

No. 832,127.

PATENTED OCT. 2, 1906.

D. H. HAYWOOD.
PROCESS OR METHOD OF MAKING HAIR PINS.
APPLICATION FILED DEC. 20, 1905.

Fig. 1,

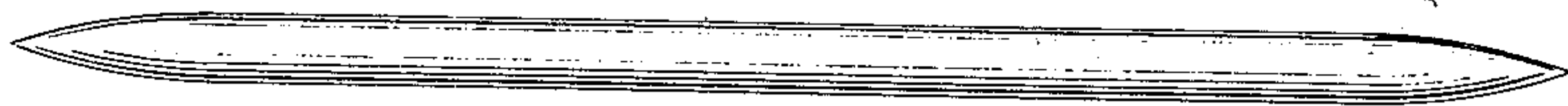


Fig. 2,

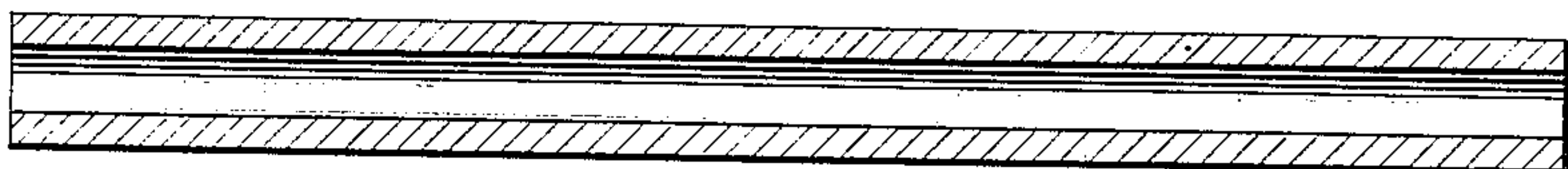


Fig. 3,

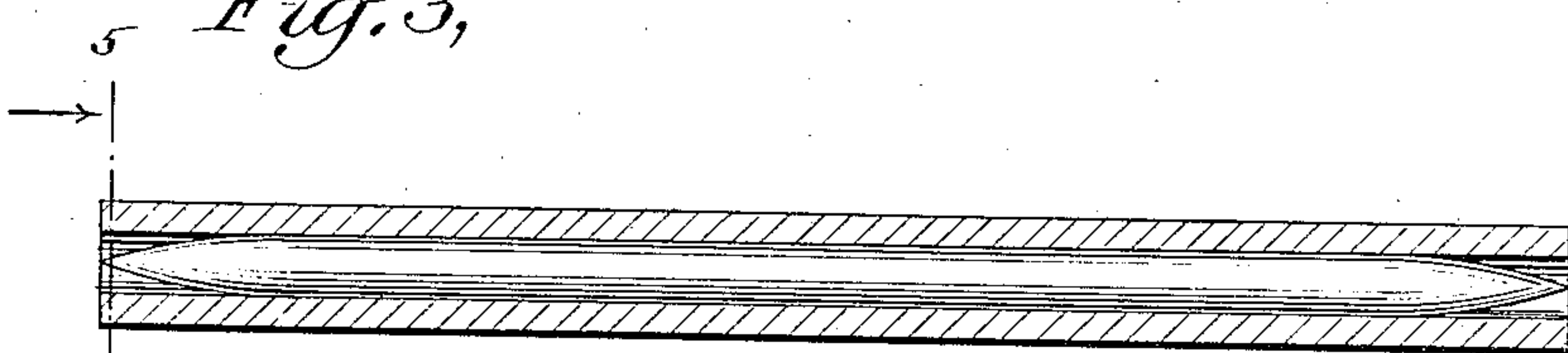


Fig. 4,

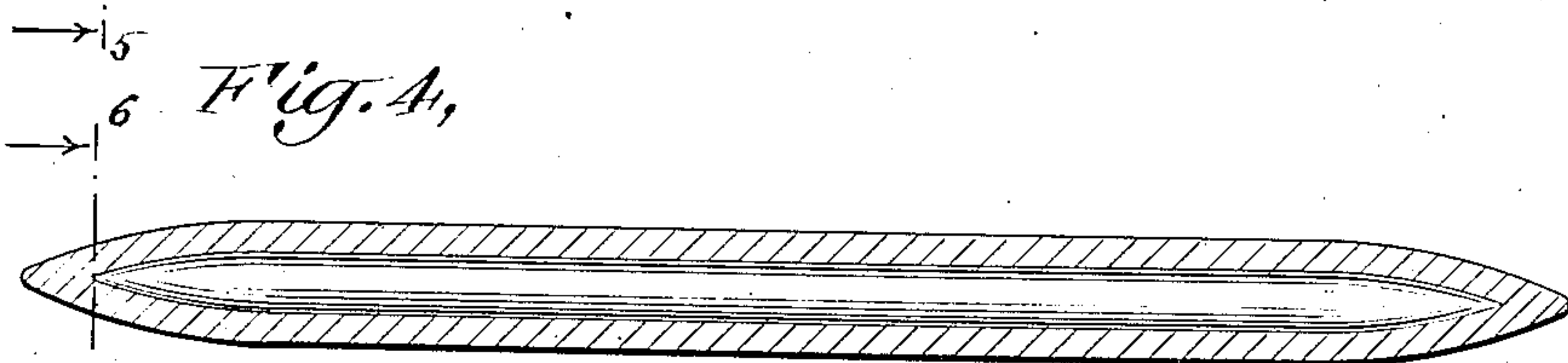


Fig. 5,

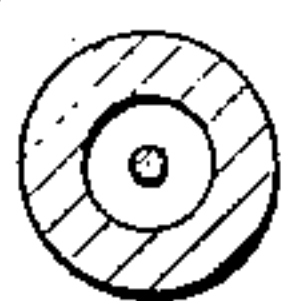
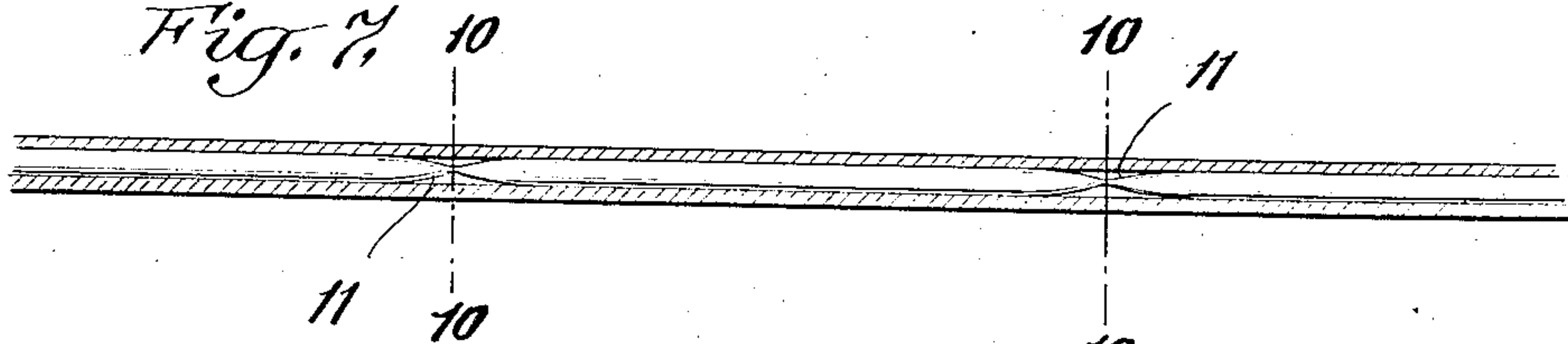


Fig. 6,



Fig. 7,



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PROCESS OR METHOD OF MAKING HAIR-PINS.

No. 832,127.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Application filed December 20, 1905. Serial No. 292,547.

To all whom it may concern:

Be it known that I, DANIEL HOWARD HAYWOOD, a citizen of the United States of America, and a resident of New York, county and State of New York, have invented certain new and useful Improvements in Processes or Methods of Making Hair-Pins or the Like, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to an improved process or method of making hair-pins or the like, such hair-pins composed of a metallic core covered with a material which becomes plastic under the application of heat, such as celluloid.

The first feature of my invention consists in an improved method of forming the ends of the hair-pins, which consists of first pointing the ends of the wire cores and in then contracting and reducing the diameters of the tubes surrounding the wire cores at the pointed ends thereof, so as to press the tube closely against the pointed ends and at the same time elongate the tubes, whereby the said tubes may be finally drawn to a point such as will completely cover and inclose the wire ends. Thus I may employ wire and tube lengths of substantially equal lengths and yet fully and completely cover the wire core with the inclosing material and properly point same.

The second feature of my invention relates to the insertion of the wire cores into the tubes or, what is the same thing, to the drawing of the tubes over the wire cores. In practice it has been found that celluloid tubes such as I may employ vary somewhat in their inner diameters, and this is also true to a certain though less extent of the wire employed for the cores; but if the wire be fixed loosely in the tube the tube is apt to break where bent. If, on the other hand, the wire core fits the tube accurately, such tendency to break is reduced to a minimum or practically eliminated. In the second feature of my invention then I heat the tube before inserting the wire core therein, the wire core provided being of a size slightly larger than the inner diameter of the tube when cooled, so that after the wire has been inserted and the tube allowed to cool the contraction thereof will cause the tube to intimately engage the core, as will be readily understood. Preferably I heat the tube to a degree sufficient to cause the same to have a tendency to

adhere to the core, and I may, if it should be found desirable, apply a cement between the core and tube, so as to further cause same to adhere together. After the cores have been thus inserted I further heat the tube ends for the purpose of drawing them over the ends of the wire cores, as above set forth, and finish the article by pointing the ends of the covering material and finally bending the product into the desired form and shape.

In order that my invention may be fully understood, I will now describe the same in detail with reference to the accompanying drawings, illustrating the article during various steps in the process, and will then point out the novel features in claims.

In the drawings, Figure 1 shows a single length of wire to be employed as a core, having its ends sharpened or pointed. Fig. 2 is a view in central longitudinal section of a tube of celluloid or similar material, the length of said tube being substantially equal to the length of the pointed core. Fig. 3 shows the core of Fig. 1 inserted into the tube of Fig. 2, the tube being shown in central longitudinal section and the core in side elevation. Fig. 4 is a view similar to Fig. 3 with the ends of the tube contracted and drawn out into points over the pointed ends of the wire core. Fig. 5 is a view in transverse section upon the line 5 5 of Fig. 3. Fig. 6 is a view in transverse section upon the line 6 6 of Fig. 4. Fig. 7 is a view showing a continuous tube and a continuous core inserted therein, the core having contracted portions at intervals, transverse dotted lines being employed to show the points of severance upon which the continuous tube and core may be divided into units.

In carrying out my improved process I either employ individual tubes and cores of equal lengths to start with, as shown in Figs. 1, 2, 3, and 5, or I provide tubes of greater length and insert multiple cores therein, as shown in Fig. 7, afterward severing the tube and cores upon the lines 10 10, as illustrated. In the latter case I prepare a wire core by reducing its diameter at intervals, as at 11, so that when the same is severed upon the lines 10 10 the result will be individual cores with sharpened ends similar to the individual sharp-end cores shown in the other figures. If I employ cement, I may dip the cores into the cement or otherwise apply the cement prior to their insertion in the tubes, the tubes also being first heated, if desired, as

explained above, for the purpose of expanding them, so that in their contraction they may more closely hug the cores contained within them. The units will then appear as in Fig. 3, the length of the tube and the length of the core contained therein being substantially similar. When in this condition, I heat the ends of the tubes to a condition wherein the material becomes quite plastic, and I then proceed to condense, contract, and reduce the diameter of the tubes around the pointed core ends, thereby gradually lengthening the tubes until finally as the covering material is brought to a point over the pointed ends of the cores the same will be found to completely inclose and cover the same, as is shown in Fig. 5. The cross-sectional views 4 and 6 show, respectively, sections near the extreme ends of the cores before and after the tubes have been contracted and reduced, as above stated, and will clearly show how much material there is which will go toward lengthening the tube as the diameter thereof is reduced. I perform the operation of drawing the tube ends over the pointed ends in any suitable manner and by any suitable means. It may be done by swaging, drawing, pressing, or the like and conveniently may be accomplished in dies specially made for the purpose, as will be well understood, though it may be done by hand, if preferred.

The preferable material of which the tubes are composed is celluloid, as the particular product I am aiming to make in the present invention is celluloid hair-pins with metallic cores; but other materials may be employed and other articles produced within the scope of my invention.

What I claim is—

1. The herein-described process or method of making hair-pins or the like, which consists in assembling wire cores with sharpened ends in tubes of a material which becomes plastic under the application of heat, the wires and tubes being of substantially equal lengths, in then heating the ends of the tubes, and finally, in drawing the said ends of the tubes into points over the pointed ends of the wire cores.

2. The herein-described process or method

of making hair-pins or the like, which consists in assembling wire cores with sharpened ends in tubes of celluloid, the wires and tubes being of substantially equal lengths, in then heating the ends of the tubes, and finally, in drawing the said ends of the tubes into points over the pointed ends of the wire cores.

3. The herein-described process or method of making hair-pins or the like, which consists in providing wire cores with sharpened ends, providing a covering therefor consisting of tubes of celluloid or the like, the lengths substantially equal to the wire lengths, heating the tube ends, and contracting and reducing the tube ends around the pointed ends of the wires, thereby lengthening the tubes and bringing them to points completely covering and inclosing the pointed ends of the wires.

4. The herein-described process or method of making hair-pins or the like, which consists in first heating celluloid tubes, then inserting wire cores therein, then further heating the tube ends, and finally, in drawing the tube ends over the wire ends, into points which completely cover and inclose the wire ends.

5. The herein-described process or method of making hair-pins or the like, which consists in first heating celluloid tubes, then applying cement to the wire cores, then inserting the wire cores in the tubes, then further heating the tube ends, and finally, in drawing the tube ends over the wire ends into points which completely cover and inclose the wire ends.

6. The herein-described process or method of making hair-pins or the like, which consists in heating tube lengths of celluloid or the like, inserting sharpened wire cores therein, further heating the tube ends, and then increasing the lengths of the tubes from lengths substantially equal to the lengths of the wire cores by contracting and reducing the diameters of the tube ends around the pointed ends of the cores, to finally completely cover and inclose the wire ends and draw the tube ends into points beyond them.

DANIEL HOWARD HAYWOOD.

Witnesses:

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