

G. U. MEYER.
METHOD OF MAKING ORNAMENTAL BLANKS.
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921,722.

Patented May 18, 1909

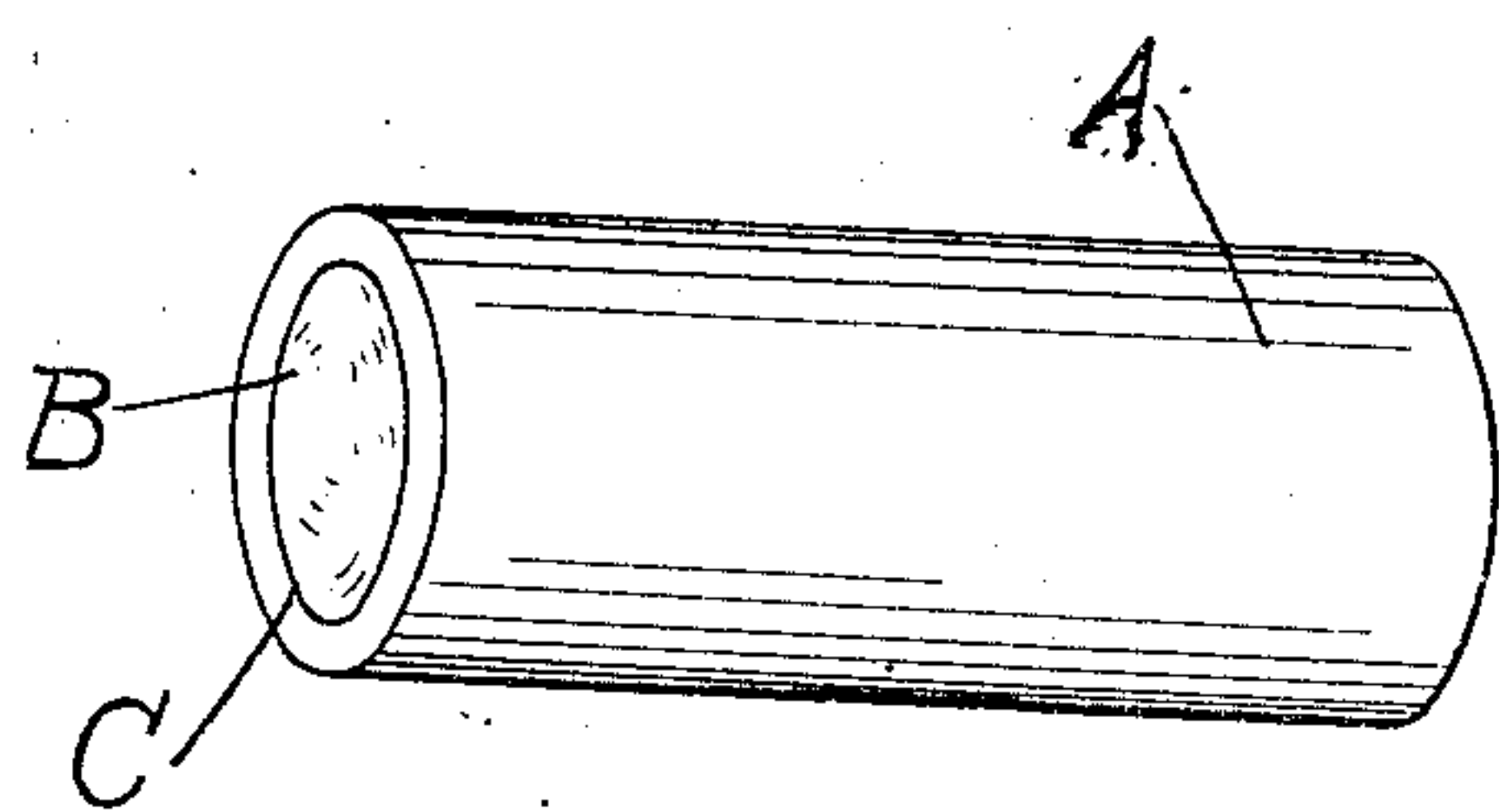


FIG. 1.

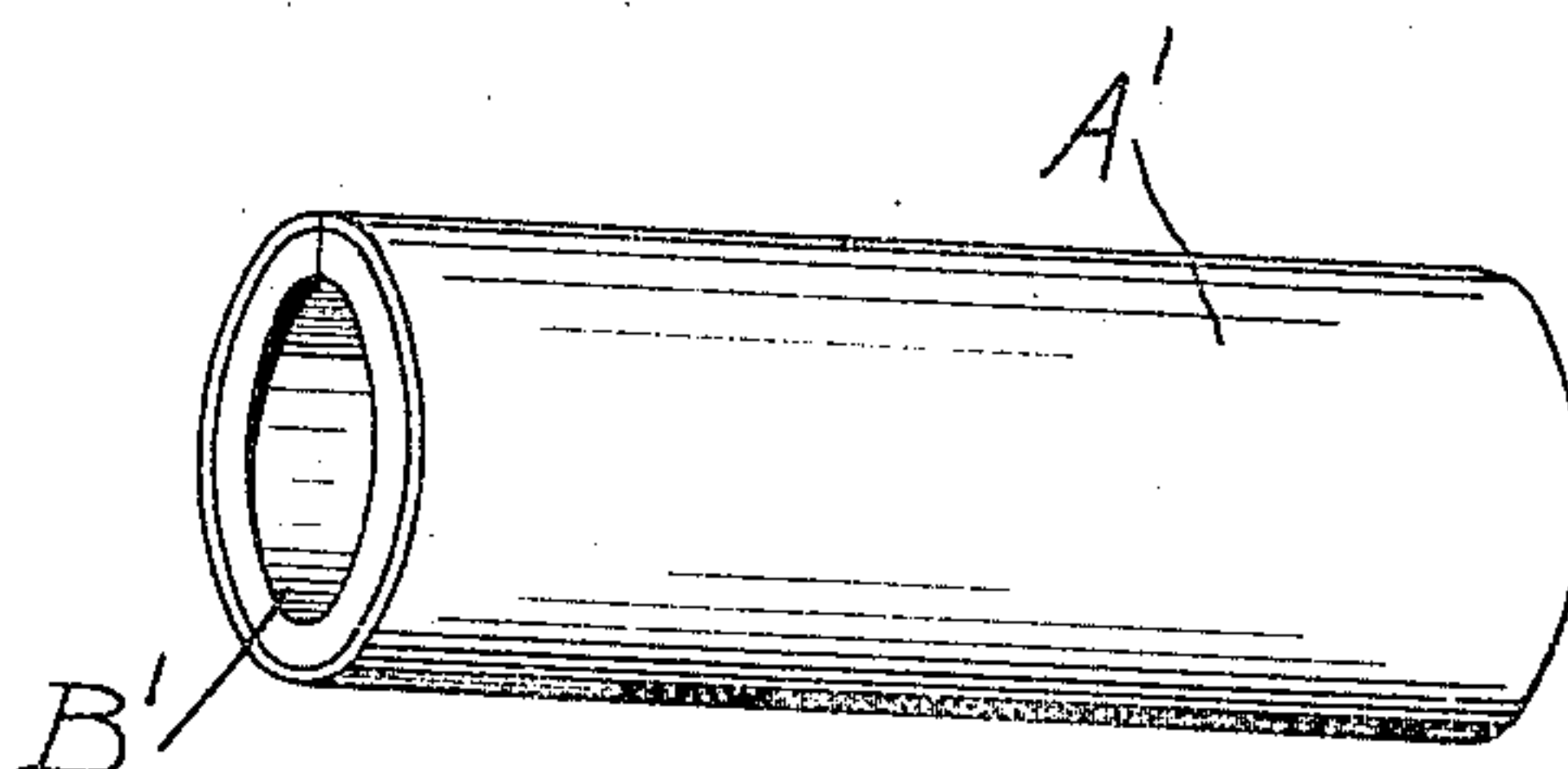


FIG. 2.

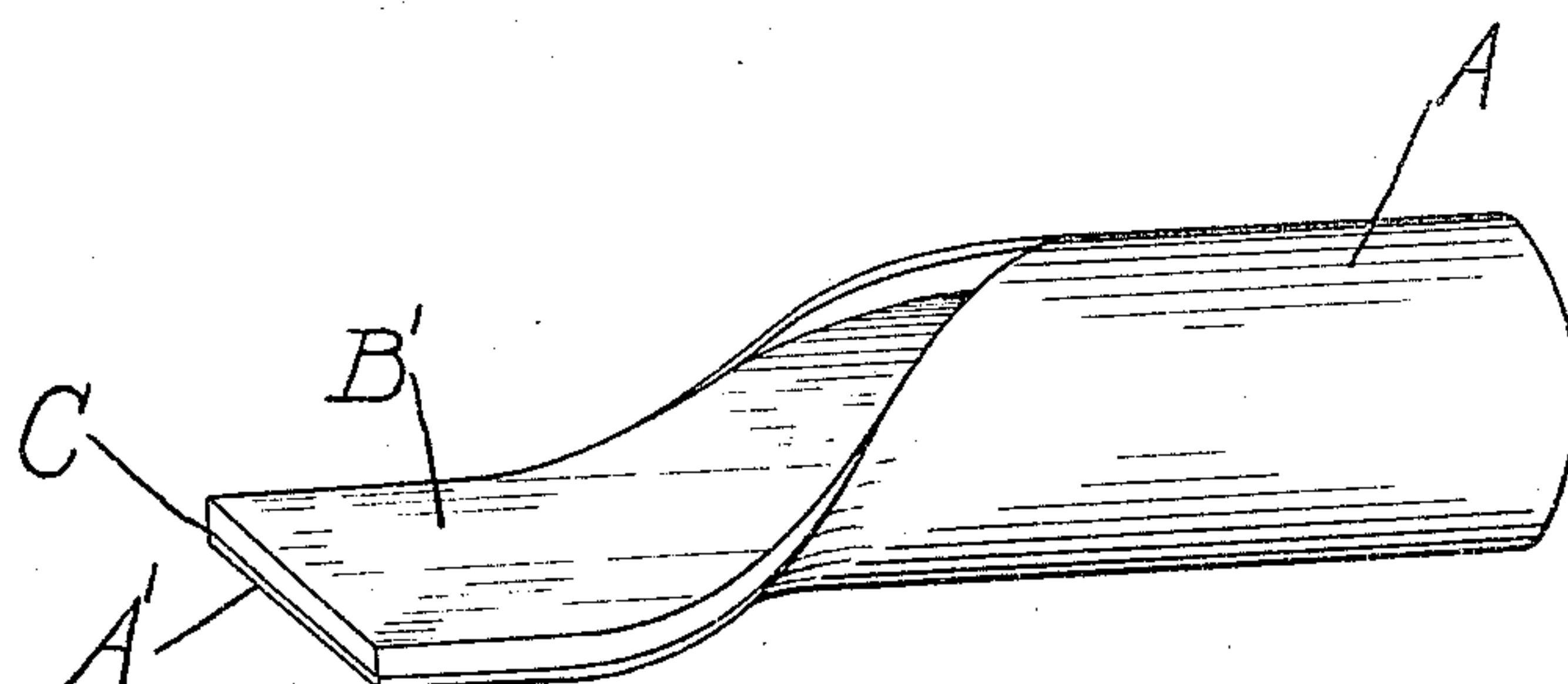


FIG. 3.

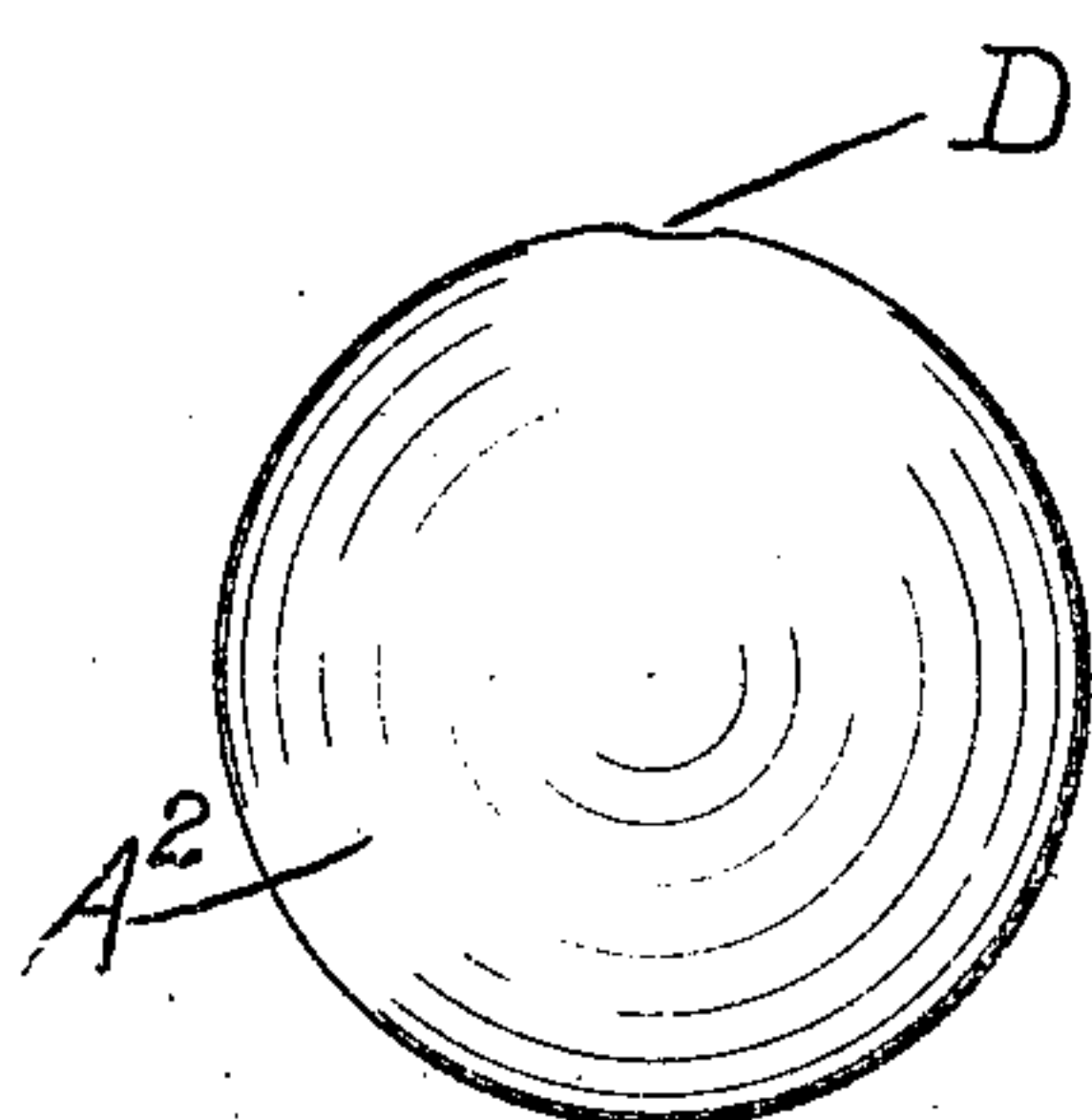


FIG. 4.

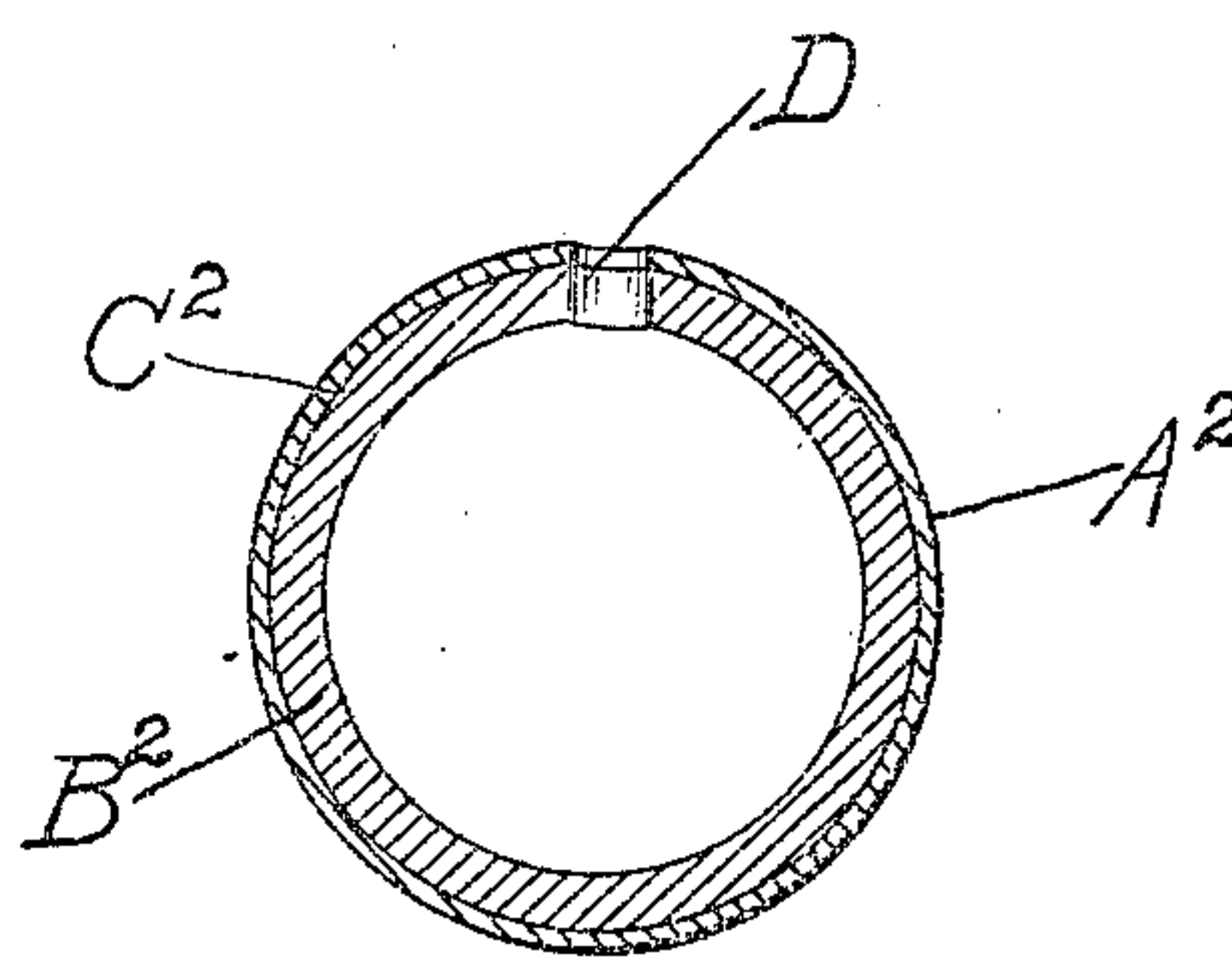


FIG. 5.

WITNESSES.

Albert G. Piegentowski.
Robert E. Lanphear.

INVENTOR.

George U. Meyer
By Horatio E. Bellows
ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE U. MEYER, OF PROVIDENCE, RHODE ISLAND.

METHOD OF MAKING ORNAMENTAL BLANKS.

No. 921,722.

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To all whom it may concern:

Be it known that I, GEORGE U. MEYER, 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 Methods of Making Ornamental Blanks, of which the following is a specification.

My invention relates to the manufacture of ingots and blanks, a constituent part of which consists of gold, alloys of gold, platinum, or other precious metal, intended to be reduced into seamless or seamed wire, balls, and other articles.

The primary objects of my invention are the successful construction of articles of this character whose thin walls would otherwise collapse, bend, or become distorted during the process of construction or reduction; or become brittle and weak under the action of acid particularly when the walls are of a metal having a low degree of fineness. To insure the thorough removal of every vestige of the core without injury to the shell, and further, to prevent distortion, buckling, and breaking of the core from the shell during the reducing manipulations.

To the above ends essentially my invention consists in the novel process described in conjunction with the accompanying drawings which constitute a part of these specifications.

I have discovered that ferrous metals can be successfully used as the cores for precious metal ingots adapted to be reduced into blanks; which ferrous metals, although obviously cheaper and otherwise more effective than the brass and copper compounds universally used, have not been employed, presumably because of fear that the oxidation of the iron would prevent a proper union of the parts. Furthermore, any acid which can be successfully used to act upon a core of brass, copper, or compositions of either, eats, rots, or otherwise injuriously affects the precious metal shell. This I have found true, for instance, whenever a gold shell is of 12 carats or under. By using iron as a core, however, acids can be employed which will effectually remove the iron without injuring the outer precious metal shell regardless of the carat or degree of fineness thereof.

Figure 1 is a perspective view of a seam-

less cylindrical ingot made by my process. Fig. 2, a like view of a seamed ingot likewise constructed. Fig. 3, a similar view of the same in process of construction. Fig. 4, a perspective view of a ball or spherical ingot made by my process, and Fig. 5, a diametrical section of the same.

Like reference characters indicate like parts throughout the views.

My process is performed by uniting to a solid or hollow core of iron, steel, or other ferrous metal a precious metal shell, with or without solder interposed between the shell and core, and subjecting the parts so assembled to heat to fuse the solder, or, if solder is not used, to fuse the alloys in the precious metal shell. It will be understood that at any convenient time before assembling the members to be heated as above, their surfaces should be fluxed to facilitate the flow of the solder or fused alloys. After allowing the ingot to cool, it will be found that the shell and core firmly adhere to each other in a practically integral mass.

In forming the cylindrical ingot shown in Fig. 1, the seamless precious metal shell, A, is united to the ferrous core, B, by the welding or fusing agent, C, which may be solder in sheet or granulated form applied in any convenient manner, such, for instance, as set forth in United States Patents Nos. 294,732, or 432,690.

In forming the seamed ingot shown in Fig. 2, the shell, A', and core, B', are originally flat, as shown in Fig. 3, and are united in the flat by the solder sheet or film, C'. Then by a draw plate or other usual tool, the parts are folded and reduced into the seamed cylindrical form shown in Fig. 2.

By my process, the spherical ingot shown in Fig. 4 is formed, as was the last described ingot, in the flat. The core, B², and shell, A², are united in the flat by the welding agent, C², and the ingot is drawn up into the hollow sphere shown in Fig. 4. A resulting opening, D, appears in the wall of the ingot.

The described forms of ingots may be reduced in diameter and otherwise worked to any desired extent or dimension without the collapse or breaking away of the shell from the core. Whenever the desired dimension of the ingot is attained, it is immersed in diluted or undiluted hydro-chloric or sulfuric

acid independently or mixed together, which attacks the exposed portions of the ferrous core and eats the same away, leaving the precious metal shell intact.

What I claim is,

The process of forming ornamental blanks consisting in uniting by fusion to a ferrous core a precious metal shell, reducing the di-

ameter of the united parts and finally removing the core by acid.

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

GEORGE U. MEYER.

Witnesses:

HORATIO E. BELLOWS,

JOSEPH E. BURNS.