zigzag path, means for moving said continuous strip forwards, means for applying shellac on the top side of said strip at one point before the drying chamber, means for applying an adhesive substance on the bottom of said strip at a point past the first of said stages, means for applying ink or paint on the top of said strip at a point past the second stage of drying, and means for printing the top of said strip at a point past the third stage of drying, said means for applying shellac comprising a spray gun for the shellac.

5. A machine for making wall strips, comprising a drying chamber, a plurality of strip guiding units for guiding sections of a continuous strip in different stages through said drying chamber in a zigzag path, means for moving said continuous strip forwards, means for applying shellac on the top side of said strip at one point before the drying chamber, means for applying an adhesive substance on the bottom of said strip at a point past the first of said stages, means for applying ink or paint on the top of said strip at a point past the second stage of drying, and means for printing the top of said strip at point past the third stage of drying, said means for applying shellac comprising a spray gun for the shellac, and means for supporting the spray gun at a desirable position in relation with said strip.

6. A machine for making wall strips, comprising a drying chamber, a plurality of strip guiding units for guiding sections of a continuous strip in different stages through said drying chamber in a zigzag path, means for moving said continuous strip forwards, means for applying shellac on the top side of said strip at one point before the drying chamber, means for applying an adhesive substance on the bottom of said strip at a point past the first of said stages, means for applying ink or paint on the top of said strip at a point past the second stage of drying, and means for printing the top of said strip at a point past the third stage of drying, said means for applying adhesive substance including a container for the adhesive substance, transfer rollers for transferring the adhesive substance from the container and depositing it upon said strip.

7. A machine for making wall strips, comprising a drying chamber, a plurality of strip guiding units for guiding sections of a continuous strip in different stages through said drying chamber in a zigzag path, means for moving said continuous strip forwards, means for applying shellac on the top side of said strip at one point before the drying chamber, means for applying an adhesive substance on the bottom of said strip at a point past the first of said stages, means for applying ink or paint on the top of said strip at a point past the second stage of drying, and means for printing the top of said strip at a point past the third stage of drying, said means for applying ink or paint to the top of the strip including a spray gun.

8. A machine for making wall strips, comprising a drying chamber, a plurality of strip guiding units for guiding sections of a continuous strip in different stages through said drying

chamber in a zigzag path, means for moving said continuous strip forwards, means for applying shellac on the top side of said strip at one point before the drying chamber, means for applying an adhesive substance on the bottom of said strip at a point past the first of said stages, means for applying ink or paint on the top of said strip at a point past the second stage of drying, and means for printing the top of said strip at a point past the third stage of drying, said means for applying ink or paint to the top of the strip including a spray gun, and means for holding said spray gun in various positions relative to said strip.

9. A machine for making wall strips, comprising a drying chamber, a plurality of strip guiding units for guiding sections of a continuous strip in different stages through said drying chamber in a zigzag path, means for moving said continuous strip forwards, means for applying shellac on the top side of said strip at one point before the drying chamber, means for applying an adhesive substance on the bottom of said strip at a point past the first of said stages, means for applying ink or paint on the top of said strip at a point past the second stage of drying, and means for printing the top of said strip at a point past the third stage of drying, said means for applying ink or paint to the top of the strip including a spray gun, and means for holding said spray gun in various positions relative to said strip, said holding means including a cam for reciprocating the spray gun to vary the designs.

10. A machine for making wall strips, comprising a drying chamber, a plurality of strip guiding units for guiding sections of a continuous strip in different stages through said drying chamber in a zigzag path, means for moving said continuous strip forwards, means for applying shellac on the top side of said strip at one point before the drying chamber, means for applying an adhesive substance on the bottom of said strip at a point past the first of said stages, means for applying ink or paint on the top of said strip at a point past the second stage of drying, and means for printing the top of said strip at a point past the third stage of drying, comprising a printing unit having an engraved roller engaging against the strip and supplied with suitable printing ink, paint and the like.

11. A machine for making wall strips, comprising a drying chamber, a plurality of strip guiding units for guiding sections of a continuous strip in different stages through said drying chamber in a zigzag path, means for moving said continuous strip forwards, means for applying shellac on the top side of said strip at one point before the drying chamber, means for applying an adhesive substance on the bottom of said strip at a point past the first of said stages, means for applying ink or paint on the top of said strip at a point past the second stage of drying, means for printing the top of said strip at a point past the third stage of drying, and a means for applying melted paraffin or the like to the strip past the printing means.

12. A machine for making wall strips, comprising a drying chamber, a plurality of strip guiding units for guiding sections of a continuous strip in different stages through said drying chamber in a zigzag path, means for moving said continuous strip forwards, means for applying shellac on the top side of said strip at one point before the drying chamber, means for applying an adhesive substance on the bottom of said strip at a point past the first of said stages, means for applying ink or paint on the top of said strip at a point past the second stage of drying, means for printing the top of said strip at a point past the third stage of drying, and a means for applying melted paraffin or the like to the strip past the printing means, including a spray gun for the paraffin or the other substances, and means for supporting said spray gun in a suitable relative position to the strip.

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