Jan. 9, 1934. G. D. HARRIS 1,942,893

APPARATUS FOR HANGING TOBACCO

Original Filed June 26, 1931

FIG. 1.

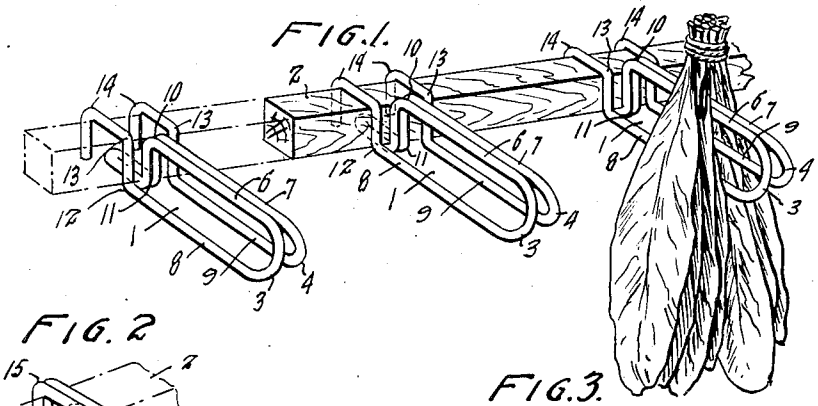


FIG. 2

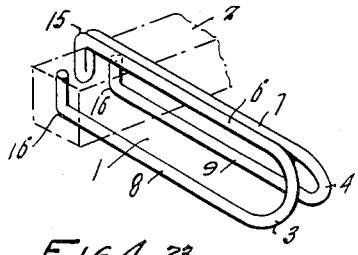


FIG. 3.

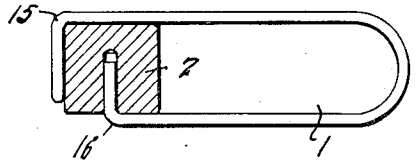


FIG. 4.

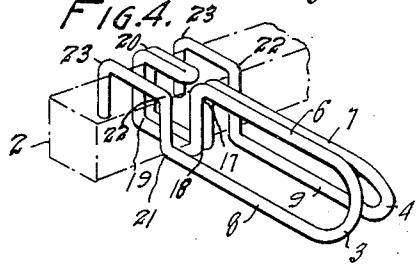


FIG. 5.

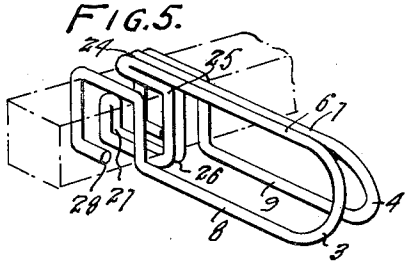


FIG. 6.

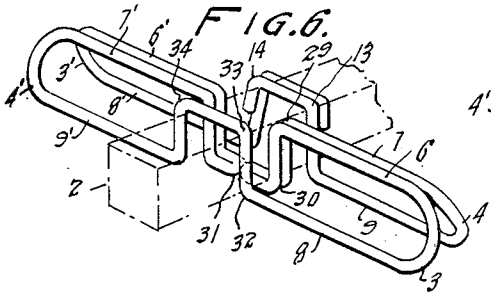
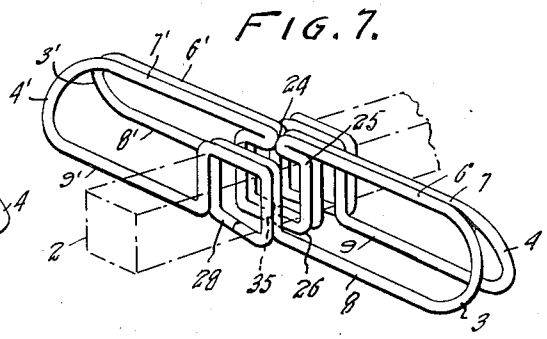


FIG. 7.



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# UNITED STATES PATENT OFFICE

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## APPARATUS FOR HANGING TOBACCO

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Application June 26, 1931, Serial No. 547,097
Renewed December 27, 1932

8 Claims. (Cl. 131—21)

This application is in part a division of my copending application Serial No. 482,083, filed September 15, 1930.

This invention relates to the treatment of tobacco and more particularly has reference to methods and apparatus for suspending hands of tobacco, during treatment.

Heretofore in the treatment of tobacco with gases to dry or condition the same, the tobacco is generally placed in bundles which are known as hands. A plurality of hands of tobacco are arranged on what is termed "tobacco carrying sticks." These sticks are positioned within the treating chambers of the tobacco conditioning apparatus in any desired number. The treating apparatus in many instances is constructed so that a plurality of the tobacco carrying sticks are arranged therein either fixedly or detachably.

Hands of tobacco to be treated are held in the desired spaced relation by means of the tobacco carrying sticks. One method of positioning the hands of tobacco on the sticks comprises separating the leaves of tobacco constituting a hand into two equal portions and placing the hand over the stick so that the two equal portions of leaves straddle the stick. In this instance the stick may be made triangular so as to better fit the hand of tobacco straddling the same.

Other devolopments have been made in which the hands of tobacco are attached to the tobacco carrying sticks by various devices. For instance, the hands of tobacco may be attached to sticks by spring clips or other means for frictionally retaining the same in engagement with the sticks. In other instances, wire hooks are provided, adapted to pierce the stems of the tobacco so as to retain the same in engagement with the sticks. Still other devices consist of prongs or wire attachments for passing between the leaves of tobacco so as to hold the same in proper relation to the tobacco carrying sticks.

While many developments have been made in the prior art to produce a variety of means for suspending the tobacco in the treating chamber, nevertheless, there is as yet no device which serves adequately to support and spread the leaves of tobacco so as to permit the most advantageous access of the conditioning gas to all portions of the tobacco undergoing treatment.

The major object of this invention is to devise a method and apparatus for hanging tobacco in a treating apparatus which avoids the disadvantages inherent in the prior art.

Another object of this invention is to provide a method and apparatus for suspending tobacco in a treating chamber so as to permit the maximum degree of access of the conditioning gas to all portions of the tobacco undergoing treatment.

Still another object of this invention is to provide a method and apparatus for hanging tobacco in a manner so as to support and spread the leaves thereof and yet engage the tobacco at only three lines of contact.

Yet another object of this invention is to provide an attachment for a tobacco carrying stick onto which hands of tobacco may be placed and removed in a most advantageous manner and which will support and spread the leaves of the tobacco hand.

With these and other objects in view, which may be incident to my improvements, the invention consists in the parts and combinations to be hereinafter set forth and claimed, with the understanding that the several necessary elements comprising my invention may be varied in construction, proportions and arrangement without departing from the spirit and scope of the appended claims.

In accordance with the present invention, a plurality of devices are associated with the tobacco carrying stick by means of which, hands of tobacco are supported by the stick. The devices may be formed from wire-like material or material in other forms and are preferably shaped so as to substantially produce a skeleton of a triangular prism. It has been found advantageous in many instances to form the devices for supporting tobacco by the carrying sticks of a plurality of loops in the form of a UU. Each loop in the UU-loop is preferably arranged so that the plane in which one loop lies is at an agle to that in which the other loop lies. When completed the UU-loop is in the form of a skeleton triangular prism and may be attached in any suitable manner to the tobacco carrying stick.

In order to make my invention more clearly understood, I have shown in the accompanying drawing, means for carrying the same into practical effect without limiting the improvements in their useful applications to the particular constructions which, for the purpose of explanation, have been made the subject of illustration.

In the drawing:

Figure 1 is a perspective view of a tobacco carrying stick or lath on which is arranged a plurality of devices constructed in accordance with the present invention.

Figure 2 is a modified form of tobacco support-

ing structure constructed in accordance with the present invention.

Figure 3 is a variation of a form of tobacco supporting device shown in Figure 2.

Figure 4 is a still further modified form of the present invention constructed somewhat similarly to the devices shown in Figure 1.

Figure 5 illustrates a form of the invention in which the free ends of the loops constitute the attachment for securing the loops to the tobacco carrying stick, and are so formed as to engage four sides of a square tobacco carrying stick.

Figure 6 is a modification of the structure shown in Figure 1, in which tobacco attaching devices extend from each side of the tobacco carrying stick.

Figure 7 is a modified form of tobacco attaching device in which the loops extend from both sides of the tobacco carrying stick.

As shown in the drawing, the present invention comprises providing a plurality of attaching devices on a stick or lath of the type adapted to be positioned within the treating chamber of a tobacco conditioning device. As hereinbefore pointed out, the prior art devices did not serve to both support and spread the leaves of a hand of tobacco so as to permit the maximum access of the treating gas to all portions of the tobacco.

One of the most commonly employed devices for suspending tobacco in a treating chamber is the so-called triangular tobacco carrying stick or lath over which the hands of tobacco are straddled. This type of tobaccco stick or lath is disadvantageous in that a large portion of the tobacco leaves are in engagement with the surfaces of the stick or lath and thereby could not receive access to the conditioning gas. Necessarily this lack of access to the conditioning gas would cause non-uniform conditioning of the leaves of tobacco, and thereby cause a waste and the production of inferior tobacco. This feature is particularly disadvantageous in the case of preparation of leaves of tobacco for cigar wrappers in which instance leaves of highest quality are required.

The present invention overcomes the prior art disadvantages by providing a skeleton-like triangular prism attachment for the tobacco carrying stick over which the hands of tobacco may be placed. As shown in the several figures of the drawing, a plurality of the skeleton-like triangular prisms indicated generally by reference numeral 1 are arranged on a tobacco carrying stick 2.

The attachments 1 may consist of a plurality of U-loops 3 and 4 which have their free ends so shaped as to form clasps or loops adapted to be snugly received on the tobacco carrying stick or lath 2. The U-loops are arranged so as to project horizontally from the tobacco carrying stick and are also positioned so that the legs 6 and 7 of the loops 3 and 4 respectively lie in juxtaposition and so that the legs 8 and 9 of the loops 3 and 4 respectively are spaced apart a distance approximating the width of the loops. This construction when completed gives the appearance of a skeleton of a triangular prism, the two legs 6 and 7 of the loops 3 and 4 being so closely arranged as to give the appearance of one of each of the triangular prisms and the legs 8 and 9 serving as the other two edges of the triangular prism.

In order to secure the UU-loop to the tobacco carrying stick, the free ends of the legs of the loop are bent so as to clasp the tobacco carrying stick. In deforming the free ends of the loops, the central legs 6 and 7 of the UU-loop are bent downwardly as at 10, and then horizontally as at 11 to effect the two surface engagement between the tobacco carrying stick and the central legs of the UU-loop. Legs 8 and 9 of the UU-loop are each bent upwardly as at 12, and then horizontally as at 13 and finally downwardly as at 14 to form a three surface engagement between the legs 8 and 9 and the surfaces of the tobacco carrying stick 2.

When assembled on the tobacco carrying stick the devices 1 are spaced apart a distance depending upon the size of the tobacco hands being treated. After the attachments 1 are properly spaced on the tobacco carrying sticks, the hands of tobacco may be placed over the attachments, as is clearly shown in Figure 1. When a hand of tobacco is positioned over the attachment, the apex of the skeleton triangular prism formed by the legs 6 and 7 of the loops 3 and 4 serves as a means for supporting the hand of tobacco and the legs 8 and 9 of the loops 3 and 4 respectively serve as means for spreading the leaves apart so as to permit the access of the conditioning gas thereto.

It will be obvious that when the hand of tobacco is supported by the attachments 1, that there will be substantially only three lines of contact between the tobacco leaves and the attachments 1. One of these will be up near the steam or butt portion of the leaves, which is immaterial, and the other two will be at a somewhat lower point of the leaves as shown in Figure 1.

It will be appreciated that this device is a material improvement over the heretofore employed triangular sticks or laths which prevent access of the conditioning gas to a relatively large surface of the tobacco leaves.

While the device shown in Figure 1 has been described as being formed of a pair of U-loops, I wish it to be clearly understood that both loops can be formed of a single piece of wire, for instance, a piece of wire bent to form a UU. After forming the UU, the loops of the UU may be bent relatively to each other to form a skeleton of a triangular prism as hereinbefore mentioned. Also, if desired, more than one piece of wire may be employed.

In order to illustrate the susceptibility of the present invention to modification, I have shown in the several figures of the drawing many and varied modifications of means for attaching the devices to the tobacco carrying stick or lath.

In Figure 2, for instance, the central leg of the UU indicated by the reference numerals 6 and 7, has its free end bent downwardly as at 15, so as to clasp the tobacco carrying stick 2. The free ends of the legs 8 and 9 of the UU-loop are bent upwardly as at 16, so as to more securely attach the device 1 to the tobacco carrying stick. If desired, this form of the invention may be further modified by providing sockets or recesses in the tobacco carrying stick 2 into which the free ends of the legs of the UU-loop may be inserted. This latter form of the invention has been illustrated in Figure 3.

Another form of the present invention is shown in Figure 4, in which the free end of the central leg of the UU-loop is bent downwardly at 17, then horizontally at 18, upwardly at 19, and horizontally in the opposite direction at 20. By so shaping the free end of the central leg of the UU-loop, engagement is effected between the

ends of the loop and all four sides of the tobacco carrying stick 2. This gives a rather tight fitting engagement between the attachment 1 and the tobacco carrying stick. The outside legs of the loop 8 and 9 have their free ends bent upwardly at 21, horizontally at 22, and downwardly at 23, so that three sides of the tobacco carrying stick are engaged. With the arrangement just described, the attachment is securely fixed to the tobacco carrying stick and may not be accidentally displaced.

A still further modification of the invention is shown in Figure 5 in which the central leg of the loop is bent back upon itself at 24, then downwardly at 25, horizontally in the opposite direction at 26, and then upwardly at 27. By so forming the free end of the central leg of the UU-loop, a somewhat stronger construction is afforded than in the foregoing illustrations. The outside legs of the loop are formed somewhat similarly to those shown in Figures 1 and 4 but consist of additional extensions 28 adapted to engage the bottom surface of the tobacco carrying stick 2.

The construction just described, it will be appreciated, contains sufficient bends so as to provide enough engaging surfaces between the device 1 and the tobacco carrying stick 2 to permit the device to carry relatively heavy hands of tobacco without placing much strain on the joint between the device and the tobacco carrying stick.

While in the foregoing description the attachments 1 have been described as extending from only one side of the tobacco carrying stick, I wish it to be understood that the attachments 1 may be extended from both sides of the tobacco carrying stick as shown in Figures 6 and 7.

In Figure 6, I have shown a tobacco attaching device in which triangular like prisms extend from both sides of the tobacco carrying stick. For purposes of illustration, the structure shown in Figure 6 is formed of a single continuous piece of wire like material which is shaped so as to provide means for gripping the tobacco carrying stick and for providing a triangular like prism on each side of the stick.

As a matter of convenience, the parts of the structure shown in Figure 6 corresponding to those shown in the other figures have been given similar reference numerals. The structure shown in Figure 6 differs essentially from that shown in Figure 1 in that the free end of the leg 8 of the prism extending from one side of the tobacco carrying stick 2 is connected or is continuous with the free end of the leg 9 of the triangular like prism supporting structure extending from the other side of the tobacco carrying stick. It has been found convenient as a matter of practical construction to have the ends of the material of which the tobacco supporting device is formed located as shown in Figure 6.

In order to clearly illustrate the manner in which the element shown in Figure 6 is constructed, the material from the element will be traced from one end thereof to the other. Starting with the free end of he leg 9 of the prism on the right hand portion of Figure 6, it will be noted that the material is bent at 14 upwardly, and then extends horizontally and is bent downwardly at 13. The material after extending downwardly is bent horizontally to form leg 9 of the triangular like prism. The material is then bent to form the loop 4, which consists of the legs 9 and 7. The free end of leg 7 is then bent downwardly as at 29, and horizontally as at 30.

At the point indicated by reference numeral 31, the material is bent back upon itself and forms leg 6, which parallels and lies in juxtaposition to leg 7. The other leg 8 of loop 3 has its free end bent upwardly at 32, horizontally at 33, downwardly at 34, and then is bent to form loop 4' together with its legs 9' and 7'. The free end of leg 7' of loop 4' is bent correspondingly to leg 7 of the loop 4 shown on the right hand side of the figure, and is bent back upon itself at 31 similarly to the construction of the loop shown on the right hand side of the figure. The free end of leg 8' of loop 3' is bent upwardly, then horizontally and downwardly to form a three sided engagement with the tobacco carrying stick 2.

From the foregoing description, it will be appreciated that the structure shown in Figure 6 provides a tobacco carrying device having triangular like prisms extending from both sides of the tobacco carrying stick, and which may be rigidly attached to the tobacco carrying stick so as to avoid accidental displacement.

A further modification of the structure shown in Figure 6 is illustrated in Figure 7. The essential difference between the structure shown in Figure 7 and that shown in Figure 6 is that in Figure 6, both the legs 6 and 7 and 8 and 9 of the triangular prisms form a three surface engagement with the tobacco carrying stick, whereas in the structure shown in Figure 7, the free ends of the legs of the triangular like prisms form four surface engagements with the tobacco carrying stick. Reference numerals employed in the other figures of the drawing have been applied to the structure shown in Figure 7 to indicate similar parts.

As clearly shown in Figure 7, the free ends of legs 6 and 7 of the triangular like prism on the right hand side of the figure are bent back upon themselves as indicated by reference numeral 24, and then are bent downwardly at 25 and again horizontally at 26. As shown in distinguished lines, at reference numeral 35, the free end of the legs 6 and 7 are joined or made integral.

The free end of leg 8 of the loop 3 is formed substantially identically with the structure shown in Figure 5, and it is believed that the detailed description thereof will be unnecessary. Leg 9 of the loop 4 shown on the right hand side of Figure 7 has its free end raised around the tobacco carrying stick 2 in a manner similar to that in which the free end of the leg 8 is deformed. Instead of the free end of the leg 9 ending adjacent the tobacco carrying stick, it is carried around the tobacco carrying stick to form leg 8' of loop 3' shown on the left hand side of Figure 7. The other elements of loops 3' and 4' are constructed similarly to the loops 3 and 4 shown on the right hand side of the figure and a detailed description is believed to be unnecessary.

Following out the material from the device shown in Figure 7, and starting with the end 28 shown in Figure 7, it will be noted that material extends horizontally on the lower surface of the tobacco carrying stick and upwardly, horizontally, and then downwardly to engage four surfaces of the tobacco carrying stick. Then the material forms the legs 8 and 6 of the loop 3. As clearly shown in Figure 7, leg 6 extends partially in engagement with the upper surface

of the tobacco carrying stick 2 and is bent back upon itself and then downwardly, and then horizontally to engage the upper, lower and one side surface of the stick 2. At 35, the material is bent back upon itself, paralleling the leg 6 to form legs 7 and 9 of the loop 4. The material is then raised around the tobacco carrying stick by being bent upwardly, horizontally, downwardly, horizontally, upwardly, horizontally, and finally downwardly. From this point, the material forms the leg 8' of loop 3' and leg 6' of loop 3'. The material is then bent back upon itself downwardly and then horizontally to the point 35 at which it is bent back upon itself to parallel leg 6' and to form leg 7'. The manner in which the material is bent from this point on is clearly shown in Figure 7, the leg 9' being bent upwardly, horizontally, downwardly, and then horizontally until the free end of the material abuts the free end of the portion 28.

In certain instances it will be found that the structure shown in Figure 7 is more rigid than that shown in Figure 6, and may prove advantageous in certain installations. It is, of course, within the scope of the present invention to modify the other forms of tobacco carrying supports shown in the drawings so that they will extend from both sides of the tobacco carrying stick.

Devices constructed in accordance with the present invention are of particular advantage in the tobacco industry in that hands of tobacco may be supported thereby in a manner so as to permit the maximum access of the conditioning gas to all portions of the tobacco leaves. The invention herein described is also of advantage in that a plurality of the devices disclosed may be arranged on the so-called tobacco carrying sticks or laths and the hands of tobacco placed thereon without any danger of tearing or otherwise damaging tobacco leaves. When it is desired to unload the treating chamber of the tobacco conditioning apparatus, it is merely necessary to remove the sticks or laths 2 from their supports, and tilt the same so as to permit the hands of tobacco to slide off into a suitable receptacle. In the form of invention showing the attachments extending from both sides of the tobacco carrying stick, it will merely be necessary to tilt the stick first in one direction and then in the other to remove tobacco hands from both sides of the attachments.

I have found by actual experience that it is advisable to construct the attachments herein disclosed of material not susceptible to corrosion. Corrosion would cause the accumulation of incrustations on the metal and would probably damage the tobacco leaves. For instance, when constructing the device of copper wire, it is desirable to tin or otherwise plate the wire so as to avoid corrosion. Of course, suitable alloys resistant to corrosion, such as occurs in tobacco treating apparatus, may also be employed as material for constructing the devices disclosed.

While in the present invention, reference has been made to tobacco carrying sticks and laths, I do not wish it to be implied that the present invention is limited to attachments for so-called tobacco carrying sticks formed of wood. The so-called sticks may be formed of any material suitable for the purpose. Also, the tobacco carrying sticks may be constructed of any desired cross-sectional shape and the attachments may be modified accordingly to be received by the sticks or laths of varying shapes.

While I have shown and described the preferred embodiment of my invention, I wish it to be understood that I do not confine myself to the precise details of construction herein set forth, by way of illustration, as it is apparent that many changes and variations may be made therein, by those skilled in the art, without departing from the spirit of the invention, or exceeding the scope of the appended claims.

I claim:

1. A device for hanging tobacco on a tobacco carrying stick comprising a wire like member bent into the form of a UU loop, said loop being deformed so that the legs thereof form a skeleton of a triangular prism, the ends of said loops being bent to form clasps for frictionally securing the loops to the tobacco carrying stick.

2. A device for hanging tobacco on a tobacco carrying stick comprising a wire like member bent into the form of a UU loop, said loop being deformed so that the legs thereof form a skeleton of a triangular prism, said loop adapted to extend horizontally from the stick with the central legs of the UU-loop forming the apex line of the skeleton triangular prism, the free end of the central leg of the UU-loop being bent downwardly and the ends of the other legs being bent upwardly to secure the device to the tobacco carrying stick.

3. A device for hanging tobacco on a tobacco carrying stick comprising a wire like member bent into the form of a UU-loop, said loop being deformed so that the legs thereof form a skeleton of a triangular prism, said loop adapted to extend horizontally from the stick with the central legs of the UU-loop forming the apex line of the skeleton triangular prism, the free end of the central leg of the UU-loop being bent downwardly and the ends of the other legs being bent upwardly to secure the device to the tobacco carrying stick, and said stick having apertures in the upper and lower portions thereof adapted to receive the bent free ends of the loop.

4. A device for hanging tobacco on a tobacco carrying stick comprising a wire like member bent into the form of a UU-loop, said loop being deformed so that the legs thereof form a skeleton of a triangular prism, said loop adapted to extend horizontally from the stick with the central legs of the UU-loop forming the apex line of the skeleton triangular prism, the free end of the central leg of the UU-loop being bent back upon itself then downwardly, horizontally and upwardly to engage four sides of the tobacco carrying stick and the free ends of the other legs being bent upwardly, horizontally, downwardly and then horizontally in the opposite direction to engage four sides of the tobacco carrying stick to frictionally secure the device to the stick.

5. A device for hanging tobacco on a tobacco carrying stick comprising a wire like member bent into the form of a plurality of UU loops, each UU loop being deformed so that the legs thereof form a skeleton of a triangular prism, one UU loop extending from one side of the tobacco carrying stick, and the other loop extending from the other side thereof.

6. A device for hanging tobacco on a tobacco carrying stick comprising a wire like member bent into the form of integral UU loops, each UU loop being deformed so that the legs thereof form a skeleton of a triangular prism, the legs of the loops forming the triangular prism being formed to engage and clasp the device to the tobacco carrying stick.

7. A device for hanging tobacco on a tobacco carrying stick comprising a wire like member bent into the form of a UU loop, said loop being deformed so that the legs thereof form a skeleton of a triangular prism, said loop adapted to extend horizontally from the stick with the central legs of the UU loop forming the apex line of the skeleton triangular prism, the free end of the central leg of the UU loop being bent downwardly and the ends of the other legs being bent upwardly to secure the device to the tobacco carrying stick, the downwardly bent end of the central leg engaging one side of the stick, and the upwardly bent end of the other legs being received in sockets formed in the tobacco carrying stick.

8. A device for hanging tobacco on a tobacco carrying stick comprising a wire like member bent into the form of a plurality of oppositely extending UU loops, said loops being formed so that the legs thereof form a skeleton of a triangular prism, each of said loops adapted to extend horizontally from the tobacco carrying stick with the central legs of the UU loops forming the apex line of the skeleton triangular prism, the free end of the central leg of each of the UU loops being bent downwardly and horizontally to engage two sides of a tobacco carrying stick, the free end of one leg of each of said UU loops being bent upwardly, horizontally and downwardly to engage three sides of the stick, and the other legs of the UU loops being bent upwardly and horizontally and formed integrally with each other.

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