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3,339,448

FASTENER FOR FURRING ARTICLES FROM A SUPPORTING SURFACE

Filed June 25, 1964

FIG. 1.

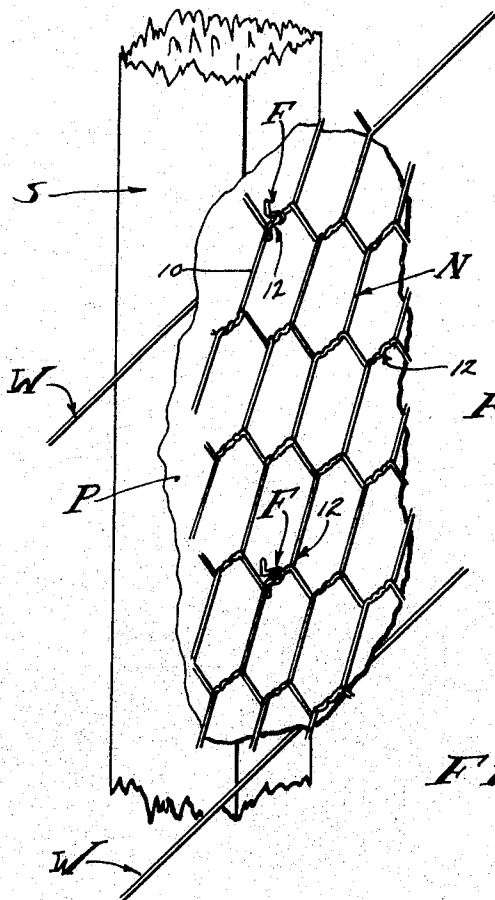


FIG. 2.

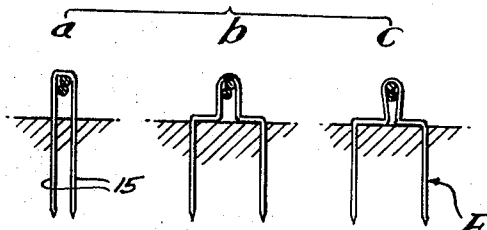


FIG. 3.

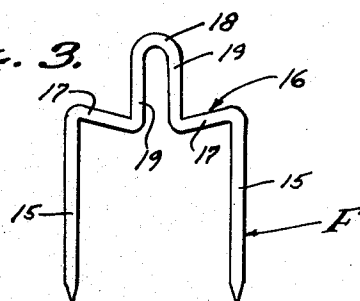


FIG. 4.

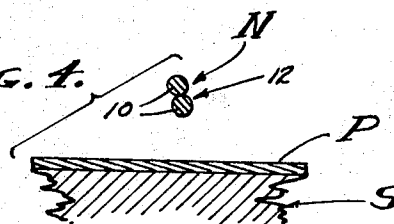


FIG. 6.

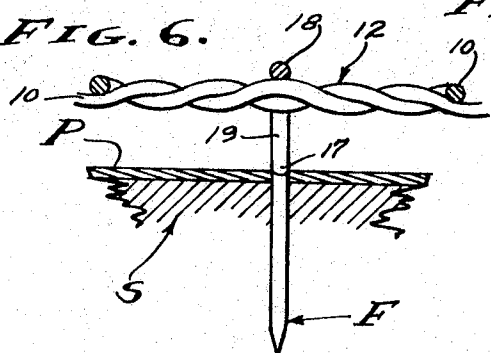
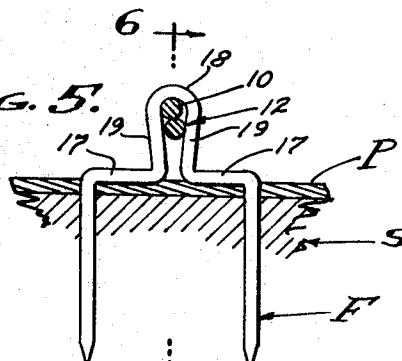


FIG. 5.



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FASTENER FOR FURRING ARTICLES FROM A SUPPORTING SURFACE

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2 Claims. (Cl. 85-49)

This invention relates to a fastener and to the method of its application in furring an article from a surface and it is particularly concerned with simultaneously furring the article as it is attached by said fastener, to lift said article to a predetermined level spaced from the surface to which it is to be attached, and further to secure said article in said predetermined levelled position by driving the fasteners into the said surface and simultaneously into positioning engagement with said article.

This invention, in its broad sense, is applicable to many situations where it is desirable to fasten an article on and in spaced relation to a surface. One very practical application of the invention is the furring of "stucco-netting" employed in the underlying foundation structure of plastered walls and the like. Therefore, the present invention will be hereinafter described as it is embodied in installation of stucco-netting as an article to be fastened in place at a predetermined level spaced from the surface to which it is attached.

Exterior building walls of frame constructions that are plastered with cement are known as stucco walls. This type of wall involves the erection of a frame which is covered with a membrane of construction paper over which the exterior stucco is applied. This particular construction is to be distinguished from lath and plaster construction, since it has acquired a status of being substantially heavier and more durable as the exterior envelope of a building. Generally, the wall consists of vertically disposed studs S that are spaced at predetermined and uniform intervals, of tie wires W laced horizontally across the outer faces of the studs, of construction paper P applied to the faces of the studs and over the tie wires, and of stucco-netting N fastened on and spaced from the faces of the studs in spaced relation to the said faces and to the said paper. The important feature is the predetermined spacing of the stucco-netting; say for example $\frac{1}{4}$ inch from the faces of the studs S and an equal spaced distance from the surface of the construction paper P. With this specified spacing of the stucco-netting from the studs and paper, it is permissible to apply the "scratch-coat" of cement, to which the overlying stucco cement is then applied.

Construction Codes strictly control the procedure of insuring proper furring and/or spacing as set forth above, and it is this levelling of the stucco-netting which ordinarily involves considerable time and effort and constant concern. And, heretofore this furring has been effected by specially headed nails with underlying felt blocks and the like, all applied by use of the classic hammer method. Further, proper suspension of stucco-netting by use of nails with underlying felt blocks requires controls over the exact placement of said nails as suspension fasteners, and this is time consuming and a factor to be considered.

The primary object of the present invention is to provide a fastener and method of applying the same to lift an article a predetermined distance from a surface to which said article is then fastened by said application.

It is an object of this invention to provide a fastener which is adapted to hold an article in spaced relation to the surface from which it is supported.

Another object of this invention is to provide a method that places an article in predetermined spaced relationship

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to a surface from which it is to be supported and that provides the application of a fastener in such a fashion as to urge the article into said predetermined spaced relation and to further provide fixation of said article in said spaced relation.

It is still another object of this invention to provide a fastener and method of applying the same wherein steps and features are included to engage and lift an article to a predetermined level and to engage the fastener with the article so as to inherently urge the article into said predetermined level.

This application is copending with application Ser. No. 377,820, filed on June 25, 1964, now Patent No. 3,279,672 and entitled, "Fastener Driving and Furring Tool for Stucco-Netting and the Like."

The various objects and features of this invention will be fully understood from the following detailed description of the typical preferred forms and applications thereof, throughout which description reference is made to the accompanying drawings, in which:

FIG. 1 is a perspective view showing the type of article involved and the application of the fasteners thereto and into a surface according to the present invention.

FIG. 2 shows the development of typical fasteners that are applied by the tool of the present invention, three fasteners being indicated as *a*, *b* and *c*.

FIG. 3 is an enlarged view of the first step in forming the preferred form of fastener that is applied by the method hereinafter described.

FIG. 4 is a view of the second step of the method wherein the article to be furred is held in position.

FIG. 5 is a view of the fastener of FIG. 3 upon completion of the method and showing the article furred as provided by the present invention.

FIG. 6 is an enlarged sectional view taken as indicated by line 5-5 on FIG. 4.

The type of structure to which this invention appertains is briefly set forth above and which involves a frame construction comprising studs S upon which the tie wire W is laced, covered by construction paper P, and over which stucco-netting N is applied. This construction is the underlying foundation that is erected for the support of the cement coating or coatings known in the building trades as stucco. The characteristic features of stucco-netting are that it is an article made of soft wire 10, usually galvanized, and arranged to form a mesh that can be applied in flat sheets supplied from rolls. It is common for this article to comprise a plurality of wires 10 extending longitudinally of the sheet of netting, these wires being turned or bent alternately from side to side and roped together as at 12. Thus, the characteristic pattern of the mesh is that adjacent hexagons are established with opposite parallel sides disposed longitudinally of the sheet and roped together, as shown. It is apparent, then, that the roped portions at 12 are stiffened and of increased cross-section. The roping comprises two oppositely pitched, or oppositely twisted, helixes that merge at the center of the sides which are roped together.

In accordance with this invention a fastener in the form of a staple or the like forms one body which is applied to a second body in the form of stucco-netting N or the like. The staples can vary in exact shape and formation, three general types of fasteners being illustrated in FIG. 2, *a*, *b*, *c*. In FIG. 2*a* the fastener has parallel shanks and is U-shaped to engage over the article to be fastened and furred. In FIG. 2*b* the fastener is U-shaped and has an extended head portion that frictionally engages the article to be fastened and furred. And, in FIG. 2*c* I have shown the preferred fastener F which is essentially a U-shaped staple but with a centrally extended head portion of looped formation and which is con-

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stricted or clinched onto the article so as to positively hold said article in spaced relation to a supporting surface. With the example fastener shown in FIG. 2a the driving means is provided with stop means (not shown) in order to limit the depth to which the fasteners are driven. However, with the fasteners shown in FIGS. 2b and 2c the first turn of the staple body presents a stop shoulder that engages the supporting surface to limit the depth to which the fasteners are driven.

In FIG. 3 of the drawings I have shown the initial and first step of the method which involves the formation of the staple fastener F and which comprises a first body formed with a pair of parallel shanks 15 integrally joined by a transverse head 16. Essentially, the shanks 15 are parallel and spaced so as to have close or sliding, and even slightly interfering, engagement with the wire or wires 10, as is clearly illustrated in FIG. 2a. However, it is preferred that the shanks 15 be stepped so as to present shoulders having positive positioning engagement with the surface into which the fastener F is driven.

The preferred head 16 is unique in that it has inclined shoulder portions 17, preferably inclined upward and outward, and in that it has a vertically disposed and centrally located loop portion 18 joining the two inclined shoulder portions. Relatively sharp turns are provided at the points of joinder with the shanks and loop portion respectively, and the top of the loop per se is uniformly turned about a constant radius and the sides 19 of the loop are initially parallel, as shown.

In FIG. 4 of the drawings I have shown the intermediate and second step of the method which involves the placement of a second body which is later held in fixed spaced relationship to the supporting surface. This second step can be carried out in many ways and comprises, essentially, the holding of the second body in position where it is to be fixed by subsequent application of the first body thereto. In the case illustrated, the second body is the stucco-netting N and it is the roped portion 12 thereof which is to be placed and then fixed in place by the first mentioned body formed as the fastener F. As shown, the roped portion 12 is elevated from the supporting surface and is held there by hand or by means of implements that accurately gauge the distance required. It is the center area of the roped portion 12 which is logically to be engaged by the first mentioned body or fastener F, and therefore the two wires 10 are usually positioned substantially as shown, one above the other (even though slightly offset).

In FIGS. 5 and 6 of the drawings I have shown the final step or steps of the method which can vary depending upon the type of engagement desired between the first and second bodies. For example, if the fastener as shown in FIGS. 2a and 2b are to be employed, then the final step involves only driving of the fastener shanks 15 into position as shown, with the shanks 15 or sides 19 frictionally engaged with portion 12 of the stucco-netting N. However, in the preferred and most improved form of the method, the final step is compounded in that the shanks 15 of the fastener F are driven into the supporting surface followed and accompanied by straightening of the shoulder portions 17 into horizontal alignment with each other and whereby the loop portion 18 of the fastener and head is constricted to the condition clearly shown in FIG. 5.

In carrying out the method, and in the manufacture of the fastener F as an article, the shoulders 17 can be inclined either as shown or they can be inclined upwardly and inward, if so desired. In either instance, the shanks 15 are driven into the supporting surface, or substantially so, whereupon the declined ends of the shoulders 17 engage said surface to be straightened. Straightening of the shoulders 17 is effected by the means employed to drive the fastener, as by hammering the head 16 into said straightened conditions or as by employing a tool of straight formation which presses the shoulders 17 into aligned engagement upon said supporting surface.

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From the foregoing it will be apparent that I have provided a very useful first article and method of applying the same to a second article for the purpose of furring said second article from a supporting surface to which it is simultaneously attached by the said first article. Each of said articles can be a single body of material and it is the first mentioned article which is formed so as to either frictionally or positively engage the second mentioned article. Manipulation of the article or articles can be accomplished as circumstances require, either by hand or with the aid of tools, or by machine application. In the case of the fastener F per se, the initial formation is either such as to frictionally engage portion 12 of the second body or stucco-netting N, or such as to be changed in formation so as to constrict the lower extremities of sides 19 to positively lift the said portion 12 to the top of loop 18. Thus, it will be seen that an upward wedging action is performed by the fastener F when fully applied and reformed with its shoulders 17 aligned. In the case of the method per se, there are three steps involved: broadly the said portion 12 is frictionally engaged so as to be fixed at the predetermined height at which it is first held; and in the more limited and improved form of the invention the said portion 12 is wedged upwardly to a predetermined position established by the loop 18. In said improved form the third and final step of the method is compounded by accomplishing the functions of (1) applying the fastener into the supporting surface, (2) wedging the article to be furled into a predetermined elevated position, and (3) tightening the head 16 onto the article, portion 12, by re-forming the head 16 simultaneously with driving of the same.

Having described only typical preferred forms and applications of my invention, I do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to myself any modifications or variations that may appear to those skilled in the art and fall within the scope of the following claims.

Having described my invention, I claim:

1. A staple-shaped fastener for securing a wire-like object in spaced relation to a support, said staple comprising a one piece integral body formed symmetrically about a longitudinally disposed axis and including:
 - a pair of longitudinally disposed and parallel shanks equidistantly spaced at opposite sides of said axis, each of said shanks having a support penetrating terminal end;
 - a centrally disposed head member of inverted U-shape having a transversely disposed bail and a pair of longitudinally disposed and parallel sides, the sides being integrally and bendably joined to said bail and spaced considerably closer to said axis than are said shanks;
 - and a pair of shoulders extending integrally between and bendably joined to the ends of the shanks remote from their penetrating terminal ends and bendably joined to the ends of said sides remote from said bail respectively, each of said shoulder members being transversely disposed between an adjacent shank and a side of the head member and oppositely inclined and slightly angularly related to the shanks and said side of the head at like angles;
- said staple-shaped fastener in use having the said wire-like object disposed between said sides of the head member, said shoulders being engaged and driven for penetration of the shanks into said support and for straightening engagement of said shoulders upon said support, thereby bending said angles of joinder into substantially right angles of joinder and bending said joiners of the bail and sides of the head member by forcing said sides of the head member toward said axis and divergently disposing them into contacting relation with and to retain said wire-

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like object against said bail and in spaced relation to said support.

2. The staple-shaped fastener for securing a wire-like object in spaced relation to a support as set forth in claim 1 wherein:

the pair of shoulders are oppositely inclined and angularly related to the shanks and said sides of the head at like acute angles of less than 90°;
said staple-shaped fastener in use being engaged and driven at said shoulders in alignment with the shanks for penetration of the shanks into said support and for straightening engagement of said shoulders upon

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said support, thereby bending said acute angles of joinder into substantially right angles of joinder.

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