

(No Model.)

J. W. ALVERSON.
WIRE FENCE.

No. 529,543.

Patented Nov. 20, 1894.

Fig. 1.

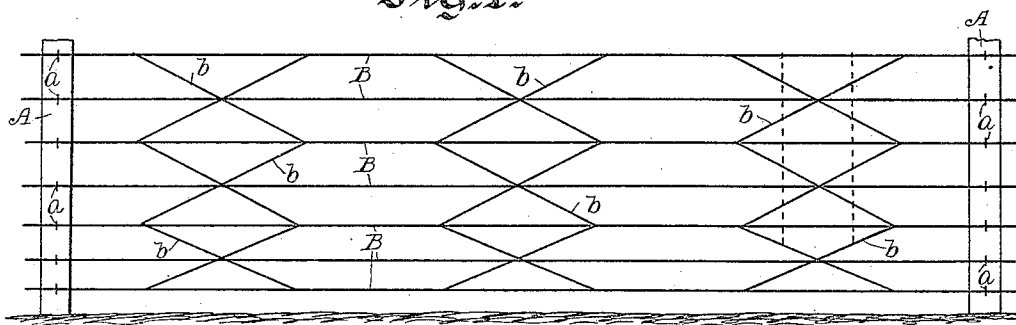


Fig. 2.

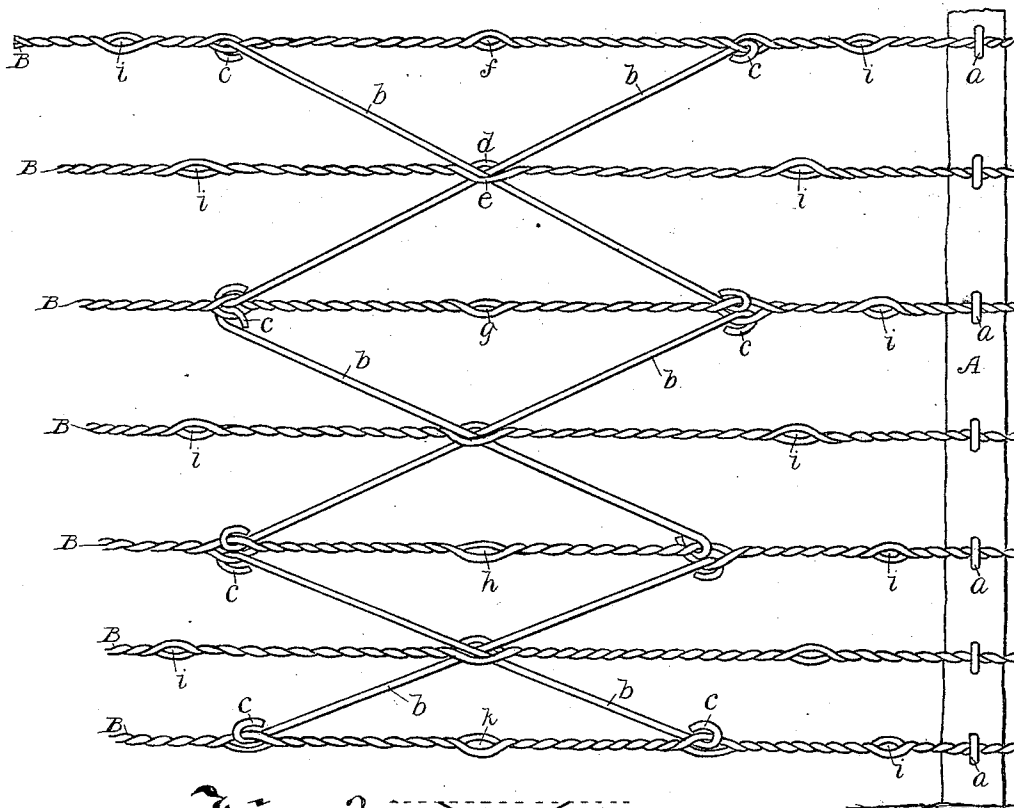
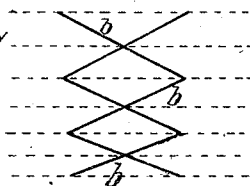


Fig. 3.



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JAMES W. ALVERSON, OF BRIGHTON, NEW YORK, ASSIGNOR TO EMMA A. ALVERSON, OF SAME PLACE.

WIRE FENCE.

SPECIFICATION forming part of Letters Patent No. 529,543, dated November 20, 1894.

Application filed February 26, 1894. Serial No. 501,537. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. ALVERSON, of Brighton, in the county of Monroe and State of New York, have invented a new and useful Improvement in Wire Fences, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

My invention consists in a wire fence composed of longitudinal cables strung between posts and secured thereto, and a series of cross braces between the cables, the whole structure constituting a panel being practically a diagonal-strut truss, which gives to the panel great stiffness and strength.

Referring to the drawings, Figure 1, drawn to a small scale, shows a panel of the fence as it appears when built, and Fig. 2, drawn to a larger scale, shows more clearly the detail of the construction of the fence. Fig. 3 shows a series of braces.

Referring to the parts shown, A are ordinary posts set into the ground, and B are longitudinal cables strung upon the posts and secured thereto by ordinary staples or fasteners *a*. Each cable consists of two wires twisted together at intervals to which are added inclined cross braces *b*, as shown. These braces are put together on the cables in pairs forming X's, each pair reaching from one cable to the second one above or below it, crossing at the middle. The braces consist of heavy wires formed into hooks *c* at their ends, through which hooks one of the strands of the cables passes, as shown. The braces forming a pair cross at the middle cable, at which point they are contiguous, the two strands (*d e*) of the cable inclosing them, as shown.

The contiguous hooked ends of the braces forming adjacent pairs are held in the same loop between the strands of the cables passing between the pairs. The pairs of braces are put upon the cables one under another to form vertical series, each series extending between the upper and the lower cables of the fence. One or more of these series of braces are employed in each panel of the fence, as may be required.

The strands of all the cables are firmly twisted together upon the hooked ends of

the braces and upon the parts where the latter cross, which serves to hold all the braces forming a series rigidly in place, the braces in turn supporting and stiffening the cables. When the cables are thus twisted upon the braces those forming a series constitute practically a single rigid piece, shown in Fig. 3. This gives to the panel of the fence great strength compared with the weight of metal employed, and by this construction a downward pressure upon the upper cable in any case is supported by all the cables of the panel all bending downward substantially alike under the pressure; also a downward pressure or stress upon any of the intermediate cables as, for instance, the pressure exerted by the foot of a person in climbing over the fence, is shared by all the cables in the panel, the latter acting in principle as a diagonal-strut girder or truss. The fence constructed in this manner is also elastic as against a horizontal side pressure, for instance, such as might be exerted by animals leaning or rubbing against it. None of the parts are liable to be permanently bent by such a pressure and as quickly as the latter ceases the fence, on account of its elasticity, resumes its normal shape and form. In this fence the lower cables are usually placed nearer together than the upper ones, and the lower braces of a series may be proportionately shorter than the upper ones, as shown, to preserve substantially a uniformity of incline of all. This, however, is not essential, for the braces of a series may be of uniform length; which will give the lower ones a sharper incline than the upper ones.

In constructing this fence after the posts are set, I first string upon the latter the wires or strands that ultimately go to form the horizontal cables securing them to place by staples or other suitable fasteners each covering both or all of the strands that finally enter into a single cable. Commencing at the top I then hook one end each of two cross braces onto one of the horizontal strands, the braces being placed near together, and pending, as indicated by dotted lines in Fig. 1. These braces are put upon the strand at the place where it is intended to have a vertical series of cross braces. I then insert a short

lever between the strands and the braces, and twist the former until the braces are spread to the required distance apart, the braces receding as the twisting proceeds, the place occupied by the lever being shown by the loop *f*, Fig. 2. I then cross the braces, passing them between the strands going to make up the second cable from the top, and hook their lower ends onto a strand going to make up the third cable from the top. Inserting the lever between the strands of said third cable and midway between the lower ends of the braces—at the point *g*, Fig. 2—I twist the strands as before. Two more braces are then hooked onto the other strand of said third cable, contiguous with the lower ends of the first pair of braces, which, being crossed as in the first case, are hooked at their lower ends onto a strand going to make up the fifth cable from the top. The strands of said fifth cable are then twisted together as before, between the lower ends of the second pair of braces, the lever being inserted for the purpose at *h*. Repeating this process with the third or lower pair of braces a vertical series is complete as to position, the lever being last inserted at *k*. Each pair of braces, it is understood, are passed between the two strands of the cable midway between their ends. The next vertical series of braces are put upon the cables in a like manner, and the third, or as many as there may be in a panel. When the braces of a panel are all thus put in place the strands of each cable are twisted firmly together between the series of braces and between the latter and the posts, inserting the lever at the several points *i*, Fig. 2, and the panel is complete.

The twists in the cables are what are known as reverse twists, and are all independent of each other, each being made separately, and the wires or strands are sufficiently inelastic to cause them to maintain their spiral forms after being twisted.

It will be understood that instead of twisting two single wires together to form a cable I may, without departing from the spirit of my invention, twist together in a single cable two or more strands each composed of a plurality of primary wires previously twisted together. This is sometimes necessary where unusual strength is required for the fence or where long spans are made necessary, as for instance, in crossing a creek.

Each section of the various cables B, as for instance, the individual sections between the ends of contiguous cross braces and between

the latter and a post, it will be understood, is wholly independent of the contiguous sections, which is also the case with the adjacent sections on either side of a rigid staple *a*. On account of this it is immaterial whether adjacent sections of the fence are twisted in the same or in opposite directions.

The staples and the ends of the various cross braces, as well as the points where the latter intersect, form effectual stops for the twists in the wires beyond which stops the twists cannot extend, and hence the twist of no section bears any relation to or interferes with the twists of the sections next beyond said stops in either direction. In forming these independent twists of the wires sometimes the free end of the twisting lever is pushed from the workman and sometimes pulled toward him, as may suit his convenience and pleasure in making each individual twist. The wires of each section are twisted one way or the other without thought, as if each section were the only one in the fence.

The longitudinal wires forming the cables are endless save as to the two ends of each at the respective ends of the fence, the twists all being made by inserting the twisting lever midway between various pairs of practically fixed points or stops along the wires.

What I claim as my invention is—

1. The herein described method of forming a fence, consisting in securing wire cables to posts, then hooking the ends of cross-braces upon one strand of each alternate cable to form vertical series of braces, the central portions of the braces crossing each other between the strands of the intermediate cables, and then twisting the strands of the cables together by reverse twists between the braces and between the braces and the posts, substantially as set forth.

2. A fence consisting of a series of wire cables secured at intervals to posts, the strands of each cable being twisted together by reverse twists in sections between the posts, vertical series of cross-braces hooked at their ends to one strand each of the alternate cables and having their central portions crossed between the strands of the intermediate cables, substantially as set forth.

In witness whereof I have hereunto set my hand, this 22d day of February, 1894, in the presence of two subscribing witnesses.

JAMES W. ALVERSON.

Witnesses:

ENOS B. WHITMORE.

M. L. WINSTON.