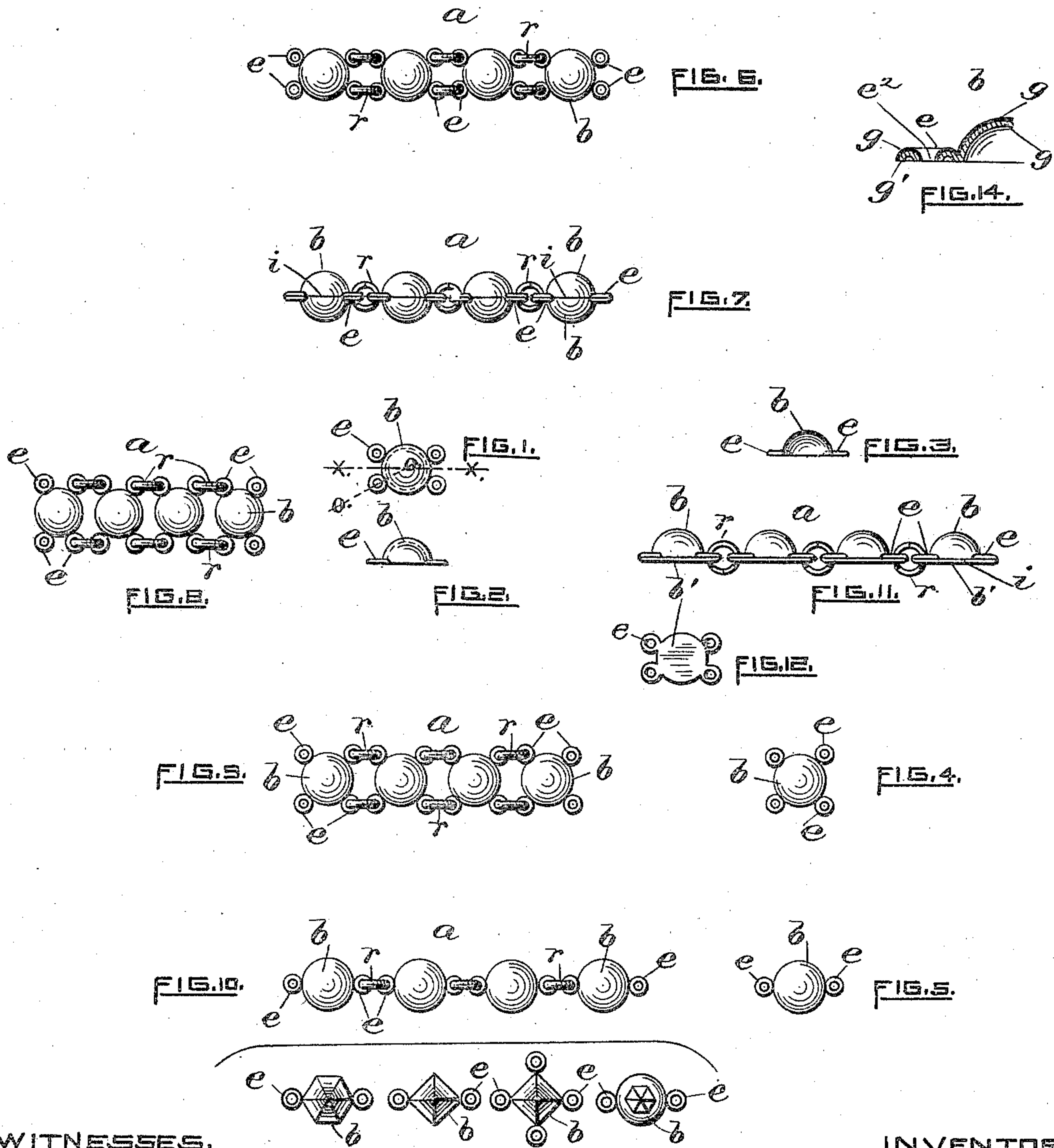


(No Model.)

C. D. REYNOLDS.  
ORNAMENTAL CHAIN.

No. 442,917.

Patented Dec. 16, 1890.



WITNESSES,

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# UNITED STATES PATENT OFFICE.

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## ORNAMENTAL CHAIN.

SPECIFICATION forming part of Letters Patent No. 442,917, dated December 16, 1890.

Application filed October 10, 1890. Serial No. 367,727. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES D. REYNOLDS, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Ornamental Chains; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

In the manufacture of bead chain—that is, chain composed of a series of hollow metallic spherical-shaped units arranged upon a cord or otherwise mounted, so as to form a flexible chain—it is practically found to be very difficult to make such units from as thin stock as is sometimes desirable, from the fact that such thin stock will not stand the necessary drawing or swaging and other operations incident to the process of manufacture. In view of this difficulty manufacturers have resorted to the practice of using heavy-plated stock when thin gold beads are required, from which the unit-blanks are first cut and subsequently reduced to a spherical form and afterward subjected to the action of “biting” acid, which eats out the base metal forming the lining of the pieces, thereby transforming the plated units into gold beads having the desired weight or thickness.

The object I seek to attain by my present invention is to produce in a much cheaper manner than heretofore a plated necklace or ornamental chain having the general appearance and weight of an all-gold bead chain. To that end my improvement consists, essentially, of a chain composed of a series of connected hemispheres or half-units struck up from sheet-stock. Each unit is provided with two or more eyes projecting from its face or base. In making up the chain two of the half-units are placed together loosely base to base, thereby forming a whole unit, the chain consisting of a series of such whole units connected by small links or rings passing through the adjacent eyes, all as will be more fully hereinafter set forth and claimed.

In the accompanying sheet of drawings,

illustrating my invention, Figure 1 represents a plan or top view of one of the half-units provided with four eyes. Fig. 2 is a side view. Fig. 3 is a sectional view taken on line  $x x$  of Fig. 1. Fig. 4 is a plan view of the unit having four equidistant eyes. Fig. 5 is a similar view of the unit provided with two eyes. Fig. 6 is a plan view of a piece of chain formed of the units shown in Fig. 1. Fig. 7 is a side elevation. Fig. 8 is a plan view showing a different arrangement of the units. Fig. 9 is a plan view of a chain formed of the units shown in Fig. 4. Fig. 10 is a similar view of a chain formed of the units represented by Fig. 5. Fig. 11 is a side view of my improved bead chain having a substantially flat side. Fig. 12 is a plan view of a blank adapted to form the flat or under side of the chain shown in Fig. 11. Fig. 13 shows modifications of units adapted to be used in my improved bead chain; and Fig. 14 is an enlarged transverse sectional view taken on line  $o o$  of Fig. 1, showing the manner of forming the link or unit eyes.

The following is a more detailed description of my invention.

$a$ , referring to the drawings, indicates the bead chain itself,  $b$  the semi-units provided with eyes  $e$ , and  $r$  the rings or small links connecting said units. The several units  $b$  are punched or cut out from a strip of flat stock rolled to any desired thickness. The stock may be gold, silver, or any suitable metal, although I preferably use what is known as “stock-plate”—that is, brass or other base metal having a thin sheet of gold united to one of its sides or faces.

In Fig. 14 is a sectionally represented (although greatly enlarged) a portion of one of the struck-up units  $b$ , taken through an eye  $e$ . In said figure,  $g'$  designates the base metal and  $g$  a thin coating or plating of gold united thereto. It will be seen that the sides of the eye and its opening  $e^2$  are well rounded. This is done during the process of transforming the flat blank into the semi-unit form, thereby practically concealing the base metal and producing an all-gold wearing-surface.

The form or shape of the units  $b$  may be varied from that shown by Fig. 1, examples of such modifications being represented in Fig. 13. In any case, however, the main, or



center portion should be upraised, the base of each unit being formed with two or more attached eyes *e*. These eyes or ears are preferably made integral with the unit; otherwise the cost of soldering them thereto would preclude the sale of such plated chain as compared with the ordinary bead chain.

In assembling the parts to produce the chain the workman places a pair of the half-units together, base to base, and inserts into each set of eyes *e* an open ring or "jump-ring" *r*. He then attaches to the same rings another pair of semi-units and closes the rings, the operation being continuously repeated as the chain progresses.

Sometimes, in order to produce a chain adapted more especially to be worn as bracelets, I combine with each semi-unit *b* a flat piece or loose back *b'*, Figs. 11 and 12, the several parts being connected by rings *r*, as before described.

If desired, the units may be engraved or otherwise made ornamental without departing from the spirit of the invention. The chain is readily made up and without the use of solder thereby, as before stated, producing in an inexpensive manner a plated chain having the general characteristics of a lightweight gold bead chain. The presence of the open joint or seam *i* formed at the adjacent faces of the semi-units of each link greatly facilitates the operation of drying the chain after it has been washed and packed in sawdust or other suitable absorbent material.

I claim as my invention—

1. As a new article of manufacture, an or-

namental chain having the units thereof formed of semi-units arranged base to base and provided with eyes having attaching rings or links passing through said eyes to connect the several units, substantially as hereinbefore described.

2. An ornamental chain consisting of semi-units, as *b*, arranged base to base to produce the appearance of substantially whole units, each semi-unit having two or more integrally-formed eyes and open rings or links passing through the eyes of the adjacent units, thereby connecting the several units of the chain.

3. A chain consisting of struck-up semi-units provided each with two or more attaching-eyes, a substantially flat back or base piece having two or more attaching-eyes for each of said semi-units, and open connecting-rings, as *r*, passing through the eyes of the adjacent semi-units and base-pieces, substantially as described.

4. An ornamental chain of the class hereinbefore described, having the links or units thereof formed each of two struck-up plated semi-units provided with integrally-formed eyes well rounded cross-sectionally to conceal the base-metal lining, and rings or small links passing through said eyes to connect the several units.

In testimony whereof I have affixed my signature in presence of two witnesses.

CHARLES D. REYNOLDS.

Witnesses:

CHARLES HANNIGAN,  
GEO. H. REMINGTON.