(No Model.)

J. H. POWER.

FENCE.

No. 419,706. Patented Jan. 21, 1890.

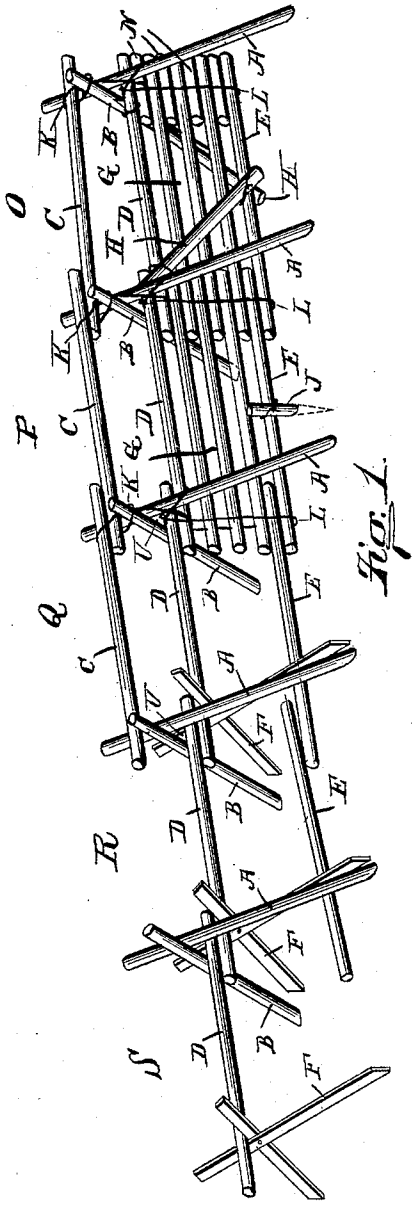

Fig. 1.

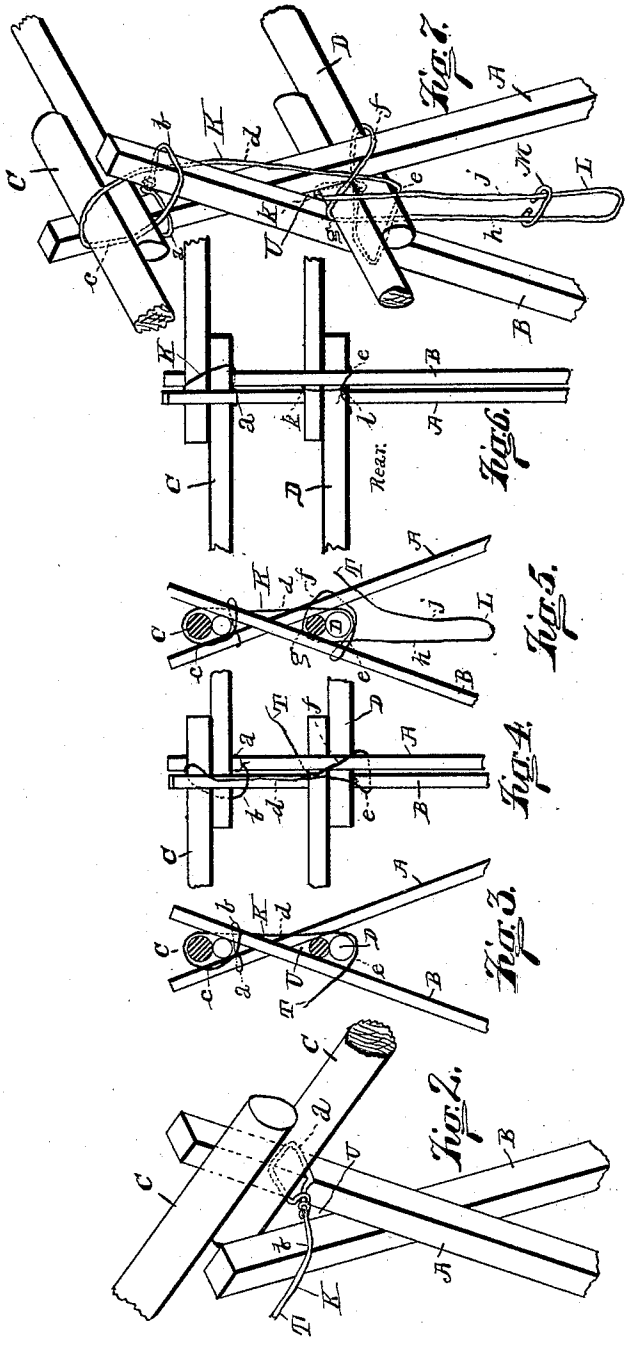

Fig. 7. Fig. 6. Fig. 5. Fig. 4. Fig. 3. Fig. 2.

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FENCE.

SPECIFICATION forming part of Letters Patent No. 419,706, dated January 21, 1890.

Application filed July 10, 1889. Serial No. 317,105. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. POWER, of Hackleman, Grant county, Indiana, have invented certain new and useful Improvements in Fences, of which the following is a specification.

This invention relates to improvements in that class of fences consisting, essentially, of rails, stakes, &c., united by wire.

Many species of fences of this general class have been devised; but my improved construction presents marked peculiarities and renders possible results not heretofore attained in this class of fences.

My improvements will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a perspective view of a fence partially completed and partially in process of construction and embodying my improvements; Fig. 2, a perspective view of one of the stake-crotches, viewed from the right, and illustrating the manner of starting with the wire ties; Fig. 3, an end elevation of the same, serving to illustrate the procedure with the wire ties as carried to a certain stage in the process; Fig. 4, a front elevation of the same, illustrating the process of wire application carried to a further stage; Fig. 5, an end elevation of the same, viewed similarly to Fig. 3, illustrating a still further stage of the wire application; Fig. 6, a rear elevation of the same, illustrating the final disposition of the terminal end of the tie-wire; and Fig. 7, a perspective view, viewed from the left, of one of the stake-crotches and with the crotch-rails, showing the complete course of the wire.

In the drawings, A indicates the first stake of each pair of crotch-stakes; B, the second stake of each pair of crotch-stakes, these crotch-stakes being arranged, as usual, to form crotches at each panel junction, the lower ends of these stakes resting on the ground; C, top rails supported in the upper crotches; D, lower crotch-rails supported below the crotches by the wires; E, the bottom rails of the fence, suspended from the crotches by the tie-wires; F, temporary jacks employed in building the fence, these jacks consisting of pivoted rests or crotches which may be temporarily and conveniently erected in the line of the fence to support the lower crotch-rails D, three or more of these jacks being employed in the construction; G, the intermediate rails of the fence, disposed between the bottom rails E and the lower crotch-rails D, there being as many of these rails as the intended purpose of the fence may call for—that is to say, the fence may be provided with two rails or any greater number of rails below the crotches, as desired; H, braces secured by wires against the sides of the lower portion of the fence and serving to brace it longitudinally, these braces being applied more or less frequently, as hereinafter explained; J, anchor-stakes driven in the ground at the center of desired panels and wired to the bottom rails of the appropriate panels, these anchor-stakes being applied more or less frequently, as hereinafter explained; K, wires applied in a very peculiar manner to the crotches and crotch-rails, as will be fully explained hereinafter; L, slings for the lower rails of the fence, these slings forming portions of the wires K; M, (see Fig. 7,) tie-links uniting the two sides of the sling-wire, these links being preferably interposed between each two of the lower rails of the fence; N, stubs or blocks interposed between the lower rails of the fence at the end of the fence or at the end of a portable section, these stubs being substitutes for rail ends which would be present in case the line of fence continued onwardly; O, Fig. 1, a complete panel of the fence double braced and forming a terminal panel of the fence; P, a panel provided with an anchor-stake and completed, except as regards its juncture with its unfinished panels to the left; Q, a panel in process of construction, having reached that stage at which the top rail and the lower crotch-rail and the bottom rail are applied; R, a panel in process of construction, the lower crotch-rail being supported on the construction-jacks and the crotch-stakes at the left having been placed; S, a panel in the initial stage of construction, the lower crotch-rail being in position on the construction-jacks; T, the free end of the wire while the wire is in process of being applied; U, (see especially Fig. 3,)

the aperture in each lower crotch just above the lower crotch-rails.

In constructing my improved fence the procedure is as follows: Three construction-jacks are first provided, the construction of which will be obvious from Fig. 1 of the drawings. They should be of such dimensions as to properly support the lower crotch-rails D at the proper height in the line of fence. They may be made of comparatively light material, and should be pivoted at their crossings for facility in adjustment, in handling, &c. The three jacks should be properly placed in the line of the fence to support two of the lower crotch-rails D. Having set the jacks and having placed two of the lower crotch-rails D, now set the appropriate pairs of crotch-stakes A B, as shown at panel R in Fig. 1. Now lay top rails C in the top crotches, as indicated at the panel Q in Fig. 1. This gives us a temporary fence structure, dependent, however, on the jacks for its support.

The wire must now be applied to the crotches and crotch-rails, and the procedure is as follows: Make one end of the wire fast to the first crotch-stake A of the pair close up under the top rails, as clearly shown at *a* in Fig. 2. Draw the wire forward close under the top rails and close against the right of the second crotch-stake and around the front of the second crotch-stake, as shown at *b* in Fig. 2. Pass the wire rearwardly underneath the top rails to the left of the crotch-stakes, and then pass the wire upwardly and over the top rails, as shown at *c*. Bring the wire forwardly over the top rails and carry it directly downward and to the right of the second crotch-stake, as shown at *d* in Figs. 3, 4, 5, and 7. Pass the wire rearwardly under the lower crotch-rails D and to the left of the crotch-stakes, as shown at *e*. At this point attention is called to the fact that the top crotch and the top rails lying in that crotch have been firmly bound by the wire, which leaves the top crotch as a single strand of wire. The binding at the top crotch is thus completed and no return of the wire to the top crotch is required. The wire is to be applied as tightly as practicable. Having completed the wire at the top crotch and having brought the wire down at *d* and rearwardly at *e*, now pass the wire around the rear of crotch-stake B and bring it forward under the lower crotch-rails to the right of the crotch-stakes, as shown at *f*. Now pass the wire to the left in front of the crotch-stake A and upwardly, and thread it through the aperture U and pass it to the rear of the fence, as shown at *g*, and then pass the wire downwardly, as at *h*, to form one side of the sling for the lower rails. At this point attention is called to the fact that the lower crotch and the lower crotch-rails are firmly bound. If the end of the wire should now be made fast, a self-sustaining and peculiarly self-tightening and rigid fence structure will have been produced, which may be moved around at will and which can withstand rough transportation; but the wires are to be still further utilized in forming the slings for the lower rails. Continue the wire at *h* down as far as required for the desired length of slings L. Now pass the wire upwardly, forming the front *j* of the sling, and thread it rearwardly through aperture U, and make the end fast to the crotch-wire, as shown at *l* in Fig. 6. This completes the wire, and a downward strain upon the sides *h j* of the sling will tighten the lower crotch-wire. Now place the bottom rails E in the slings and remove the jacks from the appropriate panel and strike downward on the bottom rails to thoroughly draw the slack of the wires. Now place intermediate rails G, using as many as have been provided for in determining the length of the slings. At the end of the fence or at the end of sections, in case the fence is made up into portable sections, insert the stubs N, it being understood, of course, that the lower rails of the fence or the lower rails and stubs N must fill the slings. Now apply the tie-links M to the sling in each joint between the lower rails below the lower crotch-rails. These links may be formed in the factory and applied without bending. Now apply the brace H against the faces of the lower rails, the upper ends of the brace abutting against the sides of the appropriate crotch-stake. Bind the upper and lower ends of these braces to the upper crotch-rail and bottom rail, respectively, with suitable wire ties firmly applied. These braces may, if desired, be applied one on each face of each panel, as indicated at panel O in Fig. 1; but I would advise that the bracing be distributed along the fence, a brace in one direction and in front of the fence at one panel and a brace in the other direction on the rear of the fence at a farther panel. The structure thus produced is a portable fence, and it may be constructed where convenient, and a team may then be hitched to it and it may be hauled to where needed. If the work be well done, the fence may safely be hauled a couple of miles. When the fence is in a permanent position, the anchor-stakes J may be applied as desired, it being advised that these anchor-stakes be interposed with reference to the braces. These anchor-stakes are not at all essential, but are very desirable where the lower rails are subjected to high winds or to low stock. The crotch-stakes and rails may be formed of usual rail-timber or of pole-timber. For the best results it is of course desirable that the ends of the rails which seat in the crotches be hewn to secure a reasonable fair bearing.

I claim as my invention—

In a rail-and-wire fence, the combination, substantially as set forth, of crotch-stakes A and B, top rails C, wires K, secured at one end at the top crotch of the stakes and applied to the top crotches and top rails, as

specified, and passing thence downwardly and applied to the lower crotch-rails and lower crotches, as specified, and passing thence downwardly to form slings L, and made fast at their terminal ends to their lower crotch portions, the bottom rails E, and intermediate rails G, supported in the slings, the tie-links M, applied to the slings between the lower rails, and braces applied to the faces of the lower rails.

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