April 12, 1932. W. H. F. ZIEDRICH 1,853,488

WIRE FASTENER

Filed Feb. 10, 1930

Fig. 1

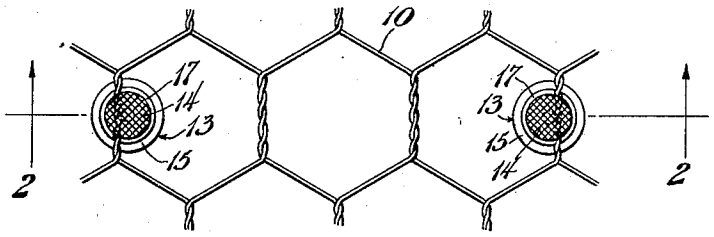


Fig. 2

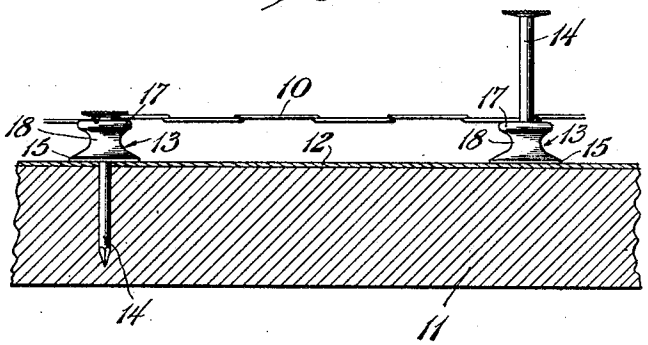
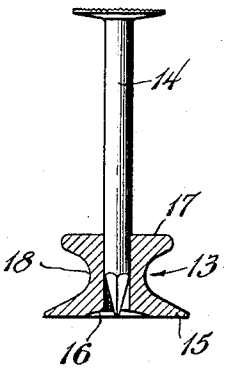


Fig. 3



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Patented Apr. 12, 1932 1,853,488

UNITED STATES PATENT OFFICE

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WIRE FASTENER

Application filed February 10, 1930. Serial No. 427,307.

This invention relates to wire fasteners commonly known as furring nails for securing reinforcing wire to sheathing subsequently to be imbedded in stucco or plaster and, among other objects, aims to provide an improved, cast metal spacer element preassembled on a nail so as to conceal the point of the nail and not only providing a deformable solid head portion against which the wire is adapted to be firmly gripped when the nail is driven in, but also, presenting an enlarged base serving to brace the nail and prevent it from bending under normal strains. This application involves important improvements on the wire fastener disclosed in my Patent No. 1,818,523, dated Aug. 11, 1931 and in my copending application, Ser. No. 282,431, filed June 2, 1928.

In the accompanying drawings:

Fig. 1 is a fragmentary side elevation showing the preferred form of fasteners applied to ordinary reinforcing wire;

Fig. 2 is a fragmentary sectional view taken on the line 2—2 of Fig 1; and

Fig. 3 is an enlarged, vertical sectional view through the spacer element.

Referring to the drawings, the preferred form of fastener is shown in Figs. 1 and 2 as being utilized to secure ordinary reinforcing wire 10 properly spaced from wooden sheathing 11 to which is usually applied a layer of waterproof paper 12. While the reinforcing wire is here shown as being like ordinary chicken wire fencing, it will be understood that other reinforcements such as expanded metal may be secured in the same manner. As stated in my aforesaid application, the idea is to firmly secure the reinforcing wire so that it will be imbedded at the proper depth in the plaster or stucco.

Referring to Figs. 2 and 3, there is shown a cast metal spacer element 13 which is preferably made of a relatively soft, non-corrosive alloy such as aluminum or a lead composition and formed directly on the shank of the furring nail 14 so that the pointed end of the nail lies about flush with the base. The idea of casting the spacer elements on the nails is to avoid the possibility of the separation of the nails from the spacer elements. Experience has demonstrated that thin, sheet metal spacer elements work loose when they are handled or during shipment and some of the nails become separated from them. Further, the cast-on spacer elements prevent the pointed ends of the nails from projecting through them so that they will tear the pockets or prick the fingers of a carpenter. Also, the bases of the elements are free to slide on the building paper 12 without tearing it.

In this example, the spacer elements are spool-shaped, each presenting an enlarged, substantially conical base 15 and having a depression 16 in the center about the point of the nail and through which the nail is driven. This prevents any rough, or irregular galvanizing on the nail shank from breaking or splitting the casting when the nail is driven through it. A head 17 of substantial area, but conveniently of less diameter than the base, is formed on the element and presents a flat surface co-operating with the nail head to provide a deformable anvil, against which the wire is firmly secured and partially imbedded when the nail is driven in. Between the enlarged or flanged base and the head portion 17 is shown a reduced neck 18 which shape is preferred because of the resulting economy in material.

It will be understood that the spacer elements may be cast on the nails in various ways. It has been found, however, that they can be formed very rapidly and assembled on the nails by automatic die-casting machinery having molds of the proper shape to receive the molten metal. Such machines, which form no part of the present invention, may be utilized to produce between 500 and 1,000 assembled fasteners per minute, thus materially reducing the cost of manufacture.

The union between the furring nail and the spacing element, it will be clear, is of a temporary nature, and doubtless arises from a molecular interlocking of the dissimilar metals of the nail shank and spacer element. The furring nails are usually galvanized, and hence have a somewhat rough surface of zinc, and this rough surface is admirably adapted to form an easily sheared connection

with the spacer element. Driving the nails home instantly breaks this connection, without any such resistance as would tend to bend the nail shank.

It will, of course, be understood that the fasteners will be made of several different sizes, depending upon the requirements as to the height and strength of the spacer elements. In all cases, however, the shapes of the spacer elements 13 are preferably the same, so as to afford braces for the nails when they are driven in and thereby prevent them from bending or being displaced when the reinforcing wire is stretched or after the stucco or plaster is applied, and its weight is carried by the nails. All of the fasteners may be quickly applied by inserting the spacer elements in the open meshes of the reinforcing wire and sliding them laterally so that the heads 17 are held between the wall and the strands. Thus, the fastener will be frictionally held in place by the wire 10 so that the carpenter may drive the nail home without holding it with one hand. Moreover, there is no protruding nail point to interfere with the easy sliding movement of the base of the spacer element on the paper. This also avoids tearing the paper which permits the water in the stucco to penetrate the paper and the sheathing.

When a nail is driven, its head forces the strand which it engages against the head 17 of the spacer element and causes the strand to make a depression and partially imbed itself in the head as indicated at the left end of Fig. 2. Since the spacer elements are solid, the strands cannot be easily disengaged from the heads by ordinary strains on the wire. Furthermore, the nail shanks completely shield the openings in the spool-shaped spacer elements so that no water in the stucco mixture can enter the openings to promote rust of the nails in the sheathing. Also, the solid spacer elements afford excellent reinforcements for the stucco about the nails and will not cause the stucco to crack due to any expansion and contraction.

It will thus be seen that the improved fasteners can be manufactured at a small cost; that the assembled elements will stand transportation and very rough handling without separation of the nails from them; that they may be easily and speedily applied by unskilled workmen; that they present no sharp projections to prick the fingers or cut or tear building paper; that they will not become entangled with each other in nail pockets and that they afford a very strong and dependable, non-rusting fastening means for reinforcing wire.

Obviously, the present invention is not restricted to the particular embodiment thereof herein shown and described.

What is claimed is:

1. A fastener of the character described comprising the combination of a furring nail and a cast metal spacer element cast adjacent the pointed end of the nail and united thereto by a molecular interlocking; said spacer element having an enlarged base and being adapted to be slipped under a wire strand and frictionally held in place thereby while the nail is being driven home.

2. A fastener of the character described comprising the combination of a furring nail and a cast metal spacer element cast upon the nail adjacent the pointed end thereof and presenting an enlarged base flange to provide a bearing surface of substantial area; the pointed end of the nail being substantially flush with the base flange and exposed from the underside of the spacer element; said nail being easily driven through the spacer element to break the union between it and the spacer element.

3. A fastener of the character described comprising the combination of a furring nail and a spacer element composed of a relatively soft metal cast about the shank of the nail adjacent the pointed end, said nail being readily severable from the spacer element by driving it.

4. A fastener of the character described comprising the combination of a furring nail and a substantially spool-shaped, cast metal spacer element cast on the shank of the nail adjacent the pointed end so as to conceal but not cover the point, the union between the nail and the spacer element being easily broken by driving the nail.

5. A fastener of the character described comprising the combination of a furring nail and a substantially spool-shaped, cast metal spacer element presenting an enlarged base formed about the pointed end of the nail but exposing said point, said spacer element being composed of a relatively soft, non-rusting metal which is die-cast on the nail; the union between the nail and the spacer element being easily broken by driving the nail.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

WILLIAM H. F. ZIEDRICH.