

1,308,724.

J. SCHUMACHER,  
PLASTER BOARD LATH.  
APPLICATION FILED MAR. 8, 1919.

Patented July 1, 1919.  
2 SHEETS—SHEET 1.

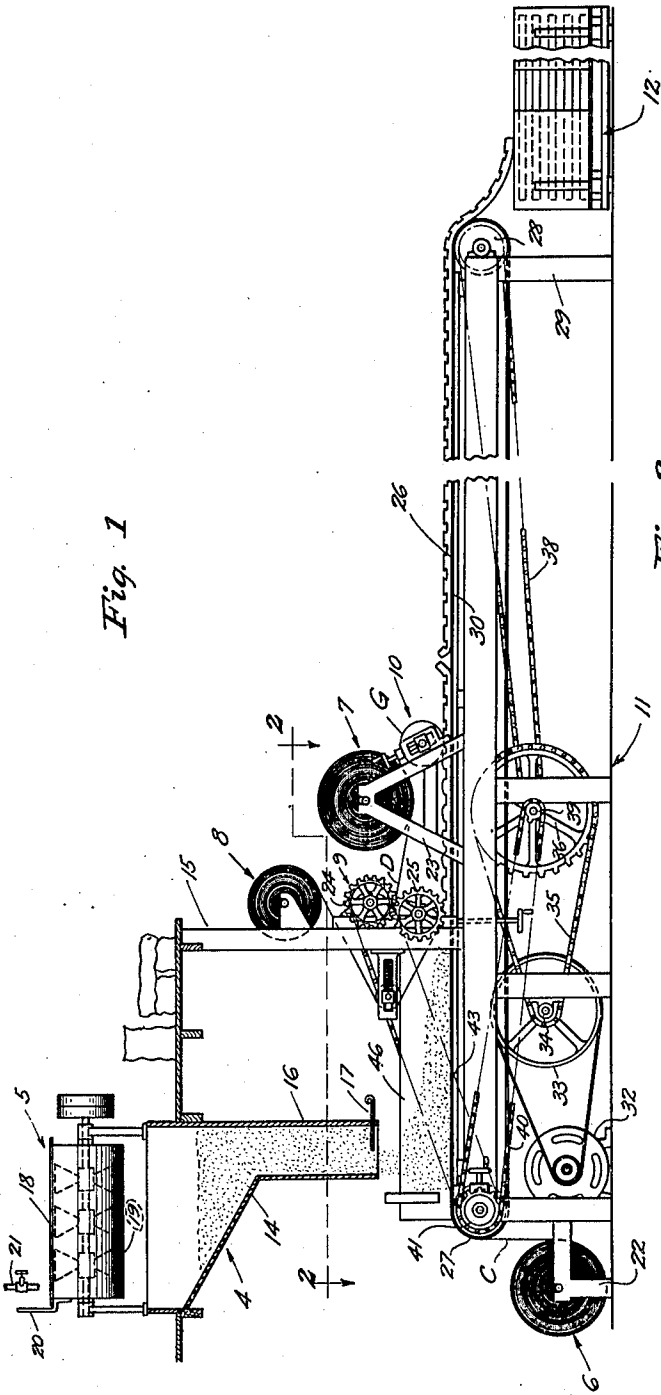


Fig. 1

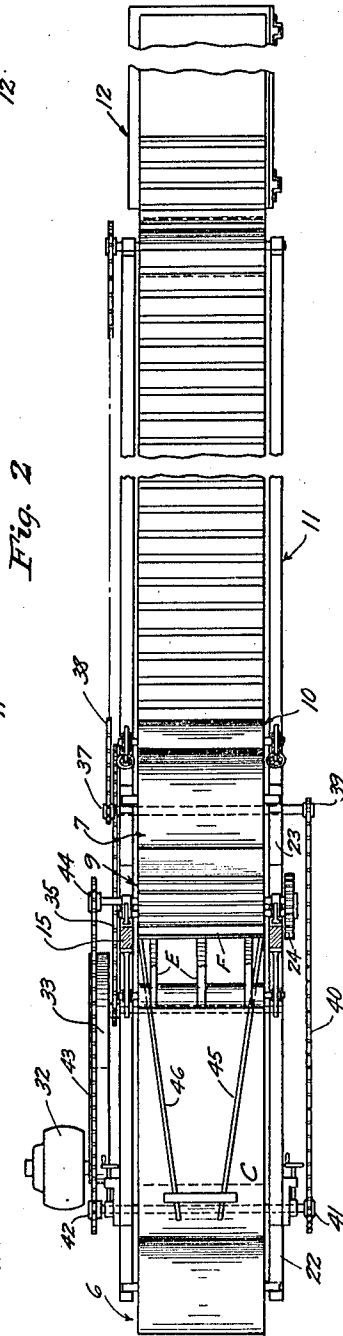


Fig. 2

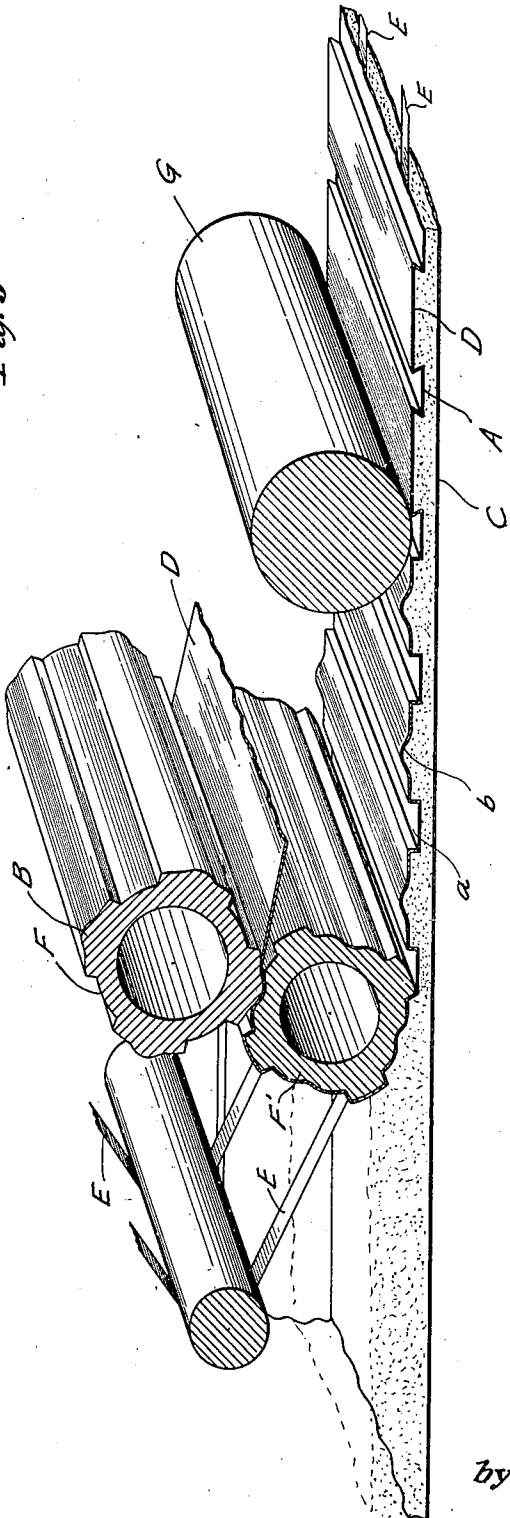
Inventor  
John Schumacher  
by Nestall and Wallace  
his Attorneys

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*Fig. 3*



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# UNITED STATES PATENT OFFICE.

JOHN SCHUMACHER, OF LOS ANGELES, CALIFORNIA.

## PLASTER-BOARD LATH.

1,308,724.

Specification of Lett's Patent.

Patented July 1, 1919.

Application filed March 8, 1919. Serial No. 281,433.

*To all whom it may concern:*

Be it known that I, JOHN SCHUMACHER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Plaster-Board Lath, of which the following is a specification.

This invention relates to an improved article of manufacture, and a method of producing the same. It pertains more particularly to an article known as plaster board lath used in building construction as a substitute for wire or wooden lath.

It is an object of this invention to provide an improved article of manufacture consisting of such plaster board or lath which will be superior in simplicity of structure, in durability and length of life.

Lath of the character described is made by incasing within surface strips or sheets of paper a plastic composition of suitable plastic material which is initially a moist unstable substance. This plastic material sets, adheres to the sheets, and forms a hard board. Such plaster board is often used to produce the finished wall surface with suitable decorations applied thereto. In accordance with the present invention, the plaster board is converted into laths by so forming it that plaster may be applied thereto to complete the wall's surface, and the board is so constructed that the applied plaster is gripped by the plaster board and anchored thereto. In the manufacture of such plaster board, as ordinarily carried on, it is difficult to prevent warping of the product due to unequal shrinkage and expansion of the component parts, and unequal resistance to the strains produced thereby. In accordance with this invention, the board is so constructed as to prevent such warping. Another object of this invention is to provide a novel and efficacious method of making such board.

The above mentioned objects and other objects as will appear from the description, are susceptible of being carried out by means of the mechanism illustrated in the accompanying drawing, in which:

Figure 1 is a side elevation, partly in section of apparatus suitable for carrying out the steps of the process; Fig. 2 is a plan view taken on the line 2—2 of Fig. 1; and Fig. 3 is a diagrammatic view in perspective of the means shown in Figs. 1 and 2 for producing the board.

Broadly the finished article shown herein

comprises a board having parallel dove tail mortises therein, as best shown in Fig. 3. The initially finished board is shown at the right of Fig. 3. The board is made by continuously feeding pliable surface paper and interposing therebetween a plastic substance. During the advance of the paper one sheet thereof is corrugated to provide the mortises. The mortises in their initial shape, indicated by *a* in Fig. 3, have parallel side walls which are not undercut. A fullness is, however, provided in the corrugated piece so that upon flattening the same, a pitch is given to the side walls of the mortise to form a dove tail, as indicated by *A*. This fullness is indicated by a hump *b*. It is evident that the uncorrugated piece *C* in drying will shrink and place a tension on that side of the board, while the corrugations on the surface sheet *D* would permit stretching without tension, and therefore, warping would occur, unless means is provided to prevent the same. This I accomplish by inserting adjacent the surface *D* a number of strips of paper *E* to act as tension means while drying holding the top layer of the board under the same tension while drying as the bottom, and thereby preventing warping. The surface sheets are fed continuously, the upper sheet *D* passing between a pair of corrugated rollers forming mortises *a* and humps *b* on the upper surface between the mortises. The board advances passing beneath a flattening roller *G*, which flattens the hump *b*, thereby forcing over the side walls of the mortises, giving them a pitch and forming the dove tails *A*.

Referring more particularly to Figs. 1 and 2, a complete machine for carrying out the process is shown. A plastic composition supply means is indicated generally by 4. Mounted thereabove is a plaster mixing means indicated by 5. Paper supply rolls are designated by 6 and 7, and paper strip rolls by 8. The means for corrugating the upper surface paper is indicated generally by 9, and the flattening roller mechanism by 10. The means for advancing and conveying the plaster board is indicated generally by 11. The cars carrying trays for receiving the initially finished plaster board are indicated by 12.

The plaster composition supply means 4 comprises a hopper 14 mounted upon a suitable frame work 15 and provided with a spout 16, the discharge from which is con-

trolled by a gate 17. The spout 16 discharges plaster upon the paper supplied from paper roll 6 at the receiving end of the advancing means 11.

5 The plaster mixing means preferably comprises a mixing trough 18 and revoluble mixing blades 19 fixed to a rotatable shaft driven by suitable means. The trough is journaled so that it may be tilted to discharge the contents thereof into the hopper, and a handle 20 is provided on the trough, whereby the trough may be tilted. A water supply pipe 21 for feeding water to the mixing trough is controlled by a suitable 15 valve.

The paper supply roll 6 is journaled upon a shaft supported by the frame work 22 and preferably below the level of the upper surface of the advancing means and at the receiving end thereof.

20 The paper supply roll 7 is similarly mounted upon a shaft supported by a sub-frame 23, preferably above the advancing means 11. Both rolls 6 and 7 are mounted 25 in accordance with the usual practice in mounting large rolls of paper.

The roll of strips of paper 8 is mounted upon a shaft journaled in brackets secured to the frame work 15.

30 The corrugating rolls indicated generally by 9 in Figs. 1 and 2 and more specifically by F and F' in Fig. 3 are disposed below the roll 8 and intermediate rolls 6 and 7. The corrugating rollers are preferably hollow, as indicated in Fig. 3, so that they may be heated to better press the corrugations into the paper. These rollers are mounted upon shafts journaled upon the frame work 15. Each corrugating roller has a gear secured to one end thereof indicated by 24 and 25. These gears mesh and positively drive the corrugating rollers. Means may be provided for adjusting the distance of the lower corrugating roller above the upper surface of the advancing means 11, and thereby adjusting the thickness of the plaster board being produced.

45 The advancing means 11 comprises a conveyor belt 26 passed over rollers 27 and 28 having shafts journaled upon the ends of the frame work 29. A table 30 is formed to properly support the belt.

55 A motor 32 for driving the machine is belted to a drive wheel 33 mounted on the frame work 29. Fixedly connected to the wheel 33 is a sprocket pinion 34, which is geared by a chain 35 to a wheel 36. Wheel 36 has fixedly connected thereto a sprocket pinion 37 geared by a chain 38 to a sprocket connected to roller 28. At the other end of the shaft to which wheel 36 is secured is a sprocket pinion 39, which is geared by a chain 40 to a sprocket wheel 41 fixedly connected to roller 27. Another sprocket 65 wheel 42 is fixedly connected to roller 27

and is geared by a chain 43 to a sprocket wheel 44 fixedly secured to the shaft carrying the upper corrugating roller F.

It is obvious that all the parts moving the components of the plaster board are positively driven and that there will be no slippage, but all will advance at the same speed. Any suitable means for severing the plaster board into lengths may be used.

70 The plaster composition is discharged from the hopper onto the lower sheet of surface paper C between guide boards 45 and 46. The conveyer belt carries the strip C forward and with it the plaster, passing under the lower corrugating roller. Referring particularly to Fig. 3, the upper surface sheet D in corrugated form is fed forwardly, the plaster being spread by the lower corrugating roller. Strips E are fed between the sheets C and D. Corrugating roller F has teeth of peculiar formation engaging openings in roller F'. The sides of the teeth are parallel, and the tops are provided with humps B conforming to corresponding depressions in the openings on roller F'. It will be noticed that the sides, tops and bottoms of the teeth meet in sharp edges. These edges break the sheets of paper D as it passes between the rollers for a purpose later described. The plaster board advances from the corrugating rollers with mortises having parallel side walls and the top surface of the boards between rollers having humps b. The humps are flattened by the roller G. Due to the break of the paper at the edges or the junctures of the walls of the mortises, the side walls of the latter tilt or pitch to form dove tails A. The strips of paper E are parallel to the surface sheet C and embedded in the plastic material. These strips prevent distortion of the upper sheet D when the humps are being flattened.

As before stated the plaster board is cut into suitable lengths and is delivered at the discharge end of the conveyer upon trays mounted upon a car 12, by which it is transported to points where the other usual steps in the process of making plaster board are carried out.

115 Having thus disclosed my invention, what I claim and desire to secure by Letters Patent is:

1. The process of making plaster board, which consists in interposing between sheets of pliable material a plastic substance, one of said sheets being corrugated and having a fullness on its surface at the grooves; and extending said surface by removing said fullness, whereby the sides of said grooves are pitched.

2. The process of making plaster board, which consists in interposing between sheets of pliable material a plastic substance, one of said sheets being corrugated and having a

fullness in its outer surface between the grooves; and extending said outer surface by removing said fullness, whereby the sides of said grooves are pitched.

3. The process of making plaster board, which consists in interposing between sheets of pliable material a plastic substance, one of said sheets being corrugated and having undulations in its outer surface between grooves; and flattening said undulations, whereby the sides of said grooves are pitched.

4. The process of making plaster board, which consists of forming mortises having broken edges in a sheet of pliable material, said sheet having a fullness in its surface at the grooves; interposing between said sheet and another sheet plastic material; and extending said surface by removing said fullness, whereby the sides of said grooves are pitched.

5. The process of making plaster board, which consists in forming mortises having broken edges in a sheet of pliable material, said sheet having a fullness in its outer surface between corrugations; interposing between said sheet and another sheet of pliable material a plastic substance; and extending said outer surface by removing said fullness, whereby the sides of said grooves are pitched.

6. The process of making plaster board, which consists in forming mortises having broken edges in a sheet of pliable material, said sheet having undulations in its outer surface between mortises; interposing between said sheet and another sheet of pliable material a plastic substance; and flattening said undulations, whereby the sides of said grooves are pitched.

7. The process of making plaster board,

which consists in interposing between a flat sheet of pliable material and a corrugated sheet of pliable material a plastic substance; interposing between said sheets and adjacent said corrugated sheet tension strips of shrinking characteristics like said flat sheet to prevent warping of said board.

8. The process of making plaster board, which consists in interposing between a flat sheet of pliable material and a corrugated sheet of pliable material a plastic substance; and interposing between said sheets and adjacent said corrugated sheet tension strips of the same material as said flat sheet to prevent warping of said board.

9. The process of making plaster board, which consists in interposing between a flat sheet of pliable material and a corrugated sheet of pliable material a plastic substance, said corrugated sheet having a fullness in its outer surface between the grooves; interposing between said sheets and adjacent said corrugated sheet tension strips of shrinking characteristics like said flat sheet; and extending said surface by removing said fullness, whereby the sides of said grooves are pitched.

10. The process of making plaster board, which consists of interposing between a flat sheet of pliable material and a corrugated sheet of pliable material a plastic substance, said corrugated sheet having undulations therein; interposing between said sheets and adjacent said corrugated sheet tension strips of shrinking characteristics like said flat sheet; and flatten said undulations, whereby the sides of said groove are pitched.

In witness that I claim the foregoing I have hereunto subscribed my name this 26th day of February, 1919.

JOHN SCHUMACHER.