T. D. STETSON.

BARBED-FENCE WIRE.

No. 192,468. Patented June 26, 1877.

Fig: 1.

Fig: 2.

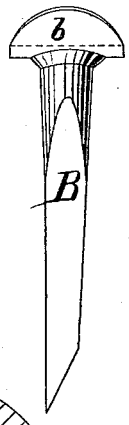


Fig: 5.

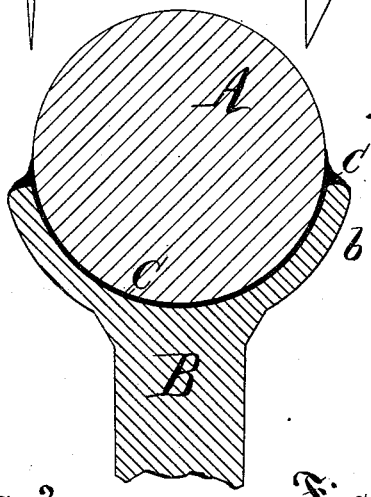


Fig: 6.

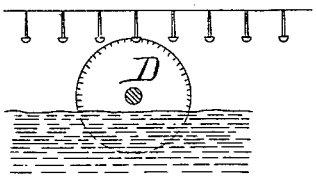


Fig: 7.

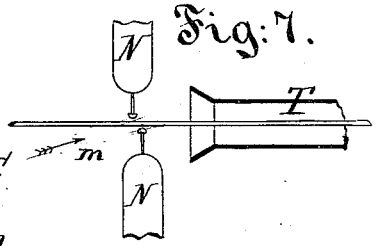


Fig: 3.

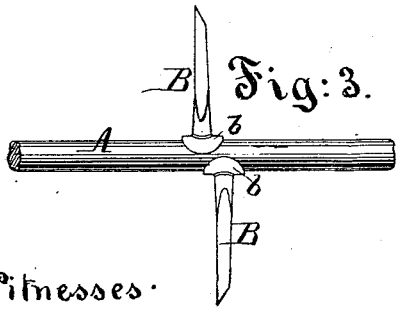
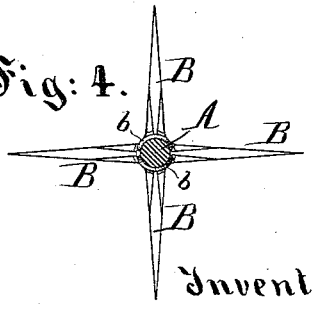


Fig: 4.



Witnesses.

A. Henry Gentner 2

C. C. Stetson

Inventor:

Thomas D. Stetson.

UNITED STATES PATENT OFFICE.

THOMAS D. STETSON, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND KIMBALL W. STETSON, OF KINGSTON, MASSACHUSETTS.

IMPROVEMENT IN BARBED FENCE-WIRES.

Specification forming part of Letters Patent No. 192,468, dated June 26, 1877; application filed September 29, 1876.

To all whom it may concern:

Be it known that I, THOMAS D. STETSON, of New York city, in the State of New York, have invented certain new and useful Improvements relating to Thorny-Wire Fences, of which the following is a specification:

My improvement relates to the construction of the thorn and the mode of attaching it. It is important to hold the thorns stiffly against being moved in any direction. Those thorns heretofore used, which require two or more wires strung together, involve more or less expense. Those which compress and indent the main wire in being secured weaken that important portion. Those modes of attaching which require the thorn to be severely bent not only weaken the thorn, but are liable, with some kind of iron, to spring open, so as not to cling firmly. Each joint forms a nucleus for corrosion.

I have devised a form of thorn which can be made on familiar machines with the ordinary velocity of tack or nail manufacture—say three or more per second—with a form well adapted to be fed down in any attaching machine, and guided after the manner of clasp-setting machines in the skirt manufacture, and which allow of being firmly set by soldering with little cost of material or labor, and with no weakening, but rather strengthening, of that part.

I tin round wire of the ordinary size for wire fence, or a little less, and having made and tinned thorns or barbs, with concave heads adapted to fit fairly to the cylindrical surface of the wire, and applied a very little extra tin or solder in the concave head, I hold the thorns and wire together with the proper heat, so as to join the thorns or barbs to the wire by soldering without any waste of solder.

My thorny wire, by reason of its protection by the tin coating, lasts longer than ordinary unprotected wire. It may receive any additional coating, as paint, coal-tar, or any of the cheap or dear varnishes, lacquers, or the like.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is an edge view of one of my thorns. Fig. 2 is a side view of the same. Fig. 3 is a side view of the thorns as soldered or brazed to the main wire. Fig. 4 is an end view of a portion of my fence-wire complete. Fig. 5 is a cross-section, showing the soldered junction of one of the thorns with the main wire on a larger scale. Fig. 6 is an outline of the apparatus which may be employed in applying the extra tin within the head; and Fig. 7, an outline of the apparatus which may be applied to aid in sweating or soldering together.

Similar letters of reference indicate corresponding parts in all the figures.

A is the main wire. B is the body, and *b* the concave head, of a stout thorn or barb. This thorn or barb may be readily made by what is known as the "Blanchard tack-machine" by putting more stock than usual into the head, and grinding the dies and header with the required curved surfaces. But it is essential that the header shall be as stiff and as stiffly supported as possible. The concave thorn-head *b* matches the surface of the wire A.

I propose to adopt the modern practice of giving to small tinned articles a violent blow with a rapidly-revolving beater as soon as removed from the melted tin, as it jars off the superfluous metal, and insures an economical and uniform coating over the entire surface of the thorns. The wire may, by judicious wiping as it comes from the bath, be also thinly and evenly tinned. A small addition of tin, or of soft or hard solder, is afterward made by hand or by machinery, and the thorns are ready for use.

The thorns may be applied simultaneously on opposite sides of the wire by hand or by any suitable machinery. I apply them preferably at points a little out of line with each other, as shown in Fig. 3.

In preparing to solder, the wires may be led through a furnace or through a heated tube, and its temperature raised to near the soldering-point. So, also, the thorns may lie in a heated pan or move through a heated spout, and similarly approximate the soldering temperature. The heat at the soldering junction may be applied by a blow-pipe, succeeded by a rapid cooling with cold air or water.

Other specially-prepared thorns with two

or more prongs may be substituted for the parts B; but I esteem the hollow head *b*, or equivalent curved surface adapted to match to the wire, as essential to success.

Mechanism may be employed to effect the soldering, or to aid in that operation, as follows: In Fig. 6, D is a wheel with slight cavity in its periphery, revolving in a bath of melted solder, and the surface of this wheel touches the interior of the concave head *b* as the thorns or barbs are carried past, which operation applies a minute quantity of extra solder to the thorn or barb head. In Fig. 7, *m* is a blow-pipe flame, playing upon the junction of two thorn-heads with the main wire, the thorns being held in properly-moved nippers N. The hot tube through which the wire has been led is indicated by T.

The thorns B may be distributed in many different directions from the axis of the main wire.

When hard solder or brazing is employed the previous coating of the surfaces with tin may be, in most cases, dispensed with.

I claim as my invention—

1. The concave headed thorns or barbs B *b*, the part *b* being constructed to conform to the surface of the fence-wire A, as specified.

2. In combination with the fence-wire A, the thorn or barb having a head with a close-fitting surface, matching to the main wire and secured thereto, as herein specified.

In testimony whereof I have hereunto set my hand this 20th day of September, 1876, in the presence of two subscribing witnesses.

THOMAS D. STETSON.

Witnesses:
M. A. CAYPLESS,
CHARLES C. STETSON.