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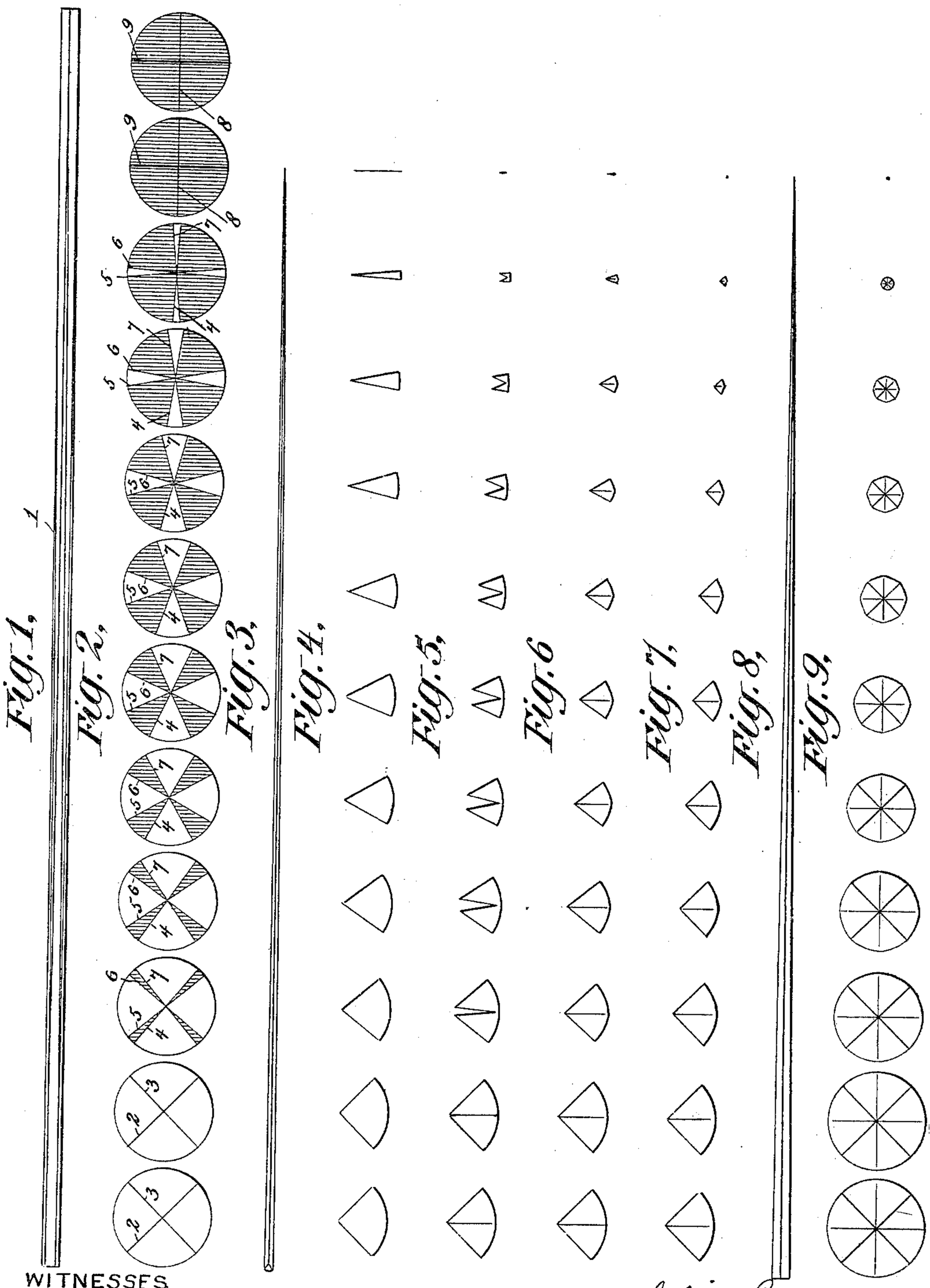
J. POMEROY & H. W. LARSSON.

STRIP OF MATERIAL FOR MAKING TAPERING ARTICLES.

(Application filed July 12, 1898.)

(No Model.)



WITNESSES

Fred. Mullett

Jas. C. Fowler.

INVENTORS Julian Pomeroy
Henry W. Larsson

BY Wilkes & Nelson ATTORNEYS

UNITED STATES PATENT OFFICE.

JULIAN POMEROY AND HENRY W. LARSSON, OF SPRINGFIELD, MASSACHUSETTS; SAID LARSSON ASSIGNOR TO SAID POMEROY.

STRIP OF MATERIAL FOR MAKING TAPERING ARTICLES.

SPECIFICATION forming part of Letters Patent No. 649,677, dated May 15, 1900.

Application filed July 12, 1898. Serial No. 685,736. (No model.)

To all whom it may concern:

Be it known that we, JULIAN POMEROY and HENRY W. LARSSON, citizens of the United States, residing in Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful strip of ratan or other material for use in making whips or similar articles and a new and useful whip or other similar article made of such strips, of which the following is a full, clear, and exact specification, reference being had to the accompanying drawings, which form a part hereof.

The invention relates to whips or similar articles made of ratan, wood, or other suitable material and to the strips of which such articles are formed, and it has special reference to articles or strips made of ratan or similar stalks.

Some objects of the present invention are to simplify and improve the construction of such articles, to decrease the cost thereof by the saving both of material and labor, and to improve the quality of the product.

One of the special objects of the invention is to enable the skin or enamel of the stalk to be entirely preserved and to give it such a curvature that it will completely surround the completed whip at every point and will be substantially circular in cross-section at every point of the whip.

Another object of the invention is to do away with the necessity of using filling-pieces of metal or other material between the sides of the several strips which are combined to form a completed article.

The invention consists, first, in a strip of ratan or other equivalent material for use in making whips or similar articles of this general nature having some of the middle or inside portion of its material removed and having its remaining parts pressed together and properly formed. In the invention in its complete form the sides of the strip are trimmed.

The invention also consists in such a strip having some of the middle or inside portion of its material removed in quantities increasing toward the tip and having its remaining parts pressed together and properly formed and having its enamel increase in curvature toward the tip. In the best form of the invention the quantities of the material which are removed from the middle portion of the strip increase toward the tip relatively to the decrease in the size of the strip and the enamel increases in curvature toward the tip relatively to the decrease in the size of the strip. In the best form of the invention also the sides of the strip are at the same angle to each other throughout the length of the strip.

The invention also consists in a whip or similar article made up in part or in whole of a strip or strips of ratan or other equivalent material, from which strip or strips some of the middle or inside portion of the material along the tapering part of the strip or strips has been removed, each such strip having its remaining parts pressed together and properly formed. In the best form of the invention the whip or other article is made up entirely of strips of this construction. In the most complete form of the invention also the strips of which the whip or other article is composed have some of the middle portion of their material removed in quantities increasing toward the tip, and the enamel of the whip increases in curvature toward the tip, and this increase in the quantity of material removed from the strips and in the curvature of the enamel is relative to the decrease in the size of the strip or whip.

The invention also consists in certain other features of construction and combinations of parts hereinafter described and claimed.

Our improved strip and whip are illustrated in the accompanying drawings, in which—

Figure 1 represents, diagrammatically, a stalk of ratan, showing the lines of splitting or cleavage which are made in the material in carrying out the complete invention herein described in the best way known to us. Fig. 2 shows a series of cross-sections of the stalk, representing the lines of cutting or cleavage at twelve different points along the length of the stalk. The first two sections at the left hand show the lines of cleavage at the butt portions, there being only two lines of cutting through the axis of the stalk. In the third section four lines of cleavage or cutting are shown passing through the axis of the stalk, thereby splitting the stalk into eight parts, all of which are tapering. In

the fourth section the lines of cutting diverge still more, and so on, until in the section next to the last there are again only two lines of cleavage, the stalk being here separated into four parts to form the butt portions at the other end of the stalk. Fig. 3 represents one of the eight strips into which the stalk is cut. Fig. 4 contains a series of cross-sections taken at different points along this strip. Fig. 5 contains a similar series of cross-sections, showing the condition of the strip after a portion of the material has been removed from the middle thereof. Fig. 6 contains a similar series of cross-sections, showing the shape of the strip after the parts thereof have been pressed together and properly formed. Fig. 7 contains a similar series of cross-sections, showing the shape of the strip after its sides have been trimmed, the strip being now in condition to be combined with other strips to form the completed article. Fig. 8 shows a completed whip made by combining four of these strips. Fig. 9 contains a series of cross-sections of this completed whip, showing the manner in which the strips are put together. In Fig. 9 the darker cross-lines which run diagonally across the whip represent the dividing-lines between the four strips or segments which combine to make up the whip, and the lighter lines which run across the whip vertically and horizontally represent the lines along which the material has been removed from the middle portion of the strips and the strips have been pressed together.

Similar numbers denote similar parts in the different figures.

The strips of ratan or other material may be cut out originally from the stalk or piece of ratan or other material by any known method. In practice, however, the strips are cut out from the stalk or other piece of material in the following manner: Referring to Fig. 1, 1 is a stalk of ratan or other suitable material. Beginning at one end—for example, at the left-hand end, as represented in Figs. 1 and 2—the stalk is split into four equal parts by cutting it on the lines 2 and 3. (See Fig. 2.) These lines of cleavage pass through the axis of the stalk and are made at right angles to each other, so as to divide this part of the stalk into four equal parts. The stalk is cut in this way for a distance equal to the length which is to be given to the butt portion in the completed whip. From this point on the stalk is split into eight parts by being cut on the diagonal lines 4, 5, 6, and 7. These four lines of cleavage pass through the axis; but the lines 4 and 5 diverge from each other, and the lines 6 and 7 diverge from each other, while the lines 5 and 6 converge and the lines 4 and 7 converge. At the middle of the stalk these lines are equidistant and cut the stalk into eight equal tapering parts. The lines of cutting continue in the manner already described until, as represented in the second section from the right in Fig. 2, the lines of cleavage 4 and 7 have merged into the line 8 and the lines of cleavage 5 and 6 have merged into the line 9. It will be seen that the right-hand end of the stalk is cut into four equal parts on the lines 8 and 9, thereby forming the butt portions at that end. The stalk is thus divided into eight equal strips, each of which has a butt portion equal in size to one-quarter of the stalk and a tapering portion tapering gradually from the butt portion to the tip.

Fig. 1 represents a stalk of ratan, showing the lines of cleavage, as already described, indicated upon it. Fig. 3 represents one of the eight strips into which the stalk is cut. Fig. 4 consists of a series of cross-sections, representing the shape of the strip at eleven different points.

We do not herein claim as a part of our invention the method of cutting the stalk of ratan just described, as this method is described and claimed in the previous application of Julian Pomeroy, Serial No. 674,569.

The next step in making our improved strip or whip consists in removing a portion of the material from the middle of the strip. Fig. 5 shows a series of cross-sections of the strip taken at eleven different points and corresponding with the sections shown in Fig. 4. The strip is tapering and has an outer curved surface and inner faces. In Fig. 5 the sections show the amount of material that has been removed from the middle of the strip from between the inner faces. When the strip has a butt portion, as in the form shown in the best practice, no part of the material is removed from the butt portion, as that is already in proper condition to form a quarter of the butt portion of the completed whip. The material is preferably removed only from the tapering portion of the strip. It is cut away as far down as the skin or enamel; but in the best form of our invention the enamel itself is not cut or disturbed in any way. As is clearly indicated in Fig. 5, the material is removed in increasing quantities toward the tip or small end of the strip, and the quantity of material so removed increases relatively to the decrease in the size of the strip. The purpose of this will be hereinafter explained. In the form shown the material is removed exactly from the middle of the strip, and this form produces the most symmetrical strip or whip; but it is apparent that the advantages of our invention would be realized to some extent even if the material were not removed exactly from the middle. By thus removing the material from the middle portion of the strip the strip is divided into two parts. The next step in making our improved strip or whip consists in pressing these parts together in the manner illustrated in Fig. 6. The inner faces of the two parts of the strip which are formed by the removal of the material are brought together, and the strip is thus made compact and solid. At the same time and as a result of thus pressing the two parts of the strip together the skin or enamel of the strip is changed in its curva-

ture, so that as the strip grows smaller the enamel is increased in curvature. The enamel is increased in curvature relatively to the decrease in the size of the strip. In the best form of our invention the quantities of material which are removed from the middle of the strip at different points are so regulated that when the parts of the strip are pressed together and formed the enamel will be so curved as to form in cross-section a quarter of a circle at every part of the strip, and as a result of this the strip will be adapted to form a quarter of a complete whip or other article without requiring the introduction of filling-pieces between the adjoining faces or surfaces of the strips. The sides of the strip are then trimmed, as represented in Fig. 7, so as to be at a proper angle to each other throughout the length of the strip. When a complete whip or other article is to be made from four strips, the sides of each strip are so trimmed that they are substantially at right angles to each other at every point along the strip, as a result of which the strip at every point is equal in size to one-quarter of the complete whip. The strips having been thus prepared are united or combined in any suitable way to form a complete whip. Fig. 8 represents a whip made in this way from four strips prepared in the manner already described. Fig. 9 contains a series of eleven cross-sections of a completed whip, showing the manner in which the whip is formed. As will be seen by examining the cross-sections of this figure, the whip is practically or substantially round at every point and is entirely surrounded by enamel, the curvature of the enamel increasing toward the tip end of the strip.

In the form of whip shown and described there are a butt portion and a tapering portion. Our invention, however, is not limited to an article having a butt portion, but is applicable to whips or other articles which have a taper throughout their entire length. In such a case a portion of the material would be removed, preferably, from the middle portion of the strip throughout its entire length.

After the strip has been pressed and formed and is in the shape shown in Fig. 6 if it be deemed desirable a small part of the strip may be cut away from the inner edge, so that when four of the strips are combined there will be a small hole in the center of the whip into which a central filling-piece of ratan, bone, gut, rawhide, cord, or any material can be inserted.

The construction and characteristics of our improved strip and whip will be clearly understood from the preceding description.

Many advantages are secured by our improved strip and whip. The article is economical in respect to the amount of material employed, a larger number of whips being manufactured from a given number of stalks. The enamel is entirely preserved and is made to completely encircle the whip from one end to the other, and thereby give to it greater strength and elasticity. The completed whip is round from one end to the other and is substantially perfect in shape. Moreover, it retains its shape for a longer time, owing to the strength and elasticity of the enamel. The whip is more serviceable and is a superior article in every respect. When the strips are combined together to form the whip, there is no need of any further turning or shaping. No filling-pieces of any kind need to be used, although, as already stated, if it is thought desirable a central filling or core may be inserted. The strength of the whip is also increased, owing to the fact that the fiber of the material extends from end to end.

It will of course be understood that the strips after being prepared in the way explained may be united in any suitable manner, as by using glue or other adhesive substance. The whip-stock thus produced may also be lined and covered in the usual manner.

As already stated, the invention is especially applicable to strips and whips made from stalks of ratan; but some of the advantages of the invention may also be secured by using other material the outer part of which is capable of being shaped or curved in the manner already explained.

What we claim as new, and desire to secure by Letters Patent, is—

1. A tapering strip of material such as ratan for use in making whips or similar articles, having an outer curved surface and inner faces and having some of the middle portion of its material removed in quantities increasing toward the tip relatively to the decrease in the size of the strip, and having its remaining parts pressed together and properly formed, and its sides trimmed, and having its enamel increased in curvature relatively to the decrease in the size of the strip, substantially as set forth.

2. A tapering strip of material such as ratan for use in making whips or similar articles having an outer curved surface and inner faces and having some of the middle of its material along its tapering part removed down as far as the enamel in quantities increasing toward the tip relatively to the decrease in the size of the strip, and having its parts pressed together and properly formed, and its sides trimmed so that they are at substantially the same angle to each other all along the strip, and having its enamel increased in curvature relatively to the decrease in the size of the strip, substantially as set forth.

3. A whip or similar article consisting of strips of material, such as ratan, each strip having an outer surface and inner faces and from each of which some of the middle portion of its material along its tapering part has been removed in quantities increasing toward the tip, each strip having its parts pressed together and properly formed and its sides trimmed, and having its enamel increased in curvature toward the tip, the strips

being suitably combined, substantially as set forth.

4. A whip or similar article consisting of strips of material, such as ratan, each having an outer curved surface and inner faces and from each of which some of the middle portion of its material along its tapering part has been removed in quantities which increase toward the tip relatively to the decrease in the size of the strip, each strip having its parts pressed together and properly formed and its sides trimmed, and having its enamel increased in curvature toward the tip relatively to the decrease in the size of the strip, the strips being suitably combined, substantially as set forth.

5. A whip or similar article consisting of four strips of material, such as ratan, each strip having an outer curved surface and inner faces and from each of which some of the middle portion of its material along its tapering part has been removed in quantities which increase toward the tip relatively to the decrease in the size of the strip, each strip having its parts pressed together and properly formed and its sides trimmed so that they are at substantially a right angle to each other all along the strip, and having its enamel increased in curvature toward the tip relatively to the decrease in the size of the strip, the strips being suitably combined, substantially as set forth.

6. A tapering strip of material such as ratan for use in making whips or similar articles, having an outer curved surface and inner faces and having some of the middle portion of its material between its inner faces removed, and having its remaining parts pressed together and properly formed, substantially as set forth.

7. A strip of material such as ratan for use in making whips or similar articles, having an outer curved surface and inner faces and having some of the middle portion of its material removed, and having its remaining parts pressed together and properly formed and its sides trimmed, substantially as set forth.

8. A whip or similar article consisting of strips of material, such as ratan, and having an outer curved surface and inner faces from each of which some of the middle portion of its material along its tapering part has been removed, each strip having its remaining parts pressed together and properly formed and its sides trimmed, the strips being suitably combined, substantially as set forth.

9. A whip or similar article consisting of strips of material such as ratan, having an outer curved surface and inner faces, and from which some of the middle portion of the material between the inner faces along the tapering part has been removed, each such strip having its remaining parts pressed together and properly formed, substantially as set forth.

10. A whip or similar article consisting of strips of material such as ratan, having an outer curved surface and inner faces and from which some of the middle portion of the material between the inner faces along the tapering part has been removed, each such strip having its remaining parts pressed together and properly formed, and its sides trimmed, the strips being suitably combined, substantially as set forth.

11. A strip of ratan for use in making whips or similar articles, having an outer curved surface and inner faces and having some of the middle portion of its material between the inner faces removed in quantities increasing toward the tip, and having its remaining parts pressed together and properly formed and having its enamel increased in curvature toward the tip, substantially as set forth.

12. A strip of material such as ratan for use in making whips or similar articles, having an outer curved surface and inner faces and having some of the middle portion of its material between its inner faces removed in quantities increasing toward the tip, and having its remaining parts pressed together and properly formed and its sides trimmed, and having its enamel increased in curvature toward the tip, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JULIAN POMEROY.
HENRY W. LARSSON.

Witnesses:
RALPH W. ELLIS,
GEO. A. BACON.