

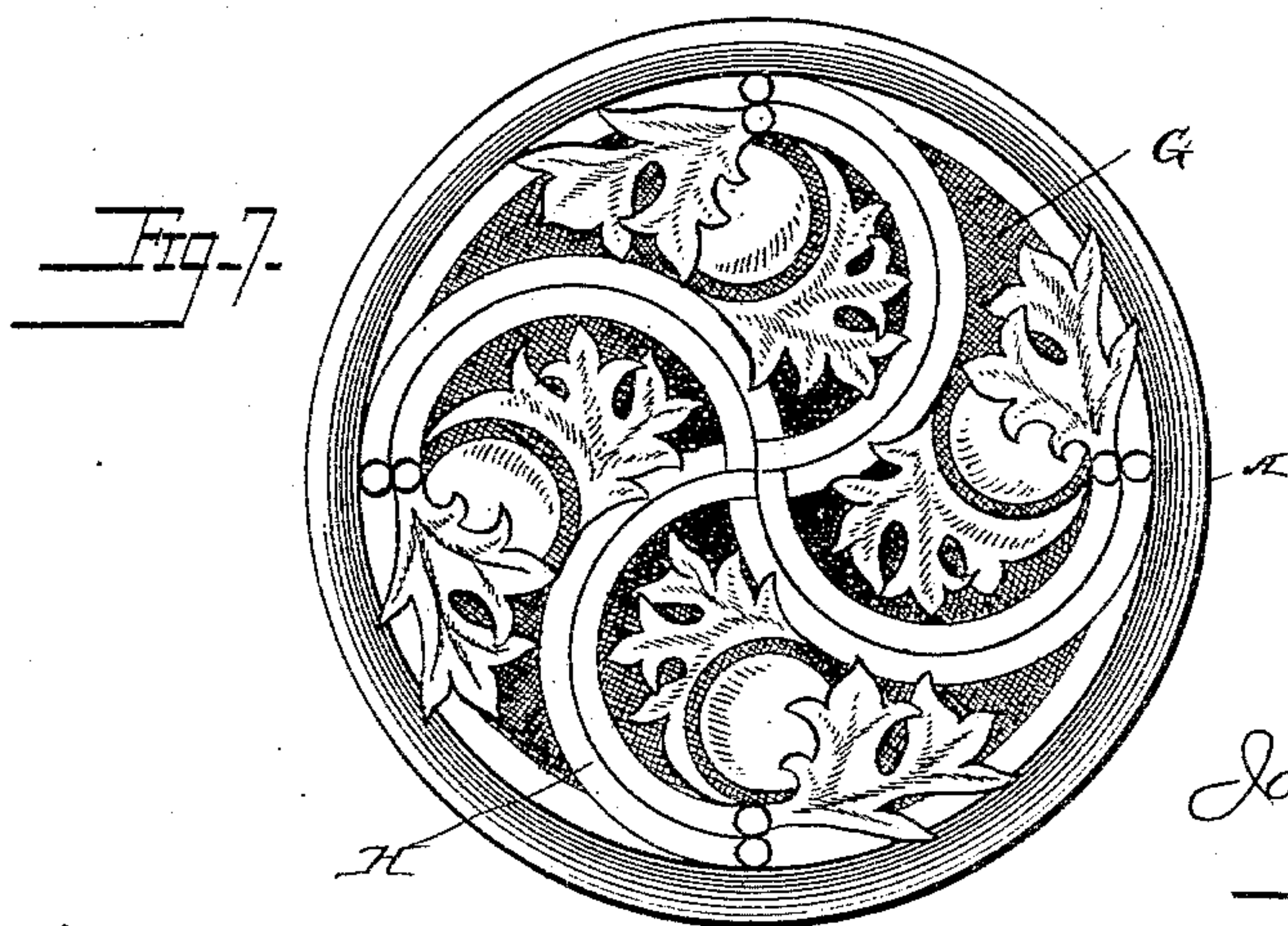
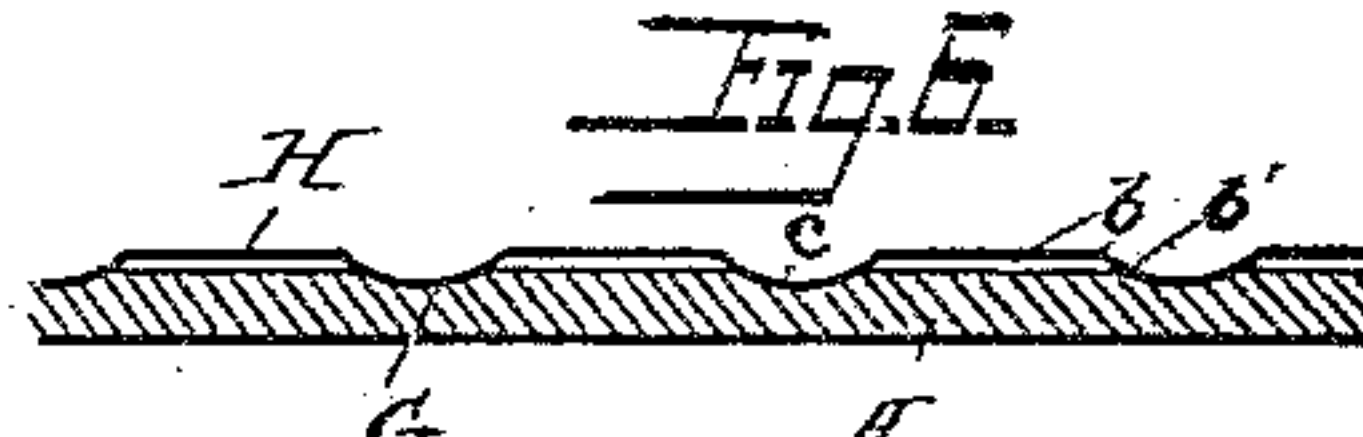
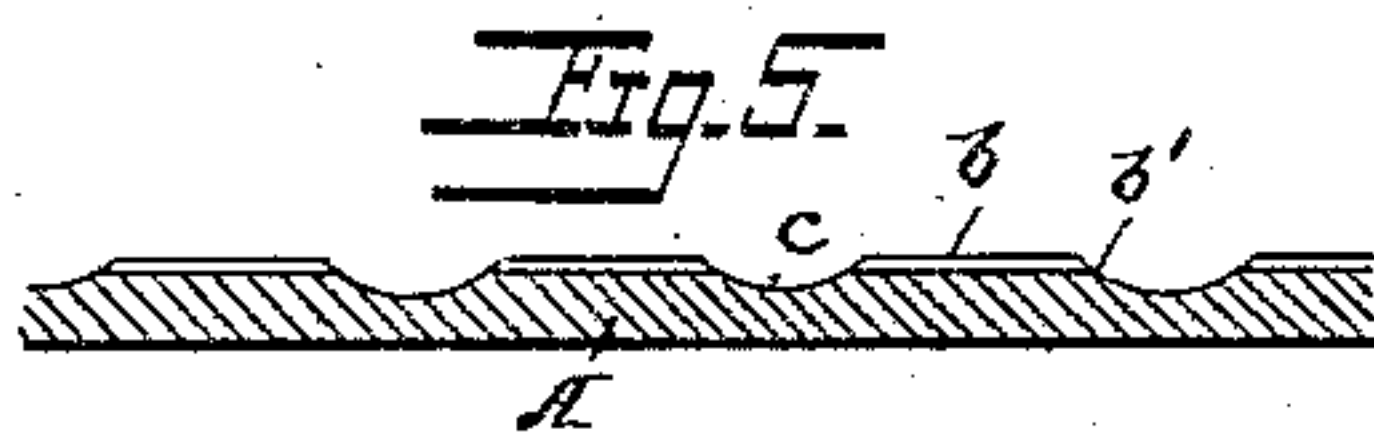
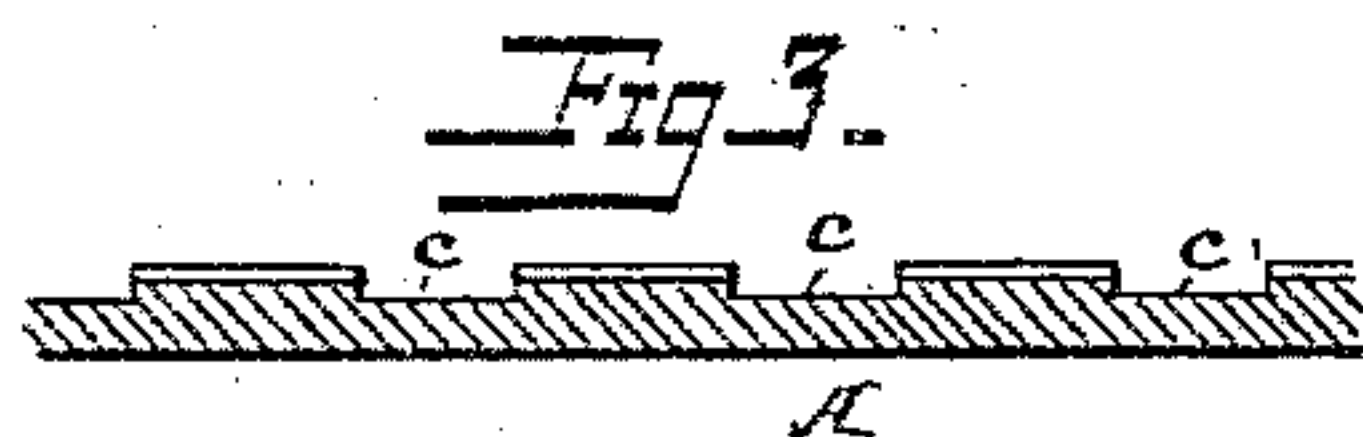
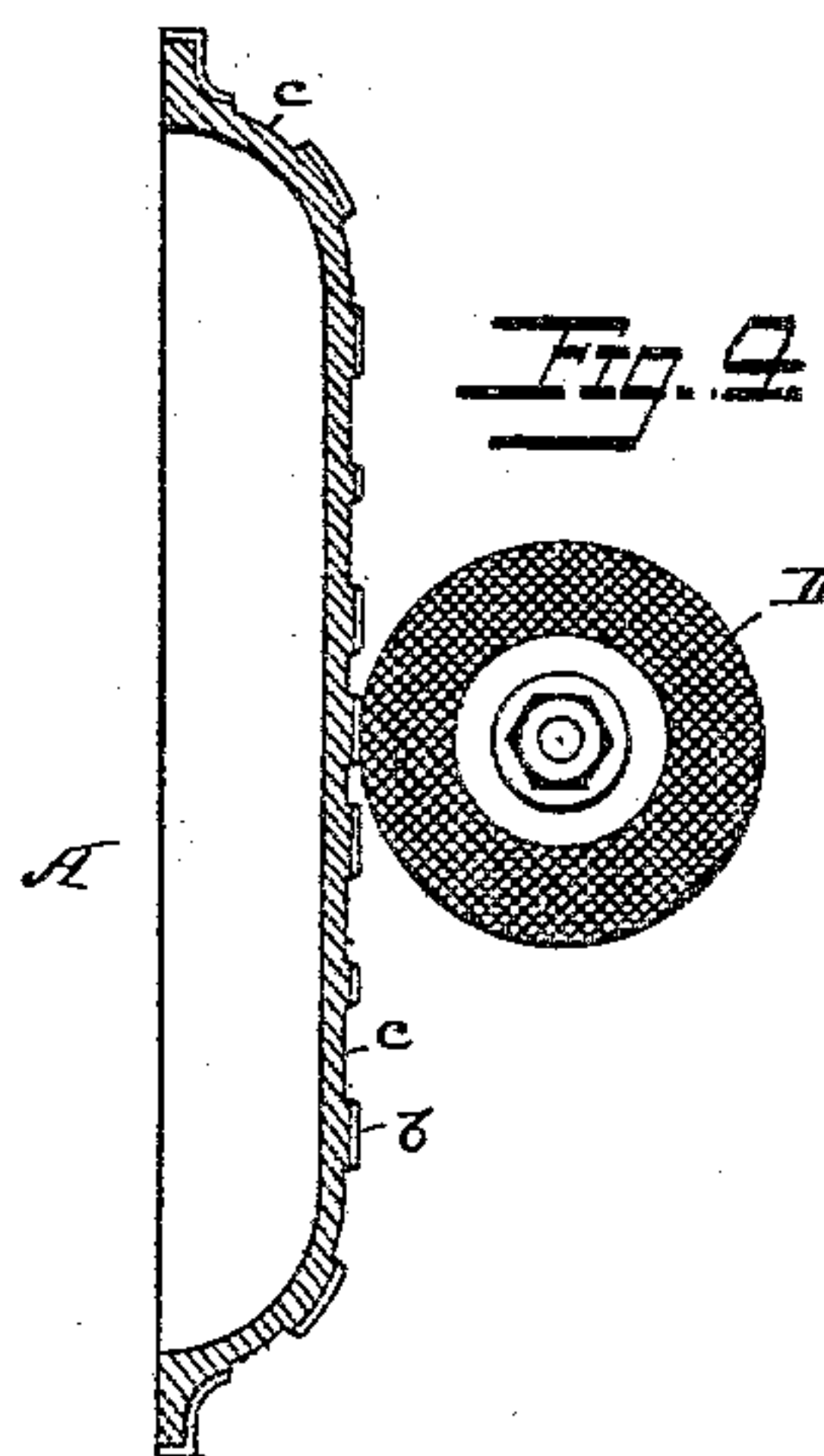
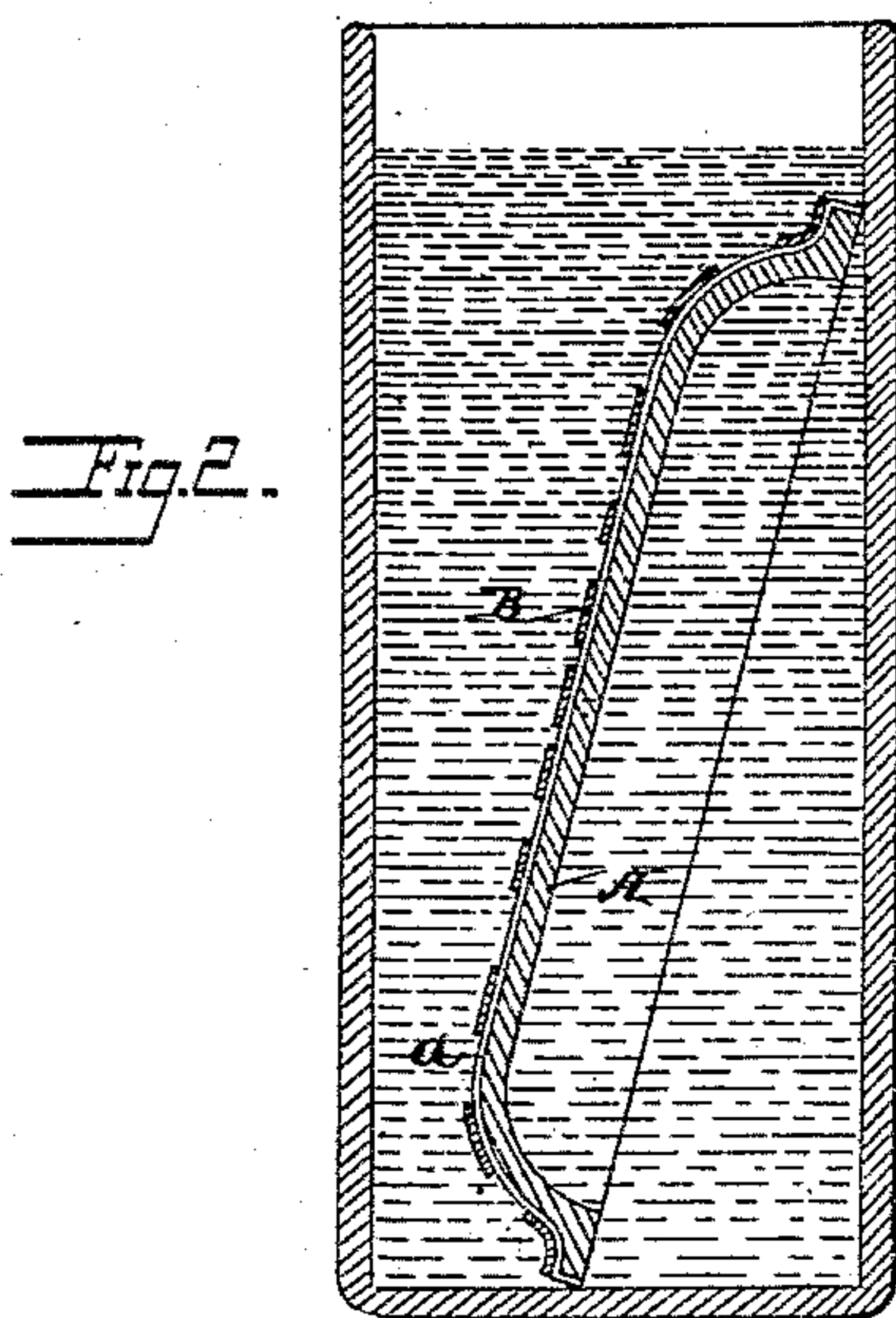
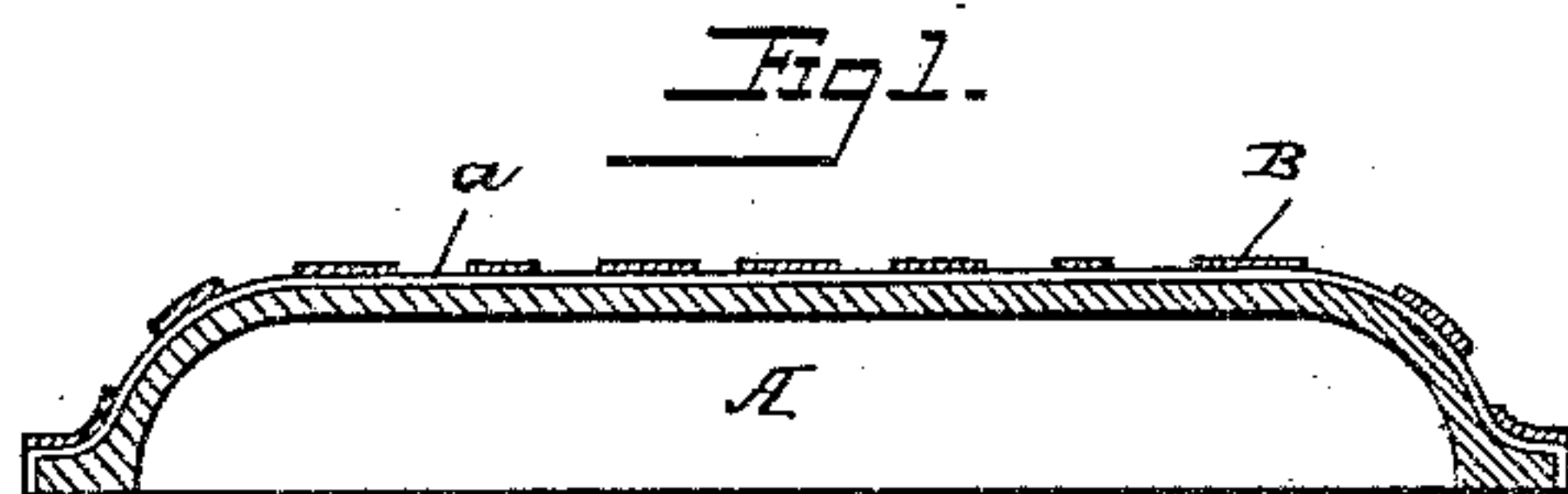
(No Model.)

J. BAYNES.

METHOD OF DECORATING METAL.

No. 378,420.

Patented Feb. 28, 1888.



Attest:
Jno. S. Shinkell, Jr.
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Inventor.
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Attys.

UNITED STATES PATENT OFFICE.

JOHN BAYNES, OF WESTCHESTER COUNTY, NEW YORK.

METHOD OF DECORATING METAL.

SPECIFICATION forming part of Letters Patent No. 378,420, dated February 28, 1888.

Application filed May 21, 1887. Serial No. 233,990. (No specimens.)

To all whom it may concern:

Be it known that I, JOHN BAYNES, a subject of the Queen of Great Britain, and a resident of Westchester county, New York, United States of America, have invented certain new and useful Improvements in Decorating Metal, of which the following is a specification.

The improvement is intended to apply to all cases where portions of a previously-plated surface are bitten by acid in the manner generally known as "etching." I have discovered that a peculiar effect, highly conducive to the ornamental appearance, is induced by polishing with a soft surface, as a buff-wheel, so that the effect will be felt on the elevations and a little distance down into the depressions, thus rounding the corners or edges of the high parts, and ultimately coating the whole with lacquer and staining the whole or a portion of the surface.

I will describe the invention as applied to the decoration of watch-backs.

The accompanying drawings form a part of this specification and represent what I consider the best means of carrying out the invention.

Figure 1 is a transverse section through a watch-back which has been plated with gold or other metal and having a coating of resist dissolved away according to the figures required. It is the condition ready for immersion in the acid. Fig. 2 shows the same immersed in the acid. Fig. 3 shows a portion of the same on a larger scale after the biting by the acid has been completed and all the remaining resist has been cleaned off. Fig. 4 shows the same watch-back in the act of being treated by a soft buff-wheel to polish the entire surface, which enters the depressions, rounding or chamfering the edges thereof. Fig. 5 is a section of a portion on a larger scale, showing the condition induced in the boundaries or edges of its several depressions by the action of the buff-wheel. Fig. 6 shows the same after a uniform coating of lacquer has been applied. Fig. 7 is a face view of the completed watch-back.

A is the body of the metal of the watch-back. a is a coating of gold or other metal thereon; B, a partial coating of wax, bitumen, or other material or composition, which is capable of serving as a "resist" for the acid.

I employ photography in producing the proper designs with the patches B of resist, or with clear spaces left between them. Such are detailed in a patent to me dated August 7, 1883, No. 282,485, and is briefly as follows: A mixture of ninety per cent. of asphaltum with ten per-cent. of gum-kauri is sufficiently sensitive to the action of light to be a practicable photographing medium. It is also a resist for the ordinary etching-acid. By coating the whole surface with a thin uniform layer of this resist, then exposing the surface to a strong light under a negative having the proper figure sharply defined for a sufficient period, (eight hours is preferable,) then a light washing with oil of turpentine or benzole to remove all the unaffected parts will leave the portions where the light has struck still continuously coated with the resist. When the acid has bitten the metal sufficiently to bite through the plating a and also to some depth into the body A, the whole is liberally washed with water, and the patches of resist B are removed by a suitable solvent, as oil of turpentine, and the entire metal surface finally thoroughly cleaned. The etched or sunk portions c are roughened by the action of the acid, and present a different appearance by reason of that fact. The surface thus roughened also holds very tenaciously the staining material which is applied.

When the etching and cleaning operations are completed, I apply the entire surface gently and skillfully to a rapidly-revolving mass, D, of soft material, as cotton, fabric, felt, or chamois leather, technically termed a "buff-wheel," holding the watch-back in various positions thereto. The soft material rubs across its surface, and entering by gentle pressure a little into the several depressions c, delicately rounds the edges of all the raised parts b, as indicated by b'. This changes the effect. The decorated surface now shines in all positions in which it may be held if there is a sufficient quantity of light thrown on it in any direction. By applying any suitable staining material, G, the spaces c are given any desired tint, and the stain is wiped from the high portions b while it is fresh. Finally, the whole surface is covered with a thin and highly-transparent lacquer, H. The decorated surface thus produced differs materially from any before

known to me both in the mode of its manufacture and in the decorative effect produced. The designs may be varied indefinitely.

What I claim as my invention is—

- 5 1. The method of decorating metal, substantially as hereinbefore set forth, which consists in plating with a different metal, photographing designs thereon in resist, etching the exposed surfaces and buffing the edges thereof.
- 10 2. The method of decorating metallic surfaces, substantially as hereinbefore set forth,

which consists in photo-etching, staining the sunk and roughened portions, and rounding the edges thereof by buffing.

In testimony whereof I have signed my name 15 to this specification in the presence of two subscribing witnesses.

JOHN BAYNES.

Witnesses:

P. KEMBLE, Jr.,
BERNARD J. KELLY.