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Patented Apr. 24, 1900.

W. H. WEIGHTMAN.
SMOKE PREVENTING APPARATUS.

(Application filed Aug. 11, 1899.)

(No Model.)

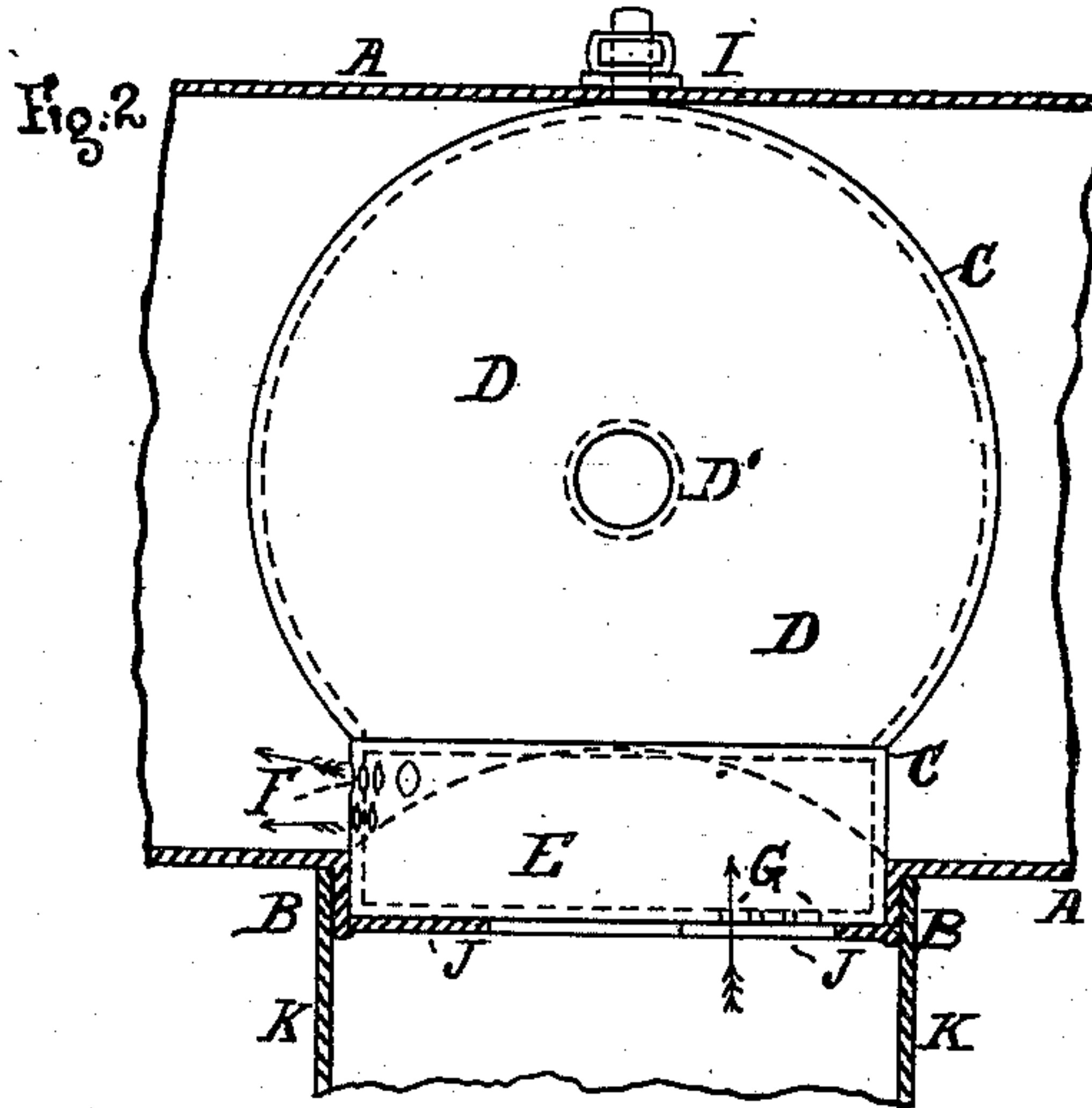
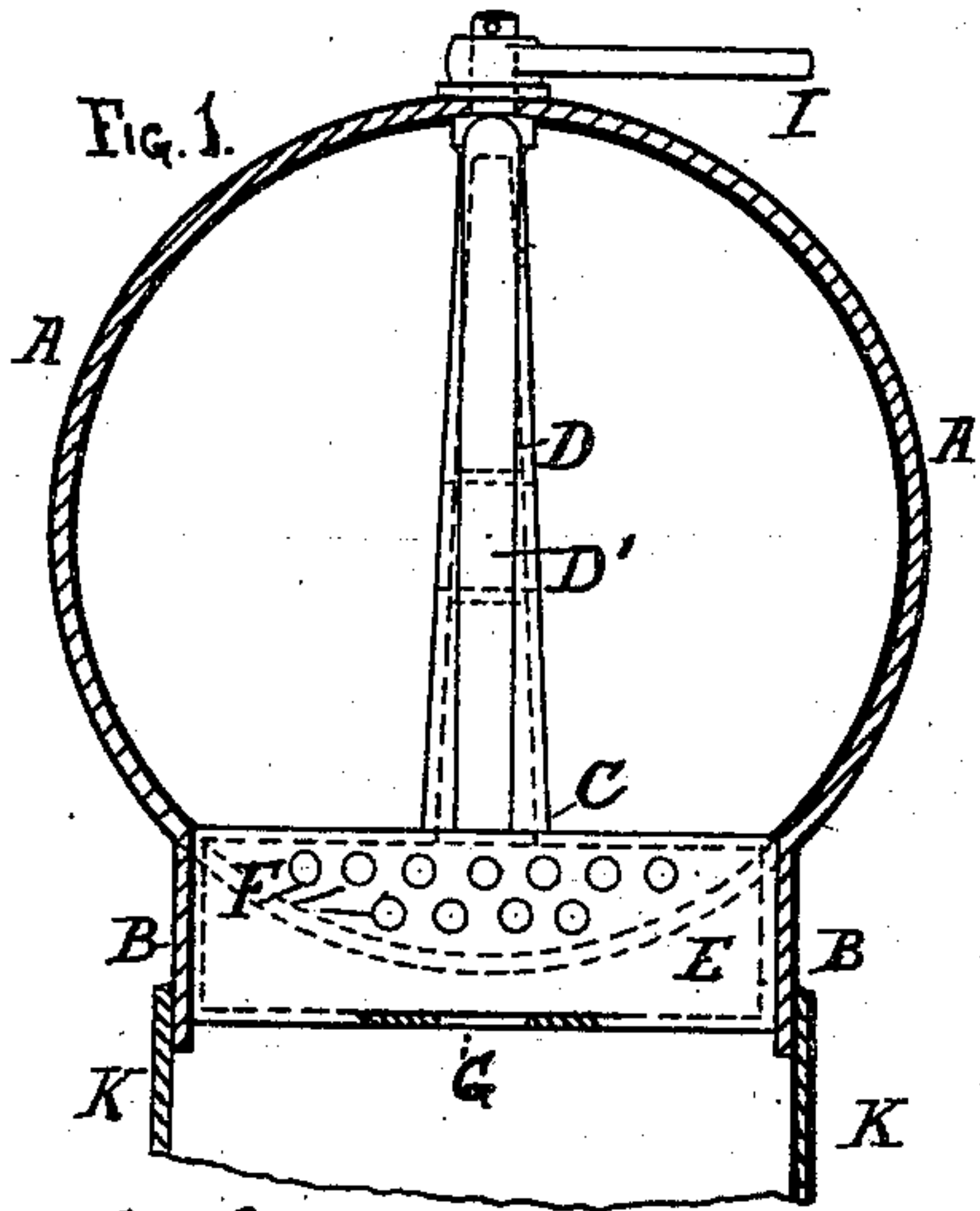


Fig. 3.

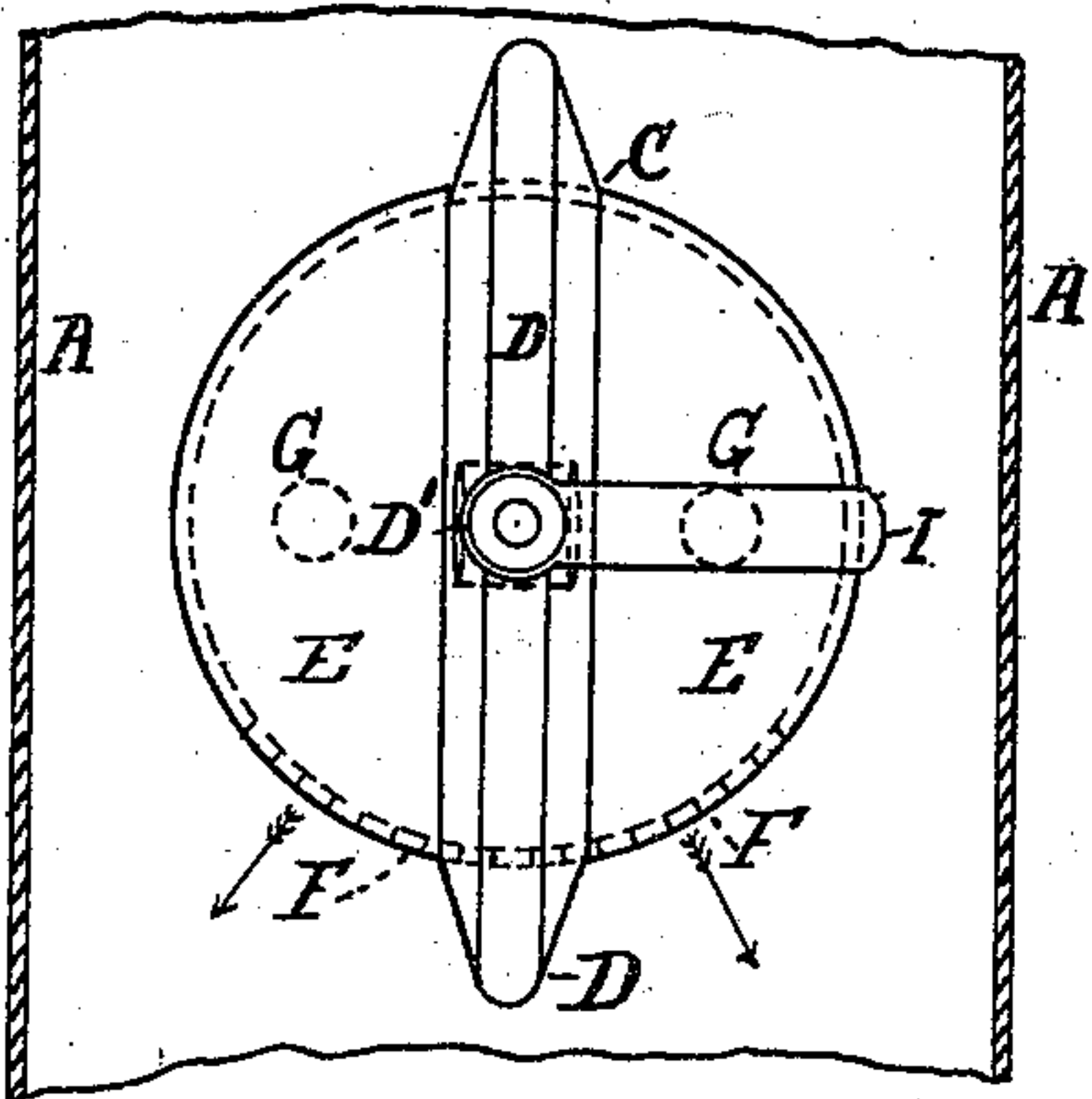


Fig. 4.

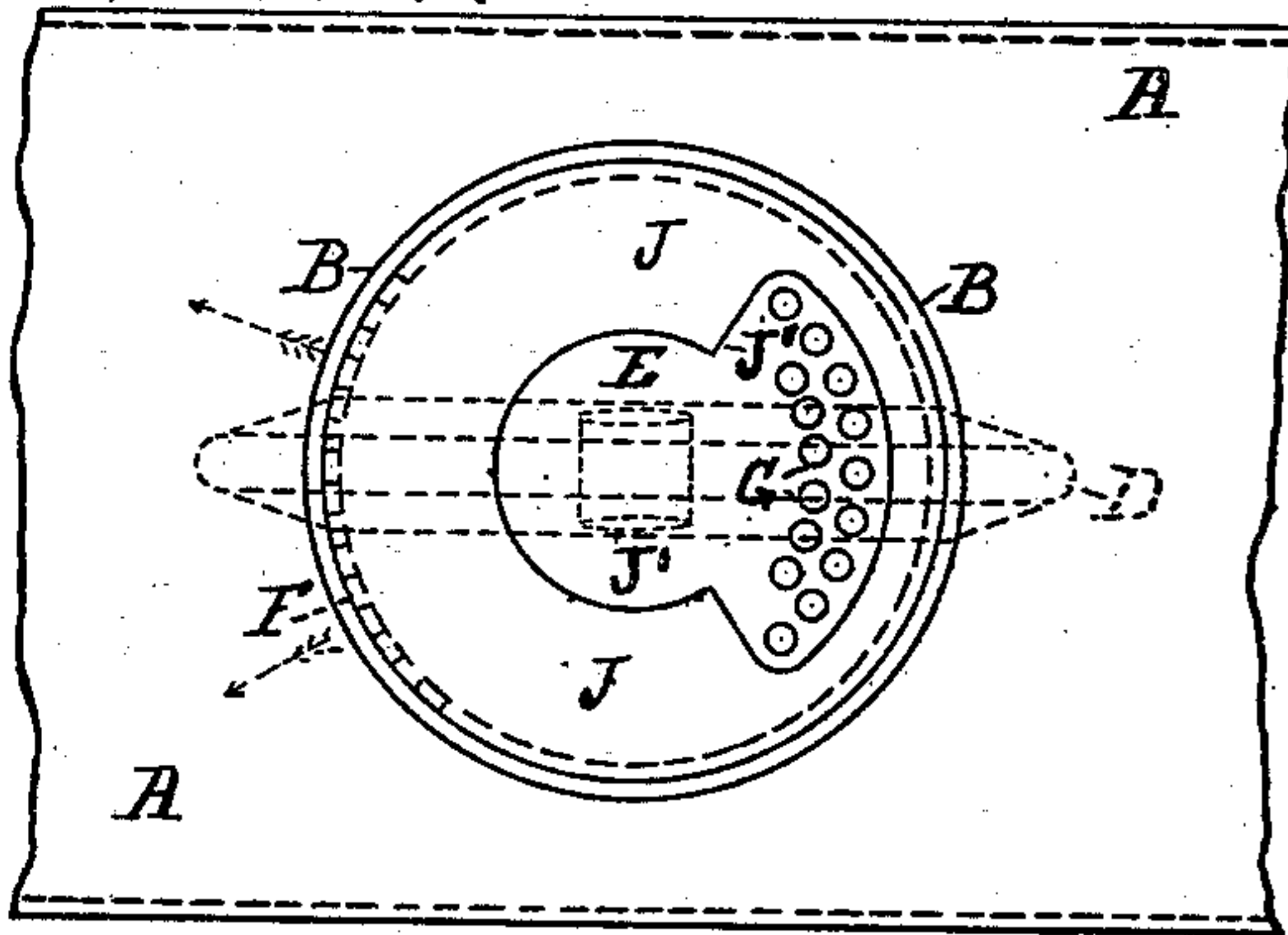


Fig. 5.

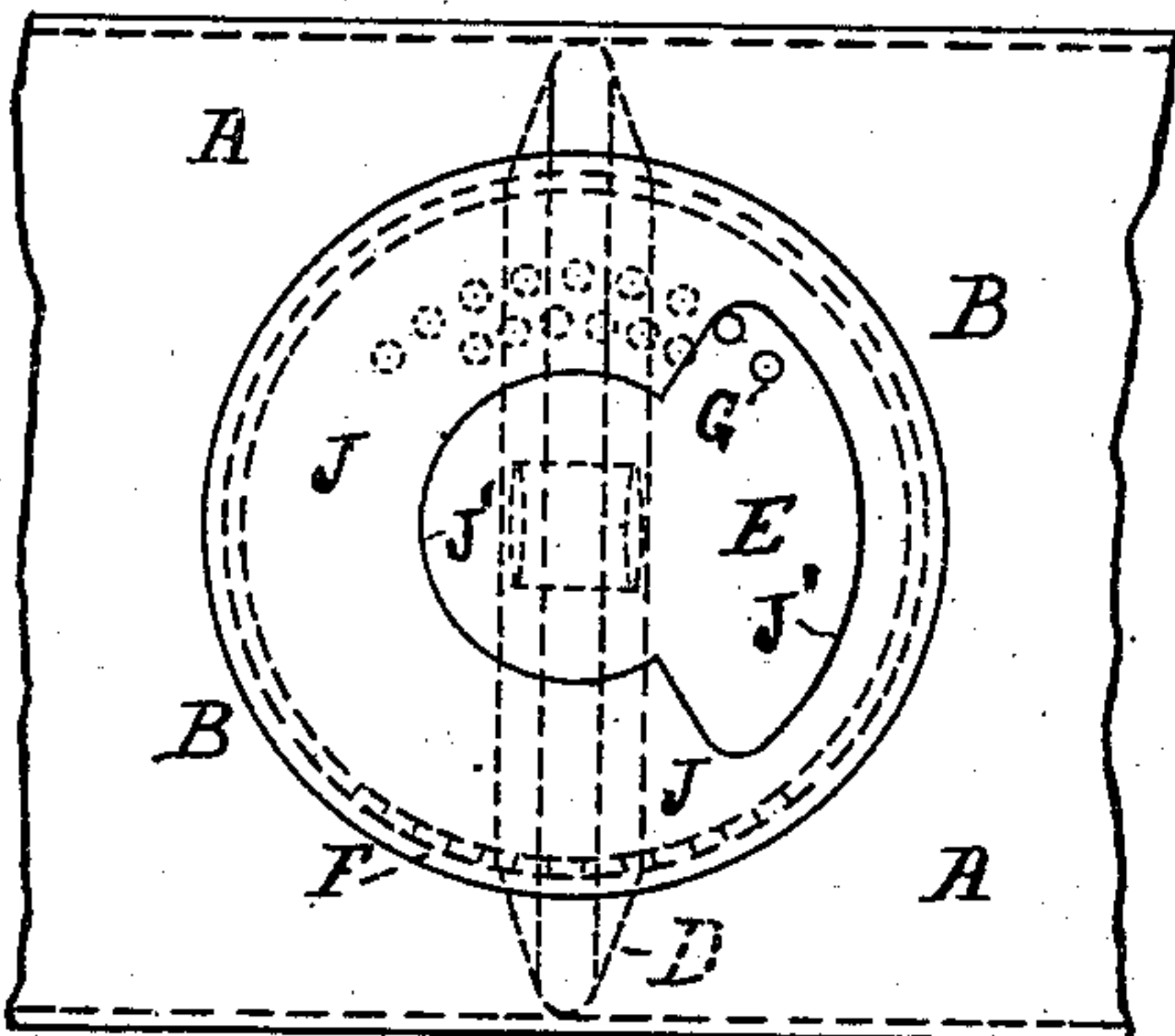
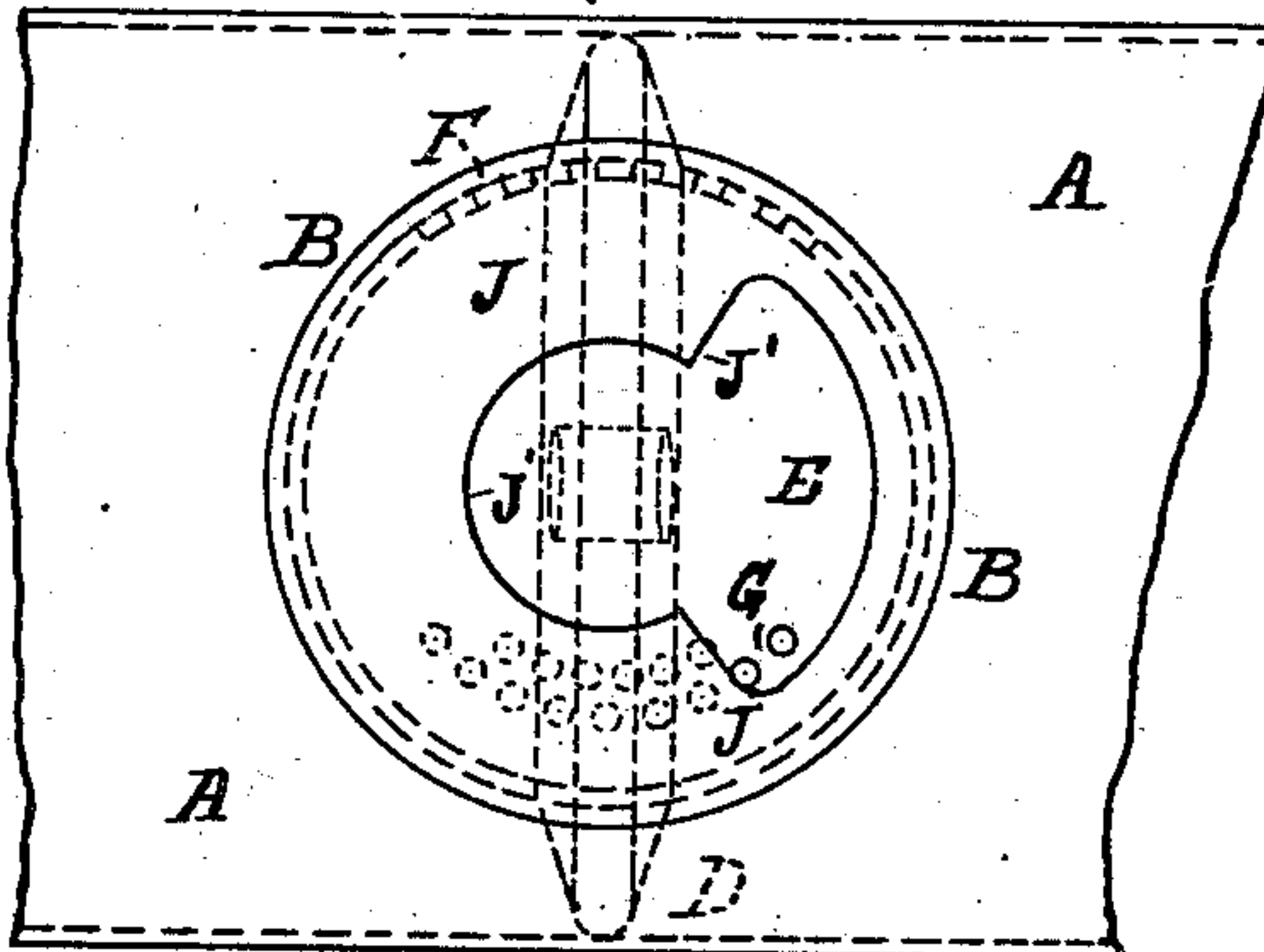


Fig. 6.



WITNESSES:-

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SMOKE-PREVENTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 648,320, dated April 24, 1900.

Application filed August 11, 1899. Serial No. 726,950. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. WEIGHTMAN, a citizen of the United States, residing in the city and State of New York, have invented certain new and useful Improvements in Smoke-Preventing Apparatus, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to and has for its object a controlled admission, introduction, and use of new air or similar combustion-assisting gaseous material into the flues, connections, or chimney of a stove, furnace, or similar apparatus, whereby a complete, economical, and satisfactory combustion of the fuel and its gases is provided for.

Certain improvements consist in the special construction, application, and combination of a chamber adapted to receive, retain for heating, and distribute, by pressure or otherwise, atmospheric air or any like combustion-assisting medium into and through the flues, draft-compartments, passages, or chambers of a stove or furnace, whereby the contained medium is received and heated and thence scattered among and caused to mingle or unite with any unconsumed gases arising from the heating, roasting, and consumption of the fuel.

Other improvements consist in the special construction, arrangement, and combination of the several parts, portions, or details comprising the apparatus, as hereinafter shown, described, and claimed.

In the accompanying drawings, Figures 1, 2, and 3 represent cross and longitudinal sectional views of a flue or connection provided with an apparatus embodying my improvements. Figs. 4, 5, and 6 represent views of the same, showing the air or medium receiving chamber in several positions for different purposes and uses.

Similar letters of reference designate like parts, portions, or details in all the figures.

Letter A designates a furnace flue or connection.

B designates a special cylindrical-shaped side pocket projecting from and connected with said flue or connection A.

C designates an air or medium receiving chamber composed of the damper portion D and a cylindrical portion E.

F designates outlet holes, slots, or perforations located in the walls of the cylindrical portion E.

G designates inlet holes or perforations located in the disk side or bottom of cylindrical portion E of chamber C. These holes or perforations, whether for inlet or outlet purposes, are more or less opened or closed by the revolution of chamber C by means of the handle I, attached thereto.

J designates a side, diaphragm, valve, or bottom for pocket B, the same being provided with holes, perforations, or slots, whereby the inlets G of compartment E are covered or uncovered, opened or closed, as desired, by the revolution of chamber C.

K designates a continuation of side pocket B to provide for a pressure delivery when desired.

As illustrated in Figs. 2, 4, 5, and 6, an opening in the diaphragm J, the outline of which opening is indicated by the letters J', is made use of to effect the control of the opening or closing of the holes or perforations G to admit air or medium to chamber C in quantities as desired.

In Figs. 1 and 3 an ordinary method of applying the device is shown wherein, there being no diaphragm J, the control of the admission of air or combustion assisting medium to flue, connection, furnace, or stove is wholly controlled by the covering or uncovering of the holes or perforations F through the revolution of damper-chamber C, including its cylindrical portion E. In Fig. 1, for instance, a single uncovered and uncontrollable hole or perforation is shown at G for air admission, the chamber C being full at all times, the outlet or discharge being controlled by the covering of all or a portion of the holes or perforations F by the cylindrical pocket-walls B. The hole or perforation G may of course be made of any size, diameter, or shape best suited to necessity, or, as shown in Fig. 3, there may be a plurality of holes G. The actual admission of air or combustion-assisting medium is uncontrolled when the apparatus is constructed as shown in Figs. 1 and 3, while its discharge from chamber C into flue or connection is accomplished and controlled by the revolution of chamber C on its axis through handle I.

The right-angular meeting of the two cylindrical shapes of flue A and side pocket B develops an opportunity for the exposure or opening and the covering or closure of the exit holes or perforations F, according to the position of chamber C, for opening or closing flue A. When the flue or connection A is fully open and the damper portion D is in line therewith, all of the holes F are uncovered, while as the damper is swung toward a closing of the flue or connection more or less of the holes become covered by the circular walls of pocket B.

As illustrated in Figs. 2, 4, 5, and 6, the diaphragm side of chamber E is provided with holes or perforations, the same being located so as to be covered or uncovered by the opening J' in pocket-diaphragm of B, according as the flue is opened or closed, or between the two. The diaphragm portion J may readily be located at a greater or less distance from the flue A by the elongation of the cylindrical pocket B and an equal elongation of cylindrical portion E of chamber C. While the use of the damper portion D of chamber C is preferable and advisable, it may be dispensed with and cylindrical portion E alone made use of for the admission of air or medium to the flue or connections. It can then be held in position and revolved by a rod connecting with handle I. When the damper portion D is used, a vent or passage D' is provided, as shown, for general ventilation of the flue and connections.

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

1. In combination with a furnace flue or

chimney, a connecting cylindrical pocket, an inclosed air-receiving chamber comprising a hollow damper portion suitable to said flue and a hollow cylindrical portion suitable to said pocket, outlet holes or perforations in the periphery of said cylindrical portion, and means for revolving said air-receiving chamber, substantially as and for the purposes set forth.

2. In combination with a furnace flue or chimney, a connecting cylindrical pocket, an inclosed air-receiving chamber comprising a hollow damper portion suitable to said flue and a hollow cylindrical portion suitable to said pocket, outlet holes or perforations in the periphery of said cylindrical portion, means for revolving said air-receiving chamber, and a ventilating-passage through said damper portion, substantially as and for the purposes set forth.

3. In combination with a furnace flue or chimney, a connecting cylindrical pocket provided with an outer valve-diaphragm, an inclosed air-receiving chamber comprising a hollow damper portion suitable to said flue and a hollow cylindrical portion suitable to said pocket, outlet holes or perforations in the peripheral walls of said cylindrical portion, a valvular diaphragm at the outer end of said cylindrical portion in operative contact with that of the flue-pocket, and means for revolving said air-receiving chamber, substantially as and for the purposes set forth.

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