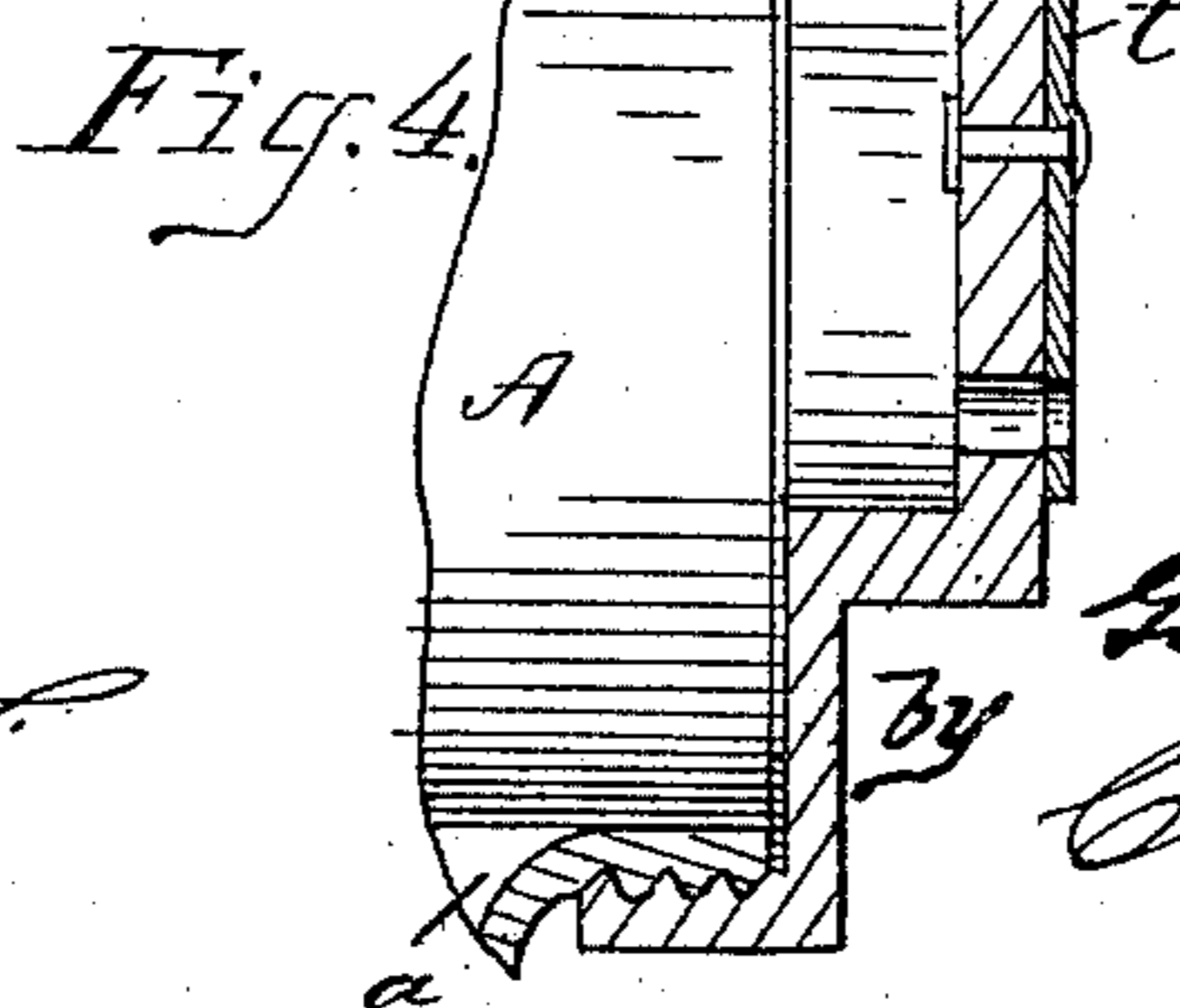
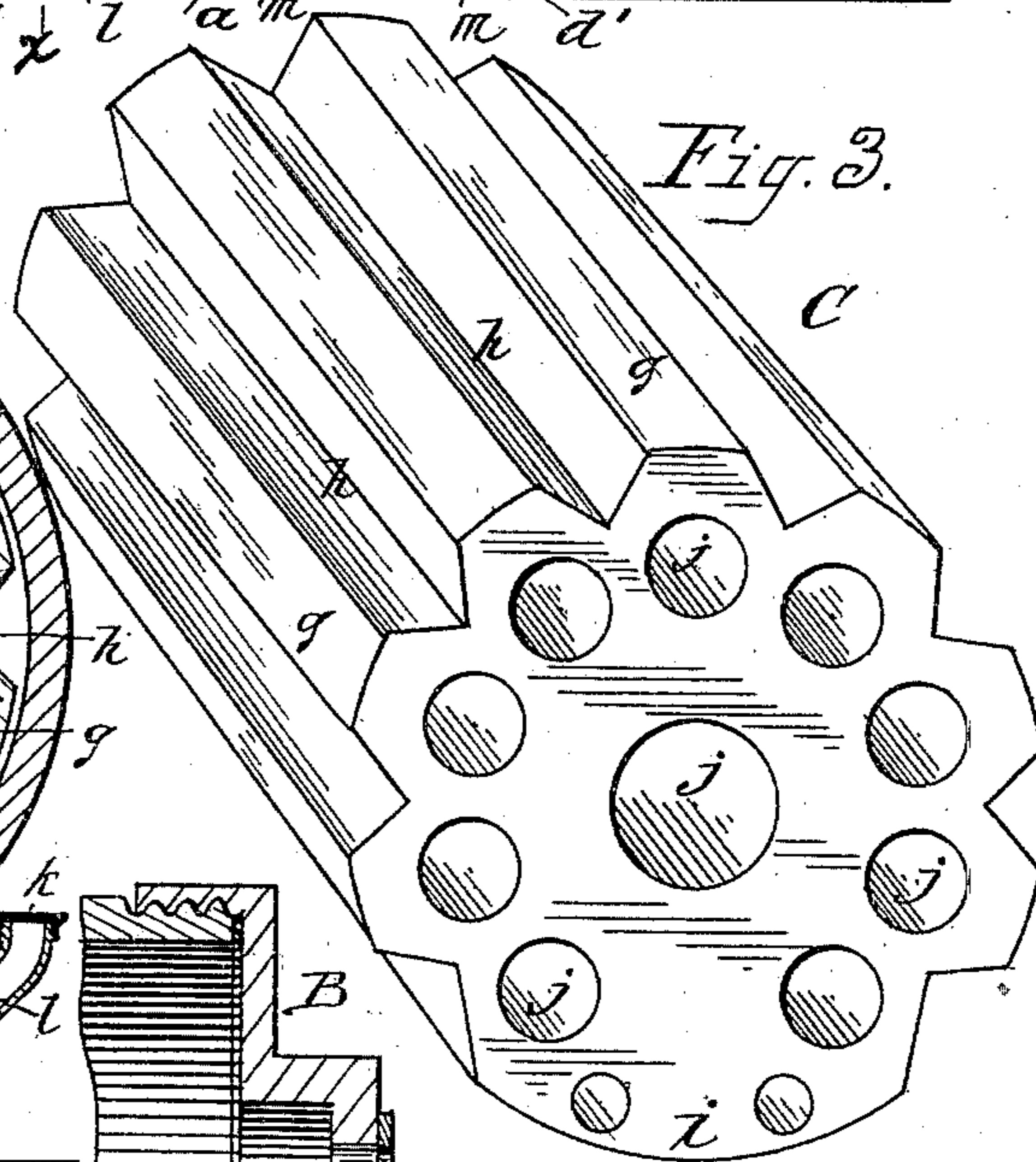
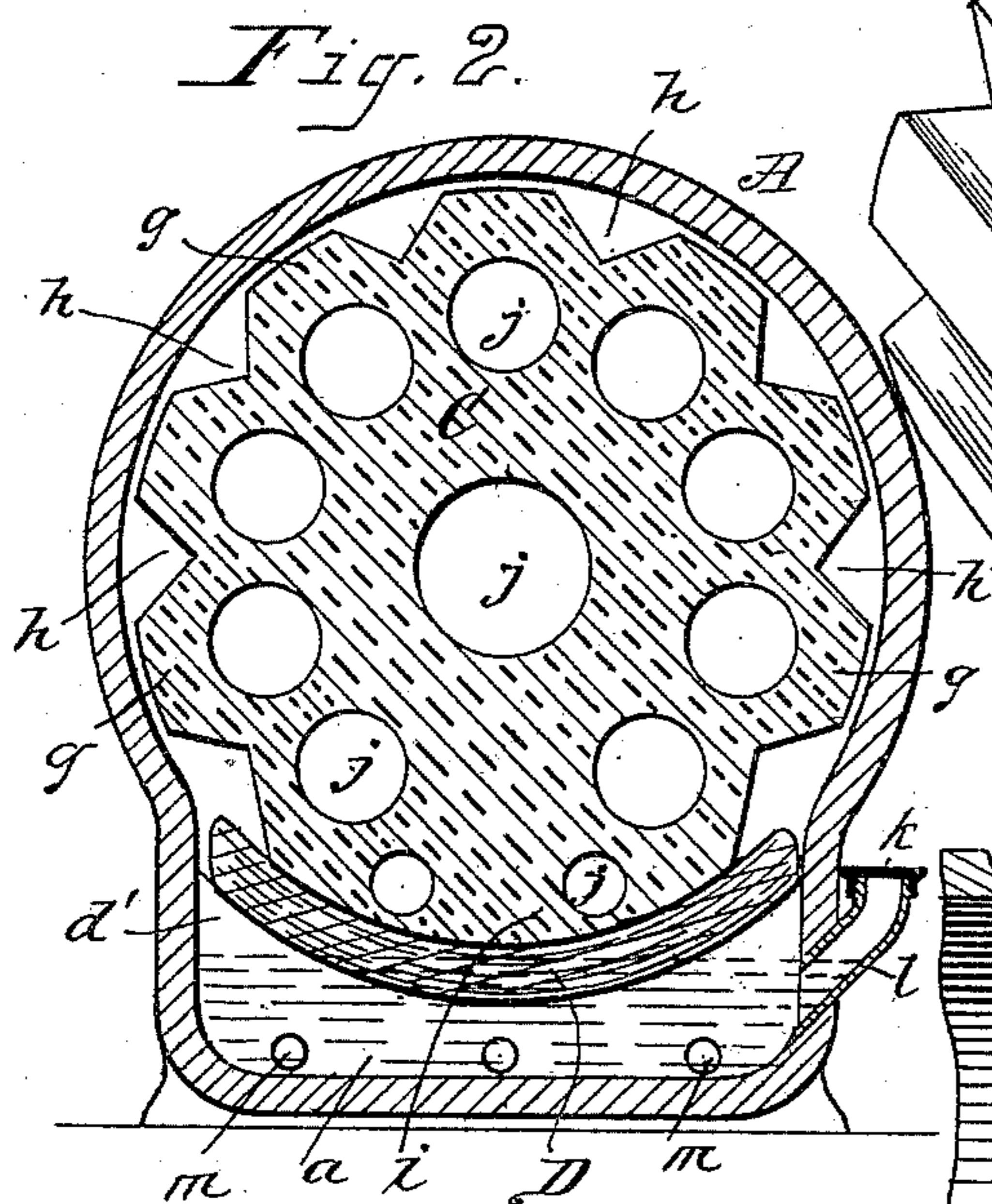
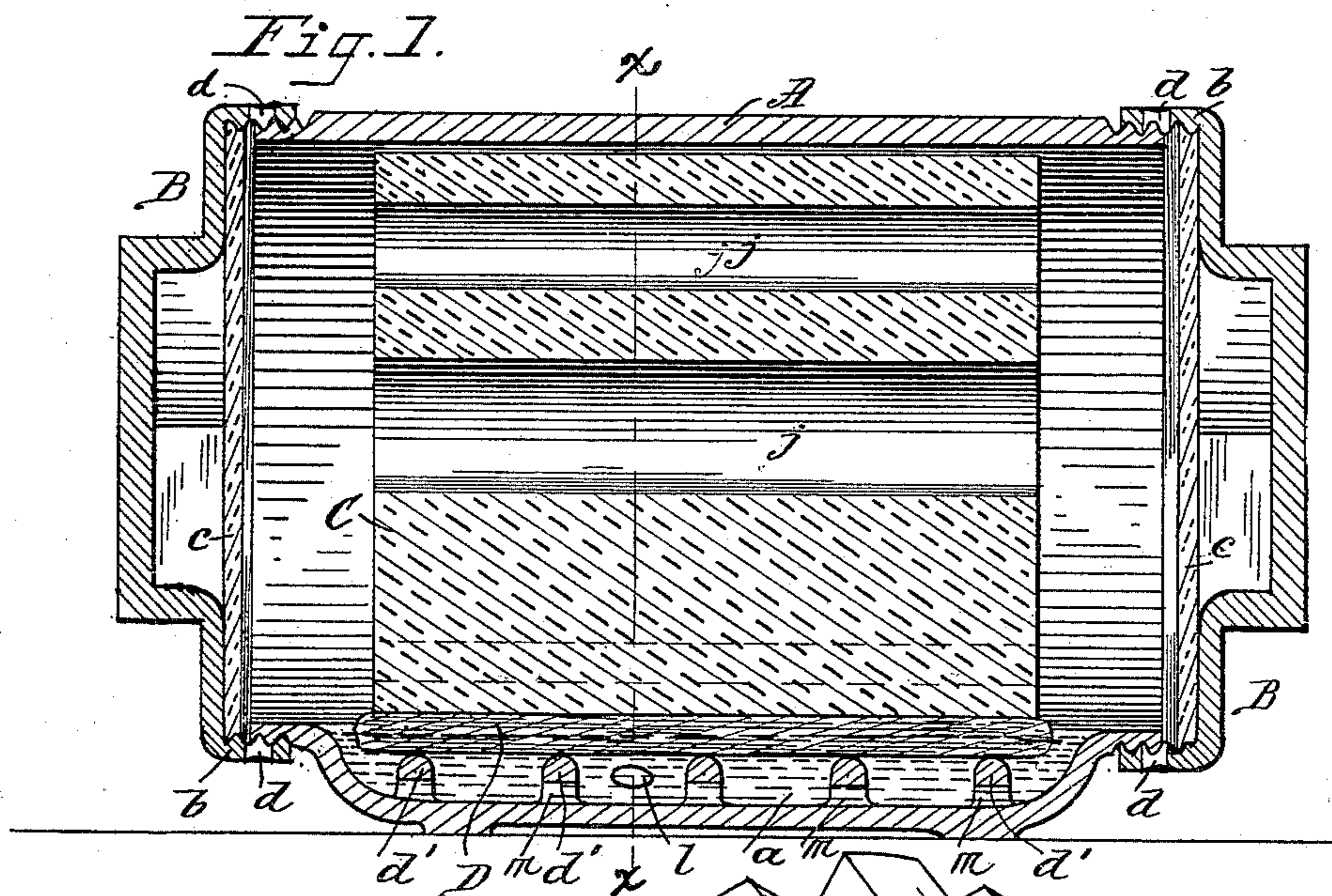


(No Model.)

G. M. SHERMAN.
VAPORIZER.

No. 432,842.

Patented July 22, 1890.



Witnesses:

Wm. S. Bellows
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UNITED STATES PATENT OFFICE.

GARDNER M. SHERMAN, OF SPRINGFIELD, MASSACHUSETTS.

VAPORIZER.

SPECIFICATION forming part of Letters Patent No. 432,842, dated July 22, 1890.

Application filed November 29, 1889. Serial No. 332,008. (No model.)

To all whom it may concern:

Be it known that I, GARDNER M. SHERMAN, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Vaporizers, of which the following is a specification.

This invention relates to vaporizers for the atmospheric dissemination of liquid disinfectants, perfumes, or other volatile matter, the object of the invention being to provide a vaporizer of the class indicated of improved construction and increased efficiency; and the invention consists in the construction, combination, and arrangement of parts, all substantially as will hereinafter more fully appear, and be set forth in the claims.

Reference is to be had to the drawings accompanying and forming part of this specification, in which similar letters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a central vertical longitudinal sectional view of my improved vaporizer. Fig. 2 is a vertical cross-section of the same, taken on the plane indicated by the line $x x$, Fig. 1. Fig. 3 is a perspective view of the "cast" or absorbent body comprised in and forming a part of the vaporizing apparatus; and Fig. 4 is a sectional view illustrative of a slight modification of construction of the vaporizer-case, to be hereinafter referred to.

The vaporizer-case, as shown, consists of shell A, of a general cylindrical form, having a depression, pocket, or basin a formed in its under side, which is open to the interior of said shell, and heads of closing-lids B at each end. The said body and heads are to be formed of glass or metal, as desired, the material to be selected having proper non-corrosive qualities to resist the action of the volatile matter to be disseminated by the use of the apparatus. As shown in Fig. 1, the extremities of the body A are screw-threaded, receiving the engagement thereon and therewith of the threads of the heads B. The rim or flange b of each head in which the screw-threads are formed, as just above noted, is provided with perforations $d d$, so disposed on the said flange relative to the axial ex-

tent thereof that when the head is screwed entirely on the portion of the body adapted to receive it said perforations will overlie the circular wall of the shell extremity; but when the head is unscrewed more or less the perforations or portions of the area thereof will lie outside of the plane, which is coincident with the end of the shell, and thereby a current of air may enter and issue from the shell through the perforations, in accordance with the well-known principles of atmospheric circulation.

$c c$ represents disks of compressible material adapted to form effective packing between the ends of the shell and the inner face of the heads, when the latter are turned up to place the perforations $d d$ within the ends of the shell.

Transverse ribs $d' d'$ are formed in the pocket or basin a , on which is supported a pad D, of porous and absorbent material—such as felt, wool, sponge, or similar material, or combination of such materials—and on said porous and absorbent pad is supported a cast or body C, of a generally cylindrical form, composed of plaster-of-paris, although other porous and absorbent material may be substituted therefor. This cast or body C is of a length preferably considerably less than that of the shell A, whereby spaces may be left between the heads of the case and the end of the cast. The cast is provided with longitudinal ribs g and intervening grooves h , which extend from end to end thereof, said ribs and grooves covering, say, about three-fourths of the perimeter of the cast, the lower portion thereof being, however, of an even and continuous surface, as indicated at i , to afford a broad and unbroken surface to rest upon the top of the pad D, and the cast is also provided with longitudinal bores or passages j , extending entirely through it.

A spout l is shown as extending from the exterior of the shell in a downward direction, communicating with the interior of said pocket or basin a , through which spout the liquid disinfectant or perfume is to be entered, and a removable cap k is to be provided for closing the orifice of said spout. In order that the ribs may in no way interfere with

the liquid finding a common level and distribution over the entire area of the pocket or basin *a*, the ribs are provided with gaps in their length, or apertures or perforations *m* through them, as shown.

In the use and operation of the vaporizing apparatus described, which is usually placed on the floor or in some low place in the apartment, the liquid disinfectant or perfume is poured into the basin to a height to be taken up by the pad, which soon becomes thoroughly saturated, and the cast then absorbs and becomes saturated with the liquid, the same being capable of taking up as much of the liquid as will more than equal the weight of the cast. The heads being adjusted to permit the passage of air into the casing, the air, entering certain of the perforations, circulates through the passages in the cast, and also in the longitudinal grooves between the ribs, coming into contact with a large surface area of the saturated cast, and the air becoming impregnated with the atomized or vaporized disinfectant issues from the shell and is disseminated throughout the room. The porous pad, acting as a ready absorbent for the disinfecting acid or other volatile matter, also serves as a strainer or filter, whereby the impurities and sediment which may exist in the said liquid are intercepted by the said pad, which would otherwise be taken up by the cast, the cast thereby becoming clogged or congested.

In lieu of the means hereinabove described for opening and shutting off the passages for the entrance and egress of air to and from the interior of the casing, the walls at the end portion of the casing may be provided with apertures overlaid by a movable disk or band *t*, which in turn has a series of apertures adapted to register and to be put out of coincidence with the apertures in said head, such a construction being illustrated in Fig. 4.

When it is deemed that a sufficient dissemination of the liquid in atomized form has ensued, the casing is entirely closed, when the liquid in the chamber—during whatever time of disuse of the vaporizer there may be—is practically preserved against evaporation.

Another application for Letters Patent of the United States for improvement in vaporizers filed by me simultaneously with this application, under Serial No. 332,009, em-

bodies a description and illustration of certain subject-matter which is hereinafter claimed; but said other application relates to independent improvements which are applicable to the class of vaporizers to which this invention appertains.

What I claim as my invention is—

1. In a vaporizer, the combination, with a casing adapted to contain in its bottom a quantity of the liquid to be vaporized and having air inlet and exit openings at its opposite end portions, of a filter-pad of absorbent material resting over and near said bottom and adapted to be partially immersed in the liquid therein, and a cast of porous and absorbent material resting on said pad, substantially as and for the purpose set forth.

2. In a vaporizer, the combination, with the casing adapted to contain in its bottom a quantity of the liquid to be vaporized and having inlet and exit openings at its opposite end portions, of a porous and absorbent cast having longitudinal circulation ways or passages through same and adapted to be supported in said casing and to be in absorptive communication with the liquid in said casing, substantially as and for the purpose set forth.

3. In a vaporizer, the combination, with the cylindrical casing having air inlet and exit openings in its opposite end portions and provided in its bottom with a basin or pocket adapted to contain a quantity of the liquid to be vaporized, and which has formed therein the supporting-ribs and is provided with the spout entering said basin, of a filter-pad of absorbent material supported on said ribs, and a cast of porous and absorbent material resting on said pad, substantially as and for the purpose set forth.

4. In a vaporizer, the combination, with a casing provided in its bottom with a basin or pocket to contain a quantity of the liquid to be vaporized and having closed end walls, said casing being provided in or near its ends with inlet and exit openings and means for closing same when desired, of a filter-pad of absorbent material supported over and to be partially immersed in the liquid in said basin, and a cast of porous and absorbent material resting on said pad, substantially as and for the purpose set forth.

GARDNER M. SHERMAN.

Witnesses:

WM. S. BELLOWES,
J. D. GARFIELD.