

(No Model.)

J. HEWITT.
VALVE.

No. 540,547.

Patented June 4, 1895.

Fig. 1.

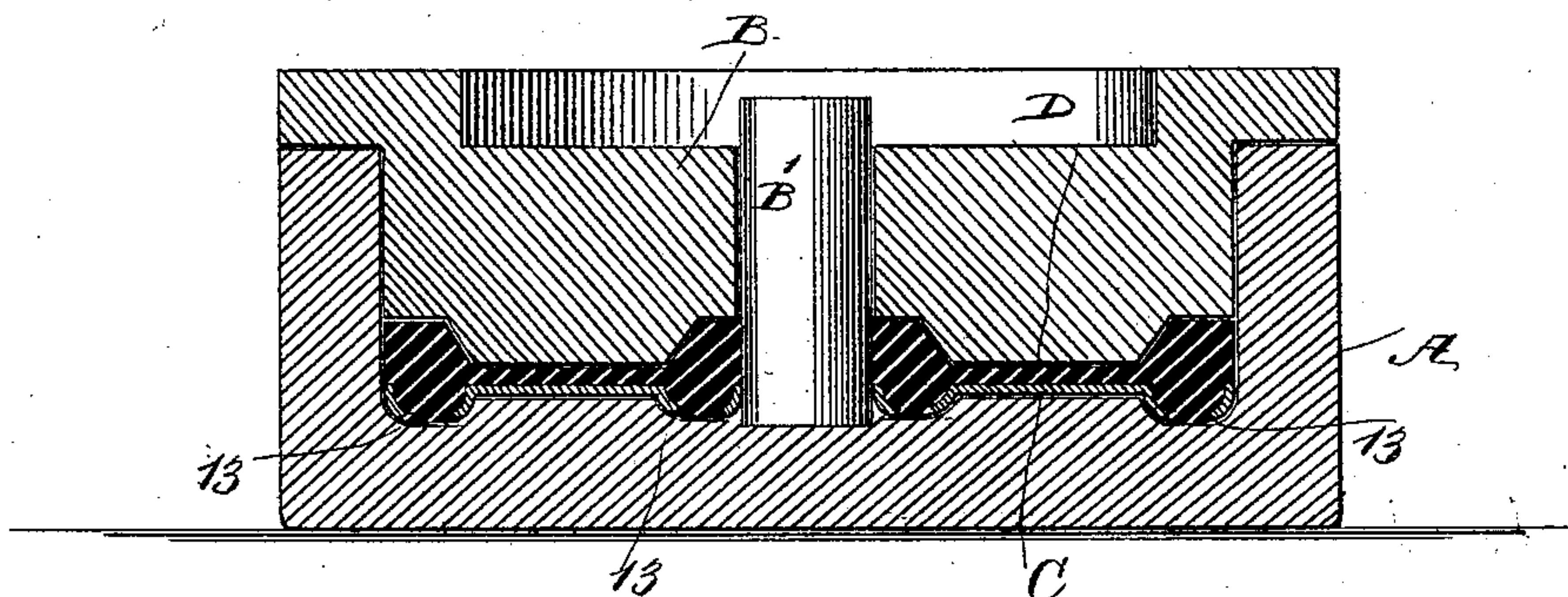


Fig. 2.

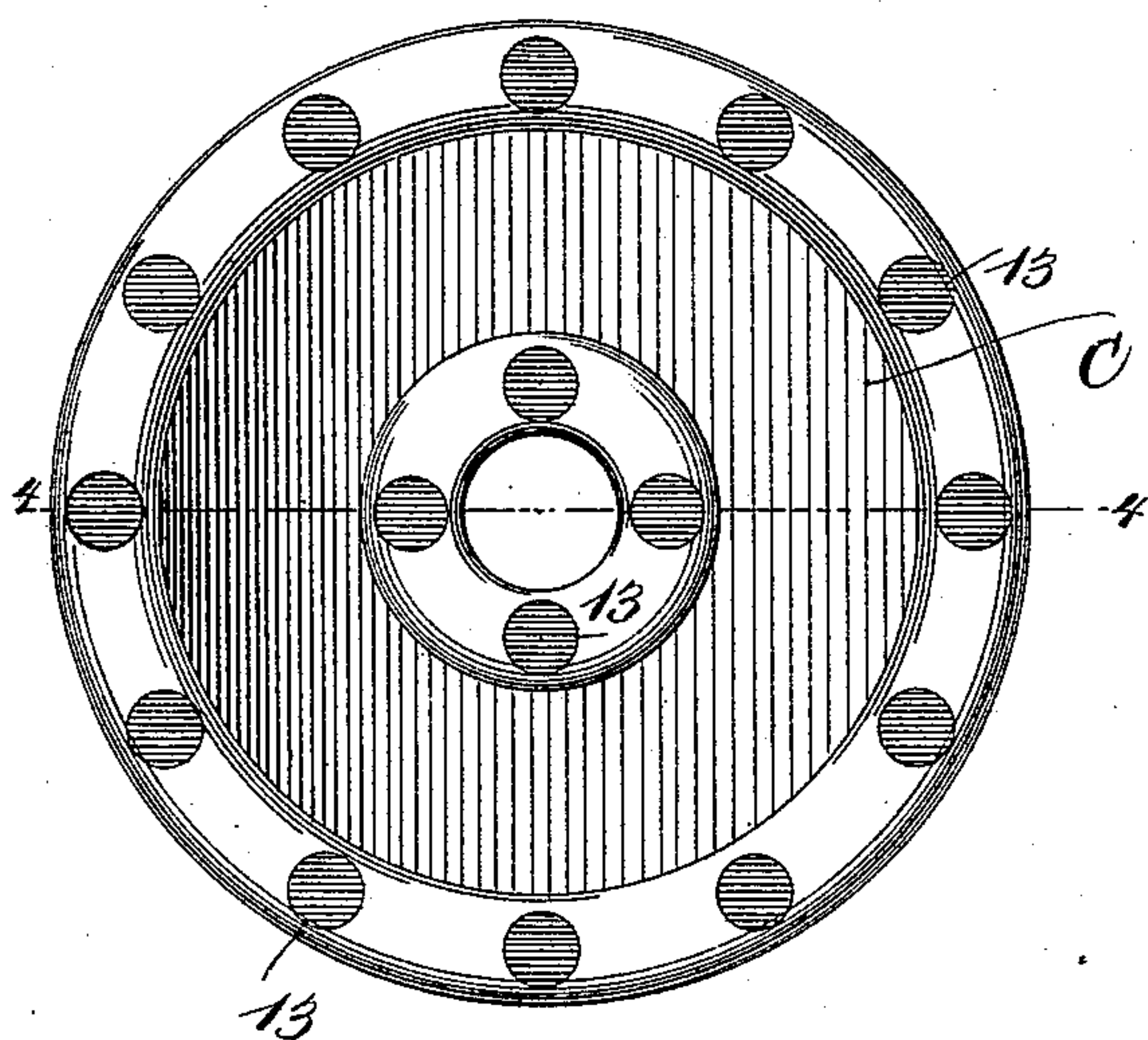


Fig. 3.

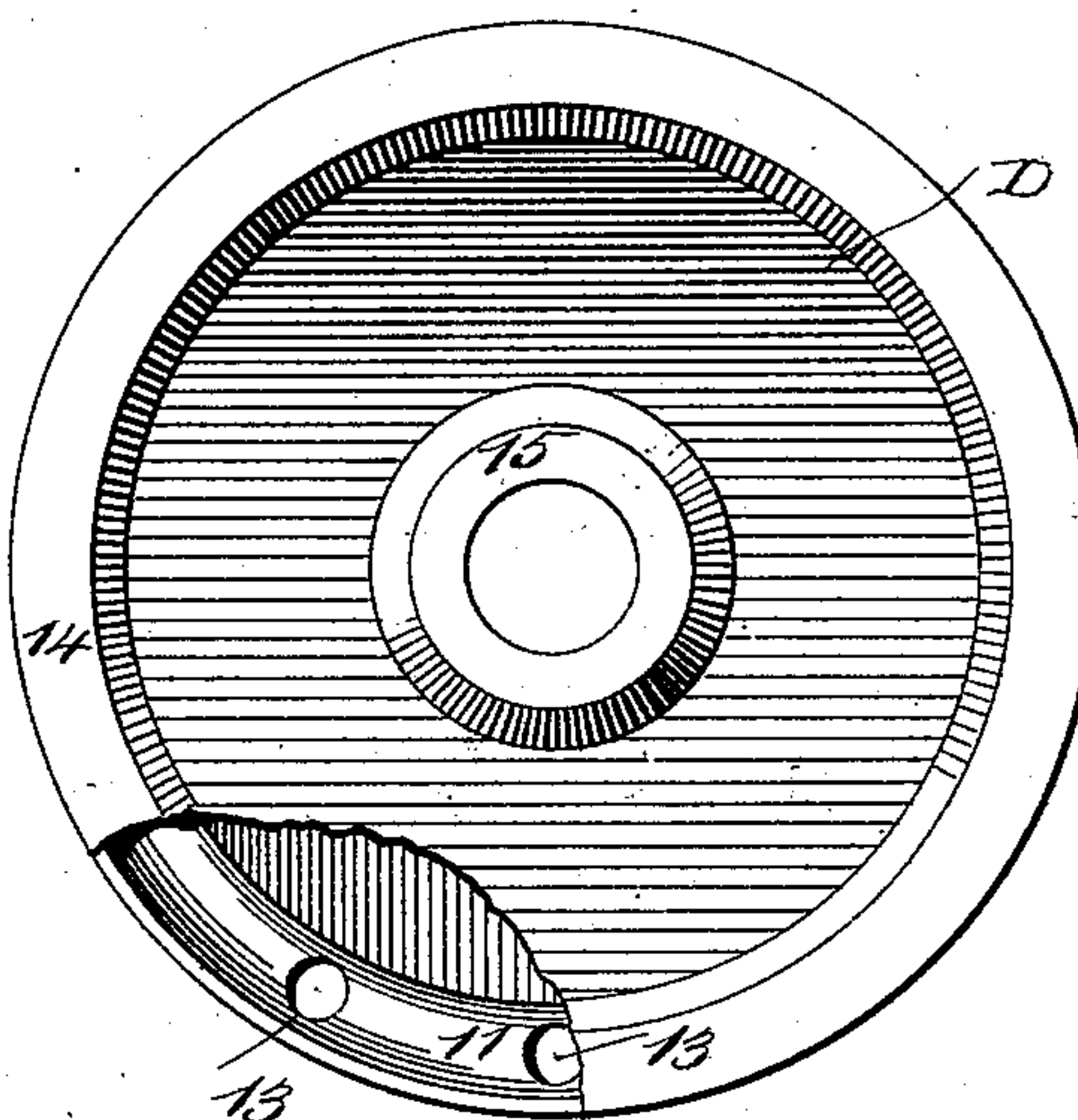
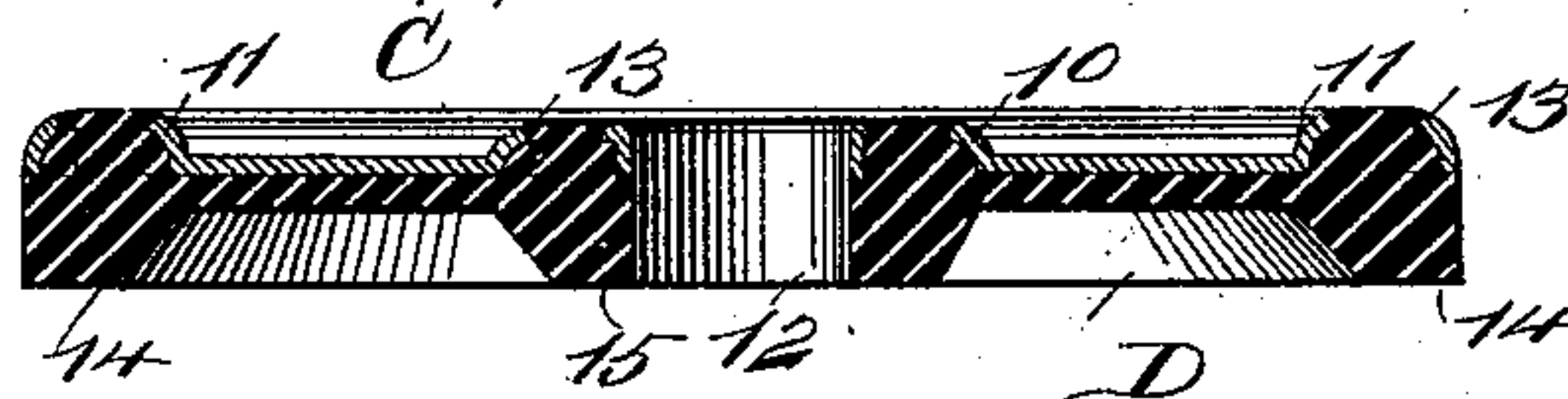


Fig. 4.



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UNITED STATES PATENT OFFICE.

JAMES HEWITT, OF BROOKLYN, NEW YORK.

VALVE.

SPECIFICATION forming part of Letters Patent No. 540,547, dated June 4, 1895.

Application filed April 23, 1894. Serial No. 508,660. (No model.)

To all whom it may concern:

Be it known that I, JAMES HEWITT, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Valve, of which the following is a full, clear, and exact description.

My invention relates to an improvement in valves, especially to an improvement in pump valves, and it has for its object to construct the valve with a metallic upper face and a lower or seating face of rubber, fiber, or equivalent material more or less yielding in its character.

One object of the invention is to combine the two materials in such manner that they may be united at a single operation, and whereby when united the seating surface will be securely attached to the back without the aid of a cement, or other fastening device other than the union of the two materials.

A further object of the invention is to provide a valve which will sustain any amount of pressure upon its upper face without in the slightest degree disturbing its seating surface or causing said surface to unduly wear, or be in any manner disarranged, and whereby the more pressure that is applied to the upper face of the valve will only serve to bind the seating face the more firmly thereto.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

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

Figure 1 is a vertical section through a mold and a valve located within the mold. Fig. 2 is a plan view of the valve. Fig. 3 is a bottom plan view thereof, a part of the seating-surface being broken away; and Fig. 4 is a section through the complete valve on the line 4 4 in Fig. 2.

In carrying out the invention the valve consists of a back C, made of metal, and a seating face D, made of rubber, fiber, or equivalent yielding, or semi-yielding material. The metal back C, is provided in its under face with a groove 10, preferably located at or near the center, the said groove being circular, and

a second similarly situated and preferably marginal groove 11, and the said plate or back is further provided with a central opening 12, to receive the valve stem.

The grooved surfaces 10 and 11 of the valve back are provided with a series of apertures 13 produced therein at predetermined intervals apart, the outer ends of which apertures are countersunk; and in producing the grooves 10 and 11 in the back plate of the valve the outer face is usually struck up, or formed with annular corresponding ribs.

The material of which the seating face D is composed is cast directly upon the metal back; and in casting the material of the seating face the said material will enter the grooves 10 and 11, and fill up the apertures 13 in the said grooved surfaces, the rabbets in the outer ends of the said apertures affording a spread of the material of the seating face, which effectually keys said material to the metal back and renders the two parts practically integral.

The material of the seating face is provided with a central aperture and with a marginal seating surface 14, together with a central seating surface 15; and between these surfaces the material of the seating face need only be sufficiently thick to properly cover the back plate of the valve. It is obvious that the more pressure exerted upon the metal back of such a valve the more firmly the seating face will cling to the back, since the material of the seating face will spread in the grooves 10 and 11, and bind firmly against the side walls thereof. The valve is perfectly steam and water tight at the same time, and the necessity of spiders upon the valve seat is dispensed with, and likewise the necessity of employing exceedingly thick rubber in the construction of the valve, it being well known that the rubber valves, owing to the pressure upon them and their constant movement, become scarred or abraded by the spiders used to support the valve between its seating surfaces, and upon the slightest turn of the valve these scarred surfaces break, tear, or drop away; and furthermore, the valve being not sufficiently stiffened upon the back the edges soon get out of shape and the valve is rendered useless.

When a valve is constructed as shown in

the drawings its back is stiff, and its seating face may be made with the least possible amount of material, and the two materials will be brought together to such an extent as
5 to render them virtually integral, and should the seating face become destroyed by any possibility, the back may be again utilized to receive another face, thus materially aiding in the economic construction of the valve.

10 As heretofore stated, the two surfaces are preferably molded one upon the other. One way of accomplishing this result is shown in Fig. 1, in which a cup mold A is employed to receive the back plate, and a follower B is
15 used to impart shape to the material which is poured upon, or otherwise delivered to the grooved surface of the back, a suitable core B' being employed to form the central opening for the valve stem.

20 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. As a new article of manufacture, a valve, comprising a metal back provided with a series of perforations, and a seating face on the
25 lower face of the back and provided with pro-

jections entering the apertures of the back and keying the same to the back, substantially as described.

2. As a new article of manufacture, a valve, 30 comprising a metal back, provided with grooves on its under face, and with openings in said grooves, and a seating face of yielding material fitting in the grooves of the back and provided with projections entering the 35 apertures thereof, as and for the purpose set forth.

3. As a new article of manufacture, a valve, comprising a metal back provided with a central opening, a groove on its under side around 40 said opening, and an annular groove at the margin, and a seating face of yielding material provided with a central aperture, a central seating surface, and a marginal seating surface, the said seating surfaces fitting in 45 the grooves of the back and provided with projections entering the apertures of the grooves, as specified.

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Witnesses:

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