

No. 607,204.

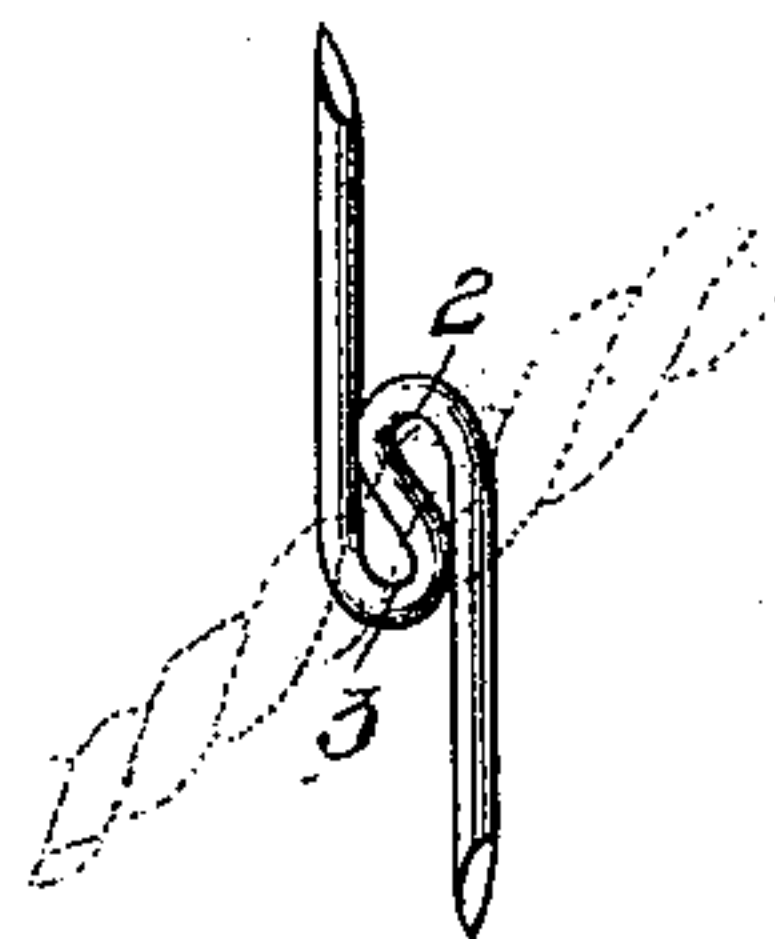
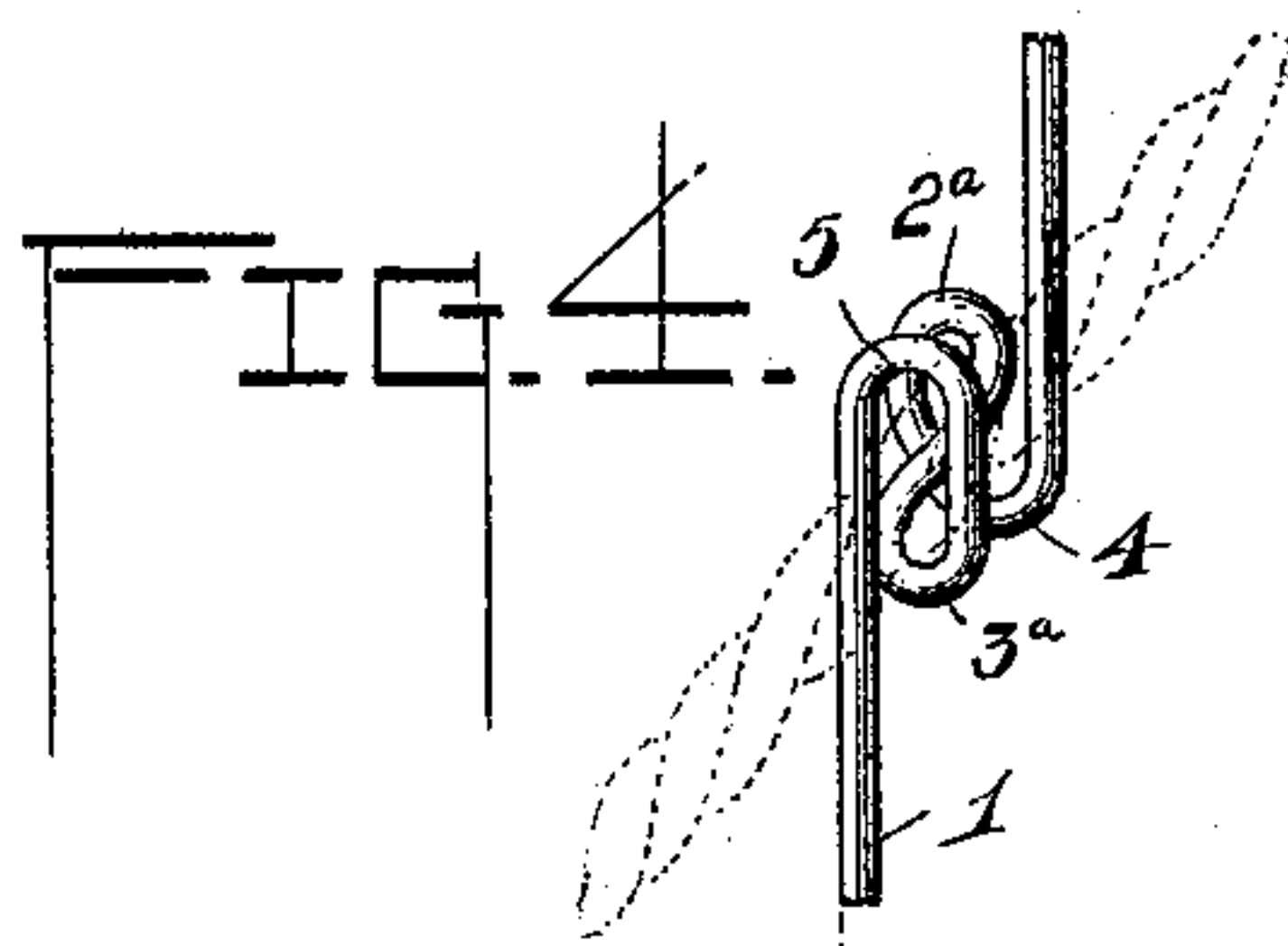
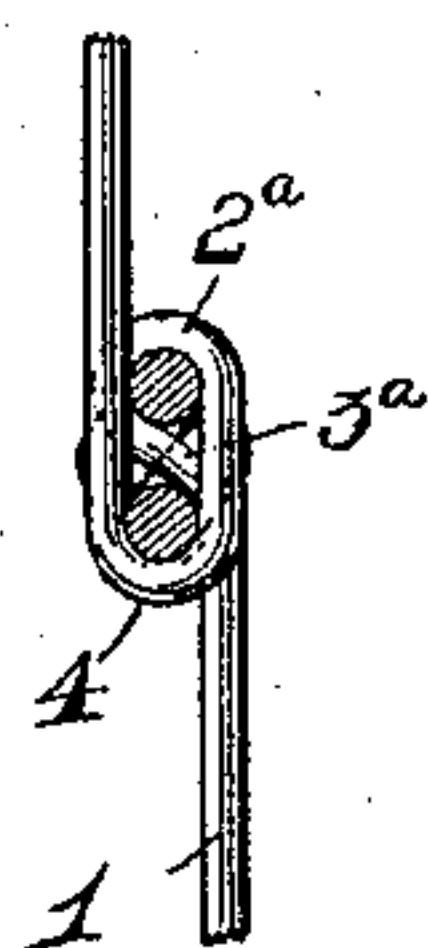
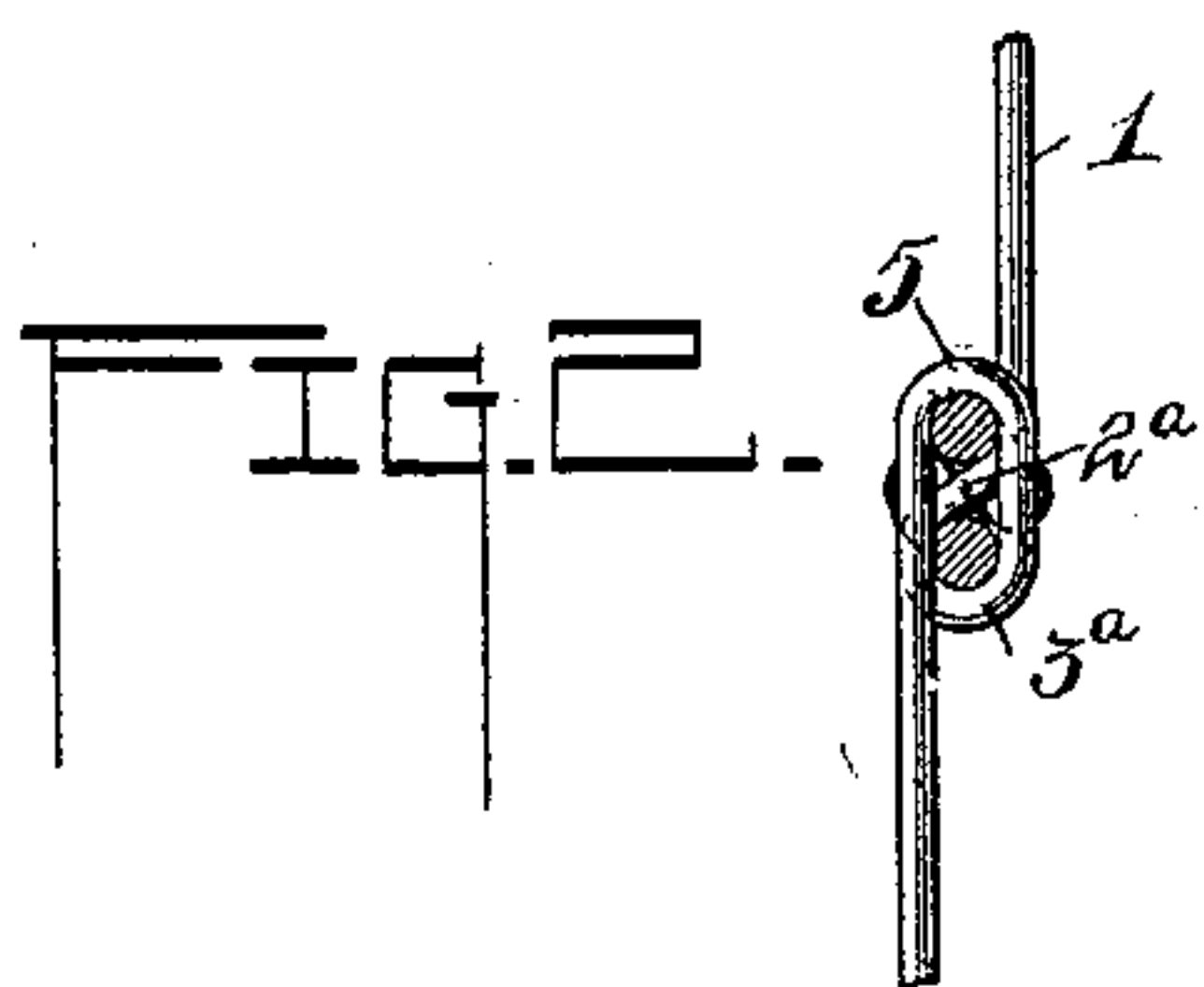
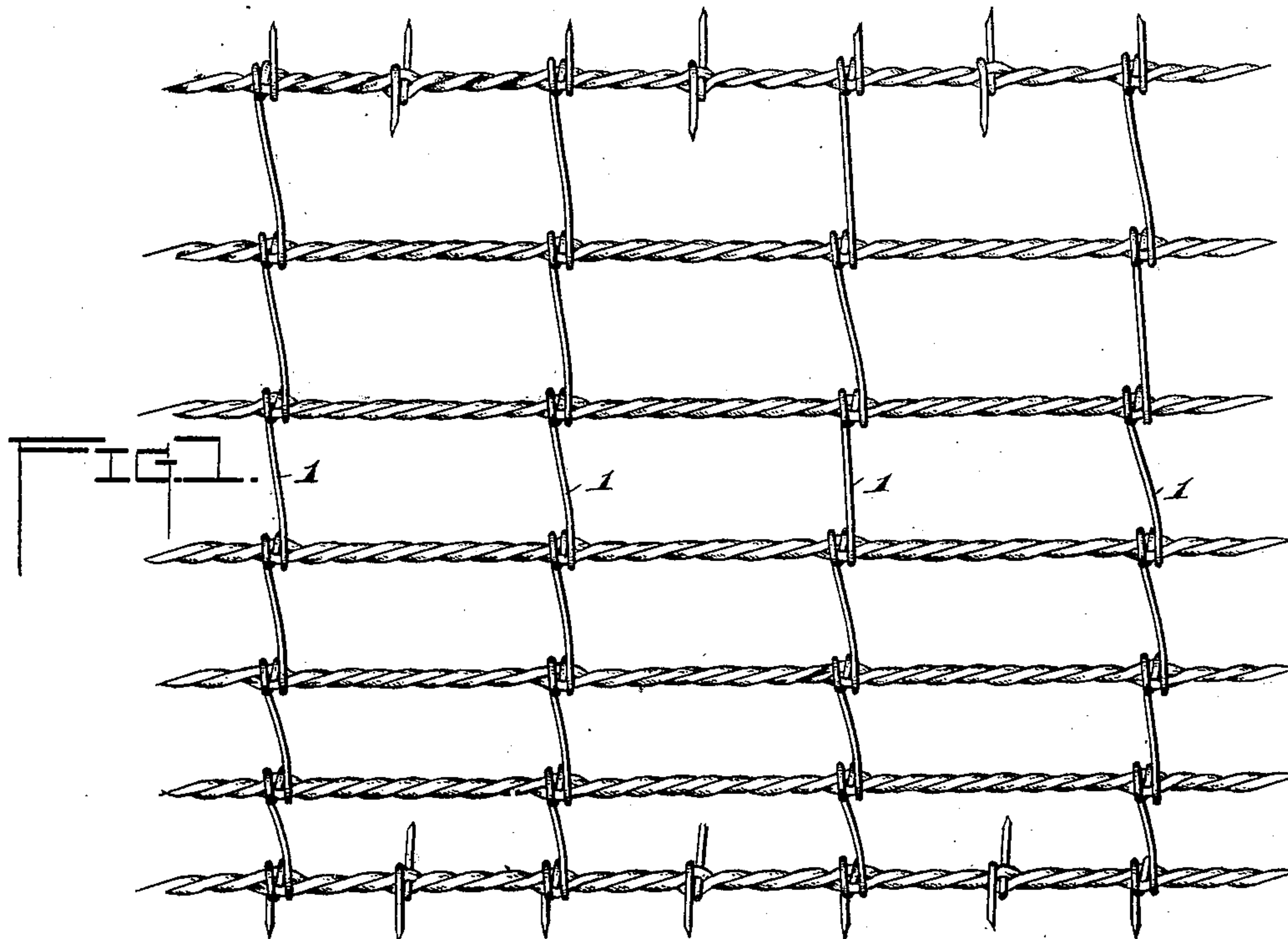
Patented July 12, 1898.

C. E. WARNER.

WIRE FENCE.

(Application filed Feb. 19, 1897. Renewed Dec. 2, 1897.)

(No Model.)



Inventor

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Witnesses

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CHARLES E. WARNER, OF WAVERLY, KANSAS.

WIRE FENCE.

SPECIFICATION forming part of Letters Patent No. 607,204, dated July 12, 1898.

Application filed February 19, 1897. Renewed December 2, 1897. Serial No. 660,553. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. WARNER, a citizen of the United States, residing at Waverly, in the county of Coffey and State of Kansas, have invented a new and useful Wire Fence, of which the following is a specification.

My invention relates to wire-fence construction particularly adapted for use in connection with stock-fences; and the object in view is to provide a simple and efficient tie or connection between twisted or plural wire runners and the stays by which they are intersected.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a view of a section of fence constructed in accordance with my invention. Fig. 2 is a detail side view of the improved tie, showing the engaged runner in section. Fig. 3 is a similar view showing the tie from the opposite side. Fig. 4 is a detail view in perspective of the tie, showing the engaged runner strands or wires in dotted lines. Fig. 5 is a similar view of a separate barb having a tie or connection embodying the essential features of my invention, said barb being attached to a selvage or plural strand runner.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

In order to provide a lock or connection which is held from displacement longitudinally of the runners, and at the same time adds but slightly to the thickness of the fence fabric as woven for sale, whereby when rolled or arranged in sections, as when packed for transportation, unnecessary space will not be taken up by projections at the points of connection of the stays with the runners, I have found it desirable to adopt a lock of which the essential feature resides in two oppositely-extending loops arranged in contiguous transverse planes, with their eyes or closed portions in a common longitudinal plane for engagement by the strands of a plural-wire runner, said strands being arranged in a common vertical plane. It is common to weave

or interlock a stay-wire with a plural-strand runner in order to prevent longitudinal displacement of the stays, but in practice it has been found to be a serious disadvantage that this lock adds greatly to the thickness of the fabric at these points of connection, and hence when rolled or packed for shipment the bulk is vastly increased over that of other forms of wire fabric. It is therefore desirable to form a lock which is not only efficient and is so interwoven with the runner as to prevent displacement, but to construct said lock of a transversely-flat form which exceeds but slightly, if at all, the transverse thickness of the runner itself. I have been able to accomplish this object by connecting the stays with the runners at those points of the latter where the intertwisted strands are arranged in common vertical planes and by using for the stays a lighter or smaller gage wire than that which is employed for the runner-strands. Thus the portions of the stay-wire which are disposed at the sides of the runner-strands do not increase the thickness of the fence beyond that of those portions of the runners where the strands intersect in a horizontal plane.

In carrying out my invention I provide the stay-wire 1 with a double or gooseneck bend to form upwardly and downwardly extending loops 2 and 3, which are counterparts in construction and shape and of which the sides are drawn toward each other after engagement with the runner-strands to form closed eyes through which said runner-strands extend, this transverse contraction of the loops being efficiently accomplished in practice by pinching the loops after the interlocking operation has been completed. But it is desirable not only to engage the oppositely-extending loops of the lock with the runner-strands at points where the latter are arranged in a common vertical plane, but to dispose the loops in different though contiguous transverse planes, whereby only one thickness of the stay-wire projects at any point beyond the side of a runner-strand. In other words, it is necessary to avoid doubling the thickness of the stay-wire at any point to prevent projection beyond the runner at those points where the strands of the latter intersect each other in a horizontal

plane. In this connection it will be understood that those points of the runner which are referred to as having the strands intersect each other in a common horizontal plane are in transverse thickness equal in width to two thicknesses of the strand-wire which is employed, and hence by engaging the stay-lock with those portions of the runner where its thickness is only equal to that of one strand-wire (both of the strand-wires being arranged in a common vertical plane) the stay-wire, by reason of being of less thickness, may be arranged at the sides of the runner-strands without causing the entire transverse thickness of the lock to exceed that of the wider portions of the runner. This simplest form of the lock, as above described, is preferably used only in connection with barbs, as shown in Fig. 5, although it will be understood that the same lock may be used in connection with stays intersecting a plurality of runners by extending the contiguous portions of the wire which leave the horizontal plane of the runner respectively in opposite directions. In practice, however, I prefer, for the purpose of connecting a stay to the runners of a fence, to extend the lock, as above described, by carrying the contiguous portions of the stays after forming the loops 2 and 3, respectively, over and under the entire runner, including both of the strands thereof. Thus, referring to Figs. 2, 3, and 4, the one-strand engaging or interlocking upper and lower loops 2^a and 3^a are extended at their outer sides to form, respectively, the lower and upper two-strand inclosing loops 4 and 5, said inclosing loops being formed by extensions of the outer sides of the engaging or interlocking loops. In forming these inclosing loops the same principle is followed as that described in connection with the engaging loops—namely, that of disposing the sides thereof in different planes to avoid arranging two thicknesses of the stay-wire at any one point, thus avoiding the increasing of the thickness of the fabric by the locks which connect the stay to the runners. The reason for preferring this doubled or more complicated form of lock in connection with a stay is that the inclosing loops serve to hold the strands of the runner pressed toward each other by the strain on the stay. Thus after interlocking the engaging loops with the strands separately and the inclosing loops with the strands collectively the transverse contraction or pinching of the lock brings all of the parts into compact form and

close relation, and thereby provides a connection which is proof against the ordinary strains to which the fence is subjected.

In order to prevent stock from passing under the lowermost runner or from resting upon the upper runner, the extremities of the stays are extended to form barbs, which are practically the same as the separate barbs 7, which are shown in the intervals between the stays in Fig. 1 and illustrated in detail in Fig. 5.

Having described my invention, what I claim is—

1. A wire fence having plural-strand runners, and stays intersecting the runners at points where the runner-strands are in common vertical planes, each stay at its point of intersection with a runner being provided with upwardly and downwardly extending engaging or interlocking loops having their sides arranged in different transverse planes and transversely contracted to form closed eyes through which the runner-strands respectively extend, and the outer sides of the engaging or interlocking loops being extended to form inclosing loops, having their sides arranged in different transverse planes from the engaging loops and extending around the runner-strands collectively, substantially as specified.

2. A wire fence having plural-strand runners, and stays intersecting the runners at points where the runner-strands are arranged in common vertical planes, each stay at its point of intersection with a runner being provided with upwardly and downwardly extending engaging loops for receiving the runner-strands separately, and downwardly and upwardly extending inclosing loops which receive the runner-strands collectively, the sides of the engaging and inclosing loops being arranged in different transverse planes to avoid doubling the thickness of the stay-wire at either side of the runner, and the loops being contracted transversely to avoid the projection of the sides of the lock beyond those portions of the runner at which the strands are arranged in a common horizontal plane, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES E. WARNER.

Witnesses:

E. L. WARNER,

CHAS. N. CONVERSE.