

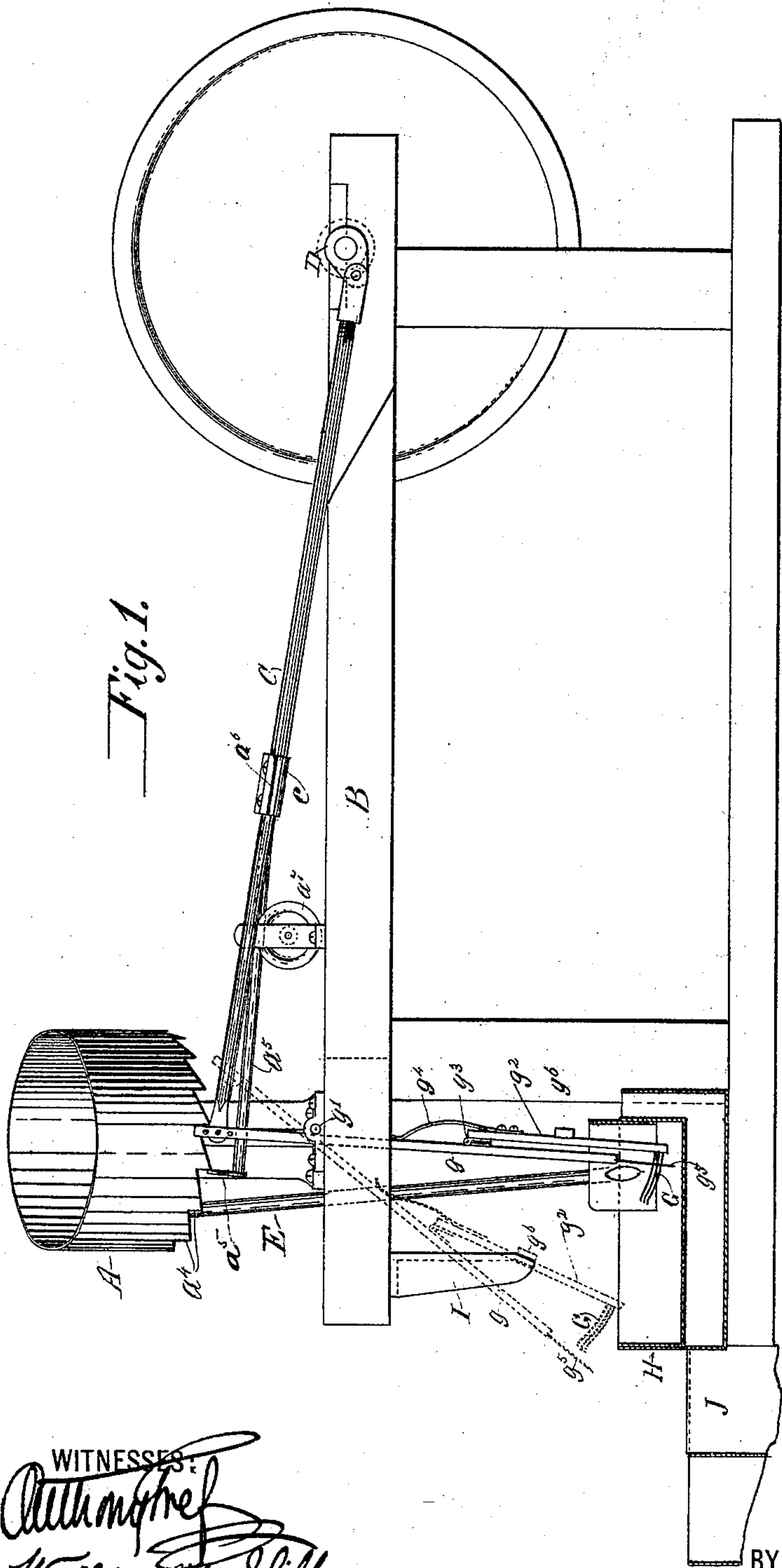
(No Model.)

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D. M. HOLBROOK.  
PROCESS OF COATING PILLS.

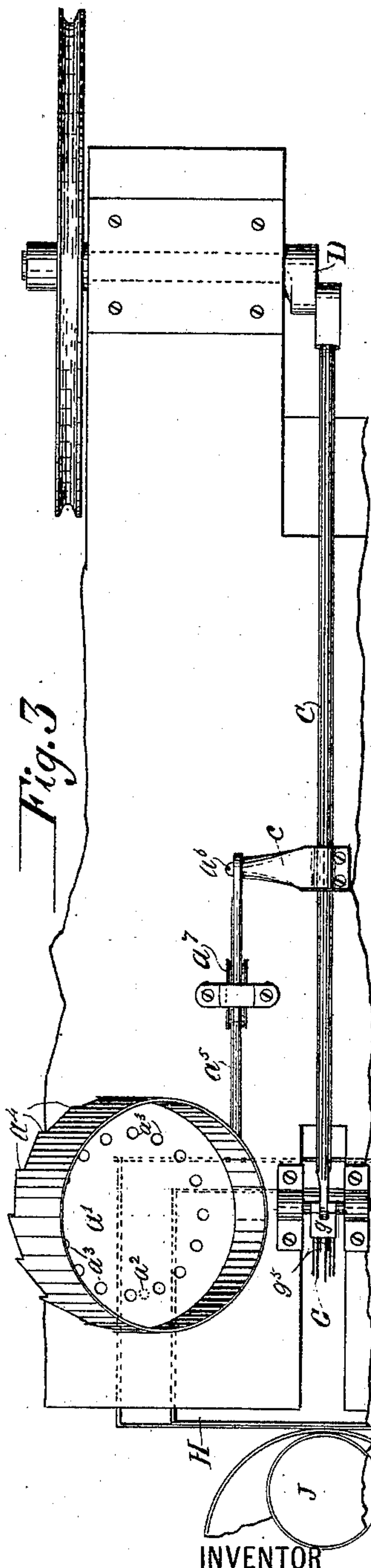
No. 542,611.

Patented July 9, 1895.



*Fig. 1.*

Fig. 3



INVENTOR

David M. Holbrook  
Edwin H. Brown  
his ATTORNEY

his ATTORNEY

(No Model.)

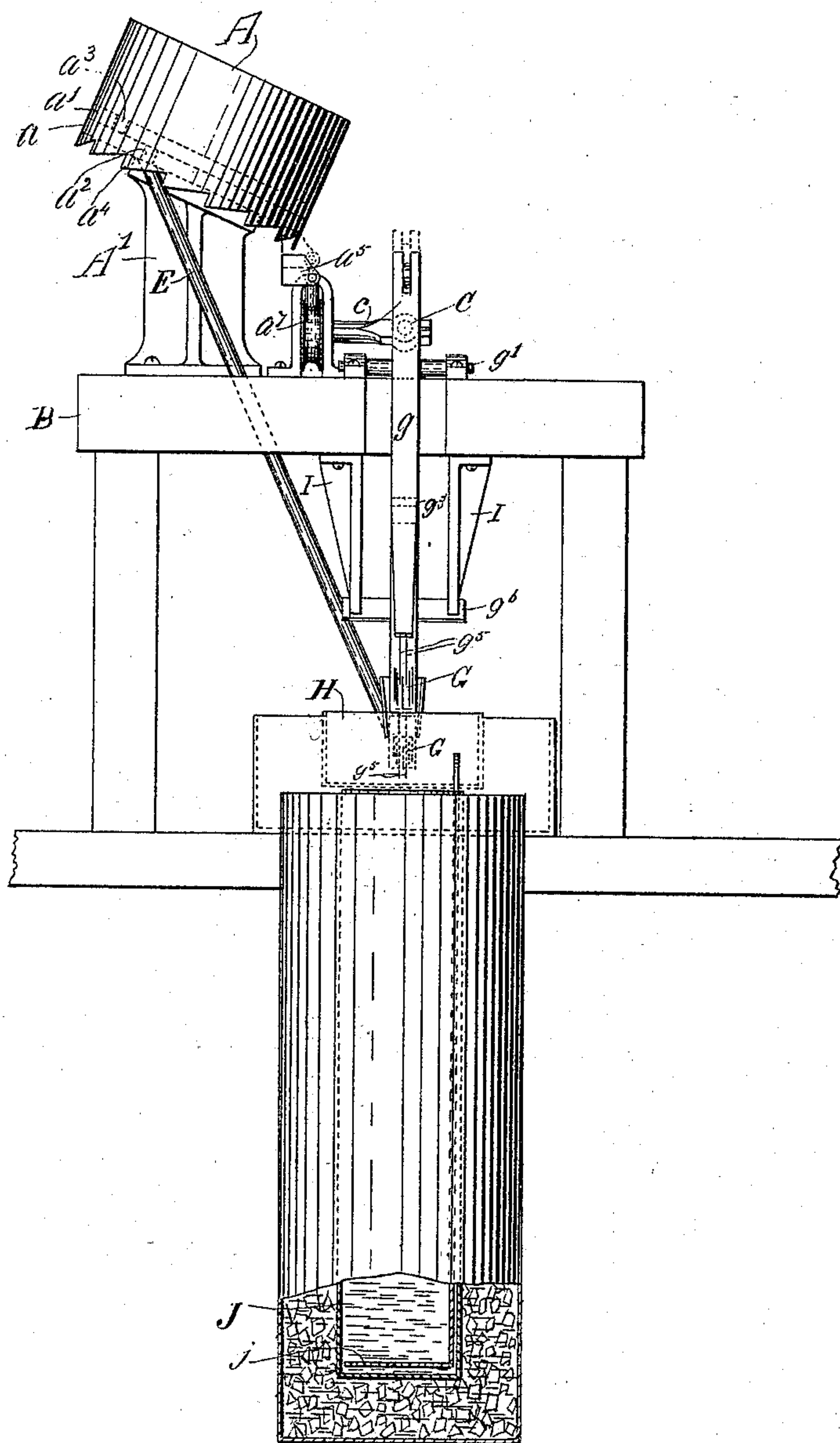
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*Fig. 2.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

DAVID M. HOLBROOK, OF BROOKLYN, ASSIGNOR TO WILLIAM H. SCHIEFFELIN, WILLIAM N. CLARK, WILLIAM S. MERSEREAU, WILLIAM L. BROWER, HENRY S. CLARK, AND WILLIAM J. SCHIEFFELIN, OF NEW YORK, N. Y.

## PROCESS OF COATING PILLS.

SPECIFICATION forming part of Letters Patent No. 542,611, dated July 9, 1895.

Application filed September 22, 1893. Serial No. 486,166. (No specimens.)

*To all whom it may concern:*

Be it known that I, DAVID M. HOLBROOK, of Brooklyn, Kings county, and State of New York, have invented a certain new and useful Improvement in Processes of Coating Pills, of which the following is a specification.

My improvement relates particularly to a process of coating pills with gelatine or similar material.

I will describe an apparatus by the use of which my process may be practiced, and then point out the novel features of my improvement in a claim.

In the accompanying drawings, Figure 1 is a side view of such parts of a machine intended for use in connection with my improvements as are necessary for a comprehension of the same. Fig. 2 is an end view. Fig. 3 is a plan view.

Similar letters of reference designate corresponding parts in all the figures.

A designates a receptacle, which may be made of any suitable material. Tinned iron will be found serviceable for its construction. It may advantageously be made cylindrical in form. It is supported in an inclined position and so as to be free to rotate. It is shown as having a non-rotary bottom  $a$  and a second bottom  $a'$ , which is formed integral, so as to partake of the rotary movement. The lower bottom may be made to serve as a journal on which the receptacle, with the upper bottom, may rotate. The lower bottom need only be provided with a single hole  $a^2$ , and this is located near the circumference. The upper bottom is provided with a number of holes  $a^3$ . These are arranged in a circular row at such distance from the center that when the upper bottom rotates above the lower bottom the holes of the former will successively pass over the single hole in the latter.

The lower bottom  $a$  may be supported upon a bracket  $A'$ , extending from a table B.

The receptacle A may be rotated by any suitable means—as, for example, through the agency of ratchet-teeth and a pawl. Ratchet-teeth  $a^4$ , corresponding in number with the number of holes  $a^3$  and similarly spaced, are shown as formed at the lower edge of the re-

ceptacle to coact with a pawl  $a^5$ , attached to a rod C, that is operated by a crank D on a suitable rotating shaft. At each rotation of the crank the receptacle may be rotated a distance equal to one of its teeth, so as to remove one of the holes  $a^3$  of the rotary bottom  $a'$  from over the hole  $a^2$  in the non-rotary bottom  $a$  and adjust the next adjacent hole  $a^3$  of the rotary bottom over the hole  $a^2$  of the non-rotary bottom  $a$ . The pawl  $a^5$  is pivoted by a pin or screw  $a^6$  to a projection  $c$ , extending laterally from the rod C, and is supported between the ends by resting upon the bearing  $a^7$ , which, to avoid undue friction, may be made in the form of a loose pulley. This manner of supporting the pawl provides for its engaging and disengaging motion, as well as its reciprocating movement.

From the single hole  $a^2$  of the non-rotary bottom  $a$  a tubular chute E extends downwardly into a position enabling it to discharge into an open-work support G, which may advantageously be made in the form of a fork having its tines out of line, so as to form a support having a concave upper surface. This support is sustained by an oscillating rod or lever  $g$ , fulcrumed at  $g'$  and connected with the rod C. It is not connected directly with the rod or lever  $g$ , but its shank  $g^2$  is pivotally connected to the latter by a pin  $g^3$ , so that the said support G may have an independent oscillation. A spring  $g^4$  fastened to the shank of the support G and bearing against the rod  $g$  tends to hold the support in proximity with two tines or needles  $g^5$ , which are provided at the lower extremity of the rod  $g$ .

Uncoated pills are intended to be introduced into the receptacle A and pass, one at a time, down the chute E, the passage of each pill occurring when one of the holes  $a^3$  of the rotary bottom  $a'$  comes into line with the single hole  $a^2$  of the non-rotary bottom  $a$ . Escaping from the chute each pill by itself drops upon the support G, this support with its supporting-rod  $g$  being then in the rearmost position and the tines of the support being, by the action of the spring  $g^4$ , projected between tines or needles with which the rod  $g$  is provided, as illustrated in full lines in Fig.



1. It will of course be understood that the pill falls in front of the tines or needles  $g^5$  of the rod  $g$ .

When the support  $G$  is in the proper position for receiving the pill it is immersed in melted coating material to a sufficient depth, so that a pill resting upon the support  $G$  will be completely covered with the liquid.

When the support and the parts coating therewith occupy the position just described the pill will be held in a solution of gelatine or other coating material with which a receptacle  $H$  is supplied. Preferably this receptacle will be provided with a heating-jacket to maintain the solution at a proper temperature.

Each time the receptacle  $A$  is partially rotated in the manner described the support  $G$  is oscillated forward and back. In its forward oscillation into the position indicated by dotted lines in Fig. 1 the support  $G$  is detained, so that the tines or needles  $g^5$  with which the rod  $g$  is provided will be moved beyond the tines of the fork constituting the support  $G$ . Thus the pill, which was formerly carried by the support  $G$ , will be removed from said support. The means for thus detaining the support  $G$  are shown as consisting of a stationary detent arm or arms  $I$ , coacting with an arm  $g^6$  extending laterally from the shank of the support  $G$ .

Before the discharge of the pill it will have been carried beyond the receptacle  $H$ . Hence when it falls it will be caught in a tube  $J$ . The latter may be made of any suitable material and is intended to have considerable length—as, for example, a length of about thirty-six inches. It is intended to contain a cooling agent—such, for example, as naphtha or liquid paraffine—and will preferably have a false bottom  $j$  of any reticulated or perforated material, so that the pills will ultimately be supported by the same and may be lifted up out of the naphtha or analogous liquid by elevating the false bottom by hand or otherwise.

Preferably the receptacle  $J$  will be jacketed,

so that it may be surrounded by a cooling agent for the purpose of maintaining the contained liquid cooling agent at a low temperature.

The temperature of the naphtha or analogous liquid is to be so reduced that when the pills reach the bottom of the tube the coating upon them will be congealed and hardened to such an extent that it will retain its position and the pills will not stick to each other. The pills can now be removed and dried in any approved manner.

Of course it will have been inferred that the cooling agent in the receptacle  $J$  is to be of less specific gravity than the pills, so that the latter will descend. The function of the cooling agent is that of an absorbent of the heat retained in the coating that envelops the pills.

The apparatus herein described is but one of a series of similar apparatus to be worked in unison.

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

The process of coating pills, consisting in lowering them one separately from another into coating material which will remain liquid only at a temperature above normal atmospheric temperature, subsequently removing them quickly from said material and finally dropping them directly into a column of a liquid which is of less specific gravity than the pill and is inert with respect to the coating of the same, the liquid being maintained at a sufficiently low temperature and the column of the same being sufficiently high to cause the congelation of the coating material before the pill has reached the bottom of the liquid, substantially as specified.

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

DAVID M. HOLBROOK.

Witnesses:

ANTHONY GREF,  
WILLIAM M. ILIFF.