No. 761,663. PATENTED JUNE 7, 1904.

F. H. DANIELS.

WIRE FENCING.

APPLICATION FILED DEC. 8, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

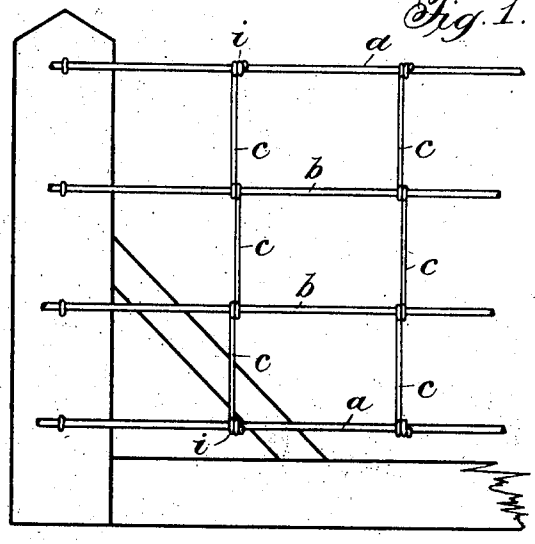


Fig. 3.

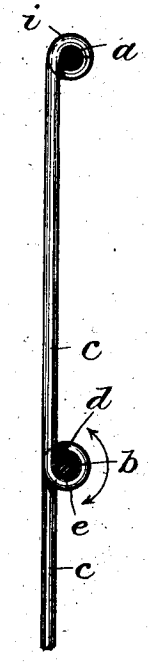


Fig. 2.

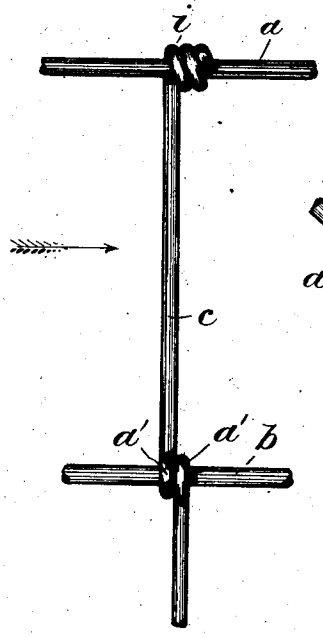
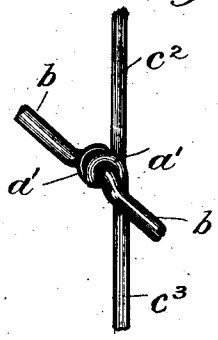


Fig. 4.



Witnesses:
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No. 761,663. PATENTED JUNE 7, 1904.

F. H. DANIELS.

WIRE FENCING.

APPLICATION FILED DEC. 8, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 5.

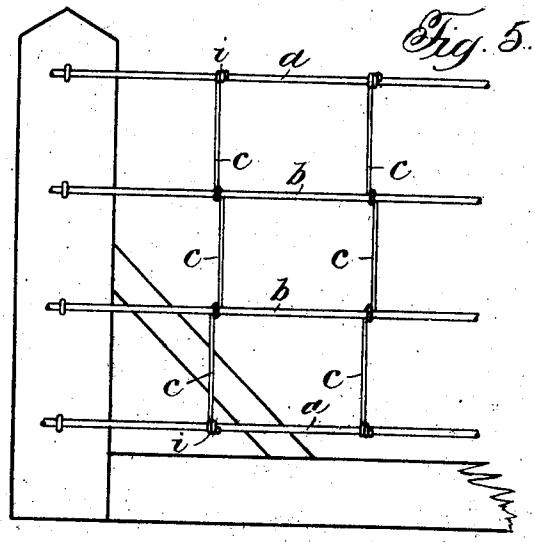


Fig. 7.

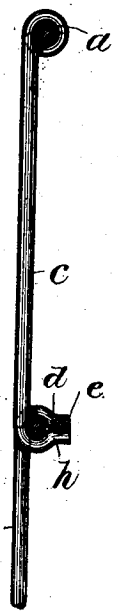


Fig. 6.

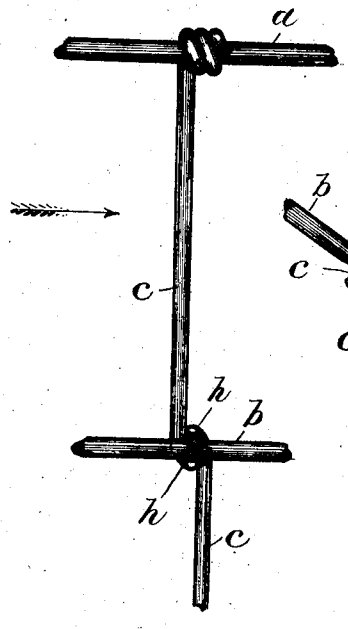
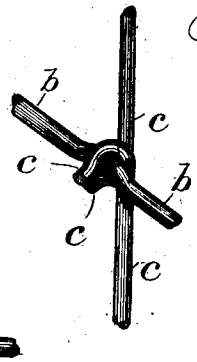


Fig. 8.



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No. 761,663. Patented June 7, 1904.

UNITED STATES PATENT OFFICE.

FRED H. DANIELS, OF WORCESTER, MASSACHUSETTS.

WIRE FENCING.

SPECIFICATION forming part of Letters Patent No. 761,663, dated June 7, 1904.

Application filed December 8, 1903. Serial No. 184,259. (No model.)

To all whom it may concern:

Be it known that I, FRED H. DANIELS, a citizen of the United States, residing at Worcester, county of Worcester, State of Massachusetts, have invented certain new and useful Improvements in Wire Fencing; 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.

The invention relates generally to that type of fencing where the longitudinal line-wires are united together at intervals by transverse wires forming stays, and more particularly to fencing wherein the transverse stay-wires are formed in sections extending from one line-wire to another and having the meeting ends of the sections united to each other and to the line-wires by welding.

The principal object in view has been to provide a fence having greater strength and durability than those where the stay-wires are coiled around the line-wires; also to economize in material by reducing the amount of wire required in the joints between the stay and line wires; also to provide for an increased amount of flexibility in the completed fencing, so as to adapt it for hilly or uneven ground, and incidentally to lessen the weight of the fence by reducing the amount of wire required in the joints.

Heretofore the usual method of making this type of fencing has been to weld the stay-wires to the line-wires, so that the joints between the longitudinal wires and the transverse stays are rigid and unyielding; but it is characteristic of the present invention that the joints between the stays and the longitudinal wires are not rigid, but are adapted to yield or give, the meeting ends of the stay-wire sections being welded only to each other and not to the longitudinal wires, and the connection between the stay-wires and the line-wires being made by looping or bending the ends of the stay-wire sections around the longitudinal wires, so as to hold the latter against movement transversely of the fencing, but to allow them to move slightly lengthwise of the fencing and with respect to the stays without displacing the latter.

The invention is represented in the accompanying drawings, forming part of this specification, wherein—

Figure 1 illustrates a side elevation of a section of fencing embodying the present improvement. Fig. 2 is an enlarged detail showing the manner of securing the stay-wire sections to the line-wires. Fig. 3 is an edge view of Fig. 2 looking in the direction of the arrow. Fig. 4 is a perspective illustrating the joint between the stay-wire sections and one of the intermediate line-wires. Fig. 5 is an elevation similar to Fig. 1, showing a modified form of the invention; and Figs. 6, 7, and 8 are detail views similar to the second, third, and fourth, showing, respectively, the same features in the modified form of joint.

Referring first to Figs. 1 to 4, *a a* indicate the longitudinal border-wires, and *b b* the intermediate line-wires. There may be any number of these line-wires, and they may be spaced at uniform or graduated distances apart. The stay-wires, considered as a whole, extend from one border-wire to another. Each stay is formed in sections *c c c*, corresponding to the spaces between the longitudinal wires and only of such length as to extend from one wire to another, with provision for making the joints between the wires and uniting the ends of the sections to each other. The stays may be secured to the border-wires in any preferred manner. As herein shown, the connection is made by coiling the outer ends of the stays around the border-wires one or more times without welding, as shown at *i*. The meeting ends of the stay-wire sections are connected to the intermediate line-wires by having their ends bent or looped around the latter, as best illustrated at *a' a'* in Fig. 4, where it will be seen that the lower end of the upper stay-wire section c^2 is bent or looped around the under side of the line-wire, and the upper end of the section c^3 of the stay-wire immediately below is bent or looped around the upper side of the line-wire, so that the two bends or loops lie side by side, as clearly illustrated in Figs. 1 and 2, and are parallel and in contact with each other. It not being intended that the joints between the stay-wires and line-wires should be rigid, the bends or

loops are not gripped upon the line-wires with sufficient pressure to lock them against movement; but it being desirable to unite the meeting ends of the sections *c c c* rigidly together into one continuous stay-wire the loops or bends *a' a'* are welded together (preferably electrically) between the points *d e*, Fig. 3, the weld being confined to the loops or bends and not extending to or including the line-wires. The border and line wires may be crimped, if desired, to permit yielding. If such crimps are provided, they are preferably, though not necessarily, made, as shown in Fig. 4, at the intersection of the stay-wires. As shown in Figs. 2, 3, and 4, the loops or bends *a' a'* in the stay-wire sections practically surround and inclose the line-wires. It is not to be understood, however, that the invention is limited to such detail, for, if preferred, the ends may be simply hooked over the line-wires and united together, as in the modification presently to be described, or may be more completely looped around said line-wires than is shown in the other figures, it being an inconsequential matter to what extent the meeting ends of the stay-wire sections surround the line-wires, provided the ends of the sections sufficiently overlap or inclose the line-wires as to permit of their being rigidly welded together.

The form of fencing shown in Figs. 5 to 8 is in all respects like that illustrated in the other figures, except in so far as the particular joints between the stay-wire sections and the line-wires are concerned. In these figures the meeting ends of the stay-sections are bent laterally, as shown at *h h* in Figs. 6 and 7, and are not curved around the line-wires as in the other form, but are slightly offset, as best illustrated in the sixth figure, and extend transversely outward, the arrangement being preferably such that one end lies above the other instead of lying side by side. As in the former construction, the bends or loops *h h* are not so firmly gripped upon the line-wires as to make a rigid joint and preclude yielding movements between the wires. The ends of the bends or loops *h* are, however, rigidly welded together where they lie in contact between the points *d e*, so that all the sections *c c c* are united into one continuous stay.

The construction being as thus described, it will be obvious that the fence may be made upon any suitable machinery and that the welding may be done simultaneously with or after the formation of the joints between the stay and line wires. It is also to be noted that although only two forms of these joints are illustrated herein the invention is not limited to any particular joints or to any particular manner of looping or bending the stay-wire sections around the line-wires, provided such joints are suitable to permit the ends of the stay-wire sections to be rigidly united together, but having such connection with the line-wires as will permit the slight yield or give above described.

Having thus described my invention, what I claim, and desire to secure, is—

1. A wire fence composed of longitudinal line-wires and transverse stay-wires, where the stay-wires are in sections extending only from one line-wire to another, and where the ends of the stay-wire sections are looped or bent around the line-wires, the adjacent bent ends of the sections being welded to each other only and not to the line-wires.

2. A wire fence composed of longitudinal line-wires and transverse stay-wires, where the stay-wires are in sections extending only from one line-wire to another, and where the ends of the stay-wire sections are looped or bent around the line-wires, the adjacent bent ends of the sections being welded to each other, but connected to the line-wires only by the loops or bends.

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

FRED H. DANIELS.

Witnesses:
A. F. BACKLIN,
H. M. LATHAM.