K. OERTEL.

HEADED WIRE PIN.

APPLICATION FILED JULY 19, 1909.

1,063,057. Patented May 27, 1913.

FIG. 1.

FIG. 3.

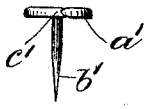


FIG. 2.

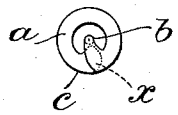


FIG. 4.

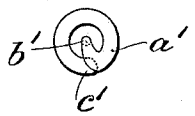


FIG. 5.

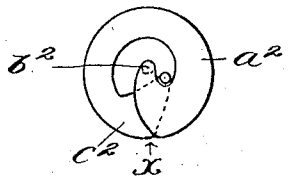


FIG. 6.

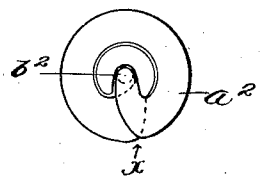


FIG. 7.

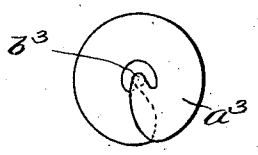
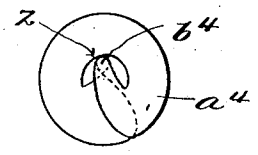


FIG. 8.



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HEADED WIRE PIN.

1,063,057. Specification of Letters Patent. Patented May 27, 1913.

Application filed July 19, 1909. Serial No. 508,516.

To all whom it may concern:

Be it known that I, KARL OERTEL, a subject of the German Emperor, residing at Berlin, Germany, have invented certain new and useful Improvements in Headed Wire Pins, of which the following is a specification.

In headed pins, such, for example, as nails and drawing-pins, and also and more particularly in button-fasteners or the like, wherein the flat heads consist of turns or wire constituting continuations of the pins proper or stems, only a small power of resistance is obtainable and the efficiency of such pins is, therefore, impaired. This must be ascribed to the fact that the turns of wire, from which the head-plate is formed, easily yield when an axial pull or pressure is put upon the pin, so that the turns of wire move out of the plane of the head-plate.

The present invention relates to headed pins in which the spiral head is not formed by several turns which fill up the entire circle, but by very little more than a single turn.

In consequence of the special formation of its head-plate, the present headed pin possesses a greater power of resistance, so that a deformation of the head-plate, caused by the bending of the wire, is less liable to occur. This is insured by the fact that the end of the coil of wire, which forms the head-plate, lies under a part of the coil situated near the axial pin, while fulfilling the requirement that the circumference of the head should be approximately circular, with the pin in the center. By this means a certain amount of strain is taken off the head-plate at the base of the pin, that is to say, exactly at the point which is subjected to the greater strain, when a pull or pressure is applied to the pin. The end laid under a part of the convolution now contributes to act in opposition to the aforesaid strain. At the same time, the end of the turn may lie entirely or partially under a portion of the turn, or it may also be so pressed up with a part of the turn, that it lies around it by forming a groove or fork. Finally the end may also be passed under a portion of the turn and reach wholly or partially into the space between the pin and the turn, so that this space is more or less completely filled up with wire material. In such a case, the end of the wire would lie in a protecting hollow, both the under and the upper surface of the head would be flat, and the circumference of the head smooth, without disturbing projections. The strength of such a pin made from wire may be increased, especially at the head-plate twisted up out of wire, by making the end lie as closely as possible to the pin projecting at right angles from the horizontal, and, in addition, by touching the pin with the turn of wire at another point also. By this means, any bending of the pin and, therefore, any oblique setting thereof relatively to the head-plate may be counteracted. The present headed pin is, therefore, particularly suited for button-fasteners, drawing-pins, carpet nails and the like, the important feature being that there shall be a firm connection between head and pin and also that the head-plate shall not be liable to bend.

In the drawing, Figure 1 is a side elevation of a headed pin embodying my invention; Fig. 2 is the corresponding plan; Fig. 3 is a side elevation of a slightly modified example of construction; Fig. 4 is a plan of the same; and Figs. 5 to 8 are plan views of four further modifications.

The head-plate a consists of slightly more than one turn or convolution of wire situated in a plane lying at right angles to the pin b. The end c of the convolution of wire lies, as shown by Fig. 1, and in dotted lines in Fig. 2, at a point x, in the vicinity of the pin b under the convolution. The head may be pressed into disk-like shape, slightly more pressure being applied at the point x, where the turns cross, than at the other points, so as to flatten and broaden said turns.

According to the form shown in Figs. 3 and 4, the end c' of the convolution a' is carried up to a point in the vicinity of the pin b'. The end c' which underlies the remaining portion of the convolution a' is shown in dotted lines in Fig. 4. By suitable pressure, said end c' is so united with the turn at the point of contact that it forms with that part of the turn a groove and tongue joint.

In Fig. 5, the end c^2 of the turn is shown in dotted lines as passed at the crossing point x^2 under the turn and into the space between the pin b^2 and head a^2, so that this end lies protected in said space. By thus introducing the end of the wire into the said space and then flattening the part of the

wire forming the head, the said space is filled up to a greater extent, as shown in Fig. 6, thus producing an approximately solid head. Furthermore, the strength, as mentioned above, may be increased by carrying the end of the wire situated under a part of the convolution a^3 close up to the pin b^3, as is shown by Fig. 7. Again, the convolution a^4 may also make contact with the pin b^4 at another point, for example, as shown in Fig. 8, at the point z.

What I claim is:

A pin of integral construction comprising a stem, and a flattened approximately solid coil disposed at right angles thereto and constituting the head of the pin, the free terminal of said coil extending across and beneath that portion of the pin which connects the stem and coil and projecting into and completely filling the space between said stem and coil.

In witness whereof I have set my hand hereunto in the presence of two subscribing witnesses.

KARL OERTEL.

Witnesses:

WOLDEMAR HAUPT,

HENRY HASPER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."