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A. E. APTHORP ET AL
SERRATED WIRE OR STRIP FOR USE IN
CARDING ENGINES AND THE LIKE
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2,731,676

FIG. 1a

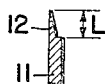


FIG. 1

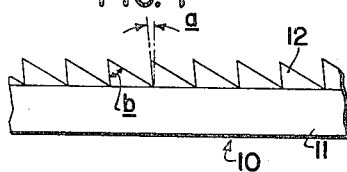


FIG. 2a

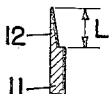


FIG. 2

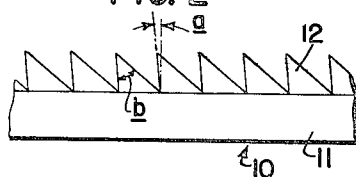


FIG. 3a

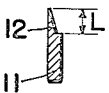


FIG. 3

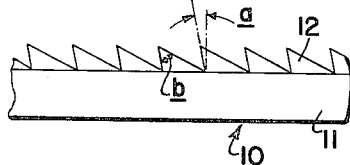


FIG. 4a

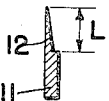
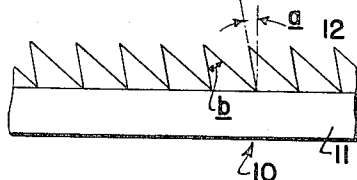


FIG. 4



1

2,731,676

SERRATED WIRE OR STRIP FOR USE IN CARDING ENGINES AND THE LIKE

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Claims priority, application Great Britain November 10, 1952

2 Claims. (Cl. 19—114)

This invention relates to serrated wires or strips for use in carding engines, doffers or the like.

Wires or strips of the kind indicated, are generally produced from wire having an initially round section, such section being modified by a process of rolling to give a wire, which is finally strip like with a rib running along one side to constitute a base or foundation for the finished strip. The thin portion of the finished strip standing above the rib is stamped to produce the necessary teeth or points which may, thereafter, be hardened. The said rib in the finished wire also serves as a distance piece to space the teeth when the toothed wire is wound around a carding cylinder or doffer or when sections of the wire are secured side by side on a carding flat.

When in use, wires of the kind indicated above, are wound spirally around carding cylinders and doffers or any other parts of a carding engine or the like as may be required. Such wires were utilized originally, for the carding of cotton, wool and other natural fibres and they obviated the necessity for the regular stripping and grinding which was required with the type of card clothing previously in use.

With wires of this nature used hitherto, the teeth have been made at least .110" high and as the toothed portion is thinner than the base of the wire, a considerable gap or channel is present between each row of teeth when the one is wound on a cylinder, or doffer. With the developments of differing types of synthetic fibres which are required to be carded, it has been found that the static electricity created, has a tendency to attract the fibres toward the metal body of the carding engine with the result that the fibres tend to be carried between the rows of wire instead of by the points. It is desirable, to avoid this and to maintain the fibres as much as possible on the surface of the various organs of the carding engine in order to enable them to be removed as easily as possible when required after the carding process.

Furthermore, with the type of wire at present in use, it has been found that when certain types of cotton containing seed and similar impurities are being carded, there is a tendency for the seed and impurities to become lodged in the gaps between the rows of teeth. As indicated above with metallic clothing of the kind indicated, the regular stripping of the card is not necessary as said card does not fill up with cotton fibres, but it has been found necessary to clean the card from time to time, to remove the seeds and impurities from the gaps between the rows of teeth.

It is the object of the present invention to produce a serrated wire or strip, which will obviate the difficulties indicated above and in accordance therewith in a wire or strip having a thicker base portion or rib and a thinner upper portion stamped to produce a plurality of teeth or points, the teeth or points are so formed as to be sufficiently high to hold the fibres but sufficiently short as substantially to eliminate the presence of any gap or channel between the rows of teeth when the wire or strip is wound on a carding cylinder, doffer or the like,

2

or when sections of the wire are arranged side by side on a carding flat. Preferably, the teeth or points will be not less than .010" and not more than .065" high.

In order that the invention may be clearly understood and readily carried into effect, the same will be hereinafter more fully described with reference to the accompanying drawings, wherein each of Figures 1-4 shows a different embodiment of wire or strip in both side and end elevation. Figures 1a-4a show the cross-sections of the corresponding Figures 1-4.

In producing any of the embodiments shown in Figures 1-4, a wire of initially round section is modified by a process of rolling so as to produce a strip like element 10 having a rib 11 along one side to constitute a base or foundation for the finished strip. The form imparted to the wire will be apparent from the end views of the various embodiments shown. The thinner portion of the strip like element standing above the rib is then stamped to produce a plurality of teeth or points 12, thereby to give the finished strip a serrated form. If desired, the finished strip element may be finely ground on one or both sides in order to remove any burns which may exist as a result of the stamping operation.

In the embodiment shown in Figure 1, the teeth 12 on the finished serrated strip have a height L of .040", the leading edge of each tooth being inclined at an angle a of 5° to the vertical while the second edge is inclined at an angle b of 60° to said leading edge.

In the embodiment shown in Figure 2, the strip formed in the manner indicated above is provided with teeth 12 have a height L of .060" and have the leading edge inclined at an angle a of 5° to the vertical while the second edge is inclined at an angle b of 45° to said leading edge.

In the embodiment shown in Figure 3, the strip formed in the manner indicated is provided with teeth 12 which have a height L of .040", the leading edge of each tooth being inclined at an angle a of 10° to the vertical while the second edge is inclined at an angle b of 56° to the said leading edge.

In the embodiment shown in Figure 4, the strip is provided with teeth 12 which have a height L of .060", the leading edge of each tooth being inclined at an angle a of 10° to the vertical while the second edge is inclined at an angle b of 48° to said leading edge.

By forming the teeth not less than .010" and not more than .065" high, they will be sufficiently high to hold the fibres but sufficiently short as substantially to eliminate any gap or channel between the rows of teeth when the wire or strip is wound on a carding cylinder or the like. With such wire, therefore, there is no gap or channel in which synthetic fibres would have a tendency to cling, owing to the static electricity created and therefore, such fibres will rest on the surface of the card and may easily be removed therefrom at the required time.

It is to be noted that the various embodiments illustrated in the drawings are purely exemplary and that provided the height limitation quoted above is observed any convenient tooth angle may be adopted.

In the case of seedy cotton, a short toothed wire of the kind described will prevent the seeds or other impurities from filling up the metallic card clothing and hence the necessity for cleaning the carding engine from time to time will be obviated. Any seeds or impurities in the cotton being carded will be carried forward so that they will automatically leave the card in the flat strip of the flats or gravitate naturally to the base of the card.

We claim:

1. A serrated wire or strip for use in carding engines, doffers or the like for the final stages of the carding or combing of natural or synthetic fibers; said wire strip com-

3

prising a relatively thick base and a thinner upper portion having stamped notches therein to produce a plurality of teeth, each of said teeth having a height from said base to the point of the related tooth not less than .010" and not more than .065" so that said teeth are sufficiently high to hold the fibres and to create air currents for aligning the fibers but sufficiently short as substantially to eliminate the presence of any gap or channel between the rows of teeth when the wire strip is wound on a carding cylinder, doffer or the like or when sections of the wire are arranged side by side on a carding flat.

2. A serrated wire strip according to claim 1, wherein with the wire strip held horizontal, the leading edge of

4

each tooth is inclined forwardly from the base at an angle of between 5° and 10° to the vertical while the trailing edge of the tooth is inclined at an angle of between 45° and 60° to said leading edge.

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