Sept. 2, 1941. H. A. NELSON 2,254,238

METHOD OF PRODUCING REVERSE TWIST BARBWIRE

Filed June 16, 1939 2 Sheets-Sheet 1

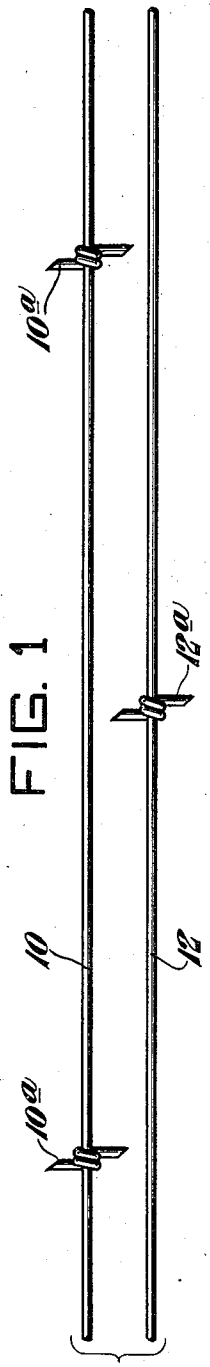


FIG. 1.

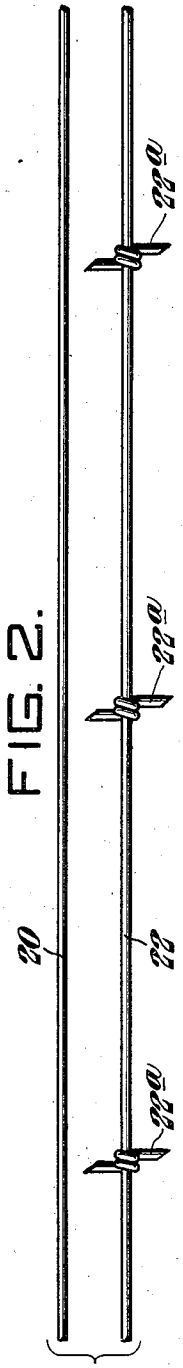


FIG. 2.

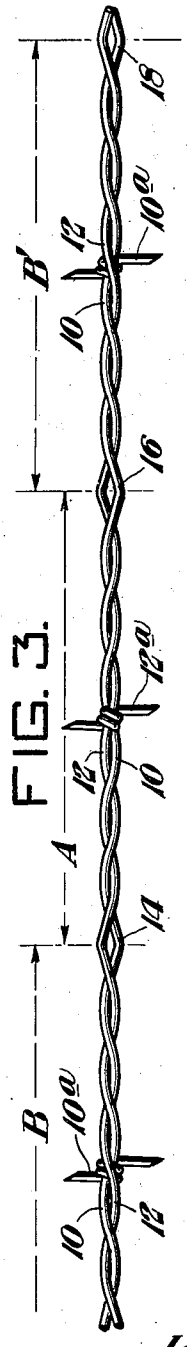


FIG. 3.

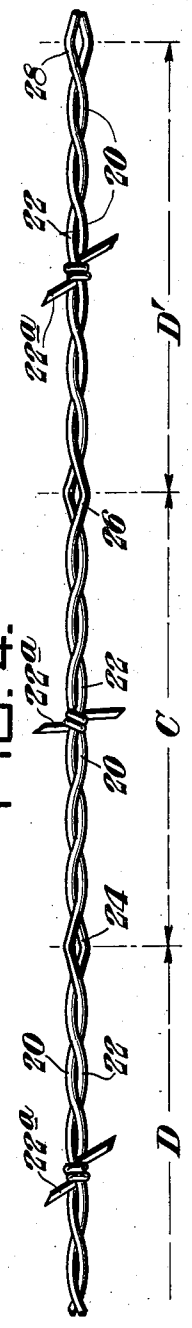


FIG. 4.

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METHOD OF PRODUCING REVERSE TWIST BARBWIRE

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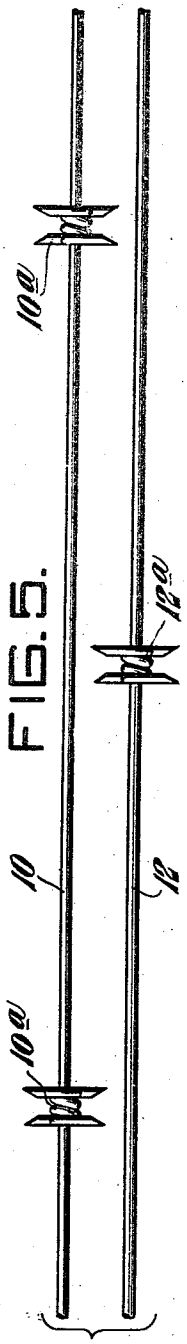


FIG. 5.

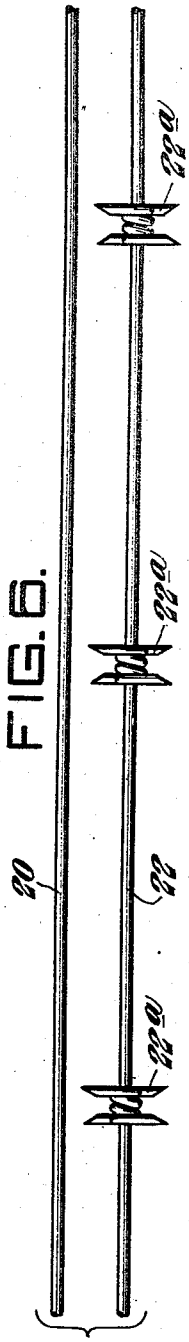


FIG. 6.

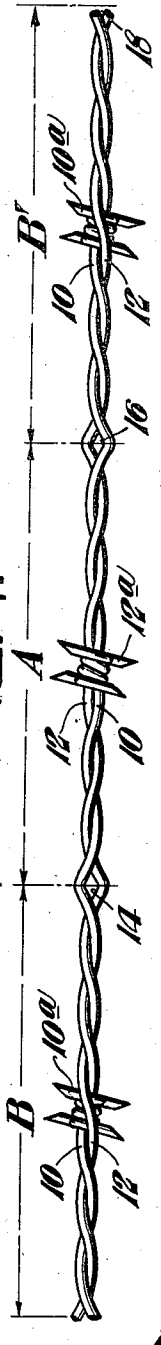


FIG. 7.

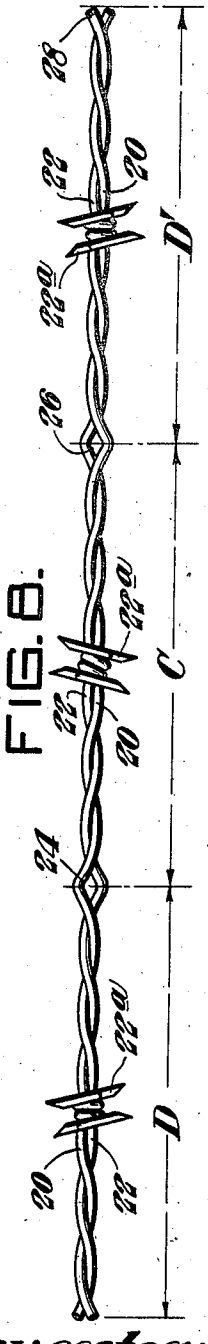


FIG. 8.

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UNITED STATES PATENT OFFICE

2,254,238

METHOD OF PRODUCING REVERSE TWIST BARBWIRE

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Application June 16, 1939, Serial No. 279,545

4 Claims. (Cl. 140—58)

This invention relates to a novel method of producing barbwire.

One object of the invention is to provide a method of manufacturing barbwire which will materially speed up the rate of production and yet produce a product having improved characteristics, as compared with barbwire heretofore available.

The above and further features of the invention will be fully apparent from the following disclosure and the appended claims, when read in connection with the accompanying drawings in which:

Figure 1 is a view showing two elemental strands of the product before twisting, both strands being provided with barbs of two prongs.

Figure 2 is a view similar to Figure 1 wherein only one of the strands is provided with barbs of two prongs.

Figure 3 is a side elevation of a length of finished barbwire made in accordance with my novel method of twisting together the strands shown in Figure 1.

Figure 4 is a view similar to Figure 3 showing the novel barbwire made according to my invention by twisting together the strands of Figure 2.

Figures 5 to 8, inclusive, illustrate modifications.

Referring first to Figures 1 and 3 of the accompanying drawings, in accordance with my novel method I provide a plurality of elemental strands 10 and 12 to which are secured barbs 10^a and 12^a. These barbs are secured to the strands by any conventional form of twisting head in much the same manner as barbs are secured in the manufacture of conventional types of barbwire. However, the spacing between the barbs 10^a on the strand 10 and the barbs 12^a on the strand 12 is substantially uniform, with the barbs on one strand staggered with respect to the barbs on the other strand. Preferably, although not necessarily, the barbs on one strand will be located about midway between those on the other strand.

After the respective barbs have been secured to the strands 10 and 12 in staggered relation, two predetermined lengths of the strands are subjected to twisting operations performed in a novel manner which constitutes an important characteristic of the method and which results in the production of the improved product.

The novelty in the method consists in twisting predetermined portions or sections of the strands in opposite directions so that the tendency of one predetermined portion of the twisted product is counteracted or negatived by the tendency of another predetermined portion of the twisted product to turn in the opposite direction. This results in the formation of what might be termed a balanced product; inasmuch as the tendency for certain portions of the barbwire to turn in one direction is balanced by the tendency of another portion to turn in a contrary direction, the two opposed tendencies thus balancing and resulting in the product which might be termed a balanced or "dead lay" product. This reverse twist of different predetermined lengths of wire will be apparent from examination of Figure 3, wherein the middle section of the completed barbwire, as indicated by the predetermined length A, is so twisted that the strands have a right-hand lay, while the sections marked B and B^1 are so twisted that the strands have a lefthand lay.

Such reverse twisting of adjacent predetermined sections of barbwire may be readily accomplished by arranging the strands close together in substantially parallel relation and then gripping the parallel strands at spaced intervals, such as indicated at 14 and 16 in Figure 3, and applying reverse rotary motions to the respective gripping element employed.

For example, if the element gripping at the point 14 is rotated clockwise, as viewed from the right in Figure 3, and the element gripping at the point 16 is rotated counterclockwise, the predetermined section A will have imparted thereto the right-hand lay described, while the sections B and B^1 will have left-hand lay imparted thereto, it being understood that the same procedure will be followed with many such predetermined lengths.

Such method of manufacture may be carried out by the utilization of any suitable mechanism capable of imparting the reverse twist to adjacent predetermined lengths of the product. While in Figure 3 I have illustrated one barb centrally of each predetermined section of the given twist or lay, it is apparent that more than one barb can be applied to each such predetermined length, or barbs could be omitted from certain predetermined lengths; also, the barbs could be located at the points 14 and 16 where the grippers exert the twisting action.

In general, it is considered preferable to employ a plurality of strands, each carrying barbs arranged in staggered relation and to exert the respective twisting actions between barbs in opposite directions simultaneously. By employing

two separate strands, each with barbs arranged in staggered relation for a given length of longitudinal travel of the strands, the separate twisting heads which apply the barbs can be operated at the maximum high speel, and, because a separate twisting head is effective to apply barbs to each strand, it follows that a much faster rate of production can be maintained than would be the case if the barbs were applied to only one of the strands, as indicated in Figure 2.

It is also contemplated that the method may be practiced by using three or more parallel strands, each with respective barbs arranged in suitable staggered relation.

In carrying out the method with the use of one plain strand 20, which is devoid of barbs, as shown in Figure 2, and another strand 22 which carries all the barbs 22a, the parallel strands may be gripped at points 24, 26 and 28 illustrated in Figure 4, and then twisted in opposite directions at such points. This will result in the production of barbwire such as shown in Figure 4, wherein the lay or twist of the strands in section C of a predetermined length will have a right-hand lay, and the lay or twist in the sections D and D^1 will be left-hand.

In Figures 5 to 8, inclusive, an alternative embodiment of the invention is illustrated. Figure 5 shows two elemental strands of the product prior to twisting, both strands being provided with barbs of four prongs. As illustrated in Figure 6, which is a view similar to Figure 5, only one of the strands is provided with four prongs. In Figure 7 is shown, in side elevation, a length of finished barbwire made in accordance with my novel method of twisting together strands shown in Figure 5. Figure 8 similarly illustrates the novel barbwire made in accordance with my invention by twisting together the strands of Figure 6. Thus it is apparent that the same method described in connection with Figures 1 to 4, inclusive, is applicable to produce barbwire with more than two prongs, for example, wire with four prongs, as illustrated by Figures 5 to 8, inclusive.

While I have described certain sequences of steps to be followed in reducing the improved method to practice, and have also shown and described definite relationships of the component parts of the two embodiments of the invention illustrated, it is to be understood that I am not limited thereto, and the drawings and detail description are to be interpreted in an illustrative rather than a limiting sense.

I claim:

1. In the manufacture of barbwire, the method which comprises providing a plurality of parallel strands, at least some of which carry barbs, and simultaneously twisting spaced portions thereof in opposite directions.

2. In the manufacture of barbwire, the method which comprises providing a plurality of strands, applying barbs thereto, positioning the strands in substantially parallel relation and simultaneously twisting the strands together in reverse directions at spaced intervals.

3. In the manufacture of barbwire, the method which comprises providing a plurality of strands, applying barbs to one strand at predetermined spaced intervals, applying barbs to another strand approximately midway between those applied to said first mentioned strand, juxtaposing the strands and then simultaneously twisting the portions of the strands intermediate adjacent barbs in reverse directions.

4. In the manufacture of barbwire, the method which comprises providing a plurality of strands, applying barbs to one strand at predetermined spaced intervals, applying barbs to another strand approximately midway between those applied to said first mentioned strand, and gripping the strands at points intermediate adjacent barbs and imparting a twisting motion in one direction to one gripped portion while applying a twisting motion in the reverse direction to the adjacent gripped portion.

HENRY A. NELSON.