No. 762,921. PATENTED JUNE 21, 1904.

E. E. METCALF.

STAY WIRE TIE FOR WOVEN FENCES.

APPLICATION FILED OCT. 24, 1903.

NO MODEL.

Fig. 1.

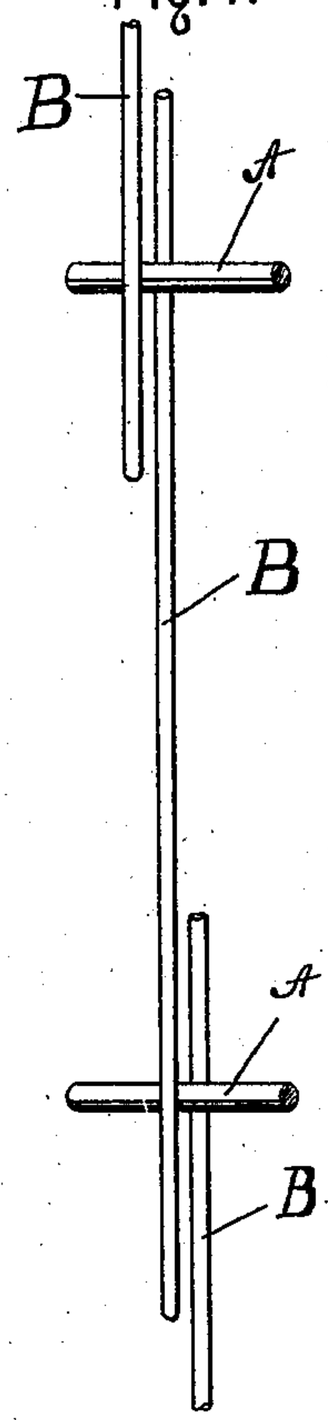


Fig. 2.

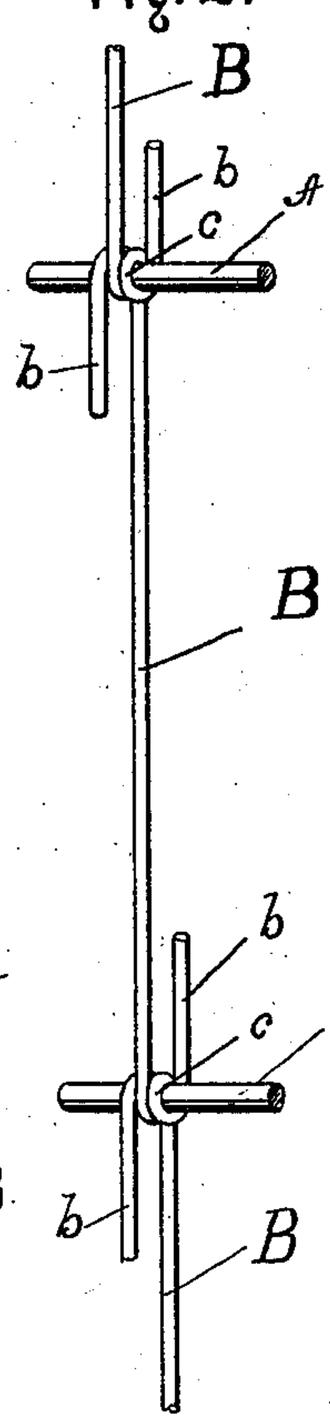


Fig. 4.

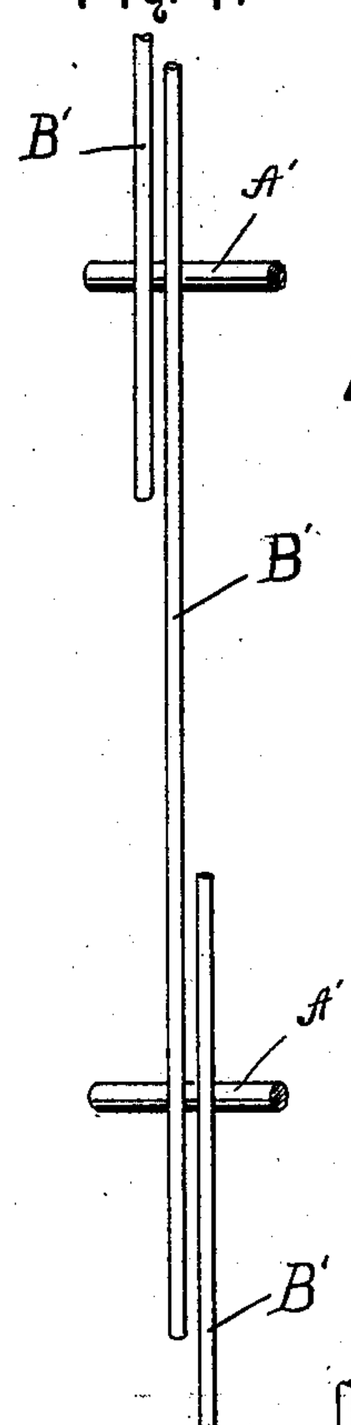


Fig. 5.

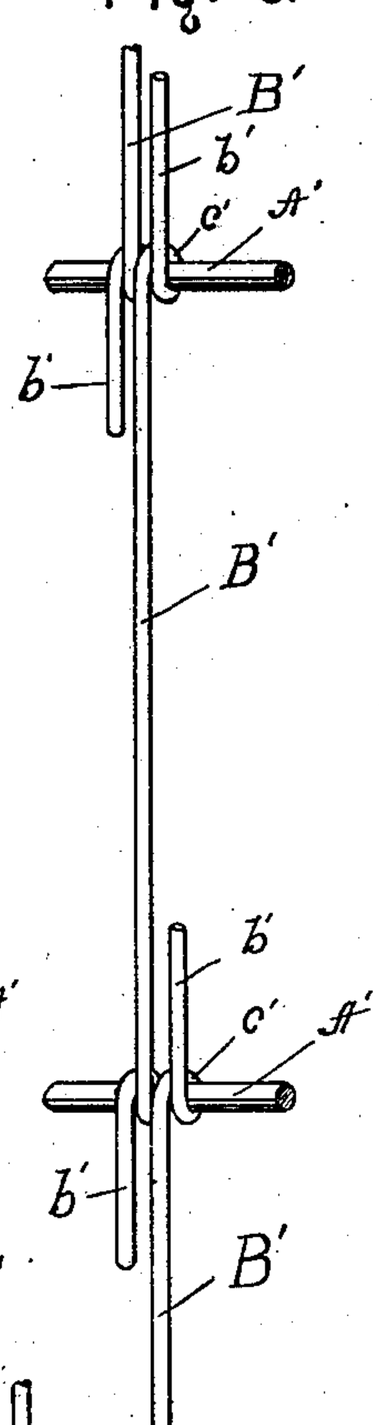


Fig. 3.

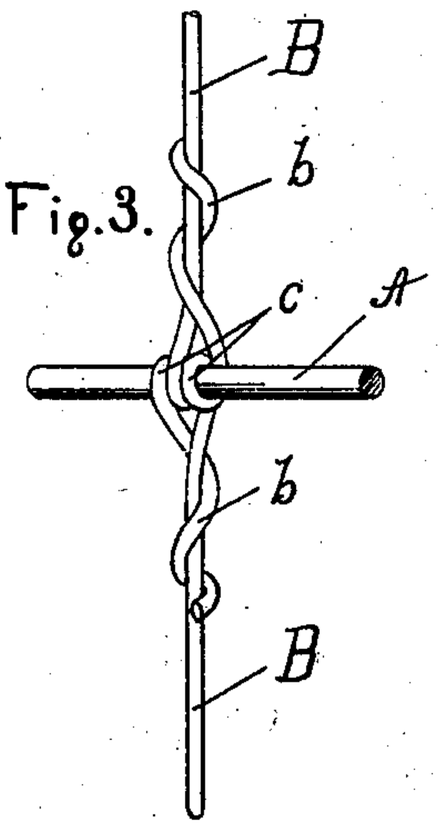


Fig. 6.

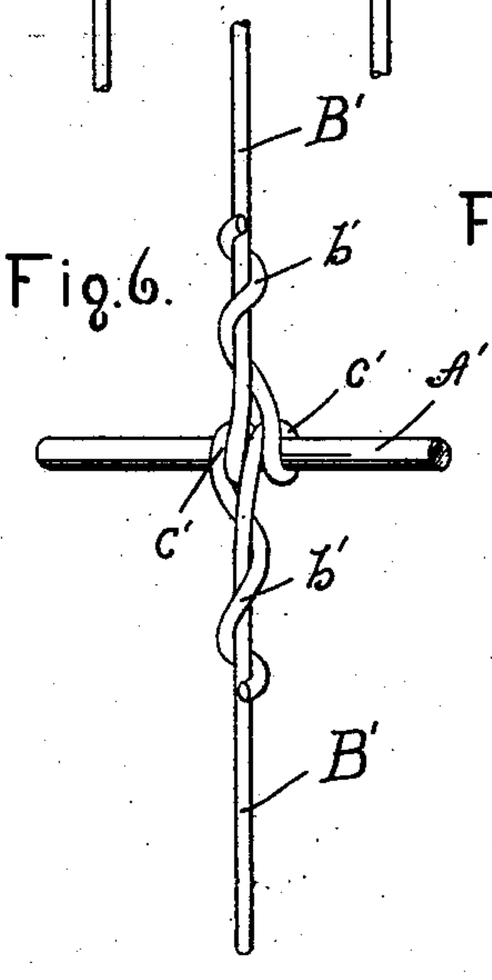
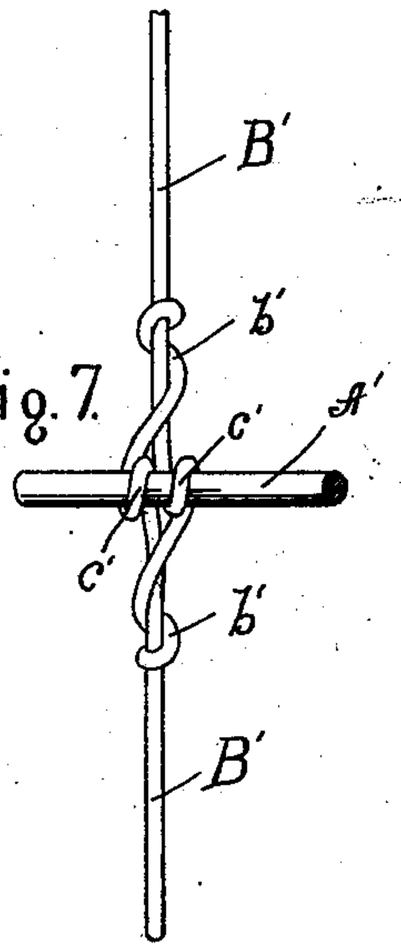


Fig. 7.



WITNESSES:

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No. 762,921. Patented June 21, 1904.

UNITED STATES PATENT OFFICE.

EDGAR E. METCALF, OF ADRIAN, MICHIGAN.

STAY-WIRE TIE FOR WOVEN FENCES.

SPECIFICATION forming part of Letters Patent No. 762,921, dated June 21, 1904.

Application filed October 24, 1903. Serial No. 178,311. (No model.)

To all whom it may concern:

Be it known that I, EDGAR E. METCALF, a citizen of the United States, and a resident of Adrian, in the county of Lenawee and State of Michigan, have invented certain new and useful Improvements in Stay-Wire Ties for Woven Fences; 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an improved tie or interlocking joint for the contiguous ends of the vertical wires of woven fences, the said wires being adapted to connect and act as stays for the line or horizontal wires of such fences.

The objects of my invention are to so connect and interlock the meeting or contiguous ends of the separate wires forming a continuous vertical stay of a fence of the class described as to prevent any independent lateral movement of the ends of such meeting wires on the horizontal wires to which they are connected and to form from the several vertical wires commonly used in fences of this class a continuous stay-wire having substantially rigid connection with the line-wires thereof.

A further and most important object of my invention is to so form these ties as to cause the end of one vertical wire to be turned around the line-wire and to continue a desired distance upward or downward on the body portion of the connecting vertical wire, as the case may be, thus strengthening the stay-wires of the fence and preventing any pivotal movement of said wires with relation to the line-wires which they encircle.

While the essential and characteristic features of my invention are necessarily susceptible of modification, the perferred embodiment thereof is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the wires as they are placed in the first step of my invention, showing the meeting ends of the vertical wires as engaging opposite sides of the line-wires to which they are to be connected. Fig. 2 is a similar view showing the second step in the operation of my invention with the vertical wires each wound once around the line-wires, and Fig. 3 is a perspective view of my completed tie after the third or final step has been made. Figs. 4, 5, and 6 are modifications of Figs. 1, 2, and 3, respectively, the meeting ends of the vertical wires thereof being so placed as to engage the same instead of opposite sides of the line-wires; and Fig. 7 is a view showing the opposite side of the tie shown in Fig. 6.

Referring to the drawings, A and A′ represent the horizontal or line wires, and B and B′ the several vertical or stay wires, forming when connected a single vertical wire of an ordinary woven-wire fence, the said wires A and B and A′ and B′ having reference, respectively, to the original and modified constructions of the drawings.

The first step in the formation of the original construction of my tie is the placing of the meeting ends of the several vertical wires B on opposite sides of the horizontal wires A, as shown in Fig. 1. The second step is accomplished by giving the ends of said wires B one or more loops or turns *c* about the horizontal wire A with which they are engaged and leaving said ends in substantial vertical alinement with their body portions and substantially parallel with the body portions of the contiguous stay-wires B, as shown in Fig. 2. By the third and final step the extended ends *b* of the wires B are drawn either under or over the body portion of the contiguous vertical wire and looped about the same a desired number of times, thus making the ends of each stay-wire interlock with the body portion B of the next wire above or below the same in substantial vertical alinement therewith, as shown in Fig. 3.

In the modified construction (shown in Figs. 4, 5, and 6) the operations are substantially the same as has been described in connection with Figs. 1, 2, and 3 of the drawings, except that the vertical stay-wires B′ are placed on the same instead of opposite sides of the horizontal wires A′. A slightly-different tie is thus formed, as shown in Fig. 6; but the wires

B′ still have their ends *b′* looped about said horizontal wires, as shown at *c′*, and engage and interlock with the adjacent body portions B′ of the connecting vertical wires.

It will be obvious that by reason of the rigid interlocking of the end of one vertical wire with the body portion of the other after having passed one or more times around the horizontal wire an independent pivotal or other movement of said vertical wires with relation to the horizontal wire engaged thereby is prevented and that a double stay-wire will be provided at such points, the length of the interlocking portions of the wires depending upon the length to which the stay-wires are cut and whether the loops of the extended ends about the companion vertical wires are close together or prolonged. It will also be noted that the extended ends *b* and *b′* of both constructions of my invention pass over and press upon the loops *c* and *c′*, respectively, between their point of contact with the line-wire and the body portion of the companion stay, thus causing the loops formed by each stay-wire to be tightly gripped between the two oppositely-extended converging ends thereof and locked against the line-wire.

Having thus described my invention, what I claim as new and useful, and desire to secure by Letters Patent, is—

1. A wire fence, comprising a line-wire and a sectional stay-wire having contiguous end portions of adjacent sections bent entirely around the stay-wire and then interlocked with the other section, substantially as described.

2. A wire fence, comprising a line-wire and a sectional stay-wire having contiguous end portions of adjacent sections bent into complete circular loops or coils for the reception of the line-wire and the extremity of one section bent about the major portion of the second section, and the extremity of the latter about the major portion of the first section, substantially as described.

3. A wire fence, comprising a line-wire, and a sectional stay-wire having contiguous end portions of adjacent sections bent entirely around the stay-wire extended in opposite directions to each other, and coiled about the adjacent section, substantially as described.

4. A wire fence, comprising a line-wire and a sectional stay-wire having contiguous end portions of adjacent sections bent entirely around the line-wire and the end portion of one section bent around the adjacent section, substantially as described.

5. A tie of the class described comprising a series of stay-wire sections having their contiguous ends each wound around a common element and then passed over and pressing inwardly upon the loop so formed and secured to the body portion of the contiguous section.

6. A tie of the class described, comprising as elements a line-wire, and a series of stay-sections arranged in substantial vertical alinement and having each of their contiguous ends engaging said line-wire at right angles thereto, looped one or more times about the same and then deflected laterally to press the loop axially and locked to the body portion of the companion stay.

7. A tie of the class described, comprising stay-sections having their major portions arranged substantially in vertical alinement, and their adjacent end portions bent to provide complete vertical circular coils or loops on opposite sides of the plane of said major portions with the portions of the sections nearer their ends to the outer sides of the coil, and the latter portion of each section deflected inwardly from the outer side of its coil and engaged with the major portions of the other section, whereby the deflected portions press upon the loops, substantially as described.

8. A tie of the class described, comprising stay-sections having adjacent end portions bent into vertical parallel complete coils and the extremity of one section coiled about the adjacent section, substantially as described.

9. A tie of the class described, comprising stay-sections having adjacent end portions bent into vertical parallel complete coils, and the extremity of one section deflected laterally to press upon the outer side of the coil formed thereby, and its portion beyond said coil twisted about the major portion of the adjacent section, substantially as described.

10. A tie of the class described comprising as elements a series of wires arranged in substantial longitudinal alinement and a member at right angles thereto, said series of wires having their contiguous end portions arranged in parallelism on the same side of said member, oppositely wound entirely about said member in diverging loops and then converging toward and engaged to the companion wire in prolonged loops, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDGAR E. METCALF.

Witnesses:
MYRON C. BOND,
C. W. OWEN.