

No. 724,000.

PATENTED MAR. 31, 1903.

E. H. FOSTER.
VALVE.

APPLICATION FILED JUNE 18, 1901.

NO MODEL.

Fig. 1

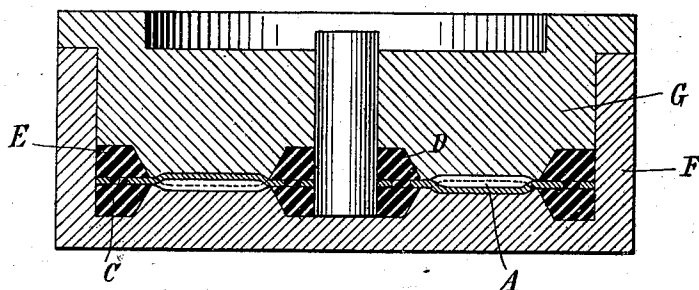


Fig. 2

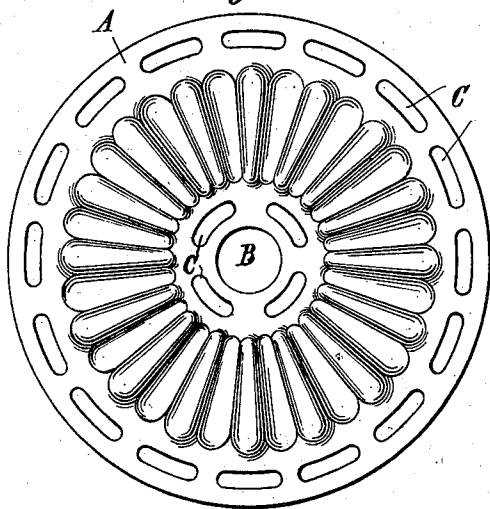


Fig. 4

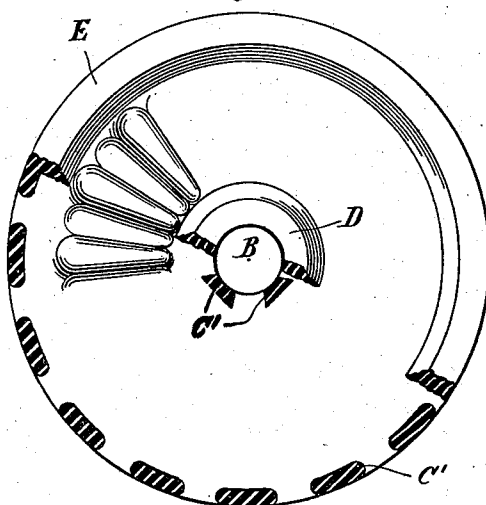
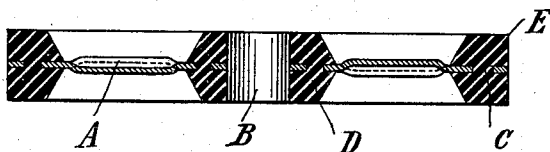


Fig. 3



Witnesses
Raphael Ketter
Benjamin Miller

Inventor
Ernest H. Foster
by Kerr, Page & Cooper Attys

UNITED STATES PATENT OFFICE.

ERNEST H. FOSTER, OF NEW YORK, N. Y.

VALVE.

SPECIFICATION forming part of Letters Patent No. 724,000, dated March 31, 1903.

Application filed June 18, 1901. Serial No. 64,999. (No model.)

To all whom it may concern:

Be it known that I, ERNEST H. FOSTER, a citizen of the United States, residing in the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improvements in Valves, of which the following is a specification, reference being had to the drawings accompanying and forming a part of the same.

The invention subject of my present application for patent is an improvement in valves, and generally applicable to devices of this class, but more especially useful in connection with pumps and hydraulic machinery of analogous kinds. I have found in the commercial manufacture of this type of valve certain practical requirements which are not met by the forms of valves heretofore in use, and these I have provided for in a construction of which the essential characteristics are as follows: In order to impart the necessary strength and rigidity and at the same time lightness to the valve, I employ an annular disk or plate of sheet metal, which is corrugated, except at its marginal portions, the latter both around the central opening and periphery being flat and provided with a series of perforations or suitable serrations or notches. A seating-face of plastic material, such as rubber, is applied to the edges and on opposite sides of the plate and vulcanized under pressure, so as to extend through the perforations or notches, thereby becoming practically integral with the plate.

This improvement is illustrated in the accompanying drawings, in which—

Figure 1 is a vertical central section of my improved valve and a mold by means of which the seating-faces are applied. Fig. 2 is a plan view of the valve-plate without the seating-faces. Fig. 3 is a central sectional view of the finished valve, and Fig. 4 is a plan view of a modified form of plate with portions of the seating-face removed.

The valve is composed of a disk or plate of comparatively thin and preferably sheet metal A, having a central opening B for the valve-stem. Between the marginal portions the plate is ribbed or corrugated radially to impart to it the necessary stiffness, and around the margin of the central opening and the periphery of the plate are a series of perfora-

tions C, which may be of various sizes and shapes. The seating-faces are preferably applied to both sides of the plate in order that the valve may be reversible, one face on each side being applied over each of the two series of perforations. It is not necessary or usual to cover the entire surface on either side of the plate with said material, as comparatively narrow annular deposits D at the center and E around the periphery will be found to answer all practical requirements, while effecting a great saving of material. The yielding material is preferably applied by and vulcanized in a mold F, the bottom of the latter and the face of the follower G being of proper conformation to mold a suitable quantity of the material to the desired shape, uniting through the perforations C the material above and below the plate.

In some cases, and particularly in valves of small size, I form the plate A with marginal notches C', as shown in Fig. 4, instead of perforations. This accomplishes the same result and affords a practical means of uniting the seating-faces to the plate. In small-sized plates the corrugations or ribs may be omitted.

It will be understood that the form and specific details of my improved valve may be varied without departing from the invention and that other ways than that herein described may be employed in its manufacture.

Having now described my invention, what I claim is—

1. A reversible valve comprising a disk or plate having a central opening, plane marginal portions around the central opening and the periphery, corrugations intermediate said plane marginal portions, and annular seating-faces of yielding material applied on each side of the plate or disk over the plane marginal portions, as and for the purposes set forth.

2. A reversible valve comprising a disk or plate having a central opening, plane marginal portions around the central opening and the periphery, a series of apertures in the plane marginal portions around the central opening, a second series of apertures in the periphery, radial corrugations intermediate said plane marginal portions, and annular seating-faces of yielding material applied on

each side of the disk or plate over the plane marginal portions and extending through the apertures in such portions, as and for the purpose set forth.

- 5 3. A reversible valve comprising a disk or plate having a central opening, and annular seating-faces of yielding material applied on

each side of the plate or disk around only the central opening and the periphery, as and for the purposes set forth.

ERNEST H. FOSTER.

Witnesses:

M. LAWSON DYER,
BENJAMIN MILLER.