

No. 786,363.

PATENTED APR. 4, 1905.

A. K. KELLER.
FENCE.

APPLICATION FILED JAN. 11, 1904.

Fig. 2.

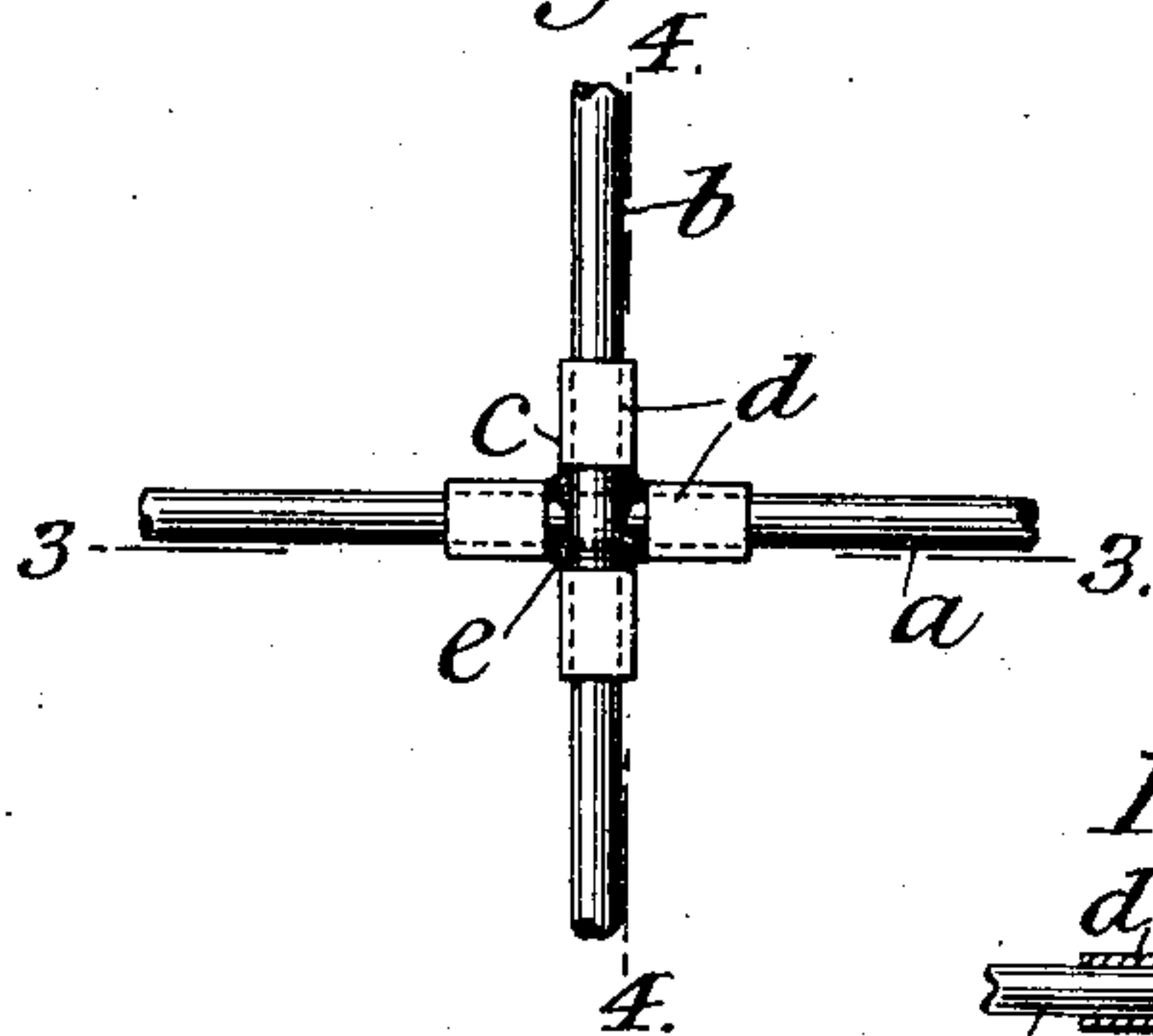


Fig. 3.

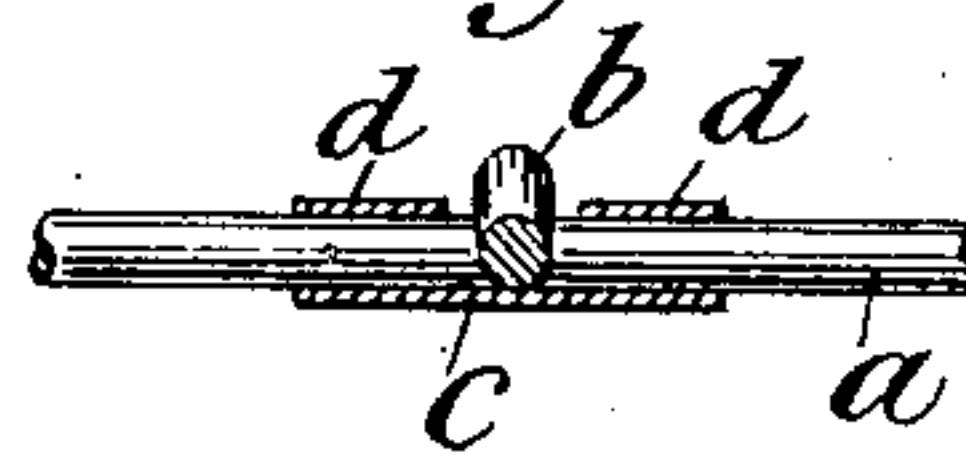


Fig. 4.

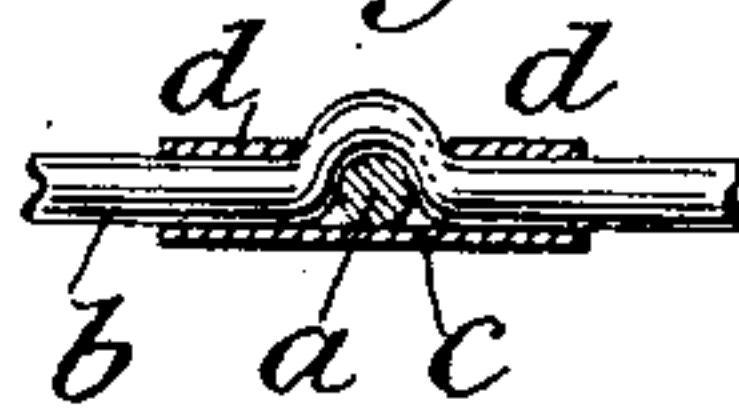


Fig. 1.

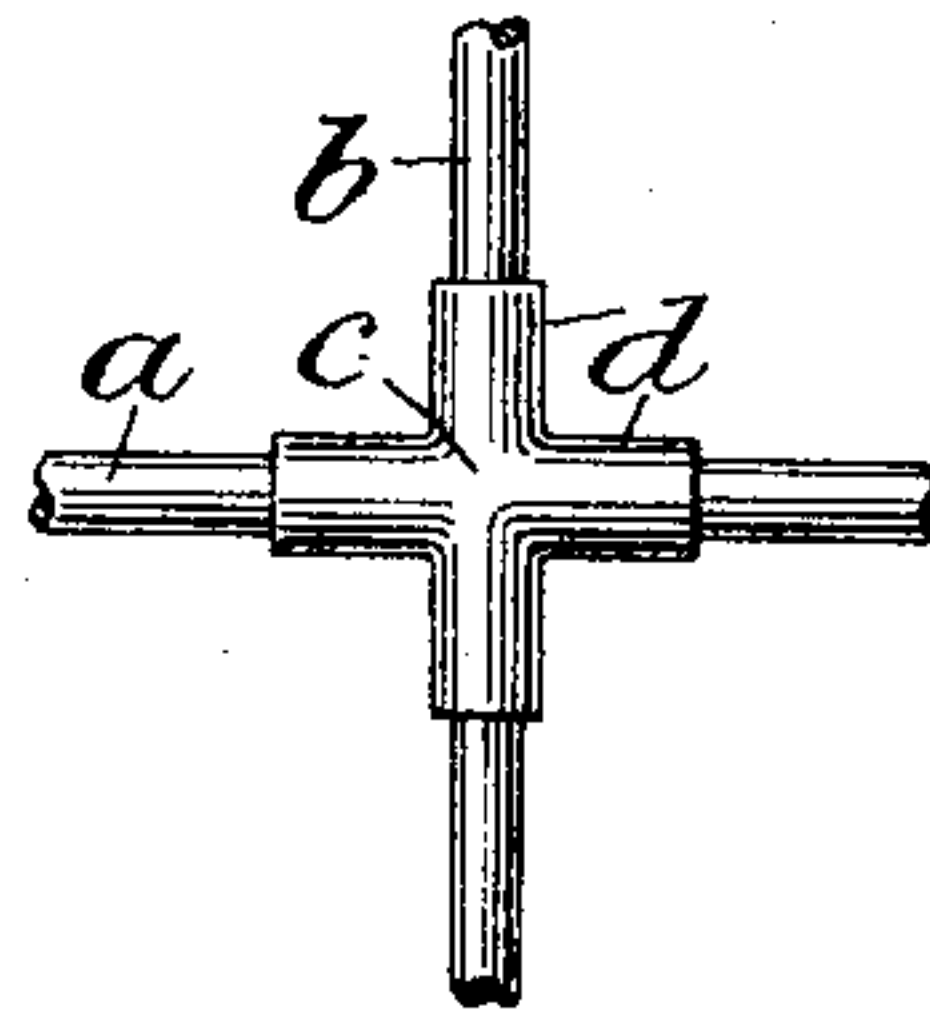


Fig. 5.

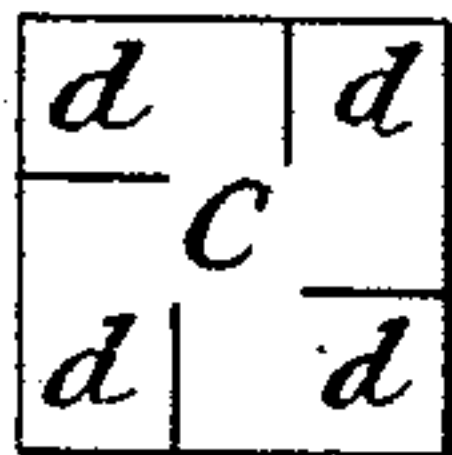
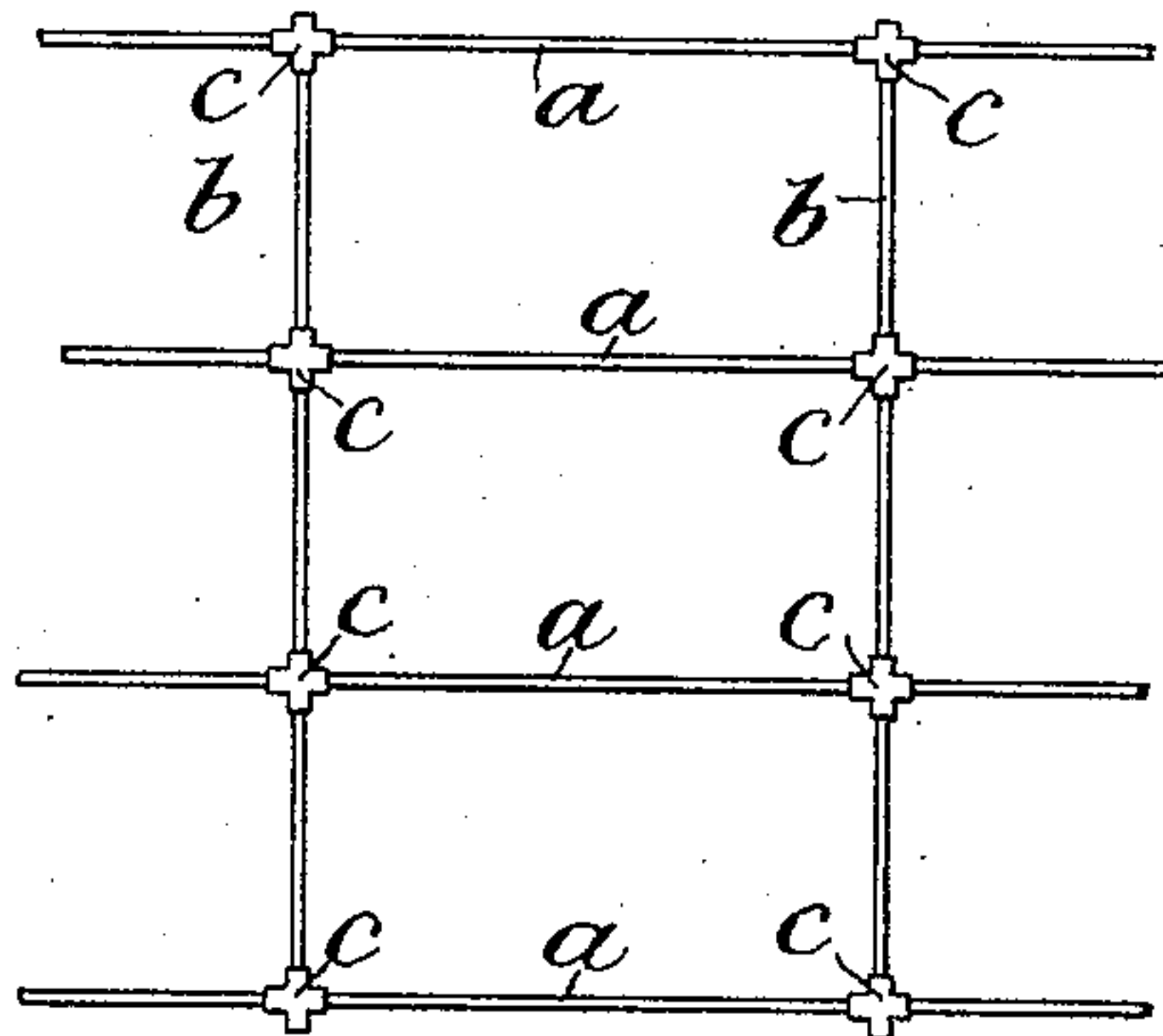


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

ALBERT K. KELLER, OF ADRIAN, MICHIGAN, ASSIGNOR TO THE INTERNATIONAL MACHINE COMPANY, OF ADRIAN, MICHIGAN, A CORPORATION OF MICHIGAN.

FENCE.

SPECIFICATION forming part of Letters Patent No. 786,363, dated April 4, 1905.

Application filed January 11, 1904. Serial No. 188,487.

To all whom it may concern:

Be it known that I, ALBERT K. KELLER, a citizen of the United States, residing in Adrian, Lenawee county, State of Michigan, have invented certain new and useful Improvements in Fences, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

In the manufacture of wire fence in which the wires are bound together at their points of intersection as distinguished from wire fence in which the wires are woven together considerable difficulty has been experienced in obtaining a thoroughly satisfactory knot or buckle to unite the intersecting wires. Many of the knots now employed for this purpose are of such a nature as to render them difficult to apply, others are blanked out of stock with considerable loss of material, and still others require a particular stamping or forming after they are cut and before they can be applied. Some of the knots now in use are applied to join the intersecting wires of the fence in such a way as to be easily detachable therefrom, while in the application of other knots to join together the intersecting wires of the fence the wires are bent at the intersections in such a way as to materially weaken the fence and to render the detachment of the knots easy. Furthermore, certain kinds of wire fence now in use are provided with knots or buckles in which water can collect and freeze, whereby the knots or buckles work loose or become destroyed and whereby the wires of the fence are sometimes parted.

It is the object of this invention to provide a knot or buckle to be used in this connection, which knot or buckle has none of the aforementioned objections. This improved knot or buckle will be particularly described hereinafter with reference to the accompanying drawings, in which—

Figures 1 and 2 are respectively front and rear elevations of a portion of the fence, taken around an intersection of a longitudinal and a transverse wire therein. Figs. 3 and 4 are respectively sections taken upon the plane indicated by the lines 3 3 and 4 4 in Fig. 2. Fig.

5 is a plan view of one of the buckles just as it is formed and before it is applied to an intersection of the wires to form the fence, and Fig. 6 is a front elevation of a fence in which the wires have been joined in accordance with this invention.

As will be seen upon reference to Fig. 6, the fence to which this invention relates is made up of longitudinal wires *a*, which are properly spaced and held in position by transverse stay-wires *b*, the latter being secured to the longitudinal wires at their intersections with the same. The longitudinal wires are substantially straight throughout, while the transverse stay-wires are bent around each of the longitudinal wires at the intersections in the manner clearly shown in Figs. 3 and 4, so that, as will be obvious, the longitudinal wires and the transverse stay-wires lie substantially in the same plane. It will be understood that in a fence of this sort the longitudinal wires at one time or another are subjected to considerable tension, while very little strain ever comes upon the transverse or stay wires. Partly for this reason and partly for other reasons it is customary to crimp the longitudinal wires by causing the fence to pass through a suitable crimping-machine, whereby the longitudinal wires are curved gently, so that they are actually sinusoidal instead of absolutely straight throughout. Nevertheless a short portion of the wire which passes through the intersections may be referred to as and for all practical purposes is straight, and the word "straight" as applied to the longitudinal wires is used herein to refer to a wire without kinks. It is highly desirable that the longitudinal wires be free from all sharp bends and kinks, which render these wires liable to part and, if occurring at the intersections, make it easy for the buckles to be ripped off. To unite the two sets of wires—the longitudinal wires and the transverse or stay wires—a knot or buckle is provided, having what may be termed a "body" portion *c* and ears, which afterward become the curved or lapped portions *d*. The knot or buckle is formed from a substantially square blank, Fig. 5, by simply cutting the

same, as indicated in Fig. 5, to form the ears *d*. A buckle is applied to each intersection of a pair of wires in the fence, the body portion *e*, as will be obvious, lying substantially in the plane of the front side of the fence, while the curved portions are bent or lapped around the wires on each side of the intersection and close to the intersection. I am aware that buckles have been formed from similarly-shaped blanks by cutting, as shown in the drawings; but such buckles have afterward been required to be stamped or shaped in a particular manner in order that they might fit the particular joint for which they were designed; but as I apply my buckle to the front side of an intersection of the wires to form the fence, which front side, as is obvious from the drawings, lies in one plane, no shaping whatever is required or takes place when the buckle is applied save the bending of the portions *d* around the wires forming the intersection. The finished joint in my fence accordingly comprises a straight section of wire—that is, the longitudinal wire—a curved section of wire—that is, the stay-wire—and the particularly shaped buckle, with its body portion in the plane of the front side of the intersections and its curved portions lapped about the sections of wire passing through the intersections.

It will be noted that the particular shape and disposition of the wires at the joint cooperate with the particular form of the buckle to bring the curved or lapped portions of the buckle close to the intersection of the wires about which the buckle is placed. This is desirable so as to prevent the formation of a space between the curved portions of the buckle and the intersection in which water might gather, freeze, and then, owing to expansion, destroy the joint altogether. What

slight space is formed in the present construction may be, as shown in Fig. 2, closed by a filling *e*, which may be of any suitable composition or be produced by galvanizing the joint.

In constructing the fence just described it will be necessary to provide means for bending the transverse or stay wires in the manner indicated either before or during the application of the buckles. The latter may be applied and clenched in any suitable manner.

I have described in an accompanying application, filed January 26, 1904, Serial No. 190,654, a machine for constructing a fence which is to be built in accordance with this invention and to which reference may be had. It will be obvious, however, that this invention is not limited to any particular machine or manner of construction.

I claim as my invention—

A fence having longitudinal wires and transverse stay-wires, the longitudinal wires being substantially straight while the transverse stay-wires are curved at the intersections thereof with the longitudinal wires, a buckle at each intersection of the longitudinal and transverse wires, said buckle having a body portion and a curved or lapped portion, the body portion being in the plane of the front side of the fence and the lapped portion being bent around the wires on each side of the intersection and close to the intersection, and a filling at each intersection between the buckle and the intersection.

This specification signed and witnessed this 6th day of January, A. D. 1904.

ALBERT K. KELLER.

In presence of—

J. W. HELME,
J. C. JOHNSON.