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TYING CLIP FOR METAL LATH

Filed April 22, 1931

FIG. 1.

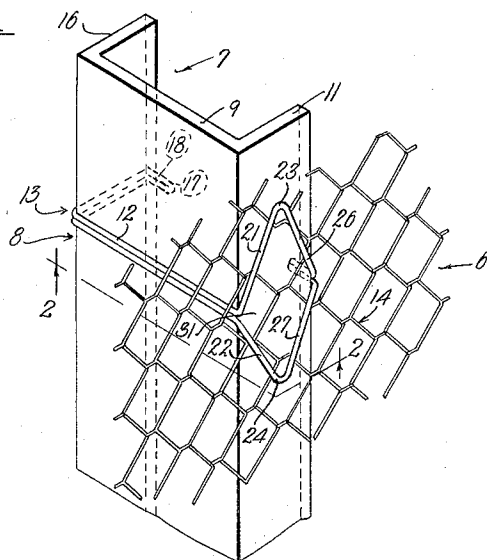


FIG. 5.

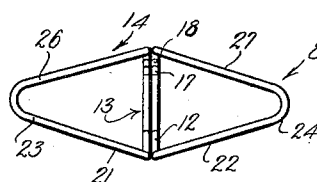


FIG. 2.

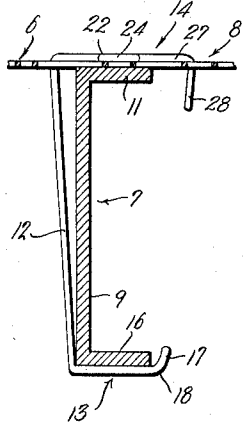


FIG. 3.

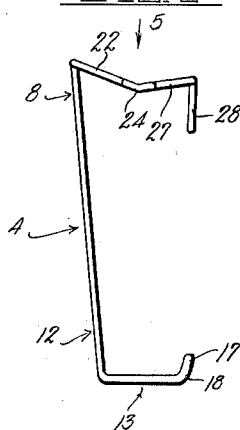
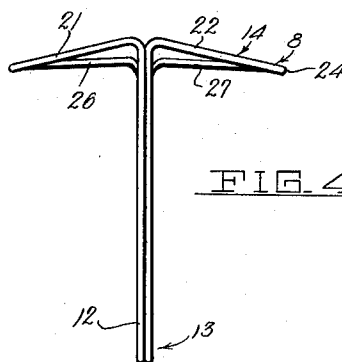


FIG. 4.



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TYING CLIP FOR METAL LATH

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8 Claims. (Cl. 72-118)

This invention relates to metal lath, and more especially to a tying clip whereby metal lath may be secured quickly and permanently to its supporting structure.

5 A more detailed object is the provision of a tying clip for metal lath of such a nature that it is mounted in operative position simply by thrusting an end of the clip through the lath at a point adjacent one of the supporting bars for the lath and pressing the outer end of the clip firmly
10 against the outer face of the lath, whereupon the clip will automatically snap to locking position wherein the lath is securely and permanently attached to the support.

15 The invention possesses other objects and advantageous features, some of which, with those enumerated, will be set forth in the following description of the invention's particular embodiment which is illustrated in the drawing accompanying and forming a part of the specification.

Referring to the drawing:

20 Fig. 1 is a perspective view of a section of metal lath, a portion of the support therefor, and a tying clip incorporating the principles of my invention, in operative position, holding the lath
25 to the support.

Fig. 2 is a side elevation of the tying clip in operative position. This view may be considered as a sectional view taken upon the line 2-2 of
30 Fig. 1, with the direction of view as indicated.

Fig. 3 is another side elevation, but showing the clip detached from the lath and support.

35 Fig. 4 is a rear elevation of the clip, the direction of view being indicated by the arrow 4 of Fig. 3.

Fig. 5 is a top plan view of the clip, the direction of view being indicated by the arrow 5 of Fig. 3.

40 Metal lath is usually employed as a foundation for plastering and the like, by securing the lath to a series of spaced parallel supporting members by means of loops of wires, each of which encircles one of the supporting members, and one or more of the sections of the meshwork
45 defining the metal lath. It is a more or less difficult and time consuming task to engage these wire loops so as to properly secure the lath to the supports, inasmuch as it is necessary to bend the end of a piece of wire to substantially
50 U-shaped configuration, thrust one leg of the U through the lath adjacent one side of the support to which it is to be secured, and to so manipulate the remainder of the wire that that leg passes around the supporting member. The wire
55 is then pulled back through the lath, so that

the leg which has passed around the support will be pulled back through the meshwork, whereupon the two ends of the U-shaped wire are twisted together by means of a pair of pliers or the like, so as to tighten the lath against the support. Not only does this require a relatively large amount of time, but it also yields a faulty construction, inasmuch as the twisted ends of the loop project for a material distance beyond the outer surface of the lath. This must be pounded
60 over so as to lie flat against the surface of the lath, otherwise it is apt to project through the outer surface of the ultimate plastering, or to be disposed at such a short distance under the surface of the plastering that rust spots from
65 the wire will appear in the outer surface of the plaster. Moreover, when the plasterer is applying plaster, his trowel is apt to become caught on these projecting, twisted ends, causing a large amount of inconvenience, and loss of time in
70 applying the plaster. Hence, in most communities it has become the practice for the building inspector to pay particular attention to the manner in which the metal lath is secured, and to require that all the twisted ends of the fasten-
75 ing loops be pounded down closely against the surface of the lath. Frequently the wire becomes broken when the ends are pounded over, because of the fact that it is bent to such an acute angle, especially after the metal of the wire has
80 become fatigued by having its ends twisted together. When this occurs, it is necessary to remove the broken wire and to make another attempt to fasten the particular portion of the lath to the support by another loop.

85 The clip of the present invention has been designed in such a manner that it is capable of securely and permanently attaching the lath to the supports in such a manner that the above mentioned disadvantages of the old method of attachment are overcome, in spite of the fact that the clip may be fastened in operative position almost instantaneously, and when so mounted
90 leaves no projecting portions apt to interfere with the manipulation of the plasterer's trowel, or to cause rust spots in the ultimate plastered wall.

95 Fig. 1 shows a small portion of metal lath 6 secured to a supporting member 7 by means of a tie clip 8 embodying the principles of the present invention. The usual supporting member 7 is a channel iron arranged with its web
100 9 in a plane perpendicular to that of the ultimate wall, and with its outer flange 11 parallel to that plane, it being intended that the lath-
110

ing shall be secured against the outer face of the flange 11.

The clip 8 comprises a shank 12 and inner and outer arms 13 and 14, respectively, extending from the ends of the shank 12 to substantially the same side thereof. The inner arm 13 is adapted to extend across and engage the inner face of the inner flange 16 of the channel 7, whereas the outer arm 14 is adapted to engage the outer face of the lath 6, with the shank 12 extending through the meshwork of the lath and across the face of the web 9 of the channel 7. The clip 8 is formed of a length of resilient wire, such as spring steel wire, doubled back upon itself midway between its ends, the reverse bend being indicated at 17. Hence, the shank 12 and the inner arm 13 both are double, inasmuch as both portions of the wire extending from the reverse bend 17 lie closely adjacent each other throughout the length of these portions of the clip.

The inner arm 13 has its extreme end 18 bent outwards, i. e., the finger 18 thus formed extends toward the outer surface of the ultimate wall when the clip 8 is in operation position, as indicated upon Figs. 1 and 2. From the base of the retaining finger 18 to the inner end of the shank 12 the inner arm 13 corresponds substantially in length to the width of the inner flange 16 of the channel 7. The shank 12 corresponds substantially in length to the width of the web 9, plus the thickness of the lathing 6, thus permitting the shank 12 to extend across the web 9 and through the lath 6, with the inner arm 13 engaging the inner face of the flange 16.

At the outer end of the shank 12 the two sections of the wire diverge substantially in opposite directions, although instead of lying in a straight line, I prefer that these sections 21 and 22 of the wire extend slightly forward, as well as laterally from the upper end of the shank, as clearly illustrated upon Fig. 5. Moreover, each of these sections 21 and 22 is disposed at an acute angle with the shank 12, so that the ends 23 and 24 of the sections 21 and 22 are closer to the plane of the inner arm 13 than the outer end of the shank 12. The reason for this is that when the clip is pressed home the ends 23 and 24 will come into engagement with the outer face of the lathing 6 before the portion of the outer arm 14 to which the shank 12 is directly connected, whereupon continued movement of the clip inwards, i. e., toward the inner flange 16 of the supporting channel 7, will cause the sections 21 and 22 of the outer arm 14 to be bent, thereby developing a resilient force which causes the shank 12 to be pulled outwards, pressing the inner arm 13 against the flange 16 when the clip is finally disposed in holding position.

At the outer ends 23 and 24 of the sections 21 and 22 the wire is again reversely bent, thus presenting sections 26 and 27 which extend angularly toward each other and forward so as to position their ends together, these ends being bent inwards to define a second retaining finger 28 which extends toward the inner retaining finger 18. The sections 21, 22, 26 and 27 define the outer arm 14, and these sections all lie substantially in a common plane. This plane is disposed at an acute angle with the shank 12, with the result that the portion of the arm 14 which first engages the outer surface of the lath 6 when the clip is being pressed home, is that from which the retaining finger 28 extends, this being the portion of the arm 14 which is spaced forward at the

greatest distance from the shank 12. Hence, when the arm 14 is pressed flat against the outer surface of the lath 6, a leverage is developed wherein this portion of the arm 14 serves as a fulcrum about which the remainder of the clip moves, pressing the inner end of the shank 12 toward and against the web 9, thus causing the inner retaining finger 18 to snap over the opposite edge of its associated flange 16, as clearly shown upon Fig. 2.

In other words, the acute angle between the plane of the outer arm 14 and the shank 12 causes the inner end of the shank 12 to be pressed against the web 9 of the channel 7; and the acute angle of each of the sections 21 and 22 with the shank 12 causes the shank 12 to be pulled outwards, pressing the inner arm 13 against the inner flange 16.

The clip is mounted in operative position simply by thrusting the inner arm 13 and the shank 12 through one of the spaces 31 in the lath 6, the space selected being closely adjacent the web 9 of the channel 7. As the clip is pressed inwards, the end of the inner retaining finger 18 will slide across the web 9 until it passes the corner at the intersection of the web 9 with the flange 16. Meanwhile, the outer retaining finger 28 will enter another of the spaces 31 and engage either a portion of the lath 6 or the opposite edge of the outer flange 11 from that which is proximal to the shank 12.

Continued inward movement of the clip 8 causes that portion of the outer arm 14 which is adjacent the retaining finger 28 to engage the outer surface of the lath 6, after which the leverage hereinabove mentioned will be developed, wherein this portion of the arm 14 operates as a fulcrum about which the remainder of the clip pivots, moving the inner end of the shank 12 toward the web 9 of the channel 7. This continues until the inner retaining finger 18 snaps over the distal edge of the inner flange 16, with the result that this finger serves to prevent the clip from working loose by vibration after it has once been mounted in operative position.

Just prior to the time at which the clip 8 is moved to its inner extreme of movement, the outer ends 23 of the sections 21 and 22 will engage the outer surface of the lath 6, with the result that the remainder of the inner movement of the clip will produce flexure of the outer arm 14, the result of which is to impose tension upon the shank 12, pulling the inner arm 13 outwards against the flange 16 and pressing the lath 6 firmly against the outer flange 11. This tension also serves to retain the inner retaining finger 18 against inadvertent displacement.

It is to be understood that the details of the invention as herein disclosed, are subject to alteration within the spirit or scope of the appended claims.

I claim:

1. A clip for tying metal lath to a support, comprising a shank adapted to extend through said lath and across a side face of said support, an inner arm extending angularly from said shank and adapted to engage the inner face of said support, and an outer arm extending laterally from opposite sides of the shank adapted to engage the outer face of said lath.

2. A clip for tying metal lath to a support, comprising a shank adapted to extend through said lath and across a side face of said support, an inner arm extending angularly from said shank and adapted to engage the inner face of said

support, and an outer arm extending laterally from opposite sides of the shank adapted to engage the outer face of said lath, said outer arm lying substantially in a plane disposed at an acute angle with said shank on the same side thereof as that to which said inner arm extends.

3. A clip for tying metal lath to a support, comprising a length of resilient wire bent to define a shank and inner and outer arms extending in substantially the same direction from said shank, the outer arm extending laterally from opposite sides of the shank, said inner arm being adapted to engage the inner face of said support and said outer arm being adapted to engage the outer face of said lath with said shank extending through the lath and said outer arm lying substantially in a plane disposed at an acute angle with said shank, whereby the inner end of said shank is pressed toward said support when said outer arm lies flat against said lath.

4. A clip for tying metal lath to a support, comprising a length of resilient wire bent to define a shank and inner and outer arms extending in substantially the same direction from said shank, the outer arm extending laterally from opposite sides of the shank, and a finger extending inwards from the end of said outer arm, said inner arm being adapted to engage the inner face of said support and said outer arm being adapted to engage the outer face of said lath with said shank extending through the lath and said outer arm lying substantially in a plane disposed at an acute angle with said shank, whereby the inner end of said shank is pressed toward said support when said outer arm lies flat against said lath.

5. A clip for tying metal lath to a support, comprising a length of resilient wire bent to define a shank and inner and outer arms extending in substantially the same direction from said shank, and fingers extending substantially toward each other from the ends of said arms, said inner arm being adapted to engage the inner face of said support and said outer arm being adapted to engage the outer face of said lath with said shank extending through the lath and said outer arm lying substantially in a plane disposed at an acute angle with said shank, whereby the inner end of said shank is pressed toward said support when said outer arm lies flat against said lath.

6. A clip for tying metal lath to a support, comprising a length of resilient wire bent to define a shank and inner and outer arms extending in substantially the same direction from said

shank, said inner arm being adapted to engage the inner face of said support and said outer arm being adapted to engage the outer face of said lath with said shank extending through the lath and said outer arm comprising a pair of branches extending laterally to opposite sides of said shank and bent back at acute angles to position the ends of said branches together and spaced in front of said shank, both of said branches being substantially in a common plane disposed at an acute angle with said shank, whereby the inner end of said shank is pressed toward said support when said outer arm lies flat against said lath.

7. A clip for tying metal lath to a support, comprising a length of resilient wire bent to define a shank and inner and outer arms extending in substantially the same direction from said shank, said inner arm being adapted to engage the inner face of said support and said outer arm being adapted to engage the outer face of said lath with said shank extending through the lath and said outer arm comprising a pair of branches extending laterally to opposite sides of said shank and bent back at acute angles to position the ends of said branches together and spaced in front of said shank, both of said branches being substantially in a common plane disposed at an acute angle with said shank, whereby the inner end of said shank is pressed toward said support when said outer arm lies flat against said lath, and each of said branches being deflected slightly inwards from said plane to an acute angle with said shank, whereby said inner arm is pulled outwards against the inner face of said support when said outer arm lies flat against said lath.

8. A clip for tying metal lath to a support, comprising a length of resilient wire doubled back upon itself midway between its ends to present a double shank, the inner end of said shank being bent forward to form an inner arm and the end of said arm being bent outward to form a retaining finger, said wire extending laterally from the outer end of said shank on opposite sides thereof and at an acute angle with the shank and then angularly forward and toward each other defining an outer arm lying substantially in a plane disposed at an acute angle with said shank, and the ends of said wire being bent to substantial parallelism with said shank to form a second retaining finger extending toward said first mentioned finger.

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