A. M. KNAPP.
Breast Cups.

No. 141,005. Patented July 22, 1873.

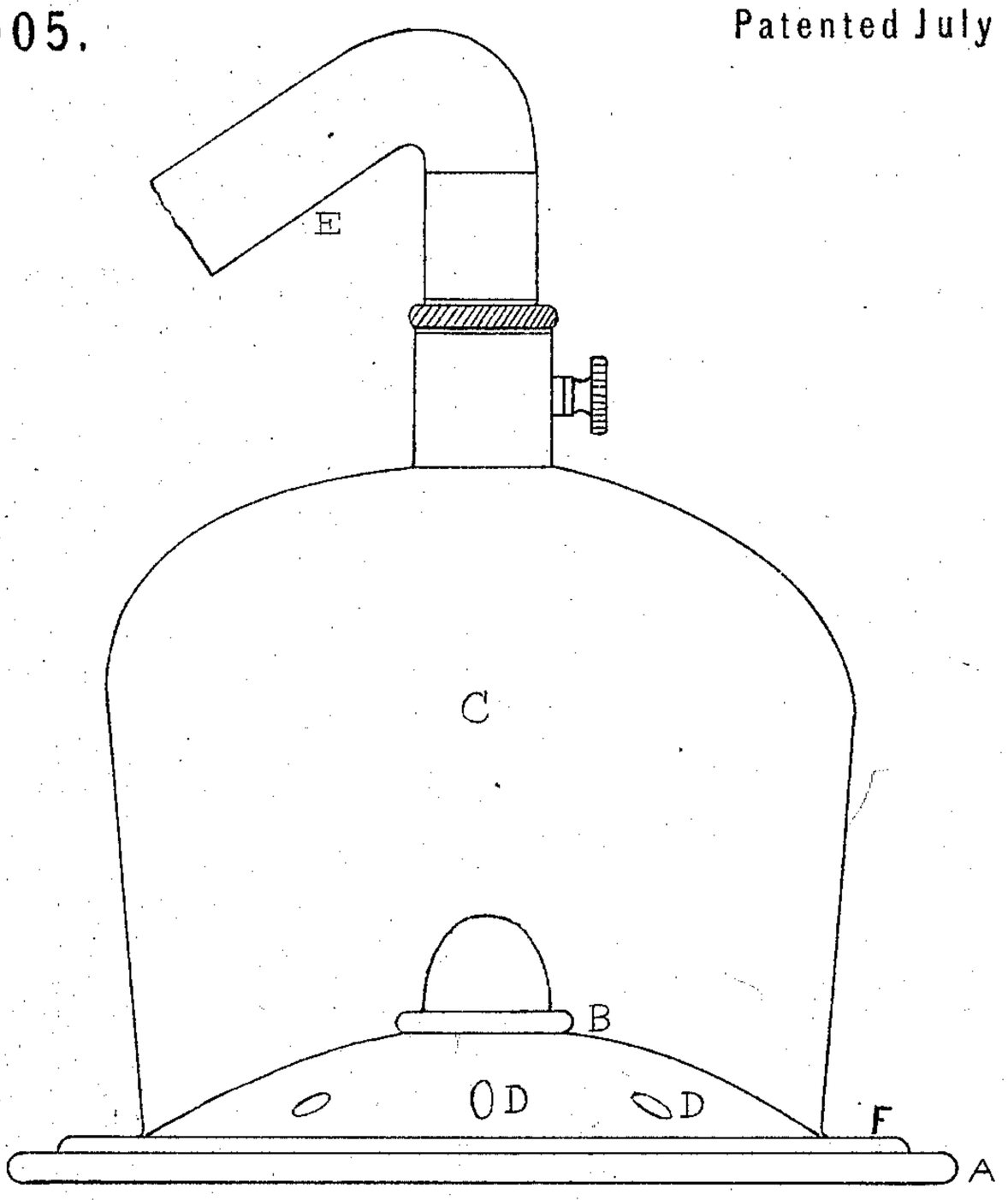

FIG. 1

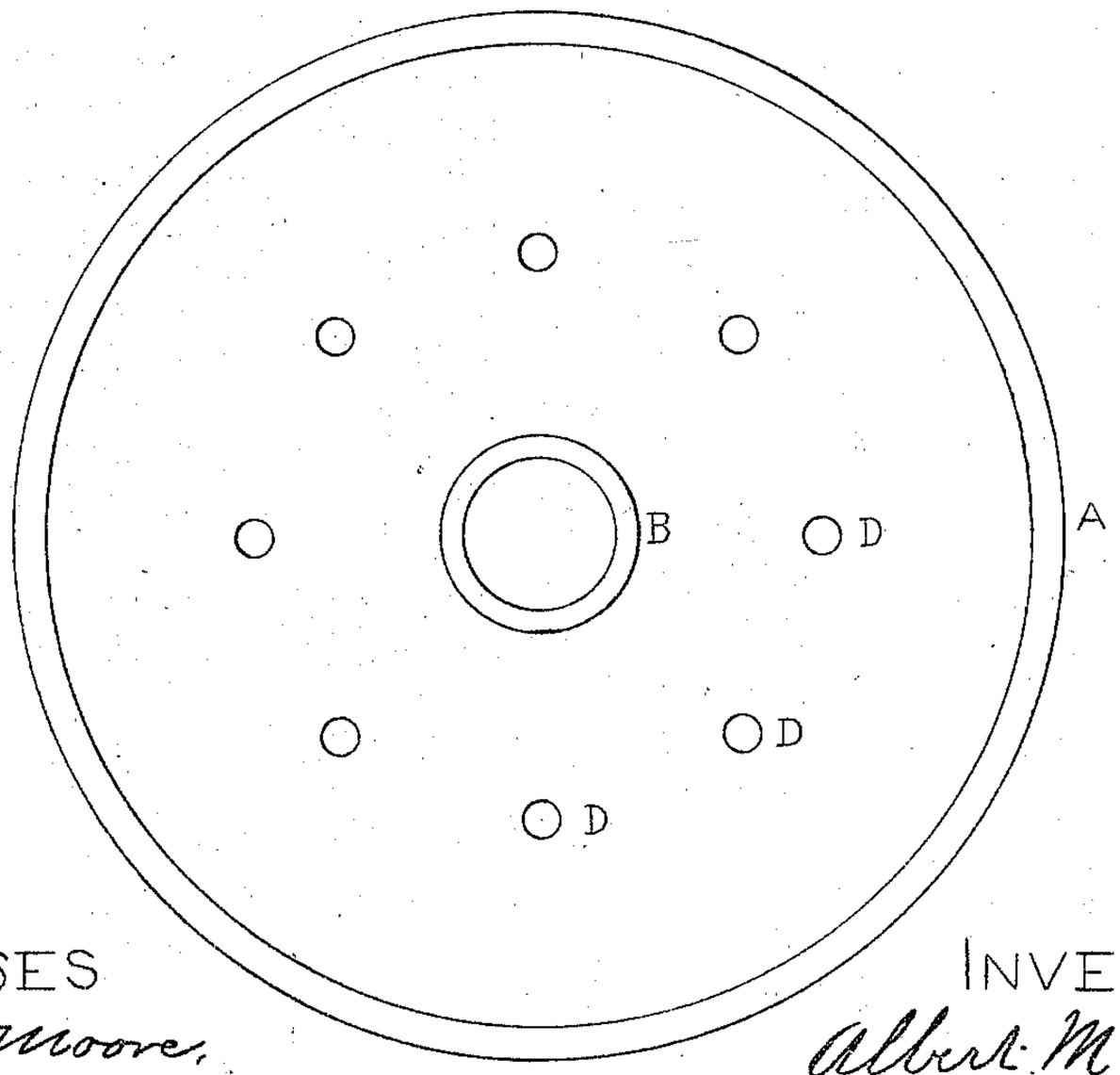

FIG. 2

WITNESSES
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UNITED STATES PATENT OFFICE.

ALBERT M. KNAPP, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN BREAST-CUPS.

Specification forming part of Letters Patent No. **141,005**, dated July 22, 1873; application filed December 26, 1872.

To all whom it may concern:

Be it known that I, ALBERT M. KNAPP, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Breast-Cups, of which the following is a specification:

The nature of my improvement consists in placing a piece of thin freely-elastic India rubber between an ordinary vacuum-cup and the surface of the breast over which the cup is placed to draw the milk, said piece of rubber to cover the breast within the boundary of the cup, excepting at the nipple and a few small points, hereafter shown and described. The India rubber, possessing free elasticity and contractibility, is constantly in close contact with the surface of the breast, expanding and contracting as the breast is drawn into the cup by exhausting the air, and exerting a counter-pressure gentle and uniform upon the breast, which assists considerably in the expulsion of the milk. The degree of power in the counter-pressure is regulated by the thickness or resistance of the rubber. In my improvement I have combined the powers of suction and pressure in such a manner as to obtain the full benefit of each in a more superior degree than is done in other breast-cups now in use. In other cups pressure is accomplished by interposing a hard, unyielding concave surface to the breast, which is more painful, especially if the breast be in a state of inflammation, and less speedy and complete in the evacuation of the milk. The pressure exerted by the arrangement of other cups is limited, inasmuch as the power which is necessary to draw the breast to this unyielding surface is exhausted as soon as the breast comes in contact with this surface of the cup. In my improvement the compression of the breast increases in proportion as the breast is drawn more completely into the cup, while the suction upon the nipple is also greater.

Figure 2 represents a circular piece of India rubber as constructed to use with an ordinary dry-cup.

A shows a slight and firm elevation from the surface of the piece of India rubber, extending around the same upon all sides. Said elevation is used for the purpose of keeping said rubber in place and position while the cup is in operation. B is a firm supporting-ring surrounding an orifice or opening in said piece of rubber, which receives and protects the nipple. D D are small holes in the rubber, through the use of which a closer and firmer contact is maintained between the piece of rubber and the breast when the air is exhausted more or less from the cup in the act of operation.

Fig. 1 shows the relation and application of the invention to the breast, in combination with the cup C.

F shows the external rim of the cup C, against which rests and is supported the elevated ridge A of the rubber. As thus supported, the rubber is not drawn into the cup when it is stretched over the breast when the cup is in operation. E shows the conducting-tube of the cup C, through which the air is exhausted by pump or bellows.

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

As a new article of manufacture, in combination with the vacuum-cup of the ordinary breast-pump, the elastic perforated rubber base, as shown.

ALBERT M. KNAPP.

Witnesses:
ALBERT M. MOORE,
ALFRED G. LAMSON.