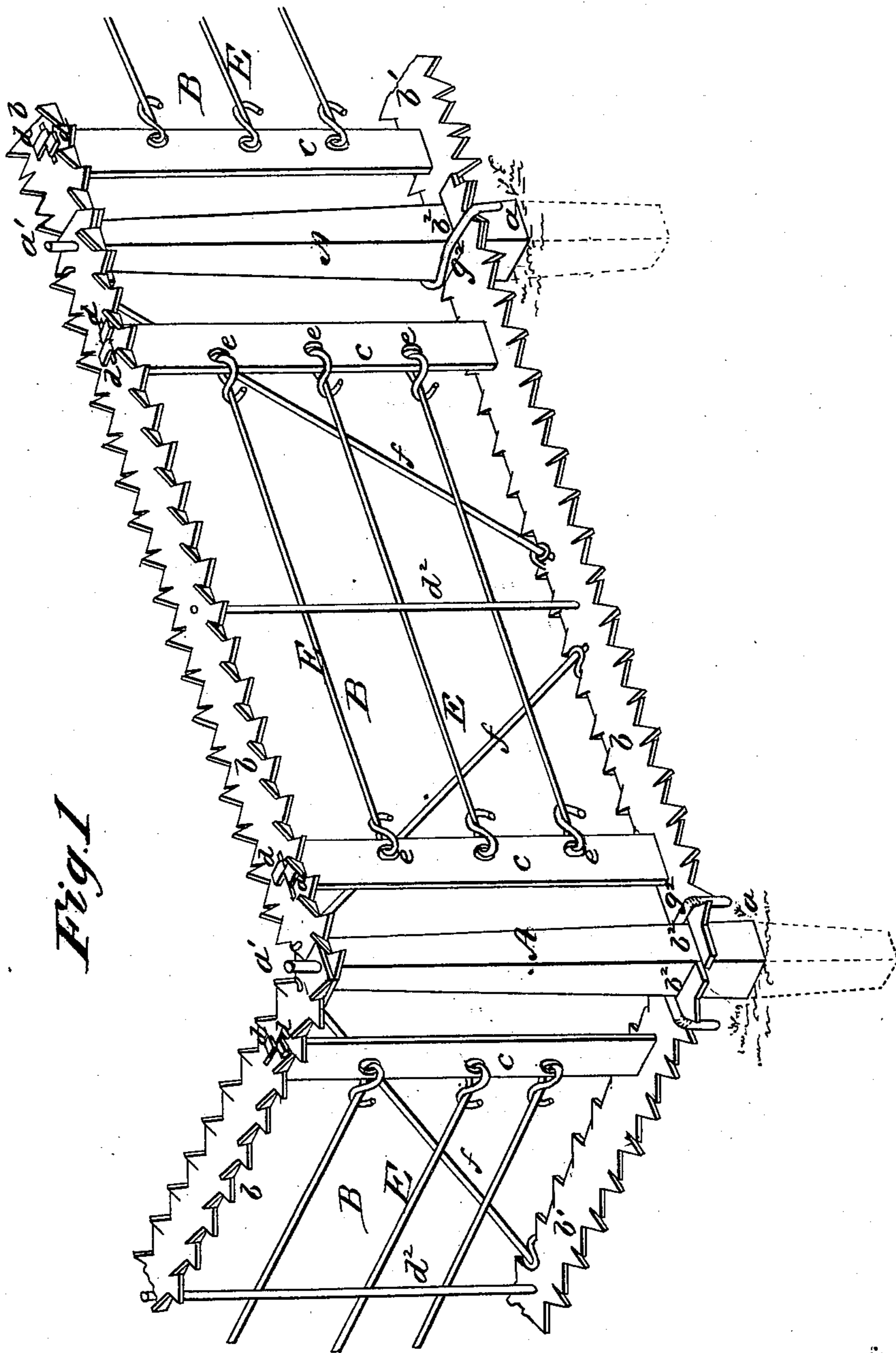


W. WARDEN.  
Barbed-Fence.

No. 199,947.

Patented Feb. 5, 1878.



## Witnesses

J. P. Connolly  
D. P. Fowl

Inventor

William Warden  
Connelly Bros

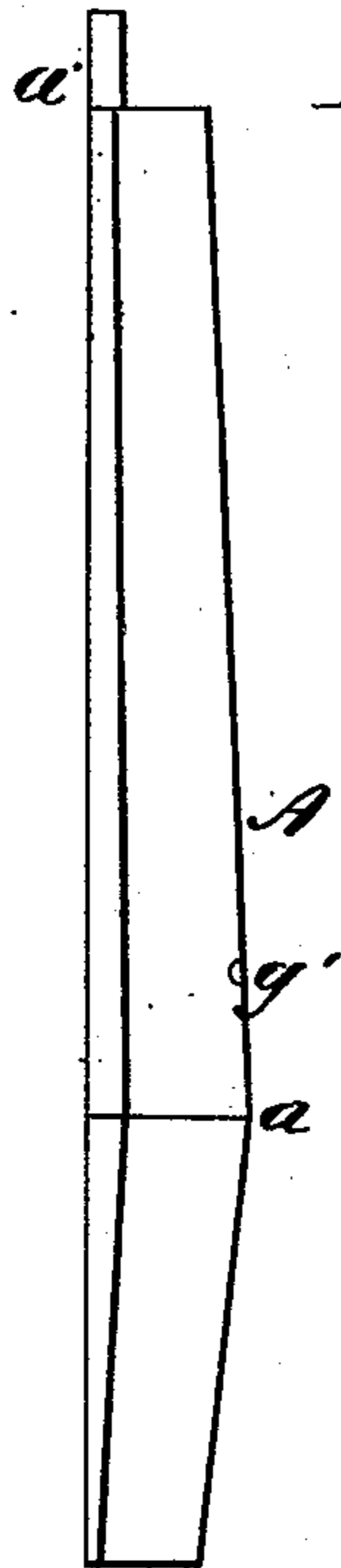
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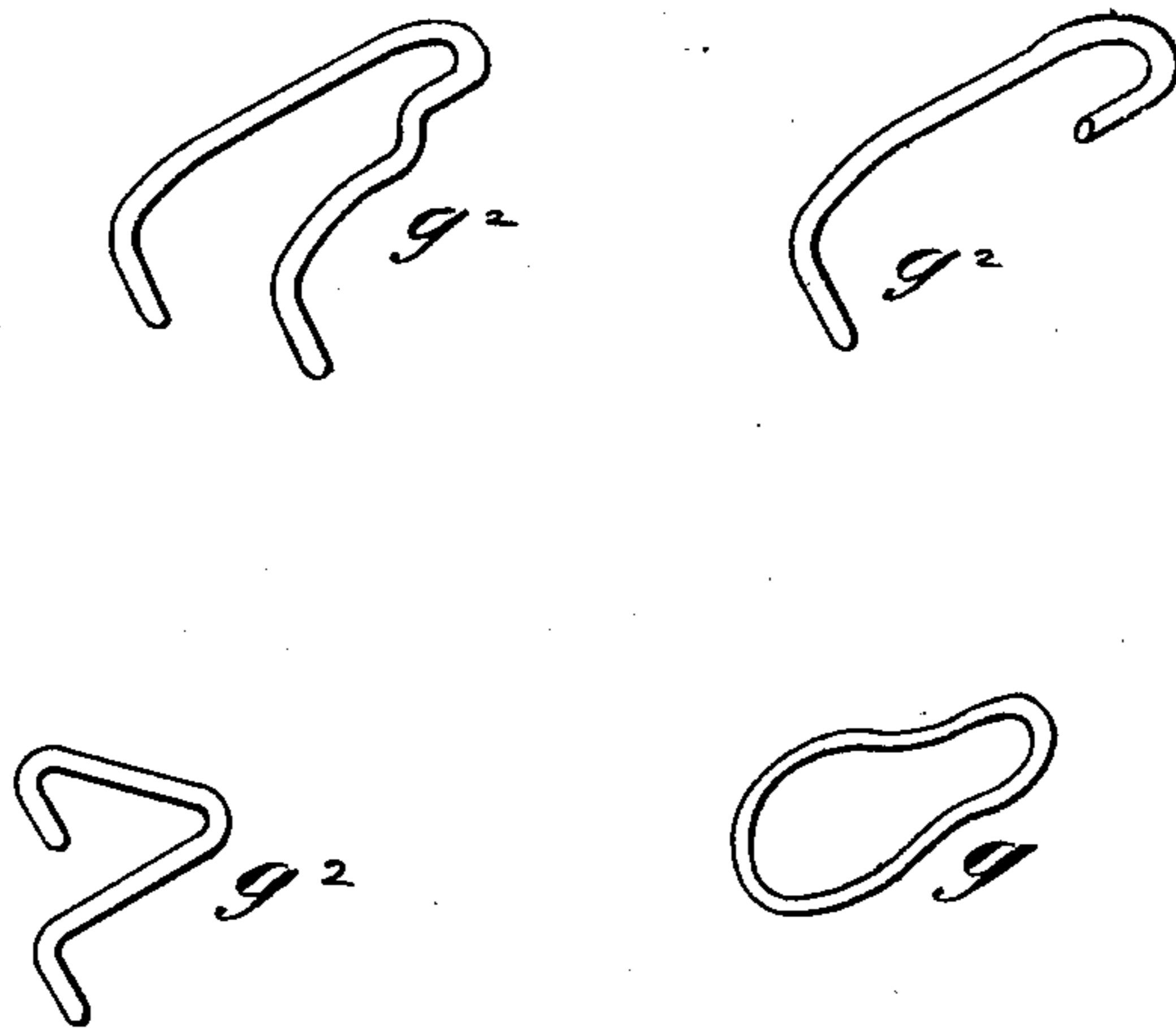
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*Fig. 2*



*Fig. 3*



*Fig. 4*



Witnesses  
*J. B. Connelley*  
*D. P. Fowl*

*William Warden* Inventor  
*Connelley Bros*  
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# UNITED STATES PATENT OFFICE.

WILLIAM WARDEN, OF MINNESOTA JUNCTION, WISCONSIN.

## IMPROVEMENT IN BARBED FENCES.

Specification forming part of Letters Patent No. **199,947**, dated February 5, 1878; application filed September 27, 1877.

*To all whom it may concern:*

Be it known that I, WILLIAM WARDEN, of Minnesota Junction, in the county of Dodge and State of Wisconsin, have invented certain new and useful Improvements in Portable Metallic Panel-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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a perspective view of my improved fence. Fig. 2 is a side elevation of one of the fence-posts. Fig. 3 represents, in perspective, several varieties of panel-fastenings. Fig. 4 is a top view of one of the posts.

This invention has relation to the novel construction of a portable metallic farm-fence, and has been designed with the object of providing a fence which shall, in a pre-eminent degree, possess the important characteristics of strength, lightness, durability, and cheapness, and which shall have as essential qualities convenient and thorough portability, adapting it to every farm, garden, or land requirement, and shall be so constructed as to constitute, when applied to its legitimate uses, a complete and effective barrier against the passage of confined or excluded live stock of every description.

In many sections of the country, and more particularly in the highly-cultivated portions of the western prairie-land, the steady and rapid decrease of the timber growth and supply has rendered it almost an absolute necessity to provide, for fencing purposes, a substitute for wood.

The requirements of such a substitute are that it shall be equal in points of strength, durability, and convenience to the better class of wooden fences, and at the same time be less expensive in its manufacture and erection.

It is also necessary that such a substitute shall embody such improvements in its general construction as are demanded by the improved systems in use in farming and stock-raising. Among the various requirements are, chiefly, portability, whereby the fence may be readily

and quickly transferred from one portion of a farm to another, so as to inclose particular or temporary pasture sections located in the immediate vicinity of cultivated portions, and security against the ingress and egress of stock.

The object of my invention is to meet fully all the requirements usually felt, especially those above referred to; and to this end my invention consists in the novel construction, combination, and arrangement of parts, as hereinafter described and claimed.

Referring to the accompanying drawings, illustrating my invention, A A designate the fence-posts, constituting, as constructed, an essential element of my improvements. These posts are made of wrought-iron, rolled to their proper form. These posts are what is termed "angle-iron," being L-shaped in cross-section, whereby they are given the greatest strength and self-supporting capabilities attainable with a small amount of metal.

When inserted in the ground, each post presents to the earth four distinct sides or surfaces, and includes between the walls forming the angle a sufficiency of clay or other foundation material to give the post a very rigid purchase and support. From the point *a*, at which the post meets the surface, the walls thereof taper or converge at their edges to their lower ends, so as to facilitate insertion and removal, while, in order to obtain a better hold in the ground when inserted, the inner surfaces of the walls below the point *a* may diverge slightly toward the lower end. The upper portion of the post and the walls diminish also toward the upper end, in order to obtain lightness, and to leave the greatest thickness at the base, where it is most required. Each post terminates at the top in a diminished stud or standard, *a'*, for the reception of the upper horizontal bars of the panels which it supports.

In arranging the posts, they are placed, respectively, with the outer surface of one wall on the line of the fence and the outer surface of the other, of course, at a right angle thereto. The distance apart of the posts corresponds with the length of the panels.

B designates the panels, of which *b* *b'* are the upper and lower horizontal bars, made of

strap-iron, having saw-tooth edges to form guards, which are substitutes for the ordinary wire-fence barbs D. The upper bar is pierced near its ends to fit upon the posts over the studs or standards  $a'$ . Upon these studs or standards the panels may be turned, raised, and lowered, or placed at any angle to adapt the fence to the inequalities of surface, and to its erection with the panels disposed at various relative positions and angles.

Instead of being pierced near their ends, the lower horizontal bars are cut away, as shown at  $b^2$ , so as to fit against the posts, and allow sufficient play to let the panel rise and fall on uneven surfaces.

The bars  $b b^1$  are connected together by the vertical bars  $c$ , of similar material. The ends of bars  $c$  are tenoned, slit, and passed through slots in the toothed bars, and are clinched, as shown, the nibs formed by slitting being bent in opposite directions, respectively, as indicated at  $d d$ , so as to make a rigid fastening. Any other method of fastening may, however, be adopted. A center post,  $d^2$ , of suitable strength, braces and supports the horizontal bars midway between the vertical bars.

E designates the horizontal wires, barbed or not, as desired. They are stretched between the two vertical bars, and fastened at their ends thereto by being inserted through holes  $e$  and bent or twisted, as shown, or in any other suitable manner.

To add strength to the panel, I connect the two horizontal bars by the diagonal braces or wires  $f$ , extending from near the ends of the upper bar to near the middle part of the lower bar, and fastened to said bars by being inserted through holes and twisted or bent, as desired.

When arranged to form a line of fence, the panels overlap at their ends. The standard or stud on top of one post receives the adjacent ends of two of the top bars. A fastening is then required for the lower bars.

I have contrived various devices for this purpose, and, without limiting myself to any specific fastening, would suggest as useful the loops or hooks illustrated. If the ring  $g$  be used, it will be slipped over the post, and brought down so as to embrace the two ends of the lower horizontal bar and the adjacent portion of the post, and then pressed down at the back until it springs into a notch,  $g^1$ , in the back of the post.

When the single or double tined hook  $g^2$  is used, and it is the better form of the two, it may be put on after the panels are in position. The hook portions will fall down between the teeth of the bars, after which the bend will be pressed down behind and sprung into the notch.

In an application of even date herewith I include as one of the essential elements an angle-iron post having slots for the passage of staples to secure the horizontal wires.

Without claiming such a post in this application, I may remark that a slotted post may be used interchangeably for wire and panels, and such a post will be found to possess many advantages.

I have described the top and bottom horizontal bars of the panels as being provided with saw-tooth or serrated edges. A part of these teeth on the upper bar should be bent upwardly to prevent live stock from pressing upon the panels, while a part of the teeth on the lower bars should be bent downward to prevent small-sized stock from crawling under.

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

1. A fence-panel having stock-guards made of sheet metal, with saw-tooth or serrated edges, and arranged in horizontal planes at the top and bottom of the fence, the upper bar having teeth bent upwardly, and the bottom bar having teeth bent downwardly, so as to prevent the passage of stock over or under the fence, as described.

2. A portable metallic fence-panel having the top and bottom bars, by which the parts of the panel are held together and supported, made of sheet metal arranged in horizontal planes, and formed, either or both, with toothed or serrated edges to constitute stock-guards, as shown and described.

3. The combination of the horizontal sheet-metal bars  $b b^1$ , vertical connections  $c c$ , and horizontal wires  $e e$ , constituting the essential features of a portable metallic fence-panel, substantially as described.

4. A portable metallic fence-panel composed, essentially, of top and bottom horizontal bars of sheet metal, vertical uniting-bars of similar material, and horizontal wires, said horizontal bars having serrated or saw-tooth edges, and the wires being attached at their ends to the vertical bars, substantially as described.

5. The combination, with the horizontal sheet-metal slotted bars of the portable panel, of the vertical sheet-metal connecting-bars, attached to said horizontal bars by slitting and clinching their ends, substantially as described.

6. The combination, in a portable metallic fence-panel, of the horizontal bars, having toothed or serrated edges, the vertical connecting-bars of sheet metal, the central vertical supporting-rod, and the horizontal wires, and diagonal wire braces, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of September, 1877.

WILLIAM WARDEN.

Witnesses:

T. A. CONNOLLY,  
J. B. CONNOLLY.