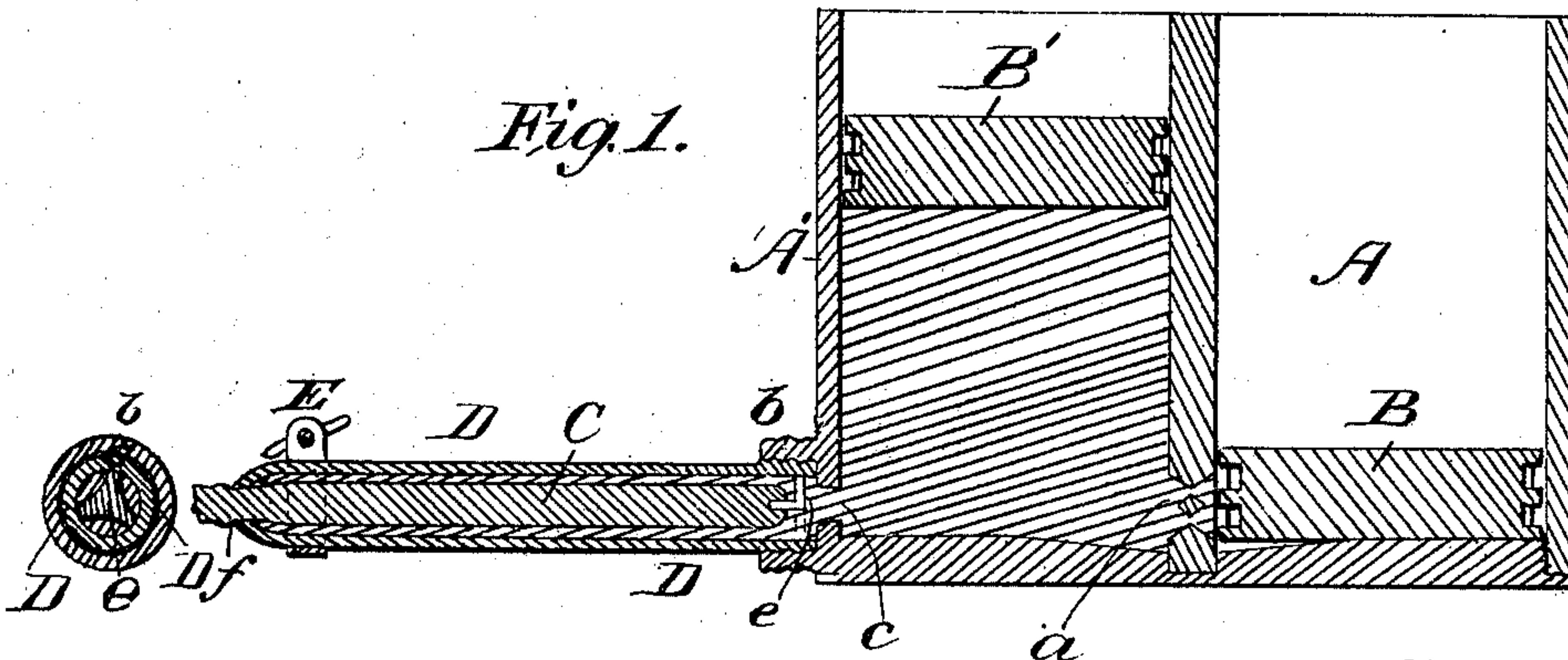


J. A. McCLELLAND.

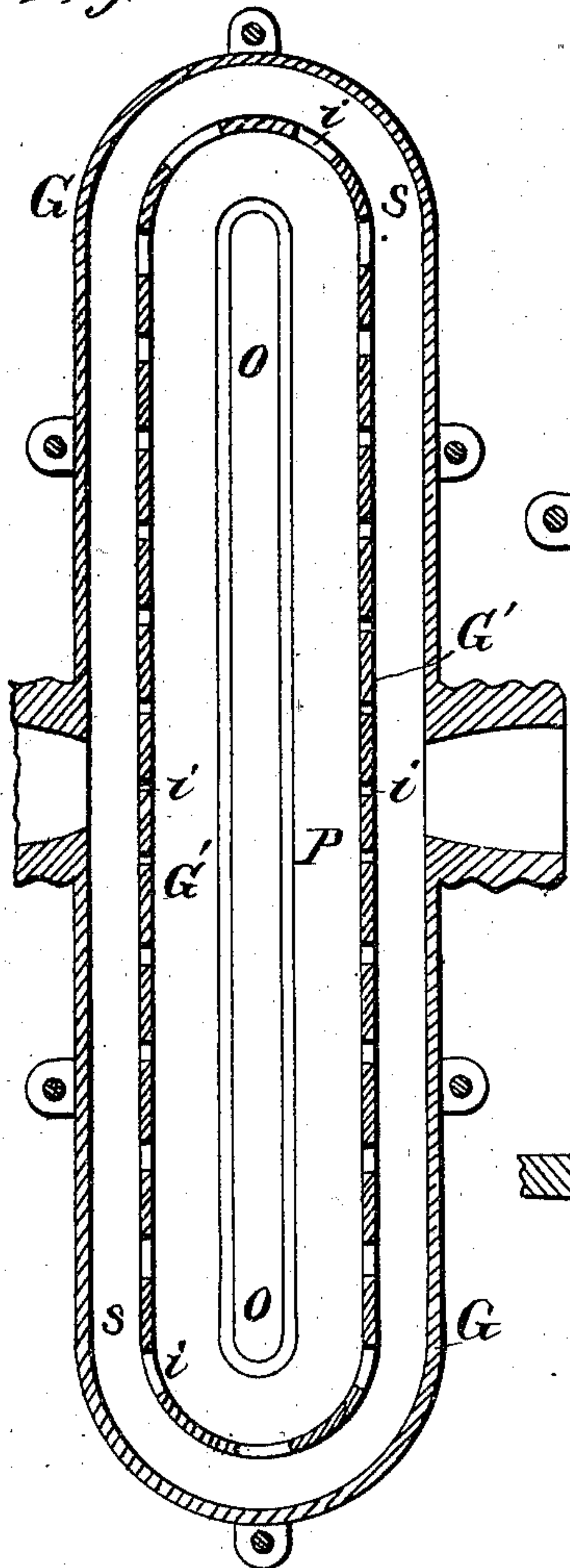
PROCESS OF COATING OBJECTS WITH COLLODION AND ITS COMPOUNDS.

No. 105,823.

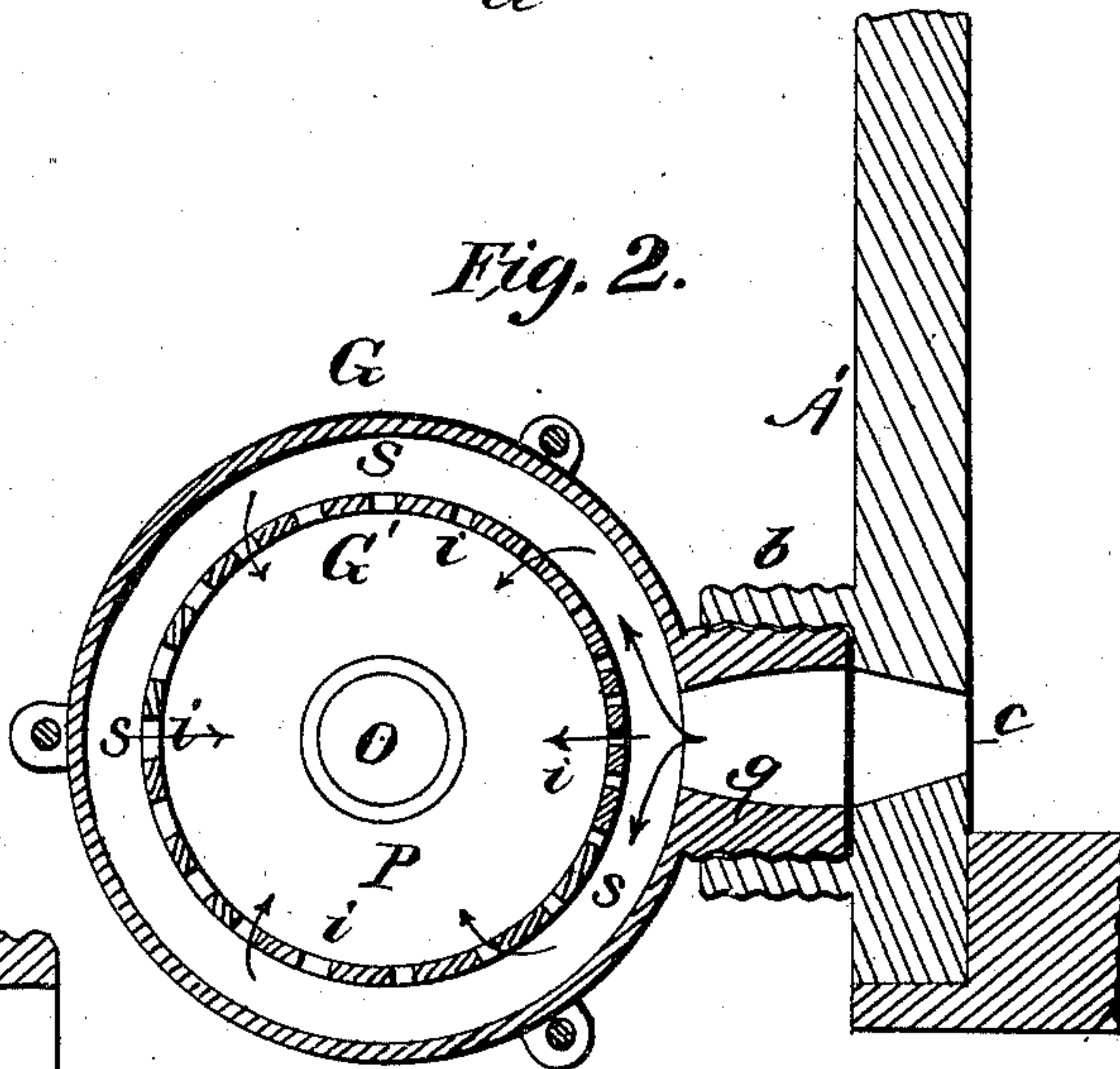
Patented July 26, 1870.



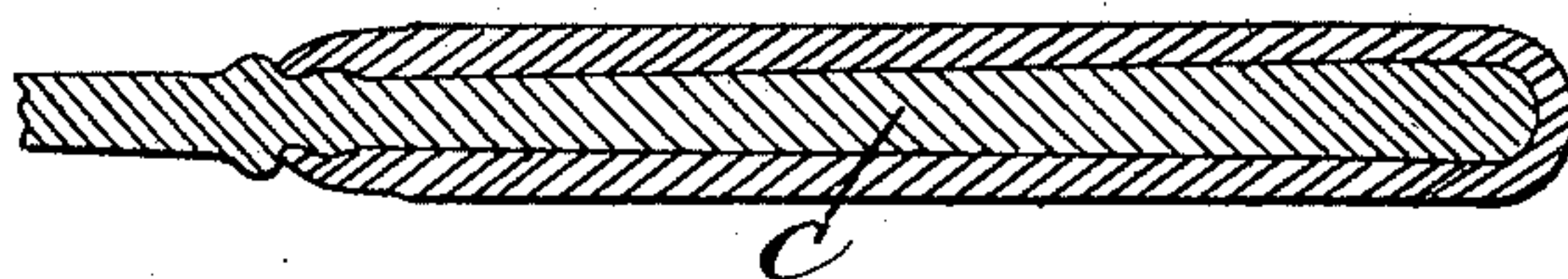
*Fig. 3.*



*Fig. 2.*



*Fig. 4.*



Witnesses  
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# United States Patent Office.

JOHN A. McCLELLAND, OF LOUISVILLE, KENTUCKY.

*Letters Patent No. 105,823, dated July 26, 1870; antedated July 22, 1870.*

## IMPROVED PROCESS FOR COATING OBJECTS WITH COLLODION AND ITS COMPOUNDS

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, JOHN A. McCLELLAND, of Louisville, in the county of Jefferson and State of Kentucky, have invented a new and improved Process for Coating Objects with Collodion and its Compounds; and I do hereby declare that the following is a fully clear and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a perspective view, showing one form of mold adapted for use in coating handles applied to a mixing-machine.

Figure 2 is a sectional view, showing another form of mold adapted for coating cylindrical objects.

Figure 3 is a modification of fig. 2, adapted for applying the coating to flat plates or sheets.

Figure 4 is a sectional view of an instrument having its handle coated.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to coat or cover the surfaces of various objects with collodion, or with compounds containing collodion in more or less quantities.

I am aware that billiard-balls, knife-handles, and other objects have been coated with collodion by a dipping process, and afterward subjected to heat and pressure for the purpose, as has been alleged, of expelling the air-bubbles and condensing the coating. I do not, therefore, claim this process of coating.

The nature of my invention consists in treating collodion, or collodion mixed with other substances, so as to deprive it of air-bubbles before it is applied to the article to be coated, and then molding this compound upon the article, so as to obtain a coating of any required thickness, at one operation, as will be hereinafter explained.

To enable others skilled in the art to understand my invention, I will describe the best means known to me for carrying it into effect.

For the purpose of preparing collodion, or the compounds containing collodion, I employ a mill or mixing-machine, constructed substantially as described in an application for a patent bearing even date with this, and marked "Case A."

In fig. 1 of the accompanying drawing—

A A' represent two vessels, in which work up and down pistons B B', and which communicate with each other through fine perforations *a*.

The fiber or woody matter, which has been treated with nitric and sulphuric acids to render it soluble, is put into one of said vessels, beneath the piston therein, and to this substance is added a suitable quantity of ether or other solvent.

The discharge-orifice *c*, leading from the vessel A', is then tightly shut, and after all the air has been ex-

pelled from beneath the pistons B B', these pistons are worked up and down, which will compel the substances contained in the vessels to alternately pass from one vessel into the other through the fine passages *a*, thereby intimately mixing the substances free from air.

If desirable, resins, balsams, gums, oils, nitro-glucose, or other substances may be added in any suitable proportions, and intimately mixed with the collodion; and if it is desired to use coloring matter, this may be added to the compound and blended with it in the mixing-vessels.

Having thus prepared the substance or compound which is to be used for coating objects, I adjust, within a suitable flask or mold, the object to be coated, and after applying the same to the discharge-orifice *c* of vessel A', as shown in fig. 1, the substance is forced into this flask or mold, around the object therein, by holding piston B down, and applying pressure to piston B'.

The drawing represents a flask adapted for coating handles of instruments; also a device for applying the coating to cylindrical objects; also a device for applying the coating to flat surfaces, but I shall not confine myself to these devices, as a variety of molds or flasks may be adopted, according to the form or character of the surface or surfaces to be coated.

In fig. 1, D represents a longitudinally divided flask, whose inner diameter is as much greater than the diameter of the object O to be coated, as it is required to have the thickness of the coating.

This flask is screwed into the discharge-nozzle *b* of vessel A', and its outer end is provided with a clasp, E, for confining the sections together at this point.

The handle of the instrument is centered in its flask by a spider, *e*, at one end, and by a contraction of the flask at the other end.

In fig. 2 another device is shown, adapted more especially for applying the coating to cylindrical objects. This device consists of a case, G, of cylindrical shape, inclosing a circular perforated shell, G', which latter forms in the case G an annular space, *s*, and a central chamber, P.

The nozzle *g*, formed on case G, is received by and attaches the device to the discharge-nozzle *b* of mixing-vessel A'.

Passages are made centrally through the ends or heads of the case G, one of which, *o*, is tapering, and adapted for spreading the coating evenly upon the object while passing through the chamber P.

The perforations *i*, made through the shell G', may be gradually increased in size as they leave the point of entrance or nozzle *g*, for the purpose of having the coating substance uniformly pressed and fed toward the center of the chamber P, all around the same.

The thing to be coated is forced slowly through the



chamber P, and as it leaves this chamber, the collar around passage o will spread the coating substance evenly upon it, and keep back all the surplus quantity of this substance.

In fig. 3, I have represented a device which is constructed substantially like that just described, with the exception that this device is flattened, and thus adapted for spreading the coating substance upon one or both sides of flat plates or sheets of rigid or flexible material, by drawing the same through the device while the coating substance is being forced into it under pressure.

If desirable, the surfaces of objects to be coated may be primed with a thin solution of any adhesive cement, such as shellac, varnish, and the like, but for cylindrical or other objects which are to be completely encircled by the collodion, such as the handles of instruments, balls, and the like, a previous preparation of their surfaces will not be necessary, for the

reason that the collodion will contract and hug tightly the object.

The coated objects may be turned finished by polishing in any desirable manner.

It will be seen from the above description that I am enabled, by a simple and rapid process, and at one operation, to apply a coating of collodion, or of compounds containing collodion, of any required thickness to the surfaces of various wares or objects.

Having described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

The process for coating the surfaces of objects with collodion, or compounds containing collodion, substantially as described.

J. A. McCLELLAND.

Witnesses:

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E. W. ANDERSON.