E. M. CRANDAL.

Barbed Fence.

No. 221,158. Patented Nov. 4, 1879.

Fig 1.

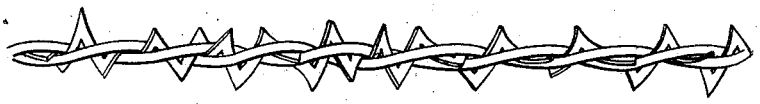


Fig. 2.

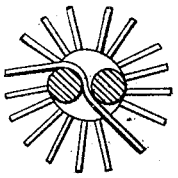


Fig. 3.

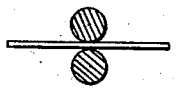
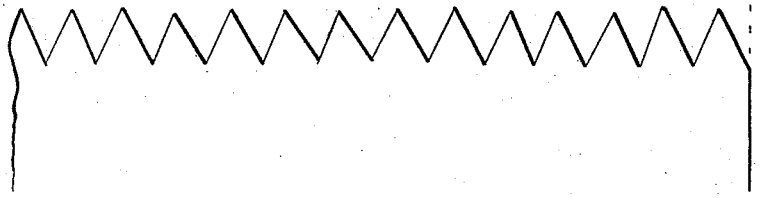


Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWARD M. CRANDAL, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN BARBED FENCES.

Specification forming part of Letters Patent No. **221,158**, dated November 4, 1879; application filed June 4, 1879.

To all whom it may concern:

Be it known that I, EDWARD M. CRANDAL, of Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Barbed Fences, of which the following is a specification.

This invention consists of a barbed fence or flexible rail for barbed fences, composed of a zigzag sheet-metal strip intertwisted longitudinally with wires to form a barbed metallic cable or rail.

The advantages which I believe this structure possesses are: it is very easy to make by simple and inexpensive machinery; there is almost no waste of material in its structure; the whole cable is barbed with closely-studded points standing in all directions; the points, while amply sufficient to deter stock from attempting the fence, are not of a nature to lacerate an animal coming in accidental contact therewith; the peculiar structure is such as to be very conspicuous and easily seen, presenting, as it does, by reason of the thickly-studded points and the substance of the interwoven sheet metal, an object of considerable size, thereby lessening the liability of animals accidentally encountering it; the structure is such that the points, while projecting to the utmost capacity of the metal employed are, without being wrapped or coiled entirely around the wire or wires, held with extreme solidity, it being utterly impossible to displace or even to deflect a single one of the barbs by any ordinary means, if the fence is properly constructed; the structure is such that ample provision is made for the expansion and contraction of the metal of both the wires and the interwoven points under varying temperatures without injury.

In the accompanying drawings, which form a part of this specification, Figure 1 is a view of a small portion of my metallic barbed cable. Fig. 2 is an end view of the same. Fig. 3 is also an end view of the same before the wires are twisted. Fig. 4 is a view of the zigzag sheet-metal strip before insertion and in the flat. Fig. 5 is a view of the sheet from which said strip was cut, indicating the method of cutting the same without waste.

In manufacturing this fence, the best way that I now know is to have a suitable punch made for cutting out the zigzag metal strip, (shown at Fig. 4,) so contrived as to stamp out at a single descent a strip of considerable length, bearing consequently a considerable number of the alternating points. The sheet of metal is fed to this punch in the form shown at Fig. 5, so that the points on one side of the strip are formed from the metal cut from the inner angles of the strip just cut off.

It will thus be seen that the only waste in cutting will consist of the small triangular bits cut out of the edge of the sheet to produce the saw-like appearance of the sheet, as shown at Fig. 5, and a like series of bits left at the other end of the sheet, the only waste being this insignificant amount at the beginning and the end of the sheet.

All that remains to be done is to place the flat strip (shown at Fig. 4) lengthwise between the two wires, as shown at Fig. 3, and finally to twist all three together. The act of twisting bends the zigzag strip in such manner that the points are distributed in all directions equally, and each point is braced rigidly.

The strips may be placed one after the other between the wires, so that no interval of unbarbed wire will exist. The cable thus formed may be spooled in the ordinary manner, and used as barbed fence is ordinarily used.

In splicing this fence the two ends may be brought together and secured by the usual hitch or interlocking twist, if preferred; but I recommend as a more sightly method that the two ends be simply lapped and wound with a lighter wire, which, by reason of the projections formed by the interwoven strips, will be a very secure method of fastening.

It will be noticed that by reason of the very firm and rigid bracing of the points each by the other, I am enabled to use very light sheet metal for the interwoven zigzag strip, thus decreasing the weight of the cable without impairing its efficiency. This is quite an object to the consumer where the cable is to be sold by the pound.

It will also be noticed that by reason of the added strength given by the interwoven strip, I am able to use light wires, which further increases the cheapness of the fence.

It is obvious that the angles of the zigzag strip may be made more or less obtuse, and

that the twist given the cable may be varied at will. These changes will, of course, affect the frequency of the barbs and the direction of the points.

A straight metal ribbon intertwisted with the wires does not possess many advantages pertaining to my invention, viz: it cannot be spooled without detriment, nor is it as flexible, nor can it be closely twisted, nor does it permit the same expansion and contraction under variations of temperature, and it tends to assume a spiral form when twisted, in all which respects it is very different from the zigzag strip.

I claim—

1. The barbed cable composed of the wires and intertwisted zigzag sheet-metal strip, substantially as specified.

2. The method of forming the barbed cable, substantially as described, by placing between the wires a zigzag strip of sheet metal and twisting thereafter the wires, whereby said strip is bent, braced, and rigidly held with the points standing in all directions.

3. The zigzag sheet-metal strip with sharp points at the angles, substantially as specified.

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