Oct. 8, 1946. A. C. KARELIUS 2,408,781

LATHING

Filed Feb. 12, 1945 2 Sheets-Sheet 1

Fig. 1.

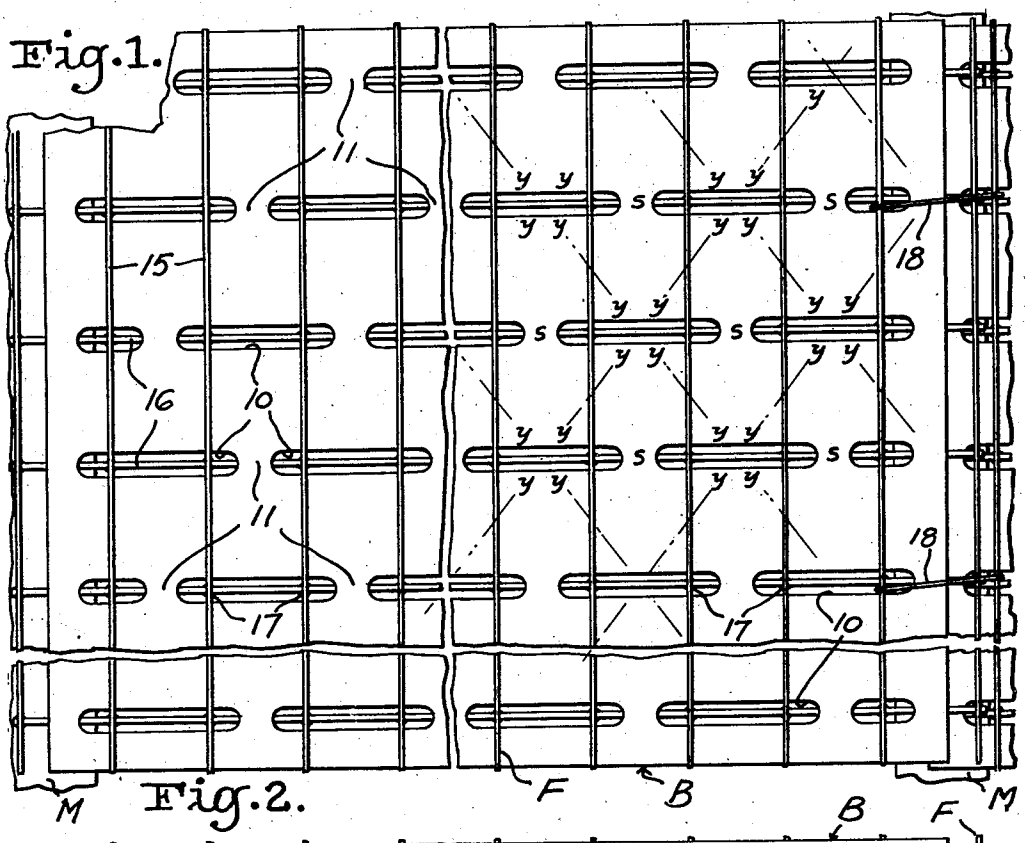
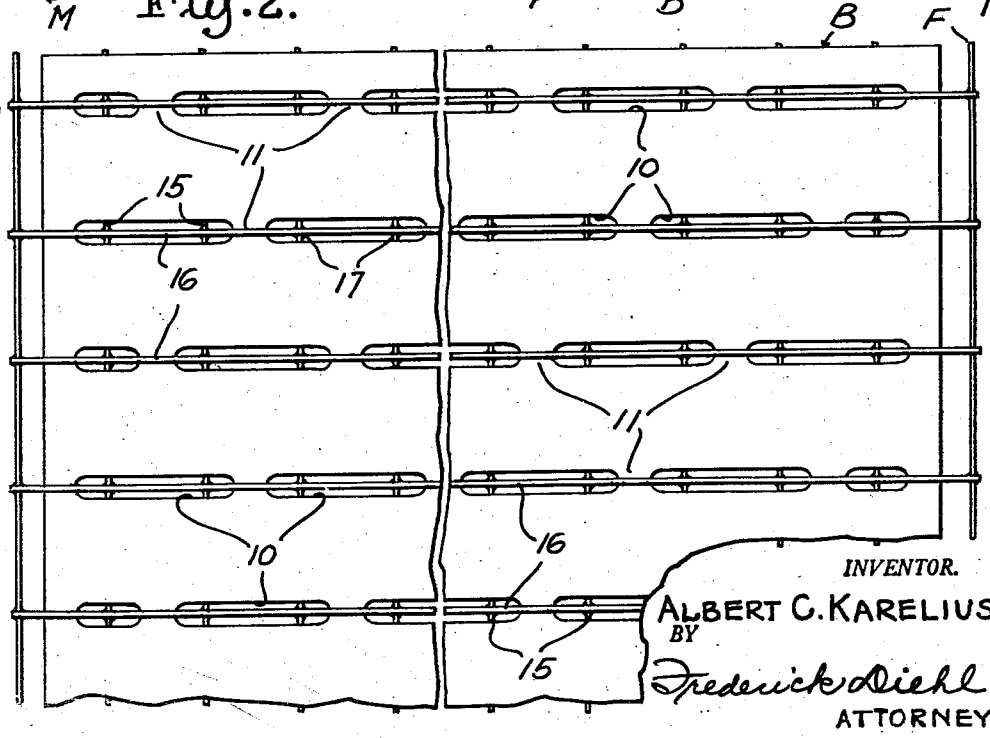


Fig. 2.



INVENTOR.
ALBERT C. KARELIUS
BY
Frederick Diehl
ATTORNEY

Oct. 8, 1946. A. C. KARELIUS 2,408,781

LATHING

Filed Feb. 12, 1945 2 Sheets-Sheet 2

Fig. 3.

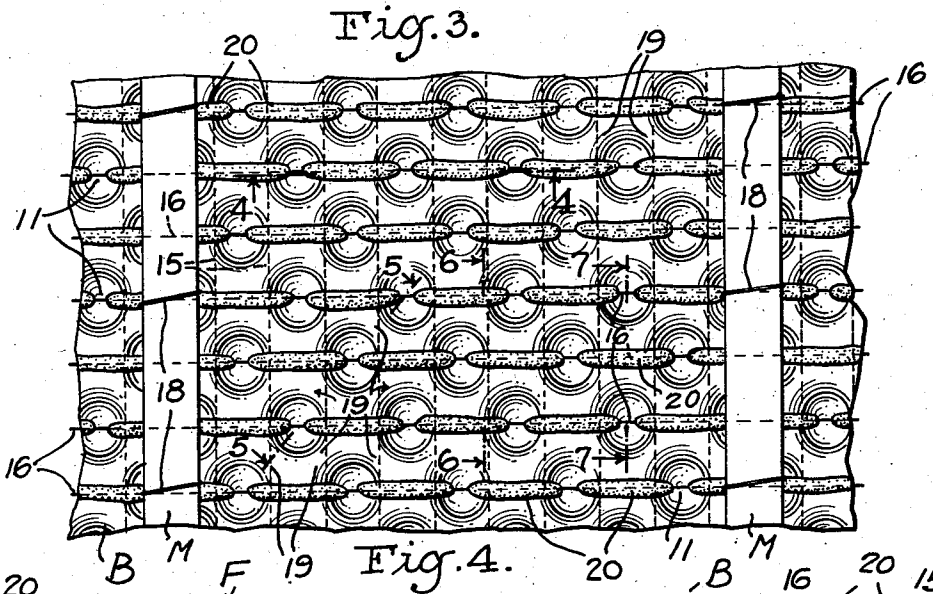


Fig. 4.

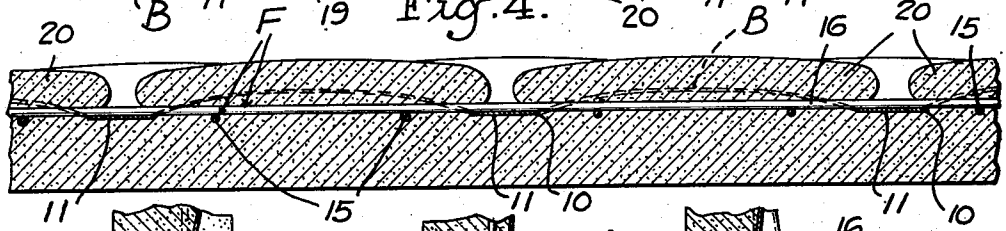


Fig. 5.

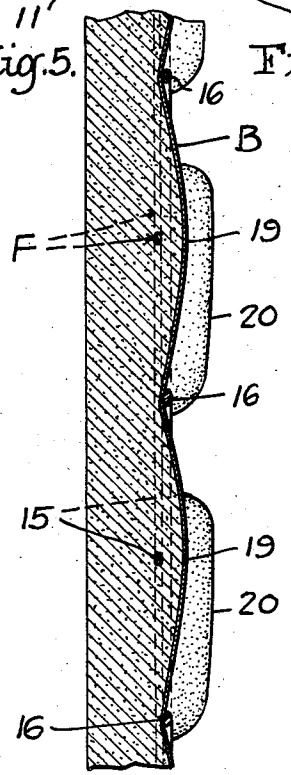


Fig. 6.

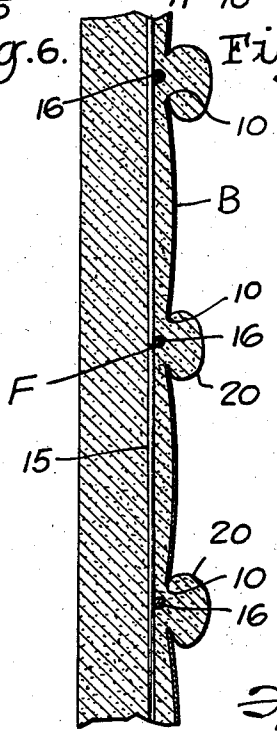
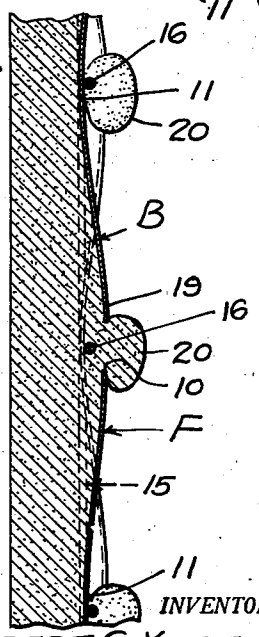


Fig. 7.



INVENTOR.
ALBERT C. KARELIUS
BY
Frederick Diehl
ATTORNEY

Patented Oct. 8, 1946 2,408,781

UNITED STATES PATENT OFFICE

2,408,781

LATHING

Albert C. Karelius, Altadena, Calif.

Application February 12, 1945, Serial No. 577,507

9 Claims. (Cl. 72—116)

1

This invention relates generally to lathing of the character disclosed in my co-pending application Serial No. 535,615, filed May 15, 1944, and officially allowed on October 23, 1944.

In its broad aspect, the application above identified discloses a lathing consisting of a backing member of flexible sheet material such as strong, tough paper, and a metallic reinforcement composed entirely of front and back wires in intersecting relation, and between which the backing member is interposed, with such wires being welded together at their intersections through openings in the backing sheet in a single welding operation for maximum economy, all in such manner as to provide practically the same plaster-embedded reinforcement as would be obtained by the use of a mesh fabric without a backing member.

A primary object of the present invention is to provide a lathing of the above described general character having all the advantages of the two-wire reinforced lathing as above described, with an added novel functional relationship of its front wires to rows of elongated plaster-keying openings through the backing member, for co-action with the back wires which span the openings longitudinally thereof, in supporting the backing sheet at such locations throughout its area, that the backing sheet will tend to yield more uniformly both longitudinally and transversely under the troweling pressure of mortar against the face of the backing sheet, so as to obtain a more uniform plaster coat thickness free from setting cracks, and to avoid continuous lines of structural weakness through the plaster coat in any direction, whereby to produce a finished product which will effectively resist deformation against bending stresses imposed thereupon longitudinally, transversely, or obliquely.

More specifically, it is an object of the present invention to provide a lathing, the backing sheet of which has plaster keying openings therethrough arranged end to end in parallel rows to leave webs of backing sheet material between the ends of successive openings, and with the openings of each row being staggered with respect to the openings of adjacent rows and in sufficiently overlapping or opposed relation for each opening to be spanned transversely by two front wires, and the openings of each row spanned longitudinally by a back wire which is welded to the front wires through such openings. This arrangement of elements results in the backing sheet being supported against the back wires at the webs in a staggered relation of the webs

2

in adjacent rows of openings, so that under the troweling pressure of mortar against the face of the backing sheet, the latter will yield most readily along continuous intersecting paths extending obliquely with respect to, and crossing the front and back wires intermediate their intersections, whereby to produce on the back of the plaster coat a raised reticulated pattern obliquely related to the wire mesh reinforcement, which functions as an added reinforcement to the lathing against deformation by lateral stresses, and co-acts with the wires to eliminate any continuous line of structural weakness through the thickness of the plaster coat, so as to obtain a stronger finished product when the plaster has set.

A further object of this invention is to provide a lathing of the above described character whose staggered and overlapped arrangement of elongated plaster keying openings in the backing sheet, with each opening spanned transversely adjacent its ends by two front wires and longitudinally by a back wire, more adequately supports the plaster keys while setting, so as to prevent the end portions of the keys from sagging away from the body of mortar under the weight of the keys, as well as reduce the mortar drop-off from the keys on vertical walls, thus producing keys of greater strength which more securely lock the plaster coat to the lathing.

With these and other objects in view, the invention resides in the combinations, arrangements and functional relationships of elements as set forth in the following specification and particularly pointed out in the appended claims.

In the accompanying drawings,

Figure 1 is a view showing in front elevation, the form of lathing embodying this invention and applied to members of a building frame;

Figure 2 is a view of the lathing in rear elevation;

Figure 3 is a view on a reduced scale, showing the lathing in rear elevation, after the application of plaster to the lathing;

Figure 4 is a full size longitudinal sectional view of the lathing taken on the line 4—4 of Figure 3;

Figure 5 is a full size oblique sectional view of the lathing taken on the line 5—5 of Figure 3; and

Figures 6 and 7 are full size transverse sectional views taken, respectively, on the lines 6—6 and 7—7 of Figure 3.

Referring specifically to the drawings, the invention in its illustrated embodiment broadly

comprises a backing member B and a plaster reinforcing metal fabric F. The backing member B may be constructed from suitable sheet material such as strong, tough paper cut into rectangular sheets of a predetermined standard size. The member is provided throughout its area with precut elongated openings 10 defining relatively narrow slots which are arranged end to end in uniformly spaced parallel rows whose center-to-center dimension may be two inches in practice, as an example. The ends of successive openings 10 of the horizontally disposed rows for a vertical wall as illustrated in the drawings, are spaced apart a relatively short distance to provide an intervening web 11 of backing sheet material, which, in practice can be as little as three-eighths or one-fourth of an inch.

It will be noted that the openings of any one row are uniformly offset with respect to the next or adjacent rows, so that the webs 11 of alternate rows of the openings are correspondingly staggered. Furthermore, the end portions of the openings are in a considerably overlapped or opposed relationship to the end portions of the openings of the next row, as most clearly shown in Figures 1 and 2.

The plaster reinforcing metal fabric F consists of one series of front wires 15 and one series of larger back wires 16 arranged in right angular intersecting relation. The backing member B is interposed between the two series of wires, with the back wires spaced apart the same distance (two inches) as the rows of openings 10, and spanning the latter longitudinally as shown best in Figure 2. The front wires may, in practice, be spaced a lesser distance such as one and one-half inches, than the back wires 16, and span the openings 10 transversely thereof.

It will be noted most clearly from Figure 1 that by virtue of the staggered relationships of each row of openings 10 to the next row thereof, and the considerably overlapped or opposed relationship of the end portions of the openings of each row to those of adjacent rows, each opening is spanned transversely adjacent its ends by two front wires 15 which are welded or otherwise permanently secured to the back wires 16 in the openings 10, as indicated at 17. The metal fabric F is now a unitary reinforcing structure between whose two series of wires 15 and 16 the backing member B is locked.

The sheets of lathing as above described are secured at intervals (six inches or less) with their edges in overlapped relation as shown in Figure 1, to members M such as studs or rafters of a building frame, by the "nail-on" or "tie-on" method, which latter is utilized for metal members as indicated at 18 in Figures 1 and 3, for the application of plaster to the wall foundation thus formed by the lathing.

Assuming that a vertical wall is to be plastered, and that the rows of openings 10 in the lathings are horizontally disposed, mortar is troweled as in normal plastering technique, against the front faces of the backing members B by a first upward stroke and then generally horizontal back and forth spreading strokes to flatten out the surface of the mortar.

Due to the above described staggered and overlapped relationship of the openings 10 of each row to the openings of adjacent rows, with a corresponding staggered relationship of the webs 11 of the respective rows, it will be clear that at the webs, the backing members will offer the maximum resistance to lateral deformation or

rearward flexing under the troweling pressure, as the webs bear against and are supported by the relatively heavy back wires 16. However, from these areas of greatest resistance indicated by *s* in Figure 1, the flexibility of the backing members to troweling pressure increases to a maximum along the paths indicated by the lines *y* in this figure. These paths of greatest weakness or most flexibility of the backing members, extend in directions oblique with respect to the lengths of the wires 15 and 16 and are in intersecting relation so as to cross the two series of wires intermediate the welded intersections of the wires as clearly shown by the aforesaid lines *y*.

The flexing of the backing member in this manner under troweling pressure creates on the back of the plaster a raised reticulated pattern as indicated at 19 in Figure 3, which is obliquely related to the pattern formed by the wire mesh reinforcement F so as to act as an added reinforcement of the lathing against deformation by bending stresses, and co-acts with the wires to avoid any continuous line of structural weakness through the thickness of the plaster, thus rendering the latter substantially uniform in strength throughout its area.

Under the troweling pressure, mortar is forced through the openings 10 around the portion of the back wire 16 and the two front wires 15 spanning each opening, so as to form plaster keys 20 in which the back wires are embedded substantially throughout their lengths as shown in Figure 4. Furthermore, the front wires 15 are completely embedded in plaster throughout their lengths as shown in Figure 6 so as to lock the plaster to the fabric F with practically the same efficiency as would be obtained without a backing member, yet providing all the advantages of the latter in preventing the waste of plaster by areas of excessive thickness.

It will also be noted that with the front wires spanning each opening 10 adjacent its ends, the mortar, which when set forms the plaster keys 20, is more adequately supported by these wires against breaking away under its weight, so that partially fractured or cracked plaster keys are prevented, and maximum locking action from the plaster keys obtained. Mortar drop-off from the plaster keys is also minimized by the support given to the mortar by this novel arrangement of the wires in the openings.

In conclusion, it will be manifest from the foregoing description that the present invention not only provides for manufacturing of the product at a relatively low cost with only a single welding operation of the front and back wires 15 and 16 through the openings 10 of the interposed backing member B being required to complete the lathing in a continuous operation, but that the plaster coat applied to the lathing will be locked to the metal fabric F with maximum security and will be free from continuous lines of structural weakness through the plaster in any direction across the lathing. Furthermore, the novel arrangement of reinforcing wires 15 and 16 and openings 10 in the backing member enables the mortar to be readily applied to obtain an economical plaster coat of substantially uniform thickness with a flat outer surface. Also, no such sagging of the mortar while setting, will occur to produce cracks in the dried plaster coat which might structurally weaken same, or be difficult if not impossible to fill by application of another coat of plaster.

I claim:

1. Lathing of the class described comprising: a backing member of flexible sheet material having elongated openings spaced end to end in parallel rows to leave relatively narrow webs of backing sheet material between the ends of the openings; the openings of each row being staggered with respect to the openings of adjacent rows; a metal reinforcing fabric having wires spanning said openings longitudinally thereof on one side of the member, and having other wires spanning all openings of all rows transversely thereof on the other side of the member; and means permanently securing said wires together at their intersections in said openings.

2. Lathing of the class described comprising: a backing member of flexible sheet material having elongated openings spaced end to end in parallel rows to leave relatively narrow webs of backing sheet material between the ends of the openings; the openings of each row being staggered with respect to the openings of adjacent rows; the end portions of the openings of each row being in opposed relation to the end portions of the openings of adjacent rows; a metal reinforcing fabric having wires spanning said openings longitudinally on one side of said member, and having other wires spanning said end portions of all openings transversely on the other side of the member; and means permanently securing said wires together at their intersections in said openings.

3. Lathing of the class described comprising: a backing member of flexible sheet material having elongated openings spaced end to end in parallel rows to leave relatively narrow webs of backing sheet material between the ends of the openings; the openings of each row being staggered with respect to the openings of adjacent rows; a metal reinforcing fabric having wires spanning said openings longitudinally thereof on one side of the member, and having other wires spanning the openings transversely thereof on the other side of the member; the end portions of the openings of each row being in opposed relation to the end portions of the openings of adjacent rows, with each opening being spanned at said end portions by two of said other wires; and means permanently securing said wires together at their intersections in said openings.

4. Lathing of the class described comprising: a backing member of flexible sheet material having elongated openings spaced end to end in parallel rows to leave relatively narrow webs of backing sheet material between the ends of the openings; the openings of each row being staggered with respect to the openings of adjacent rows; a metal reinforcing fabric having wires spanning said openings longitudinally thereof on one side of the member, and having other wires spanning the openings transversely thereof on the other side of the member; the end portions of the openings of each row being in opposed relation to the end portions of the openings of adjacent rows, with each opening being spanned at said end portions by two of said other wires; and means permanently securing said wires together at their intersections in said openings; said other wires being sufficiently near the extremities of said openings to support the end portions of plaster keys in said openings against cracking away under their weight, from the body of plaster applied to the lathing.

5. Lathing of the class described comprising: a backing member of flexible sheet material having elongated openings spaced end to end in parallel rows to leave relatively narrow webs of backing sheet material between the ends of the openings; the openings of each row being staggered with respect to the openings of adjacent rows; and a metal reinforcing fabric composed of front and back wires between which the backing member is interposed, with the wires respectively spanning said openings transversely and longitudinally and being welded together at their intersections in said openings; each of said openings being spanned by two front wires for co-action of all wires with the aforestated staggered arrangement of said openings and with said webs, to render the backing member most yieldable to the troweling pressure of mortar against the lathing, along intersecting paths obliquely related to said fabric and intermediate the wire intersections of the latter, so as to form on the back surface of the plaster a raised, reticulated pattern reinforcing the plaster coat.

6. Lathing of the class described comprising: a backing member of flexible sheet material having elongated openings spaced end to end in parallel rows to leave relatively narrow webs of backing sheet material between the ends of the openings; the openings of each row being staggered with respect to the openings of adjacent rows; and a metal reinforcing fabric composed of front and back wires between which the backing member is interposed, with the wires respectively spanning said openings transversely and longitudinally and being welded together at their intersections in said openings; the end portions of the openings of each row being in sufficiently opposed relation to the end portions of the openings of adjacent rows for each opening to be spanned transversely at its end portions by two of said front wires, for co-action of the fabric and backing member in preventing continuous lines of weakness through the thickness of a coat of plaster applied to the lathing.

7. Lathing of the class described comprising: a flexible backing sheet having elongated openings spaced end to end to leave relatively narrow webs of backing sheet material between the ends of the openings, with the webs of each row in staggered relation to the webs of adjacent rows; and front and back wires respectively spanning said openings transversely and longitudinally thereof on opposite sides of the sheet and welded together at their intersections in said openings, with two front wires spanning an opening for co-action with the backing sheet in rendering the latter most freely yieldable to the pressure of mortar applied to the lathing, along intersecting lines obliquely related to said wires and intermediate their intersections, for the purpose described.

8. Lathing of the class described comprising: a flexible backing sheet having elongated openings spaced end to end to leave relatively narrow webs of backing sheet material between the ends of the openings, with the webs of each row in staggered relation to the webs of adjacent rows; and front and back wires respectively spanning said openings transversely and longitudinally thereof on opposite sides of the sheet and welded together at their intersections in said openings, for co-action with the backing sheet in rendering the latter most freely yieldable to the pressure of mortar applied to the lathing, along intersecting lines obliquely related to said wires and intermediate their intersections; each of said openings being spanned transversely adjacent its ends by

the front wires for co-action of the back wires therewith at their intersections, in adequately supporting the end portions of plaster keys in said openings against breaking away from the plastic mortar when applied to the lathing.

9. Lathing of the class described comprising: a metal reinforcing fabric consisting entirely of two series of wires in right angular relation and welded together at their intersections; and a flexible backing sheet interposed between the two series of wires and having elongated openings arranged end to end in parallel rows, with the openings of each row in such staggered relationship to the openings of adjacent rows that each opening is spanned transversely near its ends by two wires of one series while a wire of the other series spans each opening longitudinally thereof.

ALBERT C. KARELIUS.