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WIRE CLAMPING TOOL

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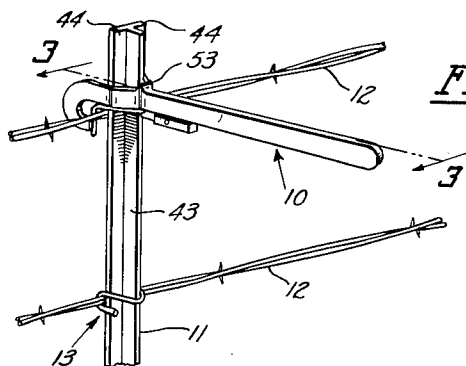


FIG. 1

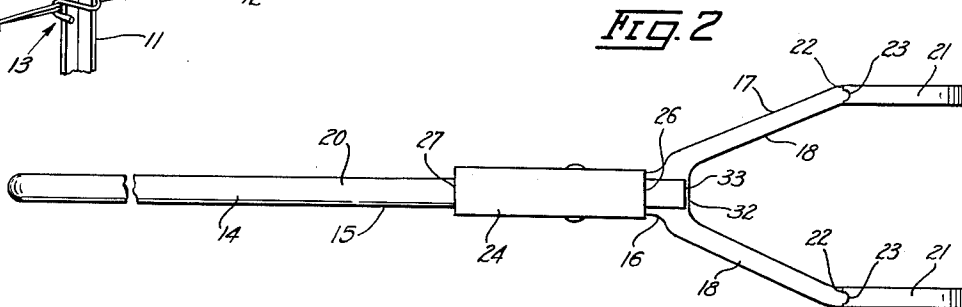


FIG. 2

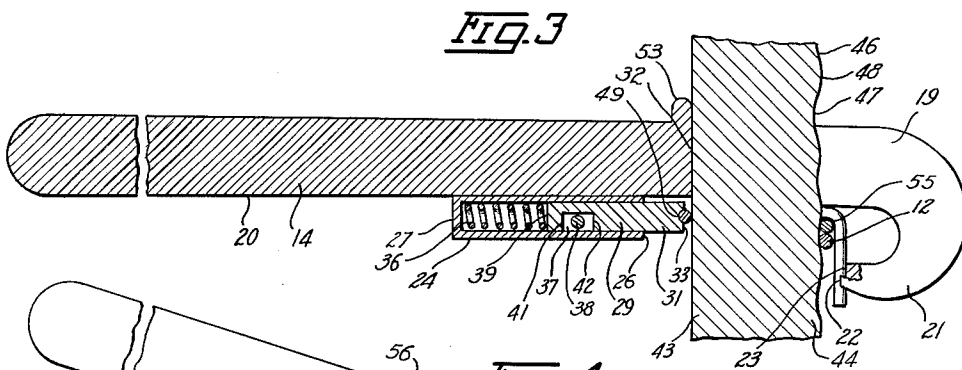


FIG. 3

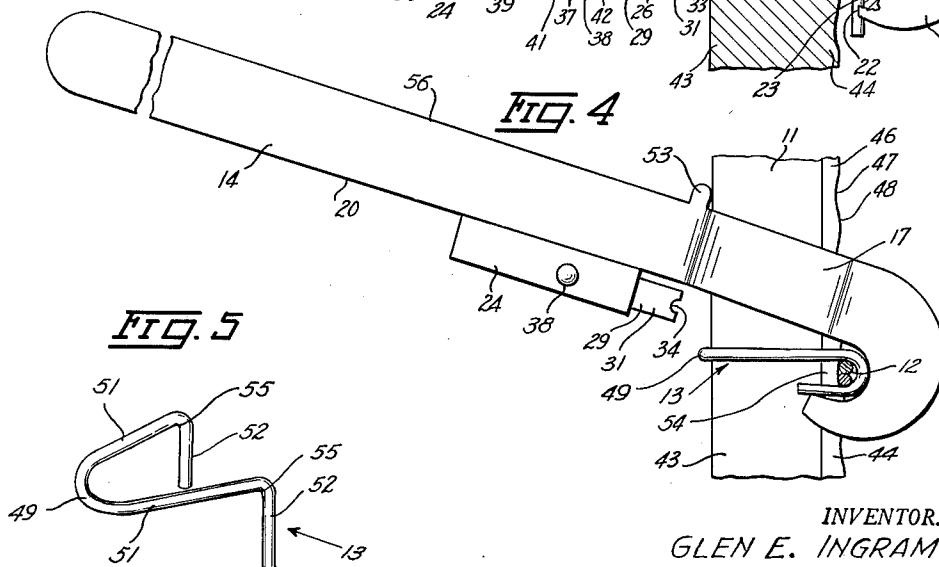


FIG. 4

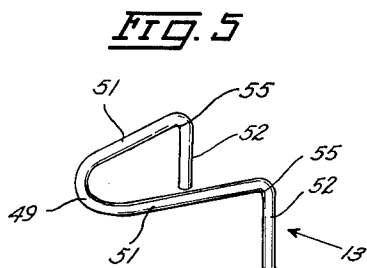


FIG. 5

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1

2,722,006

WIRE CLAMPING TOOL

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4 Claims. (Cl. 1—210)

This invention relates generally to wire bending tools and more particularly to a wire bending or clamping tool for applying wire clips to fence posts so as to clamp fence wires to such posts.

An object of this invention is to provide an improved tool for applying wire clips to fence posts so as to hold fence wire on such fence posts.

A further object of this invention is to provide a wire clamping tool which is adapted to releasably hold a wire clip in a position to be assembled with a fence post and a fence wire to be supported thereon by the clip.

Another object of this invention is to provide a wire clamping tool which is operated to assemble a wire clip about a fence wire and a supporting post therefor by a small swinging movement of the tool relative to the post.

A further object of this invention is to provide a wire clip holding and clamping tool for applying wire clips to fence posts in which the tool is operated by a pivotal movement about the fence post as a fulcrum.

Yet a further object of this invention is to provide a wire clip holding and clamping tool which is rugged in construction, economical to manufacture, and efficient in operation to easily and quickly apply wire clips to support fence wire on fence posts.

Further objects, features and advantages of this invention will become apparent from a consideration of the following description when taken in connection with the accompanying drawing in which:

Fig. 1 is a perspective view of the wire clamping tool of this invention shown in assembly relation with a fence post and in a position to bend a wire clip about the fence post so as to hold a fence wire on the post;

Fig. 2 is a bottom plan view of the wire clamping tool;

Fig. 3 is a vertical sectional view looking along the line 3—3 in Fig. 1;

Fig. 4 is an elevational view of the wire clamping tool applied to a fence post and showing the tool after the same has been operated so as to bend a wire clip to support a fence wire on the fence post; and

Fig. 5 is a perspective view of the wire clip which is used with the wire clamping tool of this invention.

With reference to the drawing, the wire clamping and holding tool of this invention is shown at 10 in Fig. 1 applied to a fence post 11 for supporting a fence wire 12. The tool 10 is used on wire clips 13 (Figs. 1 and 3) to first position a clip about the fence post 11 and then bend the clip about the fence wire 12 to support the wire from the post 11.

The tool 10 (Figs. 1 and 2) includes a body member 15 having an elongated handle section 14 and a head section 17 formed at the working end 16 of the tool. The head section 17 is of a substantially V-shape and consists of a pair of diverged jaw members 18 formed at their outer or free ends 19 with reversely bent hook portions 21 projected laterally from the side 20 of the handle section 14. The hook portions 21 are arranged at opposite sides of the handle section 14 in planes substantially parallel to the plane of the handle section 14. The

2

free ends of the hook portions 21 terminate in surfaces 22 normal to the planes of the hook portions 21 and formed with wire clip receiving grooves 23 arranged in the planes of the hook portions 21.

Mounted on the side 20 of the handle member 14 (Figs. 3 and 4) at a position adjacent the hook portions 21, is a tubular guide member 24 open at the end 26 thereof which faces the hook portions 21 and closed at its opposite end 27. Guidably received in the guide member 24 is a spring pressed clip holding member 29 having one end 31 projected outwardly from the open end 26 of the guide member 24. The projected end 31 of the holding member 29 terminates in a flat face 33 (Fig. 3) which is formed with a clip receiving groove 34 positioned normal to the clip receiving grooves 23 on the hook portions 21.

A coil spring 36, for biasing the holding member 29 outwardly from the guide member 24, is arranged in compression between the closed end 27 of the guide member 24 and the inner end 39 of the holding member 29. This outward biasing action on the holding member 29 is limited by the provision of a stop pin 38 extended transversely through the guide member 24 for riding engagement within a longitudinally extended notch or slot 37 formed in the holding member 29. In other words the holding member 29 is movable longitudinally of the guide member 24 a distance defined by the engagement of the pin 38 with opposite ends 41 and 42 of the slot 37.

The wire clamping tool 10 of this invention is particularly useful in clamping fence wires 12 to fence posts 11 which are of a substantially T-shape in transverse section (Fig. 1). Such fence posts 11 include a leg 43 and a cross arm 44 perpendicular to the leg 43 and extended in opposite directions from the leg 43. The outer surface 46 (Figs. 3 and 4) of the cross arm 44 is of a corrugated contour, namely, formed with alternately arranged depressions 47 and extensions 48 for preventing a fence wire 12 from slipping downwardly on the fence post 11.

In applying a clip 13 to a fence post 11 by means of the wire clamping tool 10, the clip 13 is first received on the tool 10 between the holding member 29 and the hook portions 21 of the jaw members 18. A clip 13 (Fig. 5) is of a generally U-shape having a base portion 49 and a pair of diverged leg portions 51 terminating at their free ends in parallel extensions 52 projected laterally in the same direction from the plane of the wire clip 13.

A clip 13 is received or loaded in the tool 10 by positioning the base portion 49 of the clip 13 in the groove 34 formed in the outer end of the clip holding member 29 (Fig. 3) with the extensions 52 faced away from the side 20 of the tool handle 14 and adjacent to the hook portions 21. The clip 13 and the holding member 29 are then moved as a unit against the bias of the spring 36, to a position providing for the reception of the extensions 52 within the vertical grooves 23 formed in the hook portions 21. The spring 36 then functions to releasably maintain the clip 13 in a clamped position between the clip holding member 29 and the jaw hook portions 21.

With the clip 13 thus releasably held, the tool 10 is manipulated to position the jaws 18 at opposite sides of the post 11, as shown in Figs. 1 and 3, such that the free end of the fence post leg 43 is adjacent the junction 32 of the jaws 18 to provide for the location of the fence wire 12, to be secured, at the junctions 55 of the clip legs 51 with their corresponding extensions 52. It is seen, therefore, that the jaws 18 are greater in length than the width of the leg 43 of the post 11 so that the leg 43 is arranged between the junction 32 of the jaws 18 and the hook portions 21. Also, it will be noted that the base 49 of the clip 13 is adjacent the junction 32 of the jaws 18 so as to

3

be in a position opposite from, and close to, the free end of the post leg 43. With the tool 10 in a substantially horizontal position, with the handle 14 extended from the leg 43 of the post 11, the leg extensions 52 of the clip 13 project vertically, or longitudinally of the post 11.

The fence wire 12 (Fig. 4) which is to be supported on the fence post 11, extends transversely of the post 11 within one of the grooves 47 formed in the surface 46 of the post 11, so as to be between the post 11 and the leg extensions 52 of the clip 13. The handle section 14 of the tool 10 is then swung or pivoted upwardly, as viewed in Fig. 3, about a projection 53 extended laterally from the side 56 of the handle 14 at the junction 32 of the jaws 18. This projection 53 is in bearing engagement with the free end of the post leg 43, and thus functions as a fulcrum for the pivotal movement of the tool 10. As the tool 10 is pivoted about the projection 53, the base portion 49 of the clip 13 is moved out of the holding member 29 and the hook portions 21 of the jaws 18 are moved toward the post 11 to positions at opposite sides of the post 11. Such movement of the hook portions 21 bends the leg extensions 52 of the clip 13 about the wire 12. Concurrently with this bending of the extensions 52, the base portion 49 of the clip 13 is moved into contact with the fence post leg 43. As a result the wire 12 is positively held within a corrugation or depression 47 by virtue of its reception within a pair of loops or hooks 54 formed by the clip legs 51 and their corresponding extensions 52, and the retention of the clip 13 against movement transversely of the post 11 by the engagement of the hooks 54 with the wire 12 and the clip base section 49 with the post 11 at the free end of the leg 43.

The tool 10 is disengaged from the wire 12 and fence post 11, for clip reloading purposes, by merely returning the tool to a horizontal position and then moving the hook portions 21 away from the supported wire 12.

It is seen therefore that this invention provides a wire clip holding and clamping tool 10 that releasably holds a clip 13 and which is easily operated to apply the wire clip 13 to a fence post 11 so as to secure a fence wire 12 to the fence post 11. As best appears from a consideration of Figs. 3 and 4, only a relatively small angular or pivotal swinging movement of the tool 10 about the fulcrum 53 is required to bend the clip 13 to form the loops 54. By virtue of the clip 13 being releasably supported on the tool 10, before the tool 10 is engaged with the fence post 11, and the releasing of the clip from the tool concurrently with the securing thereof to a fence post and associated fence wire, the overall wire securing operation is conveniently and quickly accomplished.

Although the invention has been described with respect to a preferred embodiment thereof, it is to be understood that it is not to be so limited since changes can be made therein which are within the full intended scope of this invention as defined by the appended claims.

I claim:

1. A tool for applying a wire clip to a fence post and a fence wire to support the fence wire on one side of the post, said tool comprising a body member having a head section and an elongated handle section, means on said head section for releasably holding a wire clip, and a portion on said body member for engaging the opposite side of said fence post, with said wire clip being concurrently released from said holding means and applied to said post and fence wire on pivotal movement of the body member in one direction about said engaging portion as a fulcrum.

2. A clamping tool for applying a wire clip to a fence

4

post to clamp a fence wire to said post, wherein the clip is of a generally U-shape having leg portions and a base portion and with the leg portions terminating in laterally projected extensions; said tool comprising a body member having a pair of diverged jaws for straddling said post, laterally extended portions formed at the outer ends of said jaws for engaging the leg extensions of the clip, yieldable means on said body member engageable with the base portion of said clip to releasably hold said clip on said tool at a position extended between the yieldable means and said laterally extended portions, and a bearing portion at the junction of said jaws engageable with said post when said jaws are in a straddling relation with the post, whereby on pivotal movement of said body member on said bearing portion, said laterally projected extensions are bent about a fence wire for said post.

3. A wire clamping tool for applying wire clips to fence posts to clamp fence wires to the fence posts, said tool comprising a body member having an elongated handle section, and a bifurcated head section, with the bifurcations of said head section terminating in laterally extended clip engaging portions having grooves formed therein, a clip holding member, means on said handle section opposite said clip engaging portions movably supporting said holding member for movement toward and away from said clip engaging portions, and means associated with said supporting means for biasing said holding member toward said clip engaging portions whereby a clip is releasably held on said body member between said holding member and said clip engaging portions at the grooves formed therein.

4. A clamping tool for applying a wire clip to a fence post to clamp a fence wire to said post, wherein the clip is of a generally U-shape having leg portions and a base portion and with the free ends of the leg portions terminating in laterally projected extensions; said tool comprising a body member having an elongated handle section and a bifurcated head section, with the bifurcations of said head section terminating in laterally extended hook portions having grooves formed therein, a clip holding member, means on the handle section spaced longitudinally from the hook portions for movably supporting said holding member for movement toward and away from said hook portions, means associated with said supporting means for biasing said holding member toward said hook portions whereby a clip is releasably held on said body member with the base portion of the clip engaging the holding member and the clip leg extensions engaging the hook portions at the grooves formed therein, and a bearing portion on said body member at a position substantially opposite said holding member when the holding member is engaged with the clip base portion, said bearing portion being engageable with said post when said body member is arranged such that the bifurcations are in a straddling relation with the post, whereby on pivotal movement of the body member in one direction about said bearing portion as a fulcrum, said clip is concurrently released from said holding member and applied to said fence post.

References Cited in the file of this patent

UNITED STATES PATENTS

705,504	Whipple	July 22, 1902
721,434	Edeburn	Feb. 24, 1903
1,846,933	Barnes	Feb. 23, 1932
2,036,140	Hansen	Mar. 31, 1936
2,436,278	Willett	Feb. 17, 1948
2,622,634	Hill	Dec. 23, 1952