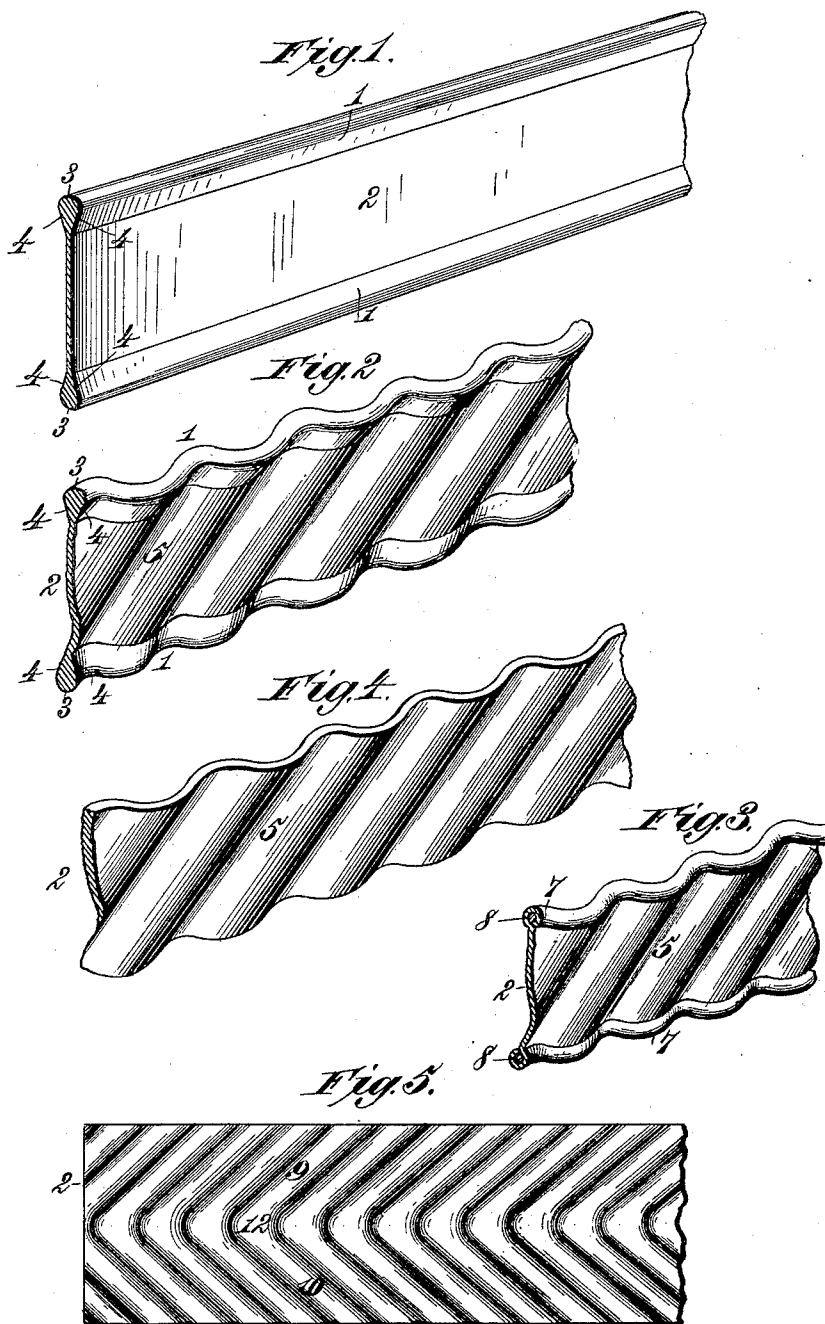


(No Model.)

A. B. WOODARD.  
FENCE STRAND.

No. 462,887.

Patented Nov. 10, 1891.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

ALONZO B. WOODARD, OF HORNELLSVILLE, NEW YORK.

## FENCE-STRAND.

SPECIFICATION forming part of Letters Patent No. 462,887, dated November 10, 1891.

Application filed January 26, 1891. Serial No. 379,146. (No model.)

*To all whom it may concern:*

Be it known that I, ALONZO B. WOODARD, a citizen of the United States, residing at Hornellsville, in the county of Steuben and State of New York, have invented new and useful Improvements in Fence-Strands, of which the following is a specification.

This invention relates to that type of fence-strands which are composed of ribbons of thin sheet metal having parallel side faces.

The objects of my invention are to provide a novel fence-strand of this type which will be lengthwise elastic, stronger, and more durable than ordinary fence-strands of flat ribbons and will be braced diagonally or transversely throughout its length, whereby the ribbon can be made very thin and as wide as desired without danger of its crushing or collapsing vertically between its horizontal parallel edges.

The invention also has for its object to provide an improved fence-strand of a flat ribbon of sheet metal which can be very economically manufactured by rolling, and in the process of rolling be formed with parallel longitudinal thickened edges, whereby an attenuated web between the thickened edges can be made exceedingly thin without danger of crushing or collapsing, while the strand, as a whole, is lengthwise elastic, will not sag when suspended between fence-posts, and can be produced with considerable economy in the quantity of metal used.

To accomplish all these objects my invention involves the features and the construction and arrangement hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a fence-strand constructed in accordance with my invention prior to diagonally corrugating the same. Fig. 2 is a similar view showing the fence-strand after being corrugated. Fig. 3 is a perspective view of a modified construction. Fig. 4 is a similar view of another modification. Fig. 5 is a side elevation showing a modified arrangement of the diagonal corrugations.

In order to enable those skilled in the art to make and use my invention, I will now de-

scribe the same in detail, referring to the drawings, where—

The numerals 1 1 indicate the parallel longitudinal thickened edges, and 2 the attenuated web, which form is produced by rolling a rectangular ribbon of comparatively-thin metal to reduce it in thickness and cause the metal to flow toward the longitudinal edges, whereby the latter are thickened while the web is attenuated. The extreme outer surfaces of the edges are semicircular or convex, as at 3; but the opposite sides of the thickened portions converge in right lines 4 4 or approximately right lines and vanish in the attenuated web. These thickened and converging portions impart the requisite strength to the edges of the fence-strand, while the attenuated web being formed integral with the thickened edges holds the latter separated, and the structure is such that the fence-strand is not liable to become crushed or collapsed vertically between the thickened edges. The flat fence-strand thus rolled into the form described and as shown in Fig. 1 is then provided with diagonal corrugations or undulations throughout its length, as at 5, and these corrugations or undulations have the effect of diagonal struts or braces, which materially increase the tensile strength of the fence-strand and at the same time render the latter susceptible of yielding lengthwise and of springing back to its normal position after the manner of a coiled or spiral spring. By this means the fence-strand will not sag when stretched between fence-posts, and a strong, durable, economical, and desirable fence is produced wherein the strands are ornamental and plainly visible. This is an important advantage over ordinary crimped wires, since the latter are dangerous to animals unless twisted or otherwise combined into wide and ornamental fencing material to render them plainly visible. By rolling the fence-strands from flat strips of metal into flat ribbons with thickened edges and attenuated webs, as described, I am enabled to rapidly and economically manufacture the article and to reduce the consumption of material by rolling the web exceedingly thin, while a strong and substantial fence-strand is produced, even

though the web be reduced to the least possible thickness suitable for the conditions required. While I prefer to roll the metallic ribbon integral with the thickened longitudinal edges, I may produce thickened edges to a thin web by folding or bending the longitudinal edges 7 of a metallic ribbon round core-pieces 8, composed of wire, as shown in Fig. 3. This may rapidly be accomplished by drawing the ribbon and wires through a suitable die or dies.

In the modification, Fig. 4, the thickened edges are omitted and the fence-strand is composed of a flat ribbon of sheet metal furnished with diagonal corrugations 6, extending in right lines the full width of the flat ribbon.

In the modification in Fig. 5 the fence-strand is composed of a flat ribbon of sheet metal formed with diagonal corrugations 9, running from one longitudinal edge to about the median line of the ribbon, and with diagonal corrugations 10, running in reverse directions from the opposite edge of the ribbon to about the median line thereof. The inner end portions of the diagonal corrugations 9 and 10 are joined by gradually-curved portions 12. The diagonal corrugations or undulations are important for the purpose of producing the effect of diagonal struts or

braces, and at the same time rendering the ribbon lengthwise elastic, so that it will stretch and tend to resume its normal position.

The diagonal corrugations not only render the strand lengthwise elastic, but provide for expansion and contraction between fence-posts, and what is more important the diagonal arrangement of corrugations operate to resist all lateral sidewise or twisting strains, in which respect my improved fence-strand is very desirable in that it is strong and substantial and is not liable to fracture by breaking strains transmitted in any direction.

Having thus described my invention, what I claim is—

A fence-strand consisting of a flat metallic ribbon having parallel side faces which are formed with diagonal corrugations continuously throughout the length of the strand for rendering it lengthwise elastic, and producing diagonal struts or braces to prevent sagging between fence-posts and resisting lateral or sidewise strains, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

ALONZO B. WOODARD. [L. S.]

Witnesses:

JAMES A. RUTHERFORD,  
A. H. NORRIS.