(No Model.)

A. ELLWOOD.

BARBED FENCE WIRE STRAND.

No. 253,022. Patented Jan. 31, 1882.

Fig. 1.

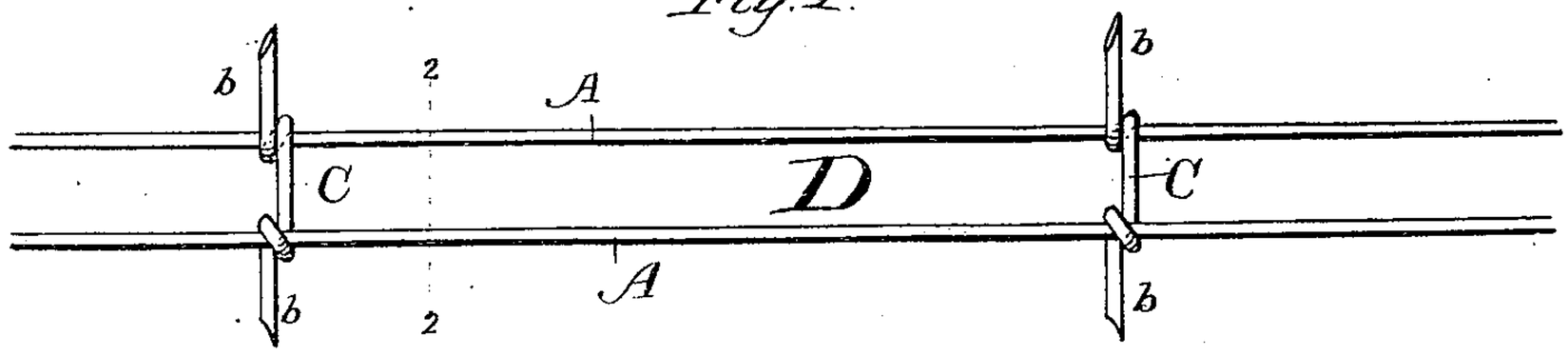


Fig. 2.

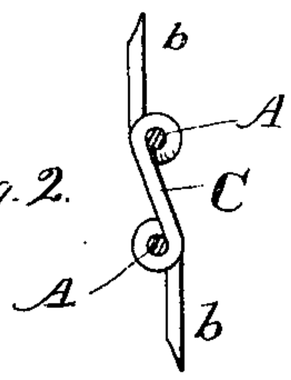


Fig. 3.

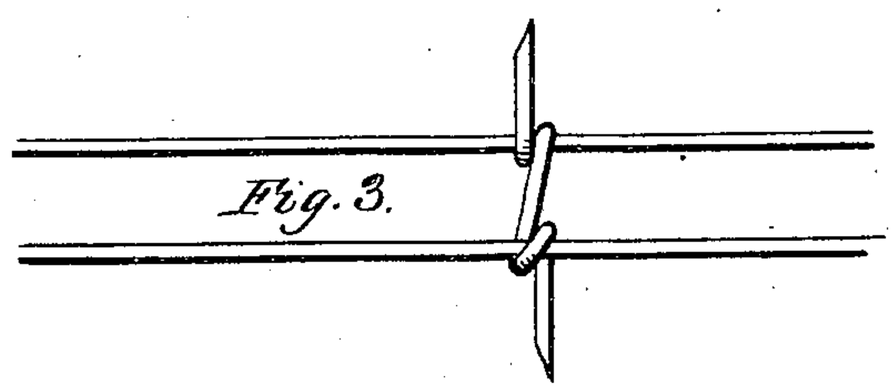


Fig. 4.

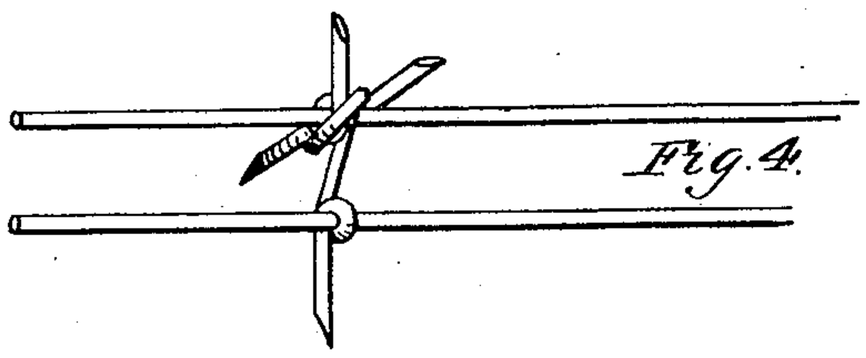
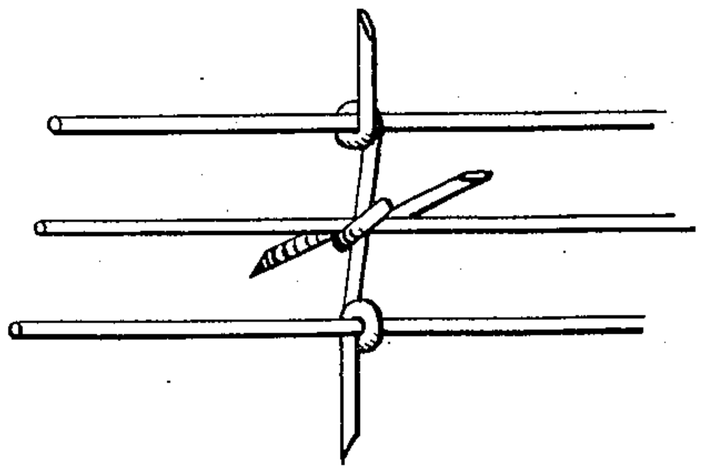


Fig. 5.



WITNESSES.

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UNITED STATES PATENT OFFICE.

ABRAM ELLWOOD, OF SYCAMORE, ILLINOIS.

BARBED FENCE-WIRE STRAND.

SPECIFICATION forming part of Letters Patent No. 253,022, dated January 31, 1882.

Application filed August 30, 1881. (No model.)

To all whom it may concern:

Be it known that I, ABRAM ELLWOOD, a a citizen of the United States, residing at Sycamore, in the county of De Kalb and State of Illinois, have invented a new and useful Improvement in Barbed Fence-Wire Devices or Strands, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan view of a strand of my improved device. A A represent the fence-wires; *b b*, the projecting barbs; and C, the bar connecting and forming the strand or device, which I will represent as strand D.

Fig. 2 is a longitudinal or end view of barb and wire forming a strand.

Figs. 3, 4, and 5 show and refer to modification of my invention referred to in my specification.

To enable others skilled in the art to understand and practice my invention, I now proceed to describe its construction, purpose, and operation, reference being had to the accompanying drawings.

I am aware that prior to my invention barbs of multiplied forms have been attached or secured to fence-wire of single and twisted strands.

I am also aware that the different strands of fence-wire have been connected together by means of wires, the ends of such connecting-wires being sharp-pointed and utilized as barbs; but the strands of such wire fences are the usual distance apart and are for a principally-different purpose.

My invention obviates many of the defects and objections incident to and necessarily connected with the construction and practical use of the other and analogous devices. It is stronger, as the wires are not injured, as to the grain and fiber, by being twisted together. The wires are placed substantially parallel to each other and about three-fourths of an inch apart; but I do not desire to confine myself to that exact distance, which may be varied somewhat without materially affecting my invention; but I have found in my experience that three-fourths of an inch apart best answers the purpose desired. The parallel wires are connected and held together as a strand at short intervals by barbs coiled together around each wire near their ends, leaving preferably upward and downward projecting points. These barbs by their connecting bodies form bars, which firmly spread, connect, and rigidly hold together the wires, and thus form my strand of barbed wire. The barbs, with their connecting-bar, are so wrapped around the two wires forming the strand that both ends of the barb come out on the same side of the bar, thus counteracting and preventing any tendency to slip, for in the above arrangement the strain upon the strand has a binding effect, and any strain upon one of the wires of the strand would cause a nearly equal strain upon both. The so wrapping of the barb as to have both of the ends on the same side of the connecting-bar has, in my opinion, several advantages, as when so made the connecting-bar is substantially at right angles with the parallel wires, in which position there is much less liability to slip than if the barbs were on opposite sides of the connecting-bar, as this construction gives the bar a diagonal position which is less firm and binding, being more liable to lateral displacement, and gives less rigidity and strength to the strand. I do not wish, however, to strictly confine myself to a construction which requires both ends of the barb to be on the same side of the connecting-bar, as when the barbs are tightly and securely wrapped around the longitudinal or parallel wires of the strand my invention will still be found to be valuable and practical, if so constructed that the ends of the barb are on the opposite sides of the connecting-bar. In Fig. 3 I have shown my invention thus modified, the ends of the barb being on the opposite sides of the connecting-bar.

In the common mode of manufacturing twisted barb-wire strands it is impossible to twist the wire equally, and practically one wire is only wrapped around the other, and thus neccessarily, when the strand is subjected to a strain, the strain all comes upon one wire. Another serious defect in twisted barb-wire as now in use is that the twisting of galvanized wire frequently loosens and peels off the galvanized surface, and quite often splits both the galvanized and plain wire, thus greatly lessening both the strength and durability of the

wire, as wire thus broken and exposed to the weather corrodes rapidly, and is easily broken when any pressure is brought against the same. My open strand is much more easily seen by the cattle or stock, presents a greater surface, forms no place for the lodgment of water to cause rust and corroding, such as is formed by the twisted-wire strand, it being a fact that twisted wire will rust out in about one-third less time than plain wire. This strand is much lighter to the rod, as nothing of either of the wires is taken up by twisting, and thus making it so much shorter. The wires of my strand are so close together that it would be impossible for animals to press against one wire without equal pressure against the other. The barbs in such a construction would all stand substantially perpendicular, thus absolutely assuring against the possibility of cattle or stock putting their heads between the different strands forming the fence, and prying the wires apart, or crawling through.

It often happens that in the ordinary styles of barbed-wire fence the barbs for a long distance are all horizontal, and animals will get their heads through between the wires, and then the barbs will be turned, and the animals, especially horses and colts, dangerously lacerated, and frequently killed or permanently disabled. The manner of applying the barbs of my invention and the width of the strand prevent this result, and permit only the quick-repelling pricking of the animals without danger of laceration.

As will be seen, the position of my barbs is such that animals cannot as readily be injured by running against or crowding up to a fence of my improved construction. This fact imparts much value to my invention, as the injury to stock from the outward-projecting barbs of the fences now in use has been persistently urged by many as being a serious objection to the use of barbed-wire fencing, and has had the effect of creating a prejudice and retarding such use. It can be readily seen that my invention can be applied to two or more additional wires so long as the additional number is placed such distance apart as to form a strand. My invention also renders the strand much more flexible and pliable, and can be more readily rolled into a spool for transportation, which is necessary to the successful sale of all barbed wire. It also enables the strand to be manufactured upon much less costly and much less complicated machines, as the manner of attaching the barbs and connection and forming the strand is of the simplest movement and without complication, and discards entirely the twisting mechanism now used in connection with all twisted barbed wire machines.

If it is preferred, a three or four pointed wire-barb may be formed by interlocking the same at the point of juncture of the bar and either wire, and standing at any desired angle with the fence-wire, as shown in Fig. 4.

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

1. The parallel wires A A, being about three-fourths of an inch apart, projecting points or barbs *b b*, and bar C, forming the strand D, substantially as and for the purposes described.

2. As a new article of manufacture, two parallel wires substantially three-fourths of an inch apart, held together and apart, and formed into a strand by interlocking staples or barbs, substantially as and for the purposes described.

ABRAM ELLWOOD.

Witnesses:
REUBEN ELLWOOD,
GEORGE W. COOLEY.