

June 1, 1926.

1,587,189

J. SCHUMACHER

MEANS FOR MAKING LATH BOARD

Filed May 5, 1924

3 Sheets-Sheet 1

Fig. 1

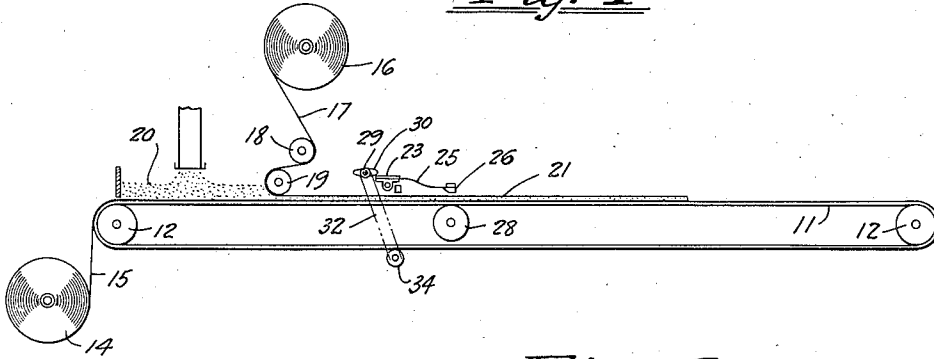


Fig. 2

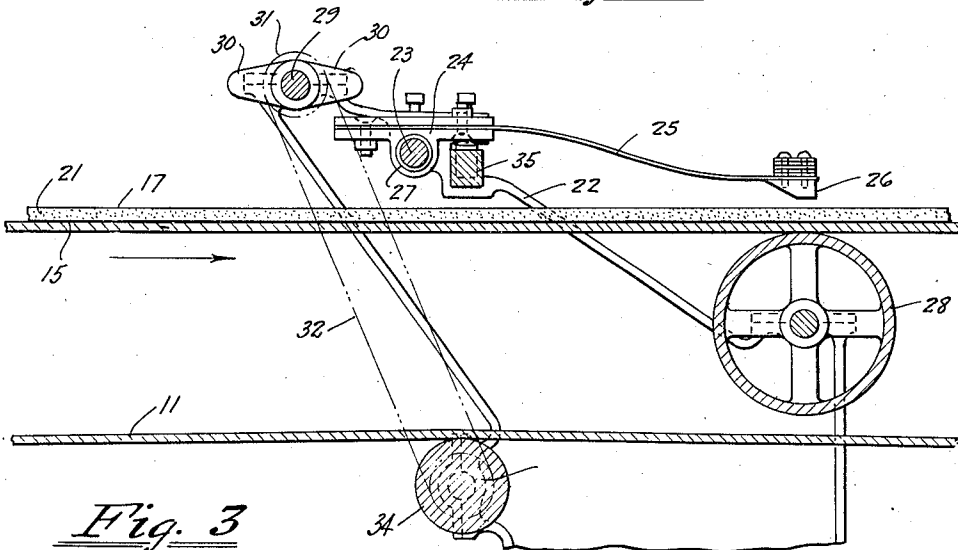
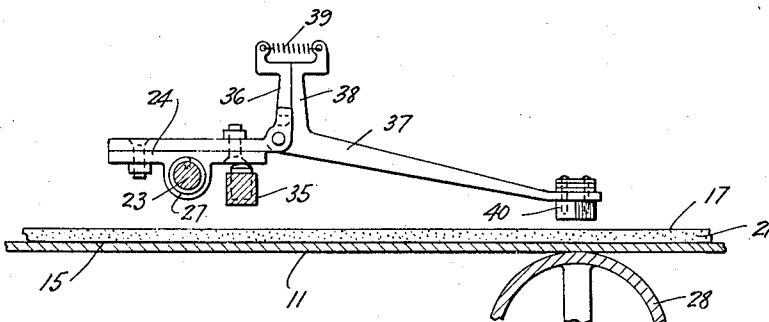


Fig. 3



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June 1, 1926.

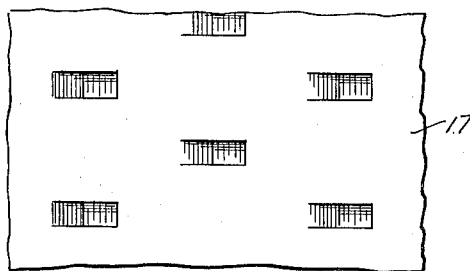
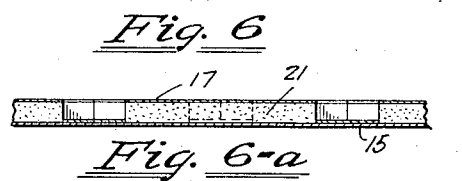
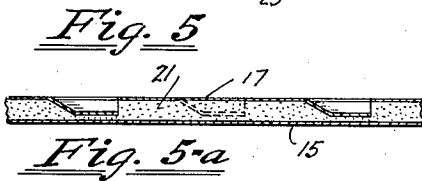
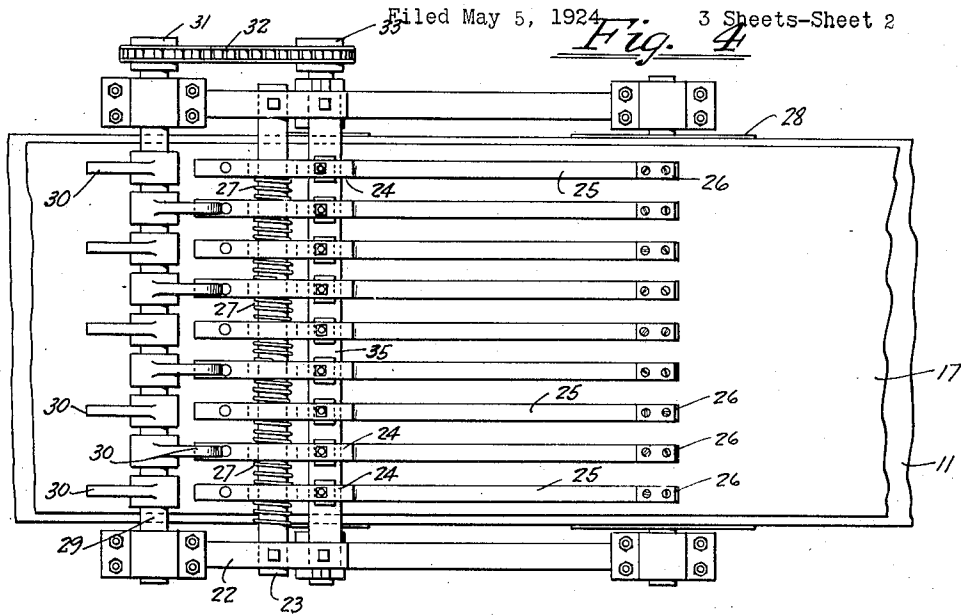
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MEANS FOR MAKING LATH BOARD

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MEANS FOR MAKING LATH BOARD

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3 Sheets-Sheet 3

Fig. 8

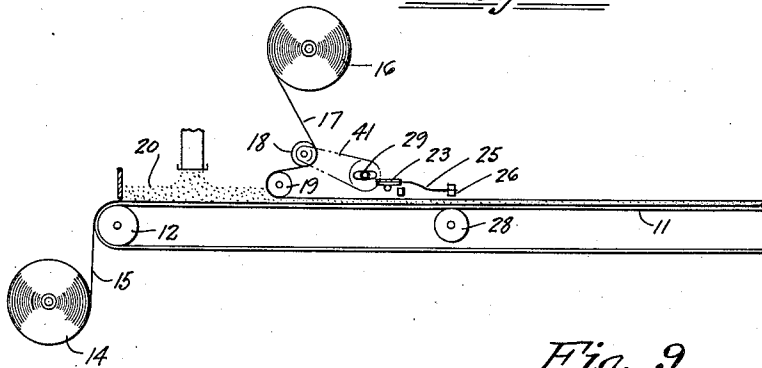


Fig. 9

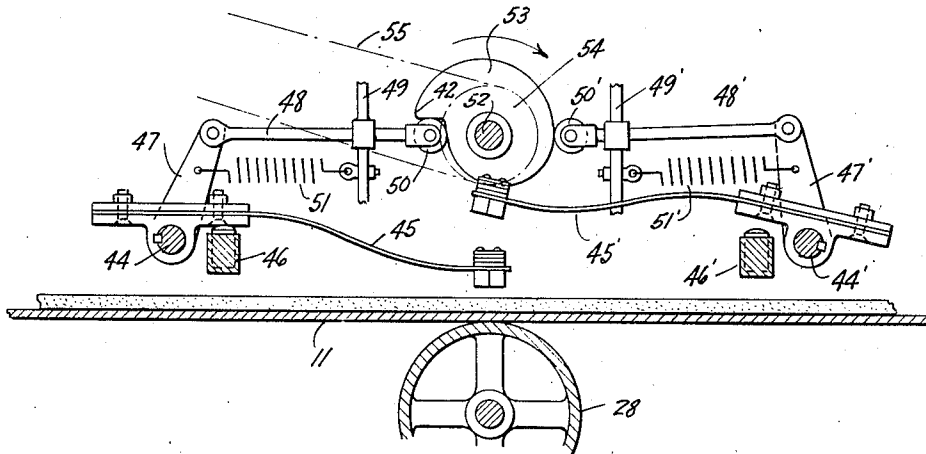
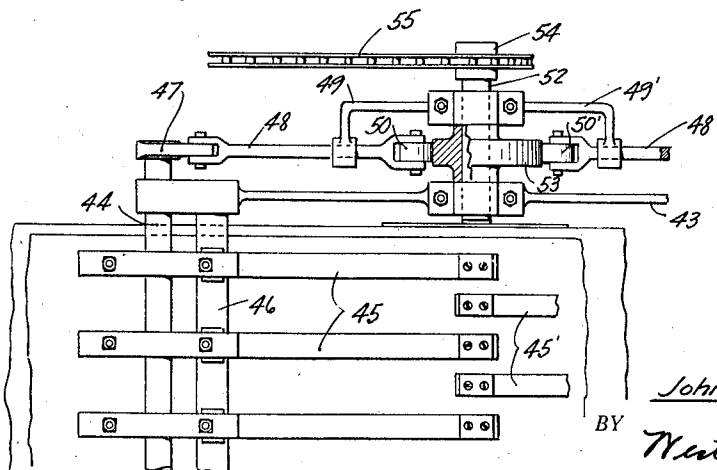


Fig. 10



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Patented June 1, 1926.

1,587,189

UNITED STATES PATENT OFFICE.

JOHN SCHUMACHER, OF LOS ANGELES, CALIFORNIA.

MEANS FOR MAKING LATH BOARD.

Application filed May 5, 1924. Serial No. 711,289.

This invention relates to a method and means of making lath board which is adapted to receive a coating of plaster or the like, wherein recesses or pockets are formed on the plaster receiving face of the board. More specifically, the product consists of a cementitious body having a covering sheet of fibrous material adhering thereto. The covered face has pockets or recesses distributed thereover, the covering sheet being slit at each pocket marginal edge, and the cementitious body being indented to form the pockets. The primary object of this invention is to provide improved methods and means to operate upon the green plaster board made by continuously advancing a covering sheet and supplying the plastic body thereto so as to form pockets therein. Another object of this invention is to provide a step in the process, and means to carry out said step wherein the pockets are formed by the impact of solid bodies upon the face of the board. In addition to the broader objects of this invention, there are certain details of design relating to the means employed to carry out the process.

With the above and other objects and corresponding accomplishments in view, the invention consists in the formation and construction of lath board by the embodiment of the invention shown in the accompanying drawing, and more particularly pointed out in the claims. In the drawing:

Fig. 1 is a diagrammatic view showing the formation of plaster board by the continuous process and the production of plaster receiving pockets therein during the advance of the green board by means of hammers; Fig. 2 is a side elevation on an enlarged scale showing one form of impact mechanism for carrying out the invention; Fig. 3 is a side elevation showing another form of impact hammer; Fig. 4 is a plan view of the construction shown in Fig. 2; Figs. 5, 6, and 7 are sectional views showing different species of lath produced by my invention; Figs. 5^a, 6^a, and 7^a are face views of the boards corresponding to Figs. 5, 6, and 7; Fig. 8 is a diagrammatic view similar to Fig. 1 but showing the impact mechanism driven directly by the travel of the paper; Fig. 9 is a side elevation of another impact mechanism; and Fig. 10 is a plan view of the structure shown in Fig. 9.

Referring more particularly to Fig. 1, an

endless conveyor is indicated by 11. The conveyor is passed over rollers 12 at the end thereof, one or both of the rollers being suitably driven. A roll of paper indicated by 14 for forming the lower face of the lath is mounted to supply paper to the conveyor, the lower web or sheet being indicated by 15. Similarly a roll of paper 16 is positioned to supply a web 17 for the upper face of the lath. Web 17 is passed about rollers 18 and 19 as shown in Fig. 1 wet plaster indicated by 20 being delivered to form the body of the lath 21 as indicated in Fig. 1. The means and steps so far described are those employed by me in making plaster board. The green board in its wet state is advanced continuously from the roller 19, being carried forward by the conveyor 11. It may be severed into suitable lengths and stacked and dried in the manner now well known in the art. However, before severing or removing from the conveyor, the board is operated upon to produce plaster receiving pockets.

To this end, I provide a frame 22 spanning the conveyor and having fixed therein a shaft 23. Pivotally mounted upon the shaft are hammer bearing members 24. These hammer bearings have handles 25 extending forwardly and preferably formed of leaves of spring metal. Secured to the ends of the handles 25 are hammer heads 26 for striking the upper face of the plaster board to form pockets. Secured to each hammer bearing is a torsion spring 27, one end thereof being embedded in the shaft and the other secured to the bearing. Mounted in the frame below the heads 26 to form an anvil and disposed under the upper bight of the conveyor belt 11 is a roller 28. Journalled in suitable bearings on frame 22 is a shaft 29, and fixed thereto are tappets 30 arranged to engage the hammer bearings 24 to raise the heads 26. Shaft 29 has a sprocket wheel 31 at the end thereof over which is passed a sprocket chain 32. Mounted upon a shaft journalled below the lower bight of the conveyor belt is a sprocket 33 geared to chain 32. A roller 34 fixed to the shaft is engaged by the conveyor belt and operated thereby. Thus, the shaft 29 is driven by the conveyor. As a tappet 30 engages the free end of its corresponding hammer bearing, the hammer is raised against the action of its torsion

spring 27. Continued revolution of a tappet causes it to ride off the hammer bearing, when the hammer head has reached its uppermost position. Thereupon the torsion spring forces the hammer downwardly, the bearing engaging a buffer bar 35 extending above the conveyor and transversely thereof. The movement of the hammers are thus arrested, but the resiliency of the handles 25 permit further movement of the head 26, so that the latter strikes and penetrates the upper surface of the green board producing a pocket therein. The rear of each head shown in Figs. 1 and 2 is bevelled, so that the head cuts a tongue from the surface sheet 17 and presses the tongue downwardly into the body of the plaster as best shown in Figs. 5 and 5^a.

In Fig. 3 another form of hammer for carrying out my invention is disclosed. Secured to the hammer bearing 24 is an upright arm 36. Pivotaly secured thereto is a handle 37 having an upright arm 38 corresponding to arm 36 to form a knuckle. Fingers extend from the ends of arms 36 and 38 and are connected by a tension spring 39. A head 40 is secured to the ends of the handle. The head shown is of diamond shape, but, if desired may be of the character shown in Fig. 2 or of any other desired shape. The hammer is operated as before, the hammer bearing being arrested in its downward movement by the buffer bar 35, and continuing so as to strike and penetrate the board, tension spring 39 permitting the continuation of the movement. With the type of head shown in Fig. 3, the pockets will be of the character shown in Figs. 6 and 6^a. In this instance the upper covering sheet 17 is severed around the entire marginal edge of each pocket, and the portion severed is forced downwardly into the body of the plaster as shown in Fig. 6.

In Figs. 7 and 7^a, pockets of rectangular form and inclined to the length of the plaster board sheets are shown. These pockets may be staggered as shown therein. The depth of the pockets may be varied by adjusting the buffer bar 35, and the configuration of the pockets may be determined by the configuration of the hammer head being used. However, the particular form of pockets form no part of the present invention.

Referring more particularly to Figs. 8, 9, and 10, another species of mechanism for carrying out my invention is illustrated. Referring more especially to Fig. 8, means for continuously producing plaster lath is shown therein. This means is the same as that illustrated in Fig. 1 except that the tappet shaft 28 is driven by means of chains and sprocket gears from roller 18, the chains being indicated by 41. Thus, opera-

tion of the hammers is controlled by the travel of the green plaster board, whereas in the structure shown in Figs. 1 and 2, the operation of the hammers is controlled by the travel of the conveyor belt. It is sometimes found advantageous in the manufacture of plaster board and the like by the means shown in Figs. 1 and 8 to cause the conveyor to travel at a higher speed than the plaster board. This causes a slippage of the conveyor under the plaster board, resulting in stretching the board. In such a case it may be advantageous to drive the hammers from devices geared in some manner to the plaster board or the elements constituting the same.

Referring to Figs. 9 and 10, a species of mechanism for producing a pocket in a board wherein two sets of hammers are employed is shown. The imperforate board is produced as before and travels along a conveyor 11 over an anvil roller 28. Mounted in a frame 43 are shafts 44 and 44'. Fixed to the shaft 44 are hammers 45 arranged to engage a buffer bar 46. Fixed to shaft 44 is a crank arm 47 to which is pivotaly secured a tappet rod 48 slidably extending through a guide on frame 49. At the end of rod 48 is a roller 50. A tension spring 51 secures arm 47 to frame 49. A shaft 52 is journaled in the frame and fixed thereto a cam 53 having a high point 42 radially in line with the low point. Secured to the shaft 52 is a sprocket wheel 54 over which passes a driving chain 55. This chain may be operated from the conveyor itself or from the advancing board. The hammers 45' opposed to hammers 45 have a similar construction, like parts of the structure being indicated by the same numerals with primes added thereto. Rollers 50 and 50' are held against the cam surface and are alternately operated. The arrow in Fig. 9 indicates the direction in which the cam is rotating. Roller 50' will ride to the high point and then drop suddenly to the low point, the tension spring 51' bringing the crank arm 47' and with it the hammers 45' with a blow upon the buffer bar 46'. The hammers continue their stroke due to the resiliency of their arms, the heads intruding into the board to form pockets. The hammers 45 are similarly operated but in alternation with the hammer 45'. The same ultimate effect is obtained as that in the structure heretofore described.

I have provided a method and means for carrying out the method wherein plaster board is formed continuously and then operated upon by impact to produce pockets. The result is a lath board, which in its final form has recesses or depressions arranged to receive intruding portions of a plaster coating. Variations in the product may be produced by adding reinforcement to the body, waterproofing the edges or surfaces.

These features form no part of the present invention.

What I claim is:

1. A machine for forming plaster lath or
5 the like, comprising means for continuously
advancing covering sheets and introducing a
plastic body therebetween to form green
board, an endless conveyor to receive the
formed board, an anvil roller beneath the
10 upper bight of said conveyor, and hammers
positioned above said conveyor and anvil to
strike said board so as to penetrate the same
and express plastic material to form pockets.

2. A machine for forming plaster lath or
15 the like comprising means for continuously
advancing covering sheets and introducing
a plastic body therebetween to form green
board, hammers having resilient handles
pivottally supported above the emerging
20 board, tappets to engage said hammers, re-
siliant means for causing said hammers to

strike, and a buffer to arrest the striking
movement of said handles.

3. A machine for forming plaster lath or
the like, comprising means for continuously 25
advancing covering sheets and introducing
a plastic body therebetween to form green
board, an endless conveyor to receive the
formed board, an anvil disposed beneath the
upper bight of said conveyor, hammers piv- 30
otally mounted above said conveyor with the
heads thereof above said anvil, said ham-
mers having resilient handles, tappets to
raise said hammers for striking, resilient
means to complete the striking stroke so 35
that said heads will penetrate the board and
express plastic material to form pockets.

In witness that I claim the foregoing I
have hereunto subscribed my name this 28th
day of April, 1924.

JOHN SCHUMACHER.