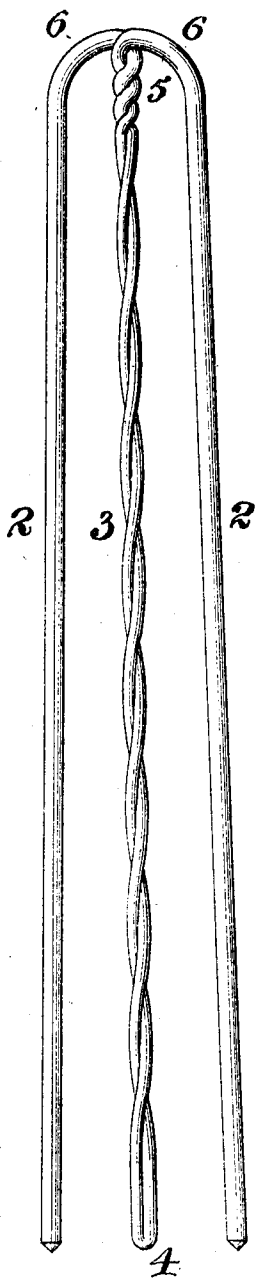


L. C. BELZ.
HAIR PIN.
APPLICATION FILED NOV. 20, 1911.

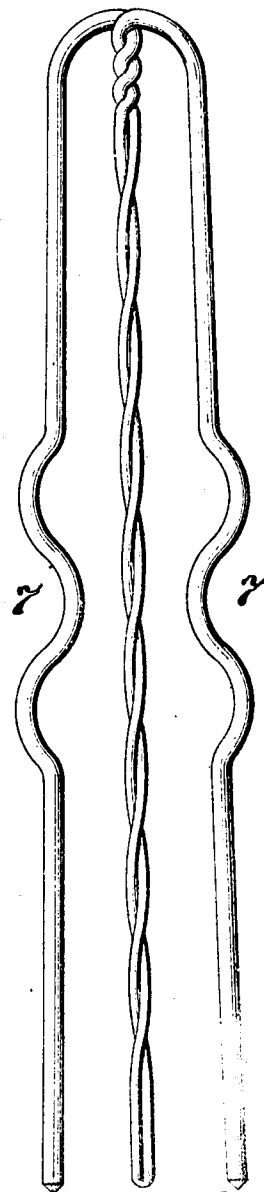
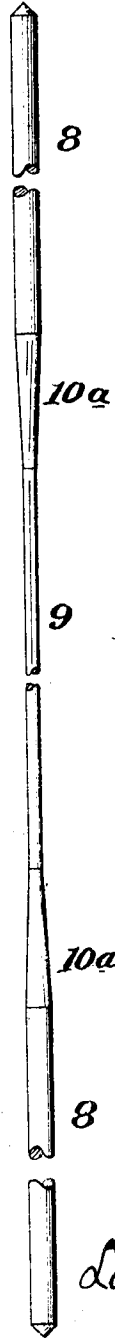
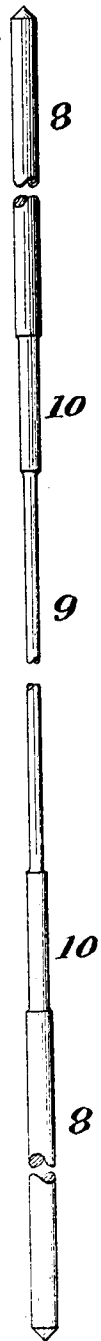
1,026,142.

Patented May 14, 1912.

FIG. 1. FIG. 2. FIG. 3. FIG. 4.



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UNITED STATES PATENT OFFICE.

LOUIS C. BELZ, OF PHILADELPHIA, PENNSYLVANIA.

HAIR-PIN.

1,026,142.

Specification of Letters Patent.

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Application filed November 20, 1911. Serial No. 661,260.

To all whom it may concern:

Be it known that I, LOUIS C. BELZ, a citizen of the United States, and a resident of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improvement in Hair-Pins, of which the following is a specification.

My invention has reference to hair pins and consists of certain improvements fully set forth in the following specification and shown in the accompanying drawings which form a part thereof.

My invention has reference to hair pins of the general character illustrated in Letters Patent No. 975,390; granted to me on November 15, 1910, and which particularly embodies a central twisted wire prong and two outer single strand untwisted prongs, and my present improvement is more especially directed to certain details of construction thereof, whereby the hair pin is more efficient in use and devoid of certain objections more or less inherent to the construction of the hair pin of my aforesaid Letters Patent.

My invention consists of certain constructions in a three pronged hair pin which are fully described hereinafter in connection with the drawings and specifically defined in the claims.

Referring to the drawings: Figure 1 is a side elevation of a hair pin embodying my invention made on a large scale for better illustration of the details; Figs. 2 and 3 are elevations of wire strands suitable for employment in the making of my improved hair pin; and Fig. 4 is an elevation of my improved hair pin with sinuosities in the side prongs.

My invention consists of a three-pronged hair pin formed of a single strand of wire bent upon itself and twisted to form the middle prong, and the ends of the said strand bent back substantially parallel to the twisted prong to form the side prongs, and in which further the strand portion forming the middle twisted prong is of less cross sectional area than that of the strand portions forming the side prongs, the twisted middle prong having the main part of its length, including the point, formed with a twist of large pitch, and that portion of its length adjacent to the branching part where it is extended into the side prongs formed of a small pitch providing a strong construction at the head of the hair pin

which will prevent the hair catching into the twist and also produce a positive friction upon the hair when the hair pin is pushed into the hair to its full extent.

I will now describe more in detail, in connection with the drawings, the foregoing improvements.

The hair pin comprises a middle prong 3 which is formed of twisted wire, the wire being bent upon itself to form the point 4, and the two side prongs 2, 2, of untwisted wire and uniting with the middle prong by the bent portions 6. The side prongs may be straight, as indicated in Fig. 1, or with sinuosities 7, as indicated in Fig. 4. The middle and side prongs are all formed of one continuous metal strand having the general shape indicated in Figs. 2 and 3, the cross section of the wire strand which is twisted upon itself to form the middle prong 3 being materially less in area than the cross sectional area of the side prongs 2, this difference being preferably about 2 to 1, so that the middle prong will not be objectionably bulky and will have reasonable and proper elasticity. The main length of the middle prong, from its end 4 up toward the bend 6, is formed with a twisted construction of great pitch so as to form very slight inclinations in the twisted portions to the direction of the length of the prong, whereby the prong will enter the hair with reasonable freedom and without putting any objectionable friction thereon, such as would occur where the wire strands are tightly twisted upon themselves and with smaller pitch. The upper end of the middle prong adjacent to the bends 6, 6, of the side prongs, is twisted with a small pitch, as indicated at 5, for the purpose of making a strong union between the two strands thus twisted together, and also providing a termination of the strands which will enable them to be bent tangentially away from the middle prong and thence downward to form the side prongs, thereby giving to the head of the hair pin a semi-circular form which will not catch upon the hair or provide a notch in which the hair may become entangled. Moreover, this tightly twisted portion 5 of the middle prong being made of portions of the strand which are of greater cross section than the cross section of the portion of the strand making up the main part of the middle prong, the cross sectional area of the metal in this part 5 is greater than the

cross sectional area of any other part of the hair pin. This is desirable, because it is at the branching point of the prongs, and secondly, it provides a twisted portion of coarser strands adjacent to the head portion which will produce a more rasping effect upon the hair and hence act as a lock due to its friction to hold the hair pin in place after being once fully pushed home.

Referring to Fig. 2, the strand there shown has the end portions 8 of the cross section of the side prongs 2 of the hair pin, and has the middle portion 9 reduced to the cross section of the strand which is to be embodied in the twisted middle prong 3 of the hair pin. The portions 10 of the wire strand shown in Fig. 2 are of a cross sectional area intermediate to those of the parts 8 and 9 and which, when twisted together, provide the part 5 of the finished hair pin. This strand shown in Fig. 2 is bent upon itself in the middle, and the part 9 thereof twisted with a large pitch to form the middle prong 3; the two parts 10 are then twisted together with a small pitch to form the part 5 of the middle prong 3. The remaining parts 8 are then bent outward and downward to form the parts 6 and 2 of the hairpin. It is evident that the fine pitch twist 5 may be carried down somewhat into the smaller cross section of the strand and likewise into the larger cross section of the strand, if so desired, but ordinarily, it will suffice that this fine pitch twisted portion 5 be substantially confined to the portions 10 of the intermediate cross sectional area.

In the construction of strand shown in Fig. 3, the reduction in the same between the parts 8 and 9 is made more gradual as indicated at 10^a, these tapered portions corresponding to the portions of reduced area, indicated at 10 in Fig. 2. When the strand, Fig. 3, is employed in making the hair pin, it is bent and twisted in the same way as above described, and in this case, the part 5 having the small pitch will be mainly composed of the tapered portions 10^a.

It is evident that while my invention, in its most perfect form, comprehends the making of the hair pin from the strand of the general character of Fig. 2, the general construction of the middle prong having the coarse and fine pitch and the twisted portions thereof may be carried out and be effective to some extent without following the particular cross sectional form of the strands here described, and therefore, I do not restrict myself to this preferred form of strand.

Some of the advantages secured by my improvements herein set out, are that the tightly twisted portion 5 at the branching points prevents the hair getting into the twisted portion, also increases the strength at this point, also provides a shape at the

union of the parts 6 which approximates a semicircle for the head of the pin, and further acts as a locking portion on the hair when the hair pin is driven home, thereby helping to hold the pin in place. The twisted portion of great pitch, constituting the main part of the middle prong of the pin, enables the same to enter the hair more freely than would be possible with the twist of fine pitch and further provides a more slender and flexible middle prong.

The hair pin, as a whole, is usually japanned to give the necessary finish. Where the prongs unite there would be more or less spring action if the pitch was large and such spring action would tend to crack the japan and thereby provide abrading portions which would catch and break the hair, but by employing the tightly twisted portion 5 of small pitch and with the tangential portion 6, this difficulty is entirely overcome, and a highly efficient hair pin is produced without any objectionable qualities.

I have described my hair pin in the form which I have found most satisfactory for commercial use, and while I prefer the details here shown, they may be modified within the scope of the appended claims without departing from the spirit of the invention.

Having now described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A hair pin formed of a single strand bent upon itself and twisted to form a middle prong and the two free ends of the strand bent substantially parallel to the twisted prong to form two side prongs, and in which further the twisted middle prong is composed partly of a twist of great pitch extending to the free end of the prong and partly of a twist of relatively small pitch adjacent to the branching parts connecting with the side prongs.

2. A hair pin formed of a single strand bent upon itself and twisted to form a middle prong and the two free ends of the strand bent substantially parallel to the twisted prong to form two side prongs, and in which further the twisted middle prong is composed partly of a twist of great pitch extending to the free end of the prong and partly of a twist of relatively small pitch adjacent to the branching parts connecting with the side prongs, the cross sectional area of the strand forming the twisted part of great pitch being smaller than the cross sectional area in any other part of the hair pin and the part of the strand forming that portion of the twisted middle prong of relatively small pitch being of substantially uniform but of less cross sectional area than the cross sectional area of the side prongs and of greater cross sectional area than the cross sectional area of the strand in the remaining portion of the twisted middle prong.

3. A hair pin formed from a wire having two cylindrical end portions of largest diameter, a cylindrical central portion of smallest diameter and two cylindrical portions between the central portion and the end portions of a diameter intermediate of the diameters of the central and end portions and of greatly less length than the length of either of the central or end portions, the said wire being bent upon itself to form three prongs and in which the union of the three prongs is formed of a twisted portion of fine pitch formed from

the portions of intermediate diameter and in which further the portions of largest diameter are bent tangentially from the twisted portions in opposite directions to form a substantially semi-circular head with the central prong extending radially inward.

In testimony of which invention, I hereunto set my hand.

LOUIS C. BELZ.

Witnesses:

R. M. KELLY,
E. W. SMITH.