

No. 638,613.

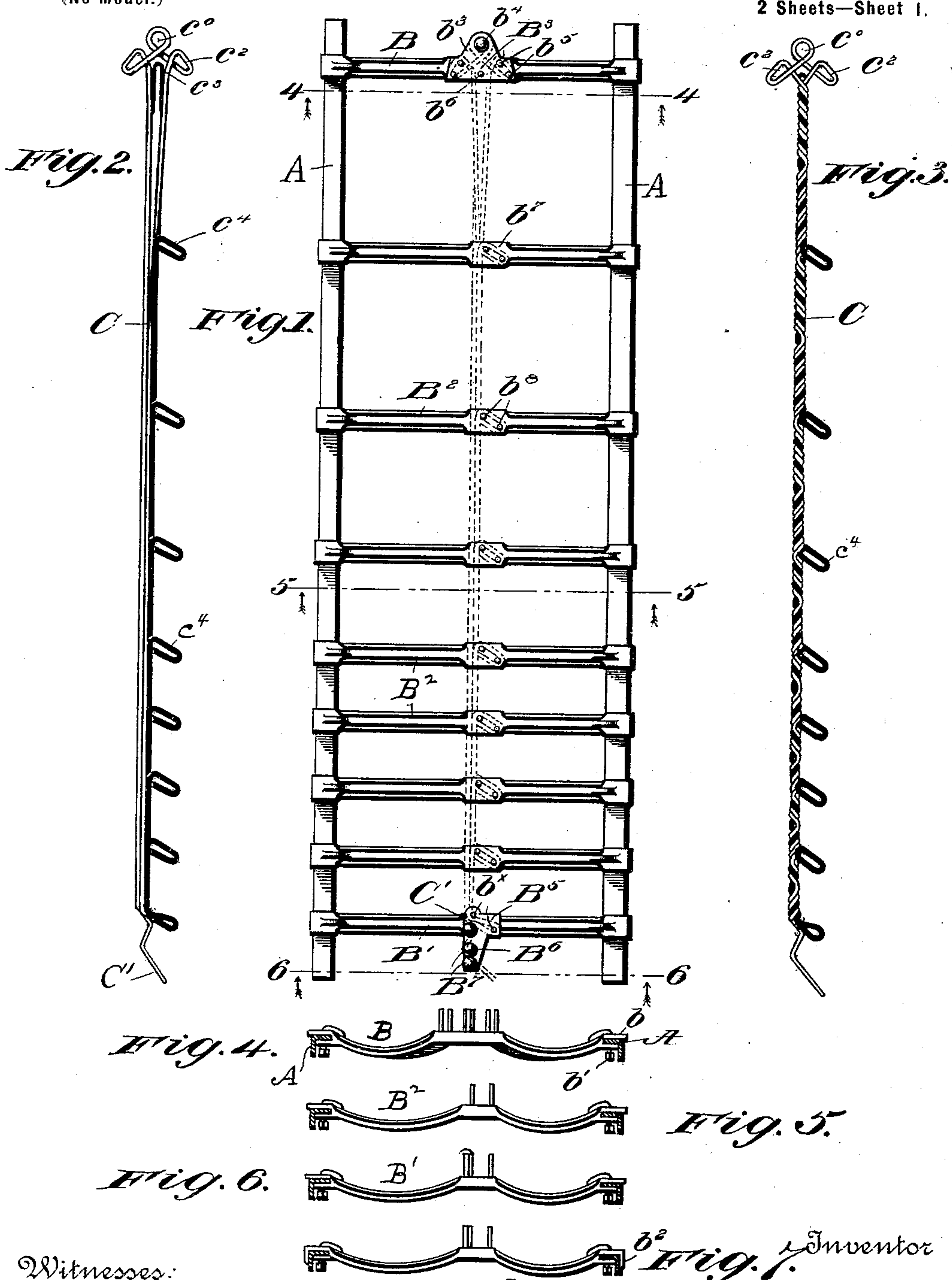
Patented Dec. 5, 1899.

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FRAME FOR FORMING WIRE FENCE STAYS.

(Application filed Sept. 29, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
L. C. Mills
John Charles Wilson
Inventor
C. E. Wintode
Attorneys

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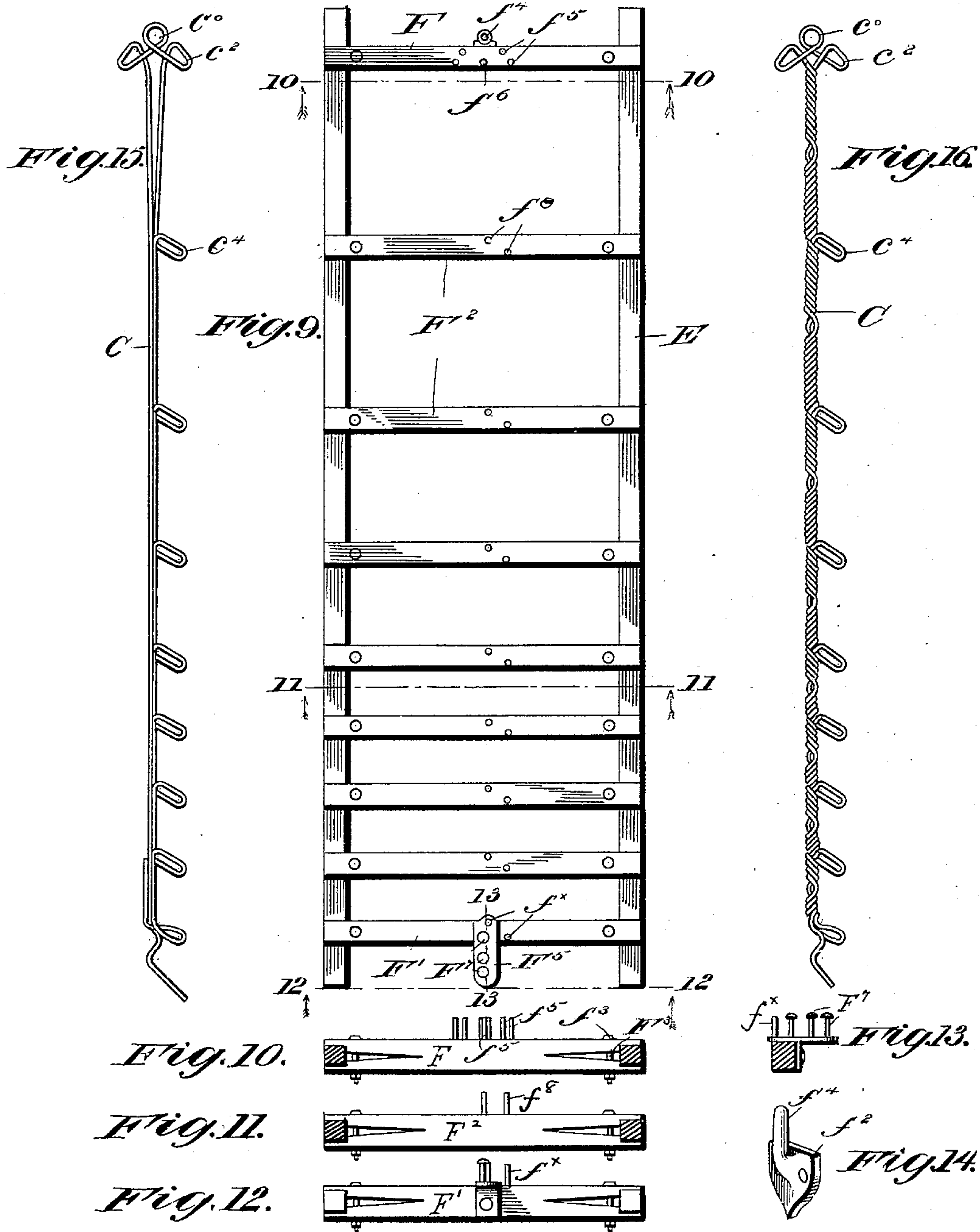
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Witnesses
L. C. Hills
John Chalmers Wilson.

Inventor
C. E. Wintode,
William A. Fitch,
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES E. WINTRODE, OF HUNTINGTON, INDIANA.

FRAME FOR FORMING WIRE FENCE-STAYS.

SPECIFICATION forming part of Letters Patent No. 638,613, dated December 5, 1899.

Application filed September 29, 1899. Serial No. 732,096. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. WINTRODE, a citizen of the United States, residing at Huntington, in the county of Huntington and State of Indiana, have invented certain new and useful Improvements in Frames for Forming Wire Fence-Stays; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in devices for use in forming twisted-wire stays for fences and similar purposes by which a plurality of strands of wire provided with suitable loops, as desired, are twisted together to form the stay.

My invention is particularly adapted for use in making a fence-stay of the character and construction covered by my Patent No. 601,540, dated March 29, 1898.

My invention will be understood by reference to the accompanying drawings, wherein the same parts are indicated by the same letters throughout the several views.

Figure 1 represents a plan view of a frame embodying one form of my invention. Fig. 2 is a plan view of the untwisted stay. Fig. 3 is a similar view of the twisted stay. Fig. 4 is a sectional view taken on the line 4 4 in Fig. 1 looking in the direction of the arrows. Fig. 5 is a sectional view taken on the line 5 5 in Fig. 4 and looking in the direction of the arrows. Fig. 6 is a sectional view taken on the line 6 6 in Fig. 1 looking in the direction of the arrow. Fig. 7 is a sectional view similar to those above described, showing a slight modification. Fig. 8 is a plan view of the wrench used for twisting the stay. Fig. 9 is a view similar to Fig. 1, showing a frame constructed according to another form of my invention, the frame in this instance being made of wood. Fig. 10 is a sectional view taken on the line 10 10 in Fig. 9 looking in the direction of the arrows. Fig. 11 is a sectional view taken on the line 11 11 in Fig. 9 looking in the direction of the arrows. Fig. 12 is an end view of the frame on the line 12 12 in Fig. 9 looking in the direction of the arrows. Fig. 13 is a sectional view taken on the line 13 13 in Fig. 9 looking to the right. Fig. 14 is an enlarged detail perspective view of the

pin used at the head of the frame for engaging and holding the top end loop of the stay. Fig. 15 is a view similar to Fig. 2, showing an untwisted stay of a modified form; and Fig. 16 is a similar view of the stay twisted.

Referring now more particularly to Sheet 1 of the drawings, the frame shown in this construction of my device comprises a pair of angle-irons A A, upon which the ends of the cross-bars, hereinafter described, are clamped. The head cross-bar B, which is used to hold the top end of the stay, and the opposite end cross-bar B' have each an arrangement of pins for engaging loops or bends in the wire of the stay peculiar to itself, as will be hereinafter described, while all the intermediate cross-bars B², of any number desired, dependent upon the number of intermediate loops to be made in the stay, are of a similar construction. The bars B, B', or B² are preferably of the form shown in Figs. 4 to 6, inclusive, having end jaws b for engaging the angle-irons A, as shown, and being provided with set-screws b', by means of which each cross-bar may be clamped upon the angle-irons A at any desired adjustment along the said bars.

In the construction shown in Figs. 4 to 6 the angle-bars A may be removed from the end jaws of the cross-bars laterally when the set-screws b' are eased up; but I may also provide an angular extension b² upon each of the jaws b, which angular extension will engage the outer side of the angle-iron A and will make it possible to remove the cross-bars from the angle-bars only by being slid along and removed from one end of the angle-bar. This construction (shown in Fig. 7) will make a very rigid frame; but I wish to reserve the right to use either of these forms, as may be found most desirable or convenient. The top or head cross-bar B is provided with a flattened central portion B³, having a laterally-extending lug b³, carrying a centrally-located pin or stud b⁴ for engaging the central top loop c⁰ of the stay C. Symmetrically-arranged pairs of rigid pins or studs b⁵ are fixed upon opposite sides of the center of the flattened portion B³ of the cross-bar B for engaging oppositely-disposed side loops c², near the top of the stay C. Another pin or stud b⁶ is fixed centrally of the cross-bar B, upon the flattened portion thereof, for engaging

the loop c^3 in the stay. (Seen most clearly in Fig. 2.) These pins or studs serve to hold the upper end of the stay while being twisted and preserve the symmetry of the loops therein. The intermediate cross-bars B^2 have each a flattened portion b^7 in the region of its center, but preferably set off to one side thereof, as shown, and upon these flattened portions b^7 of the cross-bars B^2 are provided a pair of fixed pins or studs b^8 , over which loops c^4 are formed in one of the wires constituting the stay. The bottom end cross-head B' is provided with a flattened portion B^5 and lateral extension or lug B^6 . Upon this flattened portion B^5 and its extension B^6 are mounted any suitable number of pins or studs, as required. Thus the studs b^x are arranged so that one strand of wire C' may be turned around these and looped, and a plurality of headed studs or pins B^7 are so arranged that the wire may be further turned around these latter, which serve as tension devices for the wire while being twisted to form the stay. The wire C' is first engaged around the headed studs B^7 upon the lower cross-bar and carried upwardly to the head or top cross-bar B , where it is turned about one pair of the studs b^5 , forming one of the loops c^2 therein, thence around the headed stud b^4 , forming the end loop c^0 , thence about the other pair of studs b^5 , forming the other loop c^2 , thence downwardly beneath and around the pair of studs b^8 upon the first cross-bar B^2 and similarly with respect to the other cross-bars B^2 in the series, in each instance forming a loop c^4 , and finally around the studs b^x and the headed studs B^7 , or if an extra wire is to be embodied into the stay for forming the loops c^4 the wire C^2 after leaving the head cross-bar B would be carried downwardly to the opposite end cross-bar, parallel with the first strand thereof, and a separate strand of wire, preferably lighter, would be looped, as at c^3 , over the stud b^6 of the head cross-bar B and thence carried downwardly and looped about the studs b^8 on cross-bars B^2 in succession, finally engaging with the studs b^x on the lower cross-bar B' . After the wire has thus been laid and looped upon the frame it is twisted between each two adjacent cross-bars by means of the wrench D . (Shown in Fig. 8.) This wrench D is provided with claws d for engaging the stay and is operated by means of oppositely-disposed handles d' .

In Figs. 2 and 3 I have shown the stay as composed of three strands of wire, two being formed by doubling the wire and the third being inserted separately, while in Figs. 15 and 16 I have shown the stay as composed of but two strands formed by doubling and looping the wire as above described.

In Figs. 9, 10, 11, and 12 I have shown a modified construction for the frame, which in this instance instead of being made of iron entirely, as is the frame shown in Figs. 1 to 7, is made of wood and comprises the side

pieces E and the cross-bars F , F' , and F^2 , the cross-bar F corresponding to the cross-bar B in Fig. 1 and the cross-bars F' and F^2 corresponding to the cross-bars B' and B^2 , respectively, of Figs. 1 to 6. The cross-bars are provided with spring-jaws F^3 , which are clamped upon the side pieces E by means of slots f^3 , and are adjustable along the said bars E in like manner as the bars B , B' , B^2 , as hereinbefore described. The arrangement of the pins or studs for retaining the stay and about which the loops are formed is similar to that shown and described with reference to Fig. 1, the differences between the frame shown in Fig. 9 and the frame shown in Fig. 1 being principally such as would be necessary to adapt the same principles to the wooden frame. The pairs of studs f^5 and the central stud f^6 of the head cross-bar F correspond with the studs b^5 and b^6 on the cross-bar B . A separate metallic plate f^2 carries the stud f^4 , corresponding to the stud b^4 , and is secured to the side of the cross-bar F . This plate f^2 , carrying the stud f^4 , is shown clearly in detail in Fig. 14. The studs f^8 on the cross-bars F^2 are arranged similarly to and correspond with the studs b^8 on the cross-bars B^2 . Upon the lower cross-bar F' is mounted a separate metallic plate F^5 , carrying the headed studs F^7 , corresponding to the studs B^7 in Fig. 1, while the studs f^x , corresponding to the studs b^x , are arranged in any suitable way. The frame shown in Fig. 9 is used in a precisely similar manner to the frame shown in Fig. 1.

I do not wish to limit myself to the precise arrangement of the pins for producing the loops in the wire herein described nor to any particular arrangement of said pins, as this arrangement might be varied according to the position and form of the loops desired for the finished stay, and this can be varied at will without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a device for forming wire fence-stays, the combination with a pair of side beams; of cross-bars engaging at their ends said side beams; and projecting pins on said cross-bars about which a strand of wire may be looped in forming the stay, substantially as described.

2. In a device for forming wire fence-stays, the combination with a pair of side beams; of cross-bars engaging at their ends said side beams; projecting pins on said cross-bars about which a strand of wire may be looped in forming the stay; and headed pins for retaining the wire in position while being twisted, substantially as described.

3. In a device for forming wire fence-stays, the combination with a pair of side beams; of cross-bars engaging at their ends said side beams and adjustable along the said beams;

means for clamping the said cross-bars upon said beams, and pins on said cross-bars about which a strand of wire may be looped in forming the stay, substantially as described.

5 4. In a device for forming wire fence-stays, the combination with a pair of side beams; of cross-bars provided with end jaws engaging said side beams; screw-bolts for clamping said jaws upon said beams; and projecting
10 pins on said cross-bars about which a strand of wire may be looped in forming the stay, substantially as described.

15 5. In a device for forming wire fence-stays, the combination with a pair of side beams; of cross-bars having jaws at their ends engaging said side beams; angular extensions on one member of said jaws for preventing lateral displacement of said side beams; means for clamping the said cross-bars on
20 said side beams, and projecting pins on said cross-bars about which a strand of wire may

be looped for forming the stay, substantially as described.

6. In a device for forming wire fence-stays, the combination with a pair of side beams; 25 of cross-bars mounted upon said side beams; projecting pins upon one end cross-bar arranged to produce ornamental loops in the stay when a strand of wire is wound thereon; projecting pins on the other end cross-bar arranged to produce a tension on the strand of wire wound thereon; and projecting pins upon the intermediate cross-bars having arrange- 30 ments similar to each other for producing similar loops in the stay, substantially as described. 35

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES E. WINTRODE.

Witnesses:

G. O. NEWCOMB,
F. S. PENTZER.