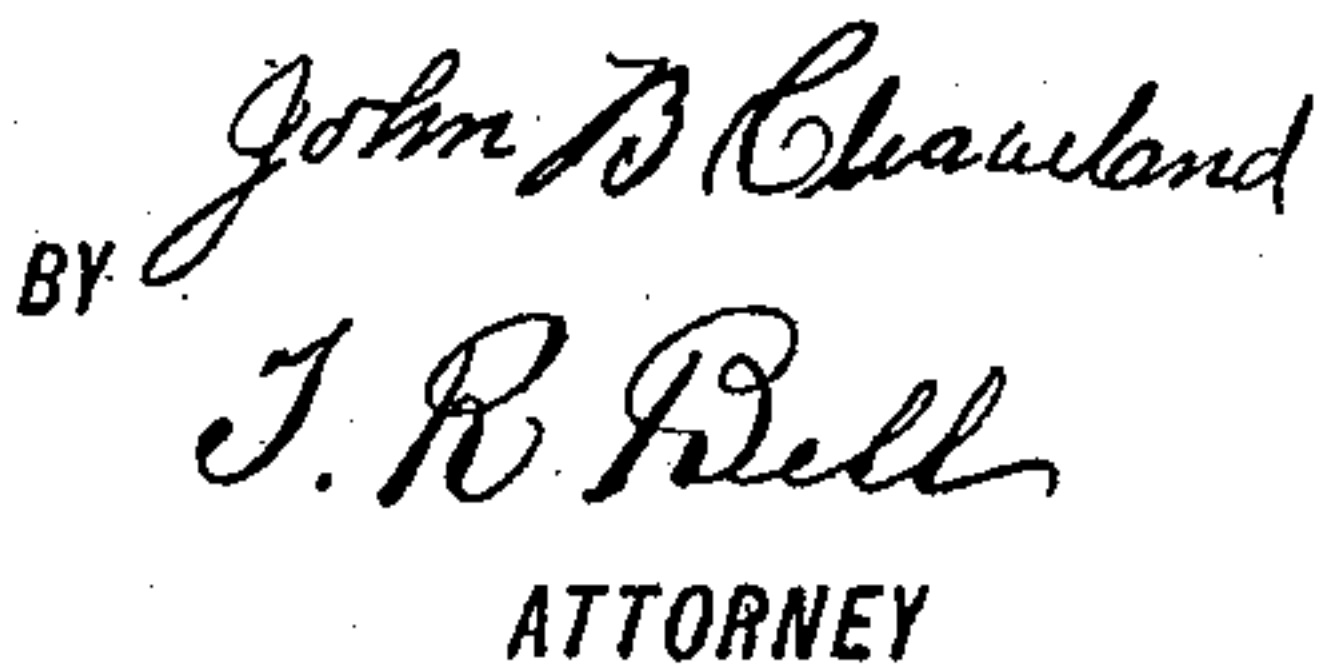


Patented Feb. 5, 1889.



UNITED STATES PATENT OFFICE.

JOHN B. CLEAVELAND, OF INDIANAPOLIS, INDIANA.

FENCE.

SPECIFICATION forming part of Letters Patent No. 397,110, dated February 5, 1889.

Application filed August 25, 1888. Serial No. 283,800. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. CLEAVELAND, a citizen of the United States, residing at Indianapolis, in the State of Indiana, have invented new and useful Improvements in Fences, of which the following is a specification.

My invention relates to improvements in wire fences in which the end and corner posts carrying the wire stretchers or windlasses are embedded in the ground and firmly held in an upright position by means of a guy and distance rod and an improved brace-rod of novel construction, hereinafter more fully described.

The object of my invention is to provide, first, a rigid and stable end or corner post, to which the stretchers are secured, that will resist the tensile strain of fence-wires when drawn taut without causing any appreciable variation from its fixed vertical position, and, second, a means of constructing rapidly a cheap, durable, and substantial fence, as hereinafter more fully described.

My invention is fully illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of fence; Fig. 2, a plan view of the end post and anchor, showing the manner of securing the guy. Fig. 3 is a section of intermediate posts, showing manner of securing wire-guides thereto. Fig. 4 is a plan of windlass. Fig. 5 is a sectional elevation along spindle of windlass. Fig. 6 is a plan of guy and distance rod clip; and Fig. 7 a detail of return-buckle guy.

Similar letters refer to similar parts throughout the several views.

W designates the wire-stretcher, formed of a continuous strip of spring-steel or other resilient metal looped to receive and clamp end post, P, and is provided with two arms, *a* and *a'*, through which holes are drilled to receive windlass-spindle *s* and form a partial bearing therefor. The spindle *s*, formed like an ordinary bolt having a square head, *h*, loosely fitting into socket *sh*, integral with ratchet-plate R, is threaded at its opposite end to receive nut *n*, is provided with a slotted or drilled hole, *sw*, to receive fence-wire of either round or ribbon section, and has formed at its

threaded end a flat portion, to which the nut-washer *nw* is loosely fitted to prevent spindle-nut from unscrewing when spindle is being revolved.

R' is a ratchet, having ratchet-teeth *r* meshing with and corresponding in shape to those of plate R, and is provided with the lips *l*, embracing clip, thus holding plate R in a fixed position, which wire-stretcher is and may be of the construction described in Patent No. 375,127, heretofore granted to me.

p designates intermediate posts, having secured thereto the wire-guide staples Gs, said guide-staples being formed from a continuous piece of wire bent in the shape of an irregular loop to form a shoulder to abut against post, and having a long and a short leg or prong, one projecting partially into post, and the other protruding through an amount necessary to be clinched or bent over, as in the manner shown in Fig. 3.

D designates the distance rod or pipe, secured at its ends preferably to dowels or teats *t* and *t'* of clamp-rings C and C', secured to posts by keys *k* and *k'*, or other suitable devices, said clip C' being provided with two arms, *Ga* and *Ga'*, through which holes are drilled to receive guy-bolts Gb, around which guy G is looped, which, passing around corner or end post, P, near its base and through eye *e* of anchor-arm A, carrying blade B, is looped to base of said post P at a point just above base-socket, thus effectually resisting the tendency of post to rise in consequence of the tension of fence-wires, as shown in Figs. 1 and 2.

The feet or bases of guy-posts *p* consist of a socket, *ps*, provided with three or more ribs (preferably three) of irregular profile, tapering to a point, and having formed thereon and integral therewith the flange F at or near its top. This manner of constructing the base is of great importance in fence construction. When the earth is affected by excessive rain or frost, the posts have a great tendency to either rise or sink an amount proportionate to the tension of the wires and guy, thus causing fence to get out of line. To obviate this evil, I construct the post-bases in the manner described, as I have

found by experience that this shape of base has a tendency to keep its true fixed position, and does not readily sink into the earth.

When lining up fence, it is desirable that end post be free to sink an amount proportionate to the strain applied to it through guy. To accomplish this end, I omit flange on this post, as it offers too great a resistance to the earth. Flanges may be omitted in all other intermediate post-bases except post *p*. The wire brace *wb* consists of a core or rod, *b*, around which is coiled tightly the notched or serrated wire or strip of metal (preferably ribbon wire) *bc*, and is bent over and looped around top, and also, if desired, to bottom fence-wires, thus securing outer coil to core or rod *b*. When it is not desirable to loop brace-coil around bottom wires, I simply bend it over end of core, thus securing coil and brace firmly together. The intermediate wires are secured to brace by means of wires *fw*, looped around intermediate wires, as shown. It will be seen that a brace constructed in this manner can be secured to fence-wires *fw* at any desirable and suitable position along them, and when once made fast cannot be moved out of position, either vertically or along wires, in consequence of the securing-loops being drawn tightly into notches of serrated wires and uneven or serrated profile of brace. The posts being placed in position, the wires are secured at their ends, one end to an end post in any suitable manner, and the other to the windlass or stretcher secured to opposite end post. The guy is now secured to intermediate or second post-clip and anchor, and as wires *fw* are stretched to their normal tension the guy is twisted or drawn up an amount equal in resistance to the tension applied to post *P*. The load applied to this post is transmitted through distance-rod *D* to end of guy *G*. The guy *G*, being secured to base of post and passing through eye of anchor, tends to hold posts parallel and in their fixed vertical position. The anchor may be placed in any position, either between corner or end post and first intermediate post, as shown in dotted lines. In such cases I omit the loop over said post and secure guy to anchor only.

The guy is made, preferably, of a number of wires of suitable thickness, forming a strand twisted and secured in the manner hereinbefore described. A single wire, cable, or even chain, of suitable strength, may be used for this purpose. To apply this method of guy, a spindle in construction somewhat similar to that illustrated by Fig. 6 may be used, the ratchet-teeth of which are shaped as shown, the teeth of spindle-head meshing into teeth of similar form integral with clip. Solid brace-rods, Fig. 7, threaded right and left and connected together by a return-buckle secured at top end to clip *C'* and at bottom end to anchor or anchor-wire at a point inside posts *P*, at which its ends are twisted to-

gether, may also be used without departing from the spirit of my invention. By turning or screwing buckle the tension of guy can be increased at will. The anchor consists of an arm, *A*, and a blade, *B*, loosely inserted therein at an acute angle. Said arm *A* is of a concave shape, with its concave surface turned toward blade. I construct anchor in this way, so that when a very great pressure is applied to eye *e* through guy it will tend to sink or still farther embed itself into the earth. It is obvious, however, that the arm *A* and blade might be cast or formed integral. The clips *C* and *C'*, instead of being secured to posts by means of keys *k* and *k'*, may also be cast, split through a plane passing vertically through center dowels. Thus when distance-rod *D* is forced over them it causes said clips to grip or clamp posts.

I do not desire to broadly claim herein a wire and metal tube fence comprising the posts, the tubes *D*, the wires *fw*, and the clips *C* *C'*, having the dowels or teats *t* *t'* to enter the ends of and support the tubes *D*, as shown, as this will form the subject-matter of a separate application.

Having thus fully described the construction and arrangement of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a fence, the combination, with the post, of an anchor and a guy secured at a point near the summit of the post, said guy passing around the end of the post and through an eye in the anchor and looped or secured to the base of said post, substantially as and for the purpose set forth.

2. In a fence, the combination, with the posts *P* and *p* and clips *C* *C'*, secured thereto, of the distance-rod *D*, engaging said clips, guy *G*, secured to the clip *C'*, passing around the base of post *P*, through the eye of anchor, and secured to said post at its base, substantially as and for the purpose set forth.

3. In a fence, the combination, with the posts *P* and *p* and clips *C* and *C'*, secured thereto, of the distance-rod *D*, secured to said clips, an anchor, the latter clip with a wire-winding spindle, and a guy-rod, which, secured to the base of the post *P* and passing through the eye of the anchor, is also secured to the winding-spindle working in arms *A* and *A'*, integral with clip *C'*, substantially as and for the purpose described.

4. In a fence, a guide-staple, *Gs*, bent to form a shoulder, and having one of its legs penetrating partially through posts and the other entirely through, substantially as and for the purpose described.

5. In a fence, the post *P*, clip *C*, secured thereto, which clip is engaged by one end of the rod *D*, rod *D*, clip *C'*, secured to the post *P* and engaged by the other end of the rod *D*, and the arms carrying the windlass-spindle or bolt *b*, around which the flexible guy is wound, a flexible guy and its anchor, all in

combination, substantially as and for the purpose set forth.

5 6. In a fence, the combination of a corner or end post, an intermediate post, and a distance-rod secured to said posts at or near their summits, with a guy secured to said intermediate post at or near distance-rod at its top end and anchored to ground at its bottom end, substantially as and for the purpose
10 described.

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

JOHN B. CLEAVELAND.

Witnesses:

T. R. BELL,

CHAS. F. CLEAVELAND.