July 21, 1953 R. F. STOCKTON 2,645,930

SELF-FURRING CORNER LATH

Filed July 26, 1948

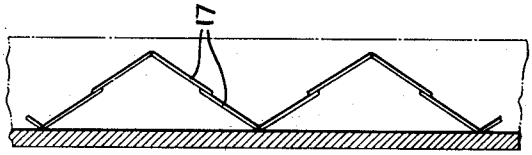


Fig. 4.

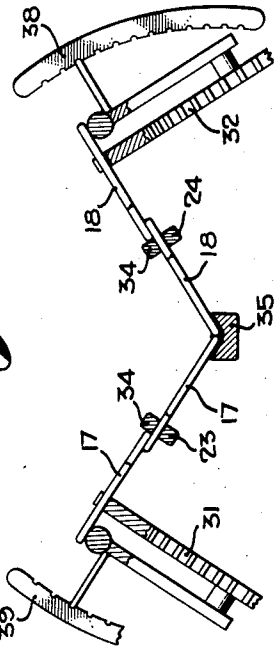


Fig. 3.

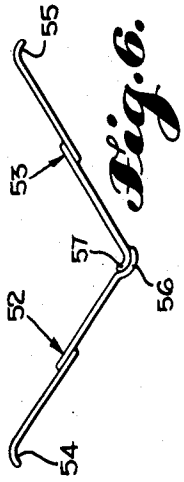


Fig. 6.

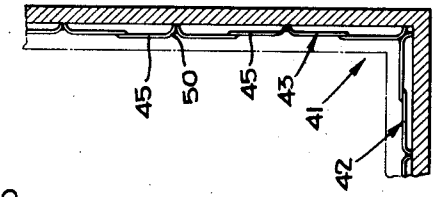


Fig. 5.

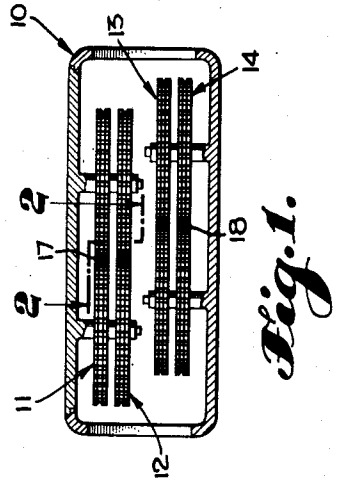


Fig. 1.

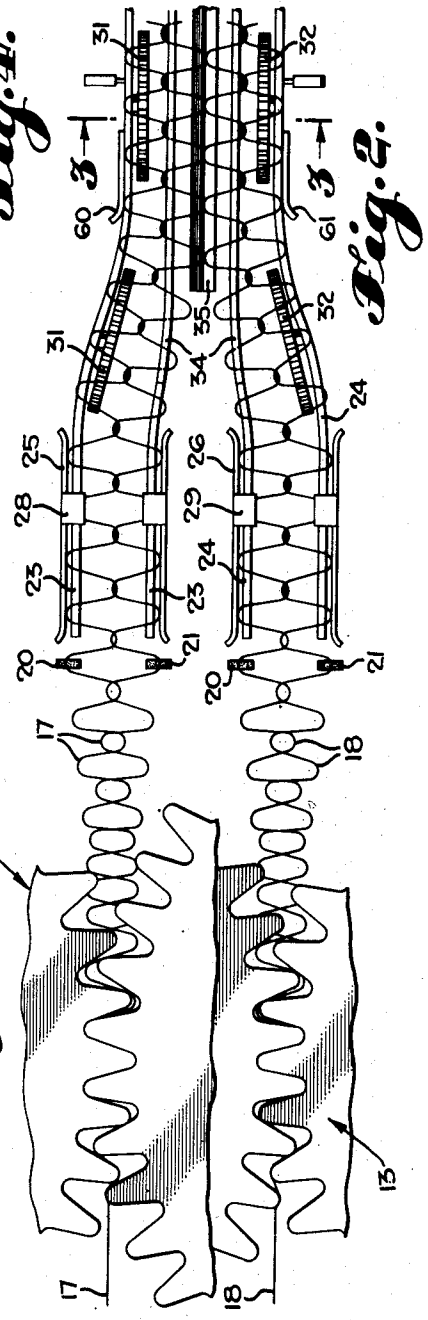


Fig. 2.

INVENTOR,
RAYMOND F. STOCKTON.
BY
Hazard & Miller
ATTORNEYS

Patented July 21, 1953 2,645,930

UNITED STATES PATENT OFFICE

2,645,930

SELF-FURRING CORNER LATH

Raymond F. Stockton, Sunland, Calif., assignor to Ray F. Stockton Wire Products Co. Inc., Burbank, Calif., a corporation of California

Application July 26, 1948, Serial No. 40,715

1 Claim. (Cl. 72—121)

1

This invention relates to self-furring-plaster-reenforcing wire and the method of making the same and is copending with and may be considered as a continuation of my application, Serial No. 28,235, filed May 20, 1948 and issued as Patent No. 2,628,642.

The great majority of metal lath now on the market is the so-called expanded metal and is universally made by simultaneously splitting and bending a sheet of metal. Although the expanded metal lath in use now does a somewhat satisfactory job it has disadvantages which the self-furring-plaster-reenforcing wire of the present invention overcomes.

One of the main disadvantages of the expanded metal lath is that it is not self-furring. One of the main objects of the present invention is to provide the metal lath which is definitely self-furring.

Another disadvantage of expanded metal lath is that it is never fully expanded and therefore its strength is only equal to that force necessary to further expand the lath. It is another main object of the present invention to provide a self-furring-plaster-reenforcing wire formed of sinuously bent wires joined together and fully expanded and therefore its strength is equal to the strength of the wire and is generally about ten times the strength of the expanded metal lath.

The self-furring-plaster-reenforcing wire of the present invention also lends itself to being handled easier than the expanded metal lath. On jobs it is customary to cut packs or bundles of lath and after the shearing operation to separate the layers of lath. Because of the construction of the expanded metal the different sheets of lath are somewhat intertwined or stuck to one another and as a result removal and separation of the sheets results in stretching of the expanding metal lath out of shape. As a result, time is wasted in trying to reshape the metal lath sheets. An object of the present invention is to provide a sheet of metal lath which does not stretch when separated and, furthermore, the self-furring-plaster-reenforcing wire of the present invention does not have the tendency to intertwine or stick together when cut in bundles as does prior expanded metal lath.

Another disadvantage of expanded metal lath and other lath now in use is that the sheets of lath have margins which are fairly definite and straight and, therefore, when applying the metal lath to a wall there is a sharp demarcation between one sheet of metal lath and the next which provides a weakness in the lath construction so that cracking of the plaster often results. Another object of the present invention is to overcome the above disadvantages by the provision of self-furring-plaster-reenforcing wire composed of sinuously bent wires the borders or margins of which are not straight and sharp but weave back and forth so that the plaster which is spread over the joint between the two sheets of self-furring-plaster-reenforcing wire has no tendency to crack.

2

Another object of this invention is to provide a self-furring-plaster-reenforcing wire which is lighter in weight and requires less material than prior metal laths.

Another main object of the present invention is to provide a simple method by which the self-furring-plaster-reenforcing wire can be made.

Another object of this invention is to provide a self-furring-plaster-reenforcing wire which has a convoluted edge thereby eliminating the selvedged edge which has been herebefore provided on metal and wire lath.

With the foregoing and other objects in view, which will be made manifest in the following detailed description and specifically pointed out in the appended claim, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Figure 1 discloses a sectional view through part of the apparatus for carrying out the method of the present invention;

Fig. 2 is a partial sectional view along lines 2—2 of Fig. 1;

Fig. 3 is a sectional view along lines 3—3 of Fig. 2;

Fig. 4 is a self-furring-plaster-reenforcing wire applied to a wall; and

Fig. 5 is a view showing another form of self-furring-plaster-reenforcing wire applied to a wall.

Fig. 6 is a view showing another form of the self-furring-plaster-reenforcing wire.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout, Figs. 1, 2 and 3 depict a set up which could be used to carry out the method of the present invention, it being understood that the apparatus is shown only in diagrammatic form and not complete since the present invention lies in the product and method and not in the machine or apparatus.

There are two main types of self-furring-plaster-reenforcing wire with which the present invention is concerned, one form being shown in Fig. 4 and the other form being shown in Fig. 5. By various adjustments the apparatus disclosed in Figs. 1, 2 and 3 can be used to form either of these types of self-furring-plaster-reenforcing wire as will presently be explained. The apparatus is set up as shown in Figs. 2 and 3 for

manufacturing the self-furring-plaster-reenforcing wire as shown in Fig. 4 and the method of manufacturing this wire will first be explained.

In Fig. 1, there is a housing generally entitled 10 supporting four pairs of gears 11, 12, 13 and 14, the gears of each pair rather loosely meshing with one another, the looseness between the teeth being such as to permit wire to be fed through between the gears of a pair where the wire will have convolutes formed therein.

The pairs of gears labelled 11 and 12 and offset from the pairs of gears 13 and 14 so that the wires 17 going through the upper pairs of gears can be arranged in side by side relation with the wires 18 going through the lower pairs of gears 13 and 14. Each of the gears may be formed with a peripheral groove so as to better adapt itself to receive the wire which it is to form.

In Fig. 2, only one upper wire 17 and one lower wire 18 can be seen and the invention will be described in connection with these single wires although it is to be understood that in each case two wires are actually being bent. To the right of the gears in Fig. 2 both of the wires 17 can be seen and both of the wires 18 can be seen.

The pairs of gears 17 and 18 are rotated by any suitable means and as soon as wires 17 and 18 are inserted in the pairs of gears the gears serve to feed the wire along after putting convolutes in it.

Any suitable means such as brushes 20 and 21 may be provided for causing wires 17 to separate and causing wires 18 to separate after they have been convoluted as shown in Fig. 2 and after they are separated they move into a welding zone and since initially one wire 17 is below the other wise 17 they will be in overlapping relationship, the same being true of the wires 18. So, when the wires 17 and 18 are fed onto the tracks 23 and 24 and between the guides 25 and 26 they will be in overlapping relationship and any suitable means may be provided for spot welding or joining the overlapped convolutes together. This spot welding or joining operation can be arranged such that only one pair of overlapped wires is welded or the welding may be arranged so that several or more of these overlapped convolutes are welded at once. Bending means 28 and 29 are provided and preferably located in the vicinity of the welding zone but are not used in manufacturing the self-furring-plaster-reenforcing wire, as shown in Fig. 4. Gears 31 and 32 are provided on tracks 23 and 24 respectively and serve to feed the welded units of convolutes wire along and to position them so that the inner edges thereof are in abutting relationship with convolutes abutting one another and another welding zone is provided at approximately the position of the second set of gears and as the convolutes are positioned in abutting relationship they are welded either singly or in groups.

Although the gears 31 and 32 are provided and will serve to feed and position the welded units of convoluted wire it may also be desired to provide guides 34 and 35 to insure proper positioning of the welded units 17 and 18, 35 being a trough.

From Fig. 3 it can be seen that the tracks 23 and 24 position welded unit 17 at an angle with relation to welded unit 18 and the resulting self-furring-plaster-reenforcing wire is shown in Figs. 3 and 4. Of course, the device can be made adjustable by means of arms 38 and 39 so that the tracks 23 and 24 may either position the welded units 17 and 18 at an angle with relation to one another or on a horizontal plane. In Fig. 2, in the first welding zone the tracks 23 and 24 position the convoluted wires 17 and 18 in a horizontal plane and the welded units or wires 17 and 18 are gradually brought into their angular relationship. It is to be understood that the term "abutting relationship" can include where one convolute slightly overlaps the other or underlaps the other convolute or the case where the two convolutes are in what is called a technical abutment.

So, a summation of the method of forming the self-furring-plaster-reenforcing wire disclosed in Fig. 4 is as follows. Pairs of wires 17 and 18 are fed through sets of gears and convolutes put in the wires, the wires of each pair 17 and 18 being positioned so that convolutes overlap one another, these convolutes being welded together to form a unit of welded convoluted wire 17 and a unit of convoluted wire 18 and these convoluted units are then positioned in angular relationship to one another with the inner edges in abutting relationship which inner edges are then spot welded or joined together.

The method for forming the sinuously bent wire disclosed in Fig. 5 is similar to the method of forming the sinuously bent wire shown in Fig. 4 with the exception that for the corner section 41, the tracks 23 and 24 are arranged so that the two units 42 and 43 of welded convoluted wire are at right angles to one another. Whereas, for the side sections 45 of the self-furring-plaster-reenforcing wire disclosed in Fig. 5 the tracks 23 and 24 are arranged in the second welding zone to be in a horizontal position with relation to one another so that the product 45, as shown in Fig. 5, is provided. As before stated, the method of forming the self-furring-plaster-reenforcing wire shown in Fig. 5 is similar to that method for forming the self-furring-plaster-reenforcing wire shown in Fig. 4 with the exceptions above noted and also the bending means 28 and 29 which may be of any suitable type are operated to bend the margins of the closed ends of the convolutes down at approximately right angles as shown at 50 in Fig. 5.

It will be understood that although the legs of the convolutes shown in Fig. 2 are shown as diverging that larger gears can be used so that the legs of each convolute are almost parallel.

It will be appreciated from Fig. 5 that there can be no stretching of the self-furring-plaster-reenforcing wire shown therein because the convolutes have their legs practically parallel and so the self-furring-plaster-reenforcing wire resists stretching by force equal to the strength of the wire.

The use of the terms "convolutes" and "sinuously bent wire" and the like in the claims is to be construed broadly to include the sinuously bent wire, actual convolutes, zigzag wire or wavy wire and the like and the convolutes therein.

The self-furring characteristics of the self-furring-plaster-reenforcing wire of the present invention can be appreciated by reference to Figs. 4 and 5 where in Fig. 4 the zigzag shape of the wire allows it to be self-furring while from Fig. 5 it can be seen that the bent legs 50 set the self-furring-plaster-reenforcing wire out from the wall. This self-furring characteristic allows the plaster to get behind and in front of the metal lath or wire and therefore will hold more firmly

and also the self-furring wire is much easier to apply.

When sheets of the self-furring-plaster-reenforcing wire of the present invention are applied to a wall there will be no sharp dividing line between the different sheets, as can best be appreciated by looking at Fig. 2 wherein it will be seen that the convoluted edge does not present a sharp straight line as does ordinary lath and therefore when two sheets are pressed together there will be no sharp line between the two sheets and therefore the plaster will have much less tendency to crack than in the lath as is presently used. This is, in effect, relieving the stress concentration on the plaster which is provided by straight line contact between sheets of metal lath.

Since the self-furring-plaster-reenforcing wire of the present invention is fully expanded and will not expand any more, as can be appreciated from Fig. 2 in the right hand view of the self-furring-plaster-reenforcing wire, there will be no sagging of this type of metal lath when plaster is applied thereto.

Since the self-furring-plaster-reenforcing wire of the present invention is produced from wire instead of slitting and bending sheets of metal it is obvious that a stronger product can be made for less weight by using the wire and spot welding process of the present invention rather than the slitting and bending operation which has heretofore been used.

The simple method disclosed for making both types of self-furring-plaster-reenforcing wire provides a method by which this type of metal lath or wire can be continuously and easily made with the least amount of expense and producing a superior product.

Since the self-furring-plaster-reenforcing wire of the present invention has a convoluted edge there is no necessity for a selvedged edge as is common in some types of metal lath and this convoluted edge does not present cutting edges as does the expanded metal type of lath and so is easier to handle. Also, when the self-furring-plaster-reenforcing wire of the present invention is cut the edge presented will be comparatively dull as compared to the sharp knife edges presented when the strip-like expanded metal lath is cut.

Another main type of self-furring-plaster-reenforcing wire with which the present invention is concerned is shown in Fig. 6 wherein there are two shingled units **52** and **53** having their outer margins bent at **54** and **55** respectively. The inner margin of shingled unit **52** has an upwardly facing bend **56** provided therein the bend being of such a depth as to make the metal wire self-furring and the inner margin of shingled unit **53** is reversely bent shown at **57** to nestle in the bend **56** and the two shingled units are spot welded to one another at the contact of bends **56** and **57**. The shingled units **52** may be arranged at right angles to one another when corner pieces of self-furring-plaster-reenforcing wire are being manufactured or may be at any other angle desired when making side sheets of self-furring-plaster-reenforcing wire.

It will be understood that the bending means indicated at **28** and **29** in Fig. 2 can be adapted to provide the bends **56** and **57** so that the self-furring-plaster-reenforcing wire shown in Fig. 6 can easily be made from the apparatus shown in Fig. 2 and that a simple method is thereby provided for manufacturing this type of self-furring-plaster-reenforcing wire.

It will be understood that when the outer margins of the shingled units of any of the forms of self-furring-plaster-reenforcing wire are bent that they will be able to fit nicely around the outer guides **23** and **24** thereby even better positioning the shingled units during their spot welding or joining operation.

If desired, additional guides **60** and **61** may be provided on the outside of the second welding zone to assist in positioning the shingled units moving therethrough.

Although in the drawings the margins of the sinuously bent wires are shown as just overlapping, it is contemplated that wire can be produced having the margins of sinuously bent wires overlapping an extent such that eyes are provided by the overlapping convolutes. It is also contemplated that in certain types of the product the inner margins of two sinuously bent wires will be arranged so that the convolutes thereof are in staggered relation to one another and joined together, that is, instead of opposed convolutes being in abutting relationship the convolutes will not be opposed but arranged in staggered relationship.

Various changes may be made in the details of construction without departing from the spirit and scope of the invention as defined by the appended claim.

I claim:

A self-furring corner lath strip comprising four laterally convoluted wires, each of which is of general sinuous shape, said wires being arranged in margin-to-margin relationship, the outermost wires having their outermost marginal portions bent at angles to the planes of their convolutes and having their inner marginal portions in overlapping relationship to the outer marginal portions of the inner wires and secured thereto, the inner wires having their inner marginal portions secured together and being arranged such that the planes of their convolutes are angularly related to each other, the inner marginal portions of the inner wires being disposed in overlapping and nested relationship and being bent such that the outermost marginal portions protrude outwardly beyond the planes of the convolutes of the inner wires so as to be engageable in the corners formed between two angularly related wall surfaces and to cooperate with the outwardly bent marginal portions of the outer wires in holding the body portions of the wires in spaced relation to the wall surfaces to enable the strip to be self-furring.

RAYMOND F. STOCKTON.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
372,818	Sackett	Nov. 8, 1887
771,577	Sawyer	Oct. 4, 1904
949,668	Swinscoe	Feb. 15, 1910
980,602	Clark	Jan. 3, 1911
1,005,267	Metzger	Oct. 10, 1911
1,112,181	White	Sept. 29, 1914
1,164,160	Arey	Dec. 14, 1915
1,666,535	Johnson	Apr. 17, 1928
1,799,750	Hummert	Apr. 7, 1931
1,974,750	Preston	Sept. 25, 1934
2,124,799	Specht	July 26, 1938

OTHER REFERENCES

"Hy-Rib" by Trussed Concrete Steel Company, 1910, page 17, Detroit, Michigan.