

(No Model.)

P. MILES.  
FENCE.

No. 381,942.

Patented May 1, 1888.

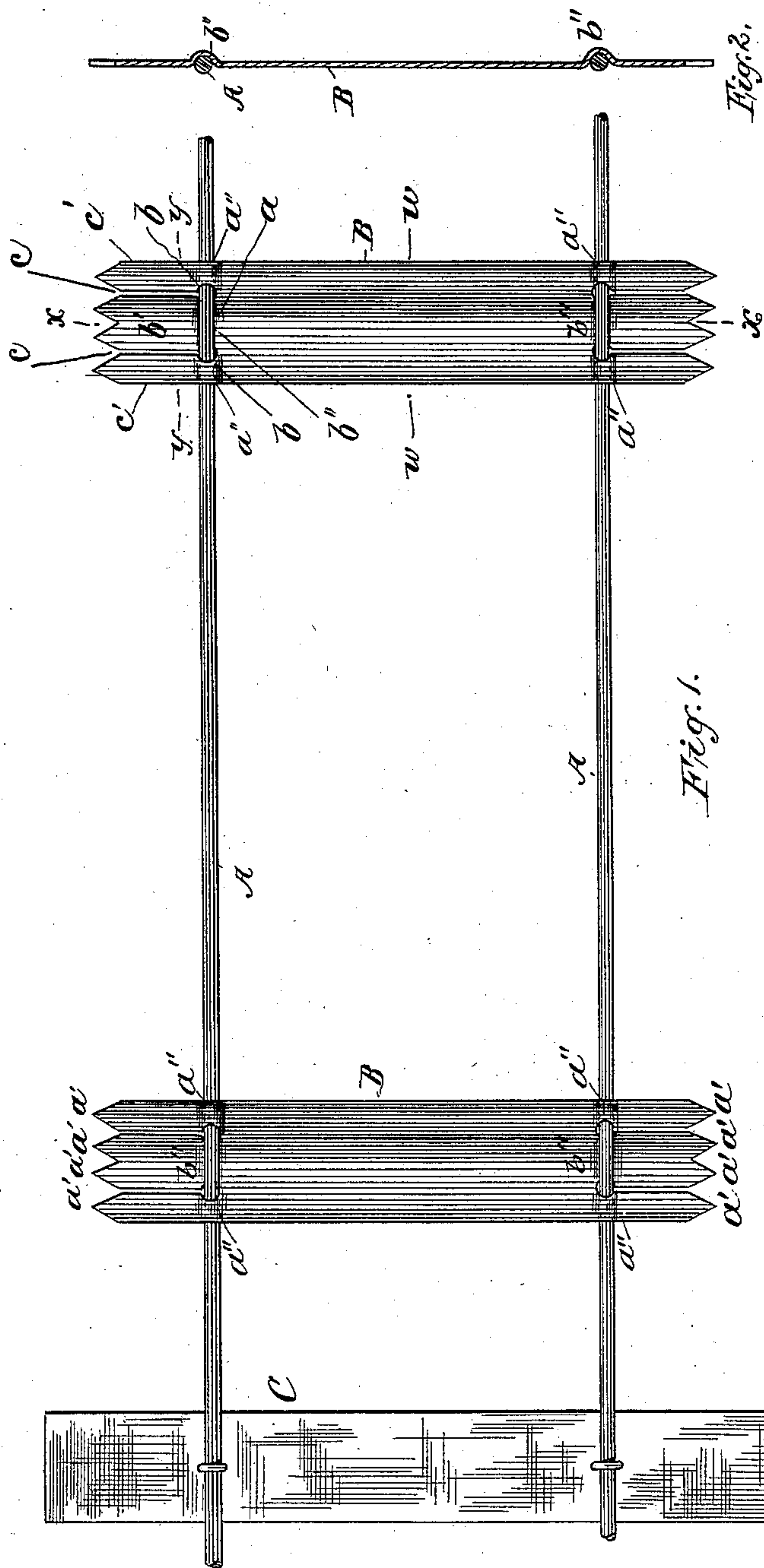


Fig. 2.



Fig. 4.

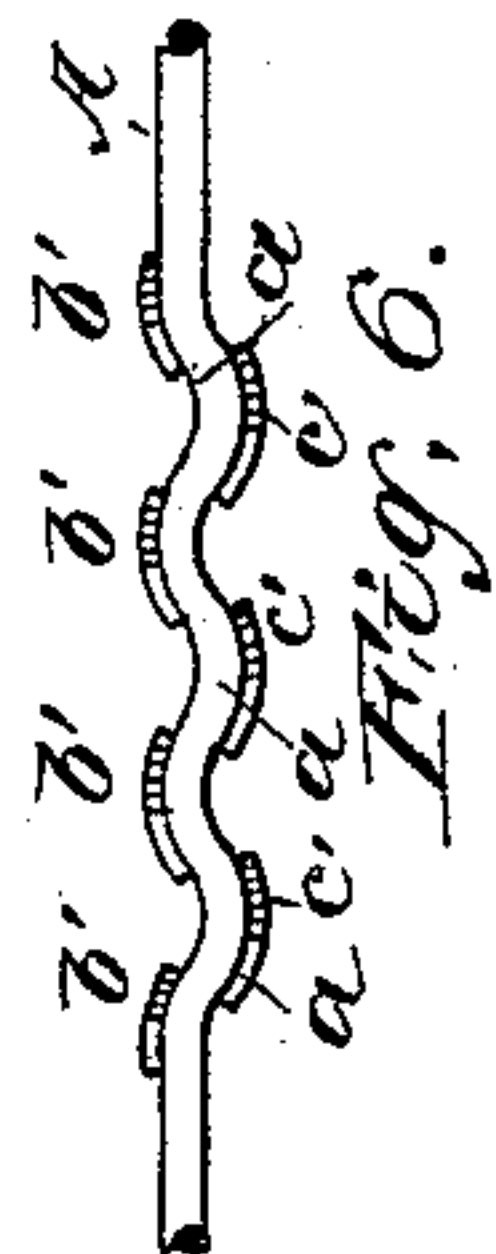
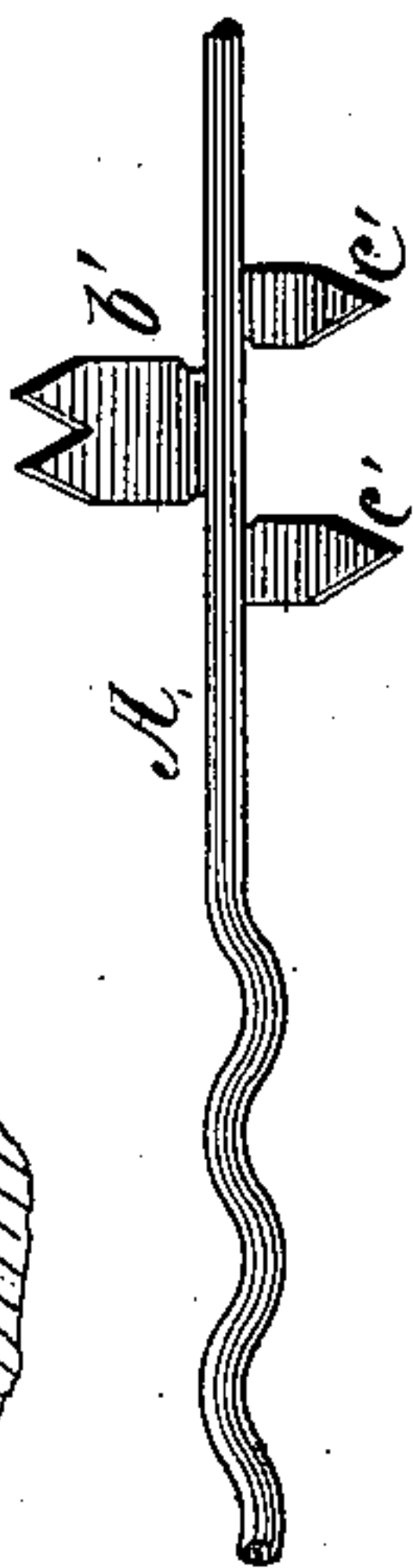


Fig. 1.

Fig. 3.



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## FENCE.

SPECIFICATION forming part of Letters Patent No. 381,942, dated May 1, 1888.

Application filed May 27, 1887. Serial No. 239,513. (No model.)

*To all whom it may concern:*

Be it known that I, PURCHES MILES, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Fences; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of fences in which vertical pales are supported by a horizontal wire or wires. Its object is to provide a fence of this kind which shall be stronger and more durable than those heretofore in use, and which will be simple in construction.

The invention relates to the form of the pales and to the form or character of the joints which hold the pales and the wires together, and the said invention comprises certain novel means and combinations of parts, which effectually secure the objects desired, and which are hereinafter more fully set forth.

Figure 1 is a front elevation of a fence constructed according to my invention. Fig. 2 is a vertical transverse section on the line  $x x$  of Fig. 1. Fig. 3 is a plan view showing certain other modifications included in my invention. Fig. 4 is a sectional view on line  $y y$ , Fig. 1. Fig. 5 is a sectional view on line  $W W$ , Fig. 1. Fig. 6 is a transverse sectional view showing certain modifications of my invention.

Each fence-panel is composed of one or more (in this instance of two) horizontal wires, A, and one or more pales or pickets, B, of sheet metal, and when put up for use the panels may be secured to posts C, as shown in Fig. 1. At intervals which determine the distances between the pales the wires A are crimped or corrugated, as best shown in Fig. 4, where the said pales B are to be attached.

The pales B, of sheet metal, may be of any desired width, length, and thickness, and preferably two or more sharp points or barbs,  $a'$ , are formed on both ends thereof, as indicated in the drawings. These pales B are also corrugated lengthwise, as illustrated in Fig. 5, to correspond with the crimps or corrugations in the wires A, and where they are joined or secured to the said wires they are provided with

holes  $b$ , as shown in Figs. 1, and 4 and have slits or cuts  $c$  made in them, extending from said holes  $b$  out to the adjacent ends, so that in effect each end of a pale is by said slits  $c$  formed into three or more (preferably three) fingers, the central one of which is designated in the drawings by  $b'$  and the sides ones by  $c'$ . These slits or cuts  $c$  may be simple slits or cuts, as indicated in the drawings, or may be wider slots or openings made by cutting out strips of the metal of the full width of a hole  $b$  from said holes outward.

The corrugations, folds, or alternate elevations and depressions formed in the pales, as shown in Fig. 5, are preferably, each one of them, of the width of a finger,  $b' c'$ , so that each finger is of curved cross section, and consequently much stiffer and less liable to be accidentally distorted or bent than if it were flat.

In constructing a fence a pale B is taken, and the fingers  $b'$  bent outward in one direction and the fingers  $c'$  bent outward in the opposite direction, so that they will be far enough apart at their bases for the wires A to be readily entered between them and rest in the holes  $b$ . Then the wires are laid between said fingers, as indicated in Fig. 3, and then said fingers are bent upright, so as to clasp the wire or wires between them. With suitable machinery this work can be rapidly done.

It is to be understood that the lateral cross-grooves  $a'' b''$  should be formed adjacent to the holes  $b$ , those in the part  $c'$  being opposite to that in the part  $b'$  in order that the wire may fit more snugly in its place at the place of attachment of the picket. This construction insures the proper strength and stability to the fence and gives a special form of joint at the points of junction between the wires and the pales, because the cross-crimping of the latter, so as to form in them transverse grooves in the line of the holes, forms a continuous lock-seat from edge to edge of the pale, in which the wire is rigidly held and interwoven between the middle fingers,  $b'$ , and the outside fingers,  $c'$ , which have their said grooves or crimps  $a''$  and  $b''$  formed, respectively, on the opposite sides or faces of the said fingers, and the wire is thereby interwoven on the opposite sides of the fingers, as shown. By this construction a pale having terminal fingers and transverse



crimps or grooves forms an absolute lock with the wire at or near the base of the fingers, and thereby braces the pales against side or vertical displacement when once secured upon the wires without fastening, and this is, so far as I know and can find, new in what is known as a "picket fence," and constitutes the essential feature of my invention.

A very important advantage obtained by my improvement is the strengthening of the picket by interweaving a plurality of its parts with the wire in the peculiar lacing manner shown in the drawings in connection with a cross-crimp.

Another important advantage of my improvement is the provision of a sheet-metal pale having three or more terminal fingers, so as to lock the pale to the wires in such manner as to prevent the pales from being partly turned in their positions upon the wires, because if less than three fingers were used the pale could be so turned partly, whereas more than two fingers makes the outer ones lock with the middle one.

Another important advantage of my improvement consists in provision for uniting the wire to the picket-fingers, which is as follows: After the pickets have been attached to the wire or wires A, the whole may be passed through the usual metallic bath to galvanize the same, the spelter serving to unite the wire to the pickets and to prevent the collection of moisture in the crevices between the wires and the picket, which would otherwise be likely to result in rust and in weakening the parts. This operation practically fills the exposed edges of the cross or crimped grooves at both sides of the wire, and thus unites the wire to the fingers of the pale at these edges, and also fills in the groove behind the wire, making the joining practically solid at each finger, so that the pales and the wires become as a single article of manufacture complete for being set up.

The corrugations in the wires A will permit them without undue straining or tension to expand or contract under changes of temperature, and for this purpose said wires may be

corrugated between the pales, as indicated on the left in Fig. 3.

In Fig. 6 is indicated a pale having more than three fingers and applied to a wire, the two having a number of corrugations corresponding to the number of pale-fingers, the alternate fingers being set on the opposite sides of the wire.

The pales may be flat and the wires straight, as indicated on the right in Fig. 3.

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

1. The combination, with a longitudinal wire, of pickets having slits *c*, perforations *b*, and grooves *a'' b''*, for the passage and attachment of the wire, substantially as and for the purpose herein set forth.

2. A fence composed of longitudinal wires and sheet-metal pales, the latter having three or more terminal fingers, each formed with a cross crimp or groove on alternate sides, and a wire or wires laid between said fingers and bound within the groove of each finger, substantially as described, for the purpose specified.

3. A fence composed of sheet-metal pales and longitudinal wires, the said pales corrugated transversely, having three or more terminal fingers and a cross groove or crimp formed on alternate sides of said fingers, and the said wires having curves *a*, conforming with the corrugations of the picket and bound alternately between the said fingers within the cross-grooves, substantially as described, for the purpose specified.

4. A sheet-metal picket for fences, having three or more terminal fingers, each formed at or near their base with a cross groove or crimp, the outer fingers having the groove or crimp on the same side and the intermediate finger or fingers having the groove or crimp on the opposite side, as shown, and for the purpose stated.

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Witnesses;

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