

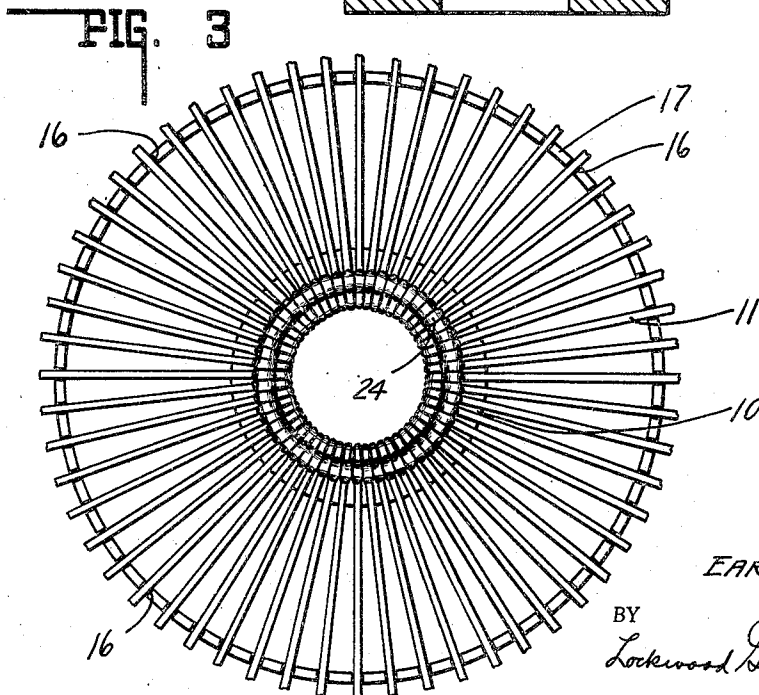
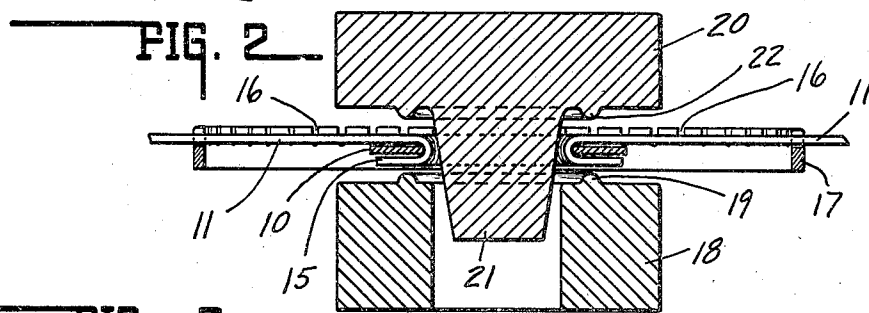
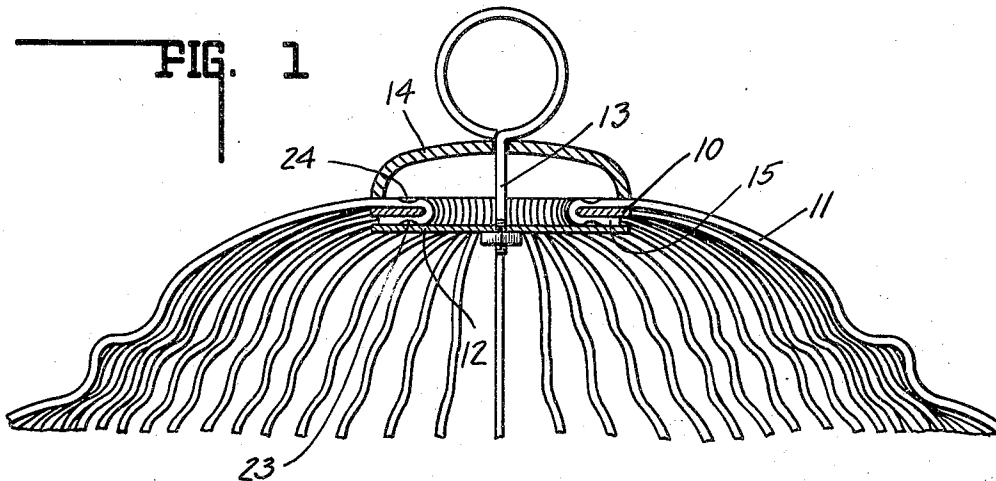
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E. W. LITTLE

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METHOD OF FORMING A WIRE STRUCTURE

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INVENTOR.
EARL W. LITTLE.

BY
Lockwood Goldsmith & Galt
ATTORNEYS.

UNITED STATES PATENT OFFICE

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METHOD OF FORMING A WIRE STRUCTURE

Earl W. Little, Indianapolis, Ind.

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6 Claims. (Cl. 140—71)

This invention relates to a method of forming a wire structure and particularly to the construction of bird cages, being an improvement upon the structure disclosed in Letters Patent No. 1,835,657, issued to Earl W. Little, December 8, 1931.

The preferred method of constructing cages is to first construct the crown of the cage and then form and shape it over a forming die. To do so requires that the upper ends of the wires be securely locked at the center and top of the crown to an anchor ring. By reason of the pull on the wires in forming the crown of the cage in various shapes on suitable dies, the anchoring of the wires to the anchor ring must be so positive and secure as to prevent their breaking away under the strains and stresses of the crown forming operation.

It is the object of this invention to rigidly secure the ends of the wires in their radiating position to the anchor ring by a simple and rapid stamping operation which will so position and lock them to the ring as to resist any dislodgment resulting from further drawing and forming operations and render the crown permanent in its structure.

Other objects and features of the invention will be readily understood from the accompanying drawing and the following description and claims:

Fig. 1 is a central vertical section through the dome of the cage after forming. Fig. 2 is a central vertical section through the anchor ring with associated wires and the forming dies before forming. Fig. 3 is a plan view of the anchor ring and associated wires after forming.

In the drawing there is shown the top or dome portion of a cage or similar structure having radiating curved or formed wire members, there being illustrated a circular anchor ring 10 from which a plurality of wires 11 radiate in their curved or formed condition. If the wire structure is to be employed for a bird cage or the like, and, for illustrative purposes, there may be provided a hanger comprising a supporting plate 12 connected by the handle bolt 13 with a cover plate 14.

The wires 11 are provided with hook formations indicated at 15 wherein the free end of the wire is bent back on itself to embrace or envelop the ring 10. The hook formation may be provided in any suitable manner on the ends of the wires so as to hook over the inner periphery of the ring 10, as illustrated.

By suitable means, not shown, the wires are po-

sitioned to extend radially from the ring 10, as illustrated in Fig. 3, with their hooked ends extending about the inner periphery of the ring 10 and their opposite ends being equally spaced from each other, and temporarily supported in recesses 16 of a locating ring 17.

With the wires resting in the proper position on the locating rim 17 and the hooked ends 15 extending about the anchor ring 10, the anchor ring is placed over a female die member 18 which is provided with an annular upstanding bead 19 of a diameter intermediate the inner and outer diameters of the ring 10. Associated with the female die, there is a male die 20 having a downwardly extending tapered centering member 21 and an annular bead 22 of the same diameter and in substantially the same formation as the bead 19.

With the ring 10 having the wires 11 hooked thereover, positioned substantially centrally of the dies, the male die is dropped so that the tapered centering member 21 passes through the opening in the ring and wires, engaging the inner surface of any wires which may be out of position, forcing and squeezing them into their relative positions against the inner periphery of the ring 10. Thus, as the die members approach each other, the hooked ends of the wires engaged by the member 21 are properly centered and spaced about the ring 10. The beads 19 and 22 then engage the wires on each side of the ring 10 to mash and flatten both sides to provide a series of flats, as indicated at 23 and 24, respectively. The mashed and flattened portions or flats 23 and 24 are thereby caused to wedge and clamp against each other to form a "keystone" structure which securely locks the wires to and about the ring and with respect to each other in such a permanent and solid construction that the wires and ring constitute an integral and solid structure, retaining the wires in their set, radially disposed and spaced positions.

The central structure is thereby completed in but a single stamping operation with the radiating wires securely fastened at their ends and extending in properly spaced relation preparatory to a drawing and forming operation for shaping the dome of the cage or similar structure, as illustrated in Fig. 1.

While the invention has been described herein as applied to bird cages, it will be readily apparent that it is equally applicable to any wire structures wherein a plurality of wires are to be gathered and secured to a common anchor ring.

The invention claimed is:

1. The method of anchoring a plurality of wires to an anchor member having an opening therein consisting in bending said wires about said member so as to extend through the opening therein, and stamping said wires about said member to form a plurality of flats in the wires extending in interlocking engagement one with the other. 5
2. The method of anchoring a plurality of wires to an anchor member having an opening therein consisting in hooking the wires to said member so that they lie adjacent to each other, and stamping the adjacent wires on said member to form a plurality of engaging flats therein interlocking one with the other. 10
3. The method of forming a wire structure having an anchor ring and a plurality of radiating wires, consisting in hooking the wires about said ring so as to extend above and below the surfaces thereof, positioning said ring and wires over a die member and applying a second die member thereto by force, one of said die members having a raised bead thereon in position to engage and flatten the wires to force them into interlocking engagement. 15
4. The method of forming a wire structure having an anchor ring and a plurality of closely associated radiating wires, consisting in hooking the wires about said ring so as to extend above and below the surfaces thereof, positioning said ring and wires over a die member having a raised 20
- annular bead, and applying a die member thereto having a corresponding annular bead, the application of said dies to said wires forcing the respective beads thereagainst and forming an annular series of interlocking flats in said wires on each side of the ring. 5
5. The method of forming a wire structure having an anchor ring and a plurality of radiating wires, consisting in hooking the wires about said ring so as to extend above and below the surfaces thereof, positioning said ring and wires over a die member having a raised annular bead, and applying a die member thereto having a portion thereof extending through the ring to force the hooked wires against the inner periphery thereof, the application of said dies simultaneously forcing the hooked wires against the inner periphery of the ring and the bead against the exposed surface of the wires, thereby forming an annular series of interlocking flats on said wires. 15
6. The method of rigidly and permanently anchoring a plurality of closely associated radiating wires to an anchor member consisting in bending said wires about said member to partially embrace the same, and stamping the embracing portions of said wires against the corresponding sides of said member to form said wires with a plurality of flats in interlocking engagement one with the other. 20

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