Feb. 17, 1953 R. F. STOCKTON 2,628,642

METHOD OF MAKING WIRE LATH

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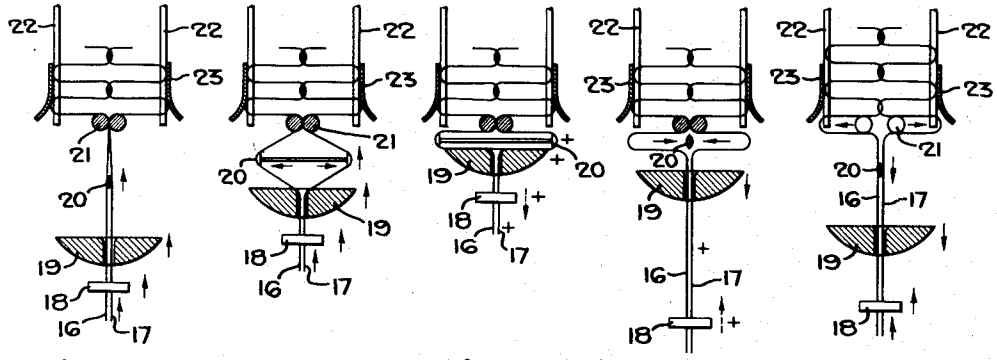

Fig.1. Fig.2. Fig.3. Fig.4. Fig.5.

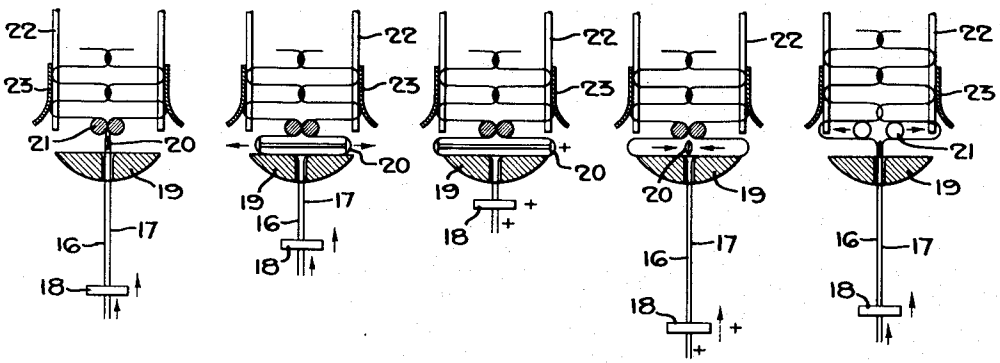

Fig.6. Fig.7. Fig.8. Fig.9. Fig.10.

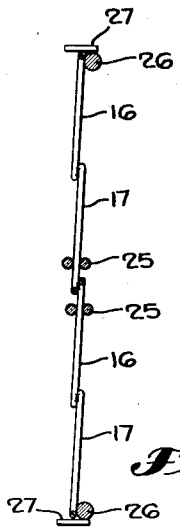

Fig.12.

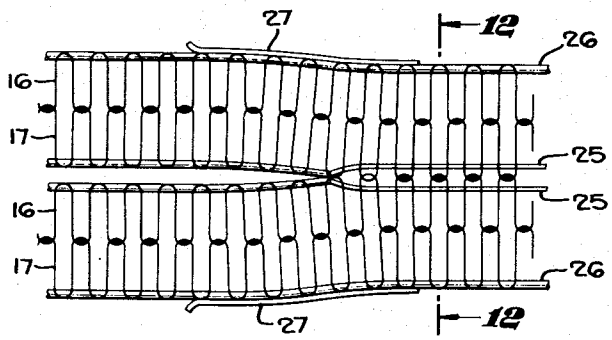

Fig.11.

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METHOD OF MAKING WIRE LATH

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2 Claims. (Cl. 140—3)

1

This invention relates to wire and the method of forming the wire and in particular relates to self-furring-plaster-reenforcing wire and the method of making the wires.

An object of this invention is to provide a simple method for making self-furring-plaster-reenforcing wire.

Another object of this invention is to provide a self-furring-plaster-reenforcing wire which is so formed as to hold plaster more securely than has heretofore been possible.

Another object of this invention is to provide self-furring-plaster-reenforcing wire which comprises a plurality of pieces of sinuously bent wire, the convolutes of which are approximately the same size and the pieces of bent wire being arranged in shingled fashion and spot welded together.

Another object of this invention is to provide a method of making self-furring-plaster-reenforcing wire which consists in putting convolutes in at least two wires to obtain two sinuously bent wires, overlapping closed ends of convolutes of one sinuously bent wire with closed ends of convolutes of the other sinuously bent wire, and spot welding overlapped closed ends together.

Another object of this invention is to provide a simple method of making self-furring-plaster-reenforcing wire which method encompasses bending the wire to put convolutes therein and immediately thereafter overlapping closed ends of the convolutes and spot welding the overlapped closed ends of the convolutes together just after they are overlapped.

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 claims, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Figs. 1 to 5 disclose a diagrammatic sequence of the steps illustrating one method of forming the self-furring-plaster-reenforcing wire;

Figs. 6 through 10 disclose a diagrammatic sequence of the steps illustrating a modified method of forming the self-furring-plaster-reenforcing wire;

Fig. 11 discloses a plan view of a set-up to show a method of combining two units of self-furring-plaster-reenforcing wire; and

Fig. 12 is a sectional view along lines 12—12 of Fig. 11 and shows a cross section of the self-furring-plaster-reenforcing wire.

Referring to the accompanying drawings wherein similar reference characters designate

2

similar parts throughout, Fig. 1 discloses two wires 16 and 17 which are fed by means of a feeding arm or means 18 through a form block 19 the wires straddling the weaving or spreading arms 20 and being held by holding arms 21. Wires 16 and 17 have been formed into convolutes back of holding arms 21 and rest on rails 22 and are moved together in overlapping relationship by guides 23.

The method illustrated in Figs. 1 to 5 is as follows. In Fig. 1, the holding arms 21 have clamped the wires 16 and 17 between them, the spreading arms 20 are about to open, and the form block 19 is about to move forward, and the feeding arm 18 has been moving forward and is still moving forward. In Fig. 2, the spreading arms 20 have moved apart and are beginning to form oppositely facing convolutes in wires 16 and 17 and form block 19 is moving forward in step with the movement of feeding arm 18, and the convolutes behind holding arms 21 are stationary.

In Fig. 3, the spreading arms have moved to their outermost position and the form block 19 has moved upwardly to form the outer or lower sides of the convolutes, the feeding arm is about to quickly move downward to grasp another portion of each of the wires 16 and 17. In Fig. 4, the feeding arm 18 has reached its downmost position, has grasped portions of wires 16 and 17 and is about to move upwardly again, form block 19 is moving downwardly and the spreading arms 20 have moved inwardly to a collapsed position, and the holding arms 21 are moving downwardly to release their hold on the wires 16 and 17.

In Fig. 5, the feeding arm 18 has moved forward and since the holding arms 21 have released their grasp on wires 16 and 17, the oppositely facing convolutes just formed are moved over the holding arms and the spreading arms 20 are moving in between wires 16 and 17 and form block 19 is still moving in a backward direction but is about to move forward again. The next sequence of events can be seen by viewing Fig. 1 again, in which the feeding arm 18 has moved from the position shown in Fig. 5 to the position shown in Fig. 1 and the spreading arms 20 are about to spread apart to form oppositely facing convolutes in the wires.

In Fig. 5 when the just formed convolutes are being moved in the direction of the arrow, the guides 23 force the convolutes together so that the inner closed ends are overlapped with one another and it is preferred that any suitable means be provided to insure that the inner con-

volutes or one of the sinuously bent wires will always overlap the inner closed ends of the convolutes on the other sinuously bent wire. Any suitable means may be provided for a spot welding operation which preferably takes place just after the inner closed ends are overlapped by the guides 23 and this will preferably take place after the holding arms 21 have clamped wires 16 and 17 together so that the spot welding operation will preferably take place during the forming of convolutes in wires 16 and 17. It is not absolutely necessary for the spot welding operation to take place immediately after the convolutes are formed but it is preferred that the spot welding operation takes place just after the convolutes are formed, that is, within a range of three or four convolutes.

It will be seen that the method disclosed in Figs. 1 through 5 is simple, effective and produces a self-furring-plaster-reenforcing wire in which two pieces of sinuously bent wire are arranged in shingled fashion and closed ends on one wire are spot welded to closed ends of the other wire and since the wire is arranged in shingled fashion there will be provided wedges into which the plaster will be forced and therefore the plaster will be firmly held in place.

Figs. 6 through 10 disclose a modified method of forming the self-furring-plaster-reenforcing wire and in this method the form block 19 does not move as in the method disclosed in Figs. 1 through 5. The spreading arms 20 in this method only spread apart and do not move away from holding arms 21 in a down direction as occurs in Figs. 1 through 5.

The method disclosed in Figs. 6 through 10 consists of the following steps. In Fig. 6, the holding arms 21 have just clamped wires 16 and 17 together, spreading arms 20 are about to spread apart to form a convolute and feeding arm 18 is moving forward and just moved forward to enable the holding arms 21 to clamp behind the just formed oppositely facing convolutes in wires 16 and 17.

In Fig. 7, the spreading arms 20 have started to spread apart and the feeding arm 18 is moving forward to supply the wire for this spreading operation. In Fig. 8, the spreading arms 20 have moved to their outermost position and the lower or outward faces of the opposed convolutes are formed by form block 19. In Fig. 9, the spreading arms 20 have collapsed and the feeding arm 18 has loosened its hold on wires 16 and 17 and is moving quickly back to grasp other portions of wires 16 and 17 and holding arms 21 are about to move downwardly and release their hold on wires 16 and 17.

In Fig. 10, the feeding arm 18 has grasped new portions of wires 16 and 17 and is moving forward and moving the just formed oppositely facing convolutes over the holding arms. During this movement, the guides 23 will force the inner closed ends of the convolutes to overlap one another and any suitable means may be provided to insure that the inner closed ends of one sinuously bent wire will always overlap the inner closed ends of the other sinuously bent wire. The sequence of events occurring after those shown in Fig. 10 are depicted in Fig. 6 which shows the beginning of the cycle again and it can be seen in Fig. 6 that the holding arms 21 have come back up and grasped the wires 16 and 17 behind the just formed convolutes.

By either of the above methods two wires are arranged in approximate parallel relationship and are moved along and operated on to form oppositely facing convolutes in the wires to form two sinuously bent wires. The words "sinuously bent wire" in this specification and claims are intended to be used in a very broad sense to include any wires which are bent into zigzag, wavy or like fashion.

The words "spot welding" as used in the application are intended to be used in a broad sense also and are not intended to be limited to electric spot welding but are intended to cover any type of spot welding and, in fact, although it is preferred that the closed ends of convolutes be spot welded together they could, of course, be brazed or soldered or otherwise fastened together without departing from the scope of the invention.

It is contemplated that several wire bending apparatuses will be used together so that two, three, four, etc. apparatuses could be working synchronously forming self-furring-plaster-reenforcing wire into units, a unit being two sinuously bent wires fastened together in shingled fashion. In such case, two units of self-furring-plaster-reenforcing wire could be joined together, as shown in Fig. 11, in which case the small rods 25 are arranged so that the inner closed ends of the convolutes on opposite wire units are overlapped and any suitable means may be provided to spot weld the overlapped closed ends together, the spot welding preferably taking place just after the ends are overlapped. The guides 27 serve to push the two units of self-furring-plaster-reenforcing wire together and the rods 25 serve to insure that the inner closed ends of the convolutes on one unit of wire will always overlap the inner closed ends of the convolutes on the other unit of wire. The rails 26 serve only to support the wire during its travel.

Throughout the drawings the plus marks are intended to show when the various parts are stationary and the arrows, of course, showing the direction of movement into which the wire or the other parts are moving. The dotted arrows are used to illustrate the part which it is adjacent is about to move in the direction of the arrow.

Fig. 12 shows the cross section of the self-furring-plaster-reenforcing wire and shows very clearly the shingled relation of the pieces of sinuously bent wire and from this drawing it can be readily appreciated that plaster applied to such a reenforcing wire would be held in a much superior manner than by prior reenforcing wire.

It is the preferable arrangement that the holding arms 21 should hold the wires 16 and 17 during the time that the feeding arm 18 is moving back to grasp new portions of the wires 16 and 17 and this period may be called the rest period while the period during which the feeding arm 18 is moving forward with the wires 16 and 17 may be termed the period of movement or feeding period.

The form block 19, the feeding arm 18, and the holding arms 21 serve to arrange the wires 16 and 17 next to one another along in the same general direction in approximate parallel relationship.

It is not particularly important at what particular time the spot welding operation takes place, that is, during the feeding period or the rest period but as before brought out it is preferred that the spot welding operation take place during the feeding period. However, it is desirable that the spot welding operation take place synchronously with successive bending operations, the

word synchronously not being used to mean necessarily simultaneously but more of in step with the bending operation so that for every bending operation there is a spot welding operation.

Although the bending operation as shown in the drawings shows spreading arms 20 as moving outwardly it is obvious that convolutes could be put in the wires with equal facility by having arms 20 which could move inwardly bending two spaced approximate parallel wires toward one another to form oppositely faced convolutes in the wires and the invention is not intended to be limited to the spreading operation unless stated in the claims.

Heretofore metal lath or self-furring-plaster-reenforcing wire has had a selvedged edge or a woven edge on the wire which, though effective for its purpose, entailed an expense and more complicated machines than was desired. In the present invention, it is not necessary to have a selvedged edge but the edge of the self-furring-plaster-reenforcing wire will be left free so that there will be a convoluted edge. Therefore, the selvedged edge operation is eliminated and it was obvious that the convoluted edge will function just as effectively as the selvedged edge without requiring the expense of a selvedged edge.

It is also contemplated that self-furring-plaster-reenforcing wire will be formed by moving at least two wires along into a bending zone, putting convolutes in the wires in a manner such that the convolutes of one wire are approximately at right angles to the convolutes of the other wire and oppositely facing thereto, and moving the convolutes as they are formed into a spot welding zone and maintaining the right angled relationship, and causing the inner closed ends of opposed convolutes to be in contacting relationship and spot welding the contacting closed ends together. This method produces a right angled self-furring-plaster-reenforcing wire and it is contemplated that closed ends of the convolutes of the wires will be in contacting relationship when they are spot welded together, that is, in abutting relationship one closed end of a convolute slightly overlapping or underlapping the other convolute, the important point being that they are in contacting relationship. By this method a right angled self-furring-plaster-reenforcing wire is produced which lends itself to be applied to corners and it is contemplated that sheets of wire may be formed having a right angle on one edge thereof or that special right angled pieces will be made and plain sheets without right angled edges, whichever is desired.

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 claims.

I claim:

1. The method of forming wire lath comprising feeding a pair of wires along and in parallel side by side relationship, holding the wires stationary at a first point, confining the wires together at a second point spaced in advance of the first point while moving the portions of wires forwardly of the second point toward the first point and simultaneously moving the portions of the wires between the points outwardly with respect to one another to permanently deform the wire and form convolutes or sinuosities in the wires, then releasing the wires at the first point and moving the wires forward while causing portions of the wires forwardly of said first point to overlap, and spot welding the overlapped portions together.

2. The method of forming wire lath comprising feeding a pair of wires along and in parallel side-by-side relationship, holding the wires stationary at a first point, confining the wires together at a second point spaced in advance of the first point while moving the portions of the wires confined together at the second point toward the first point and simultaneously moving the portions of the wires between the points outwardly with respect to one another to permanently deform the wires and form convolutes or sinuosities in the wires, then releasing the wires at said first point and moving the wires forwardly while causing portions of the wires at said first point to overlap, and permanently securing the overlapped portions together.

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