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N. H. HOLLAND
ACOUSTIC DIAPHRAGM

Filed June 12, 1926

Fig. 1.

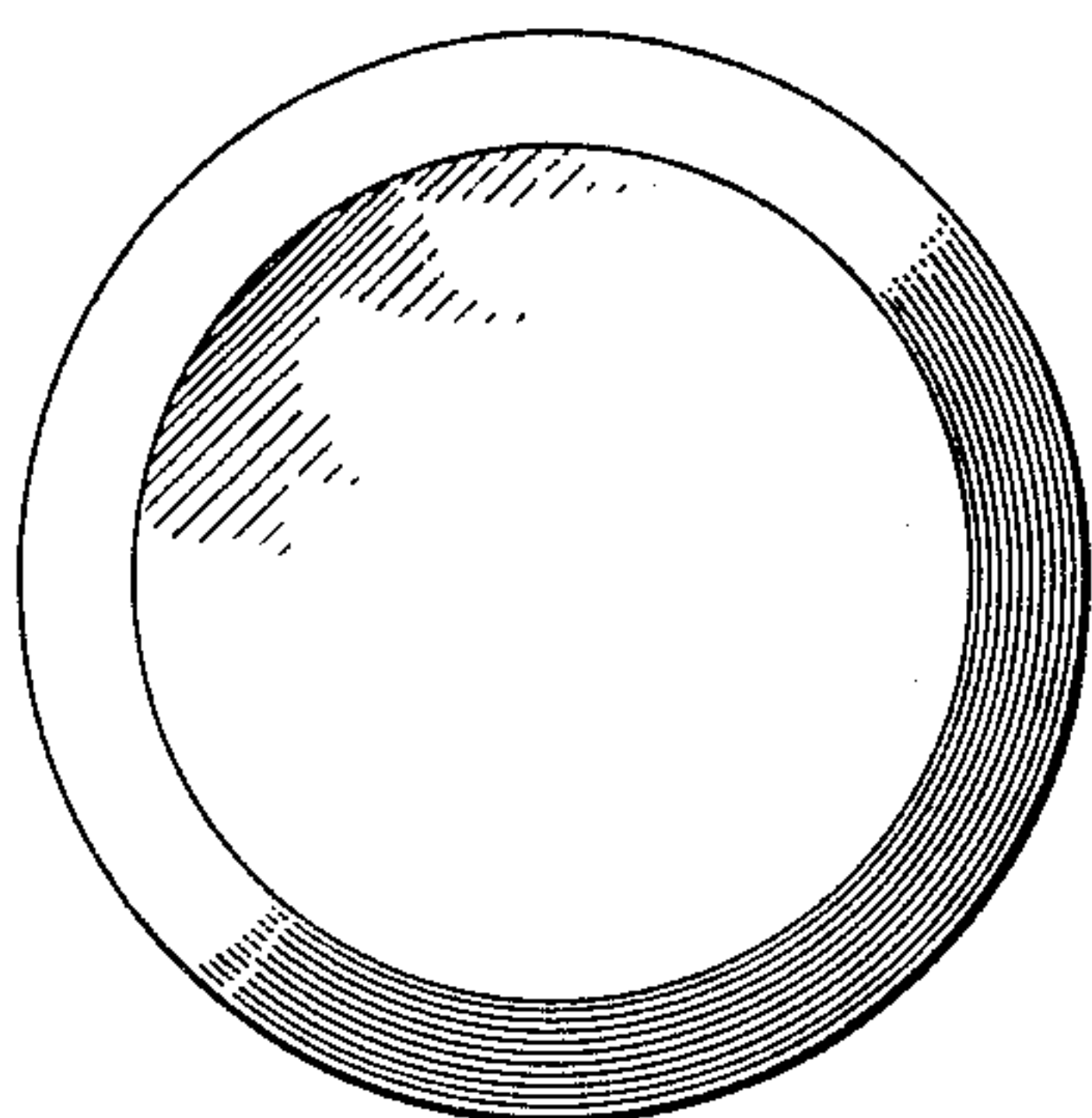
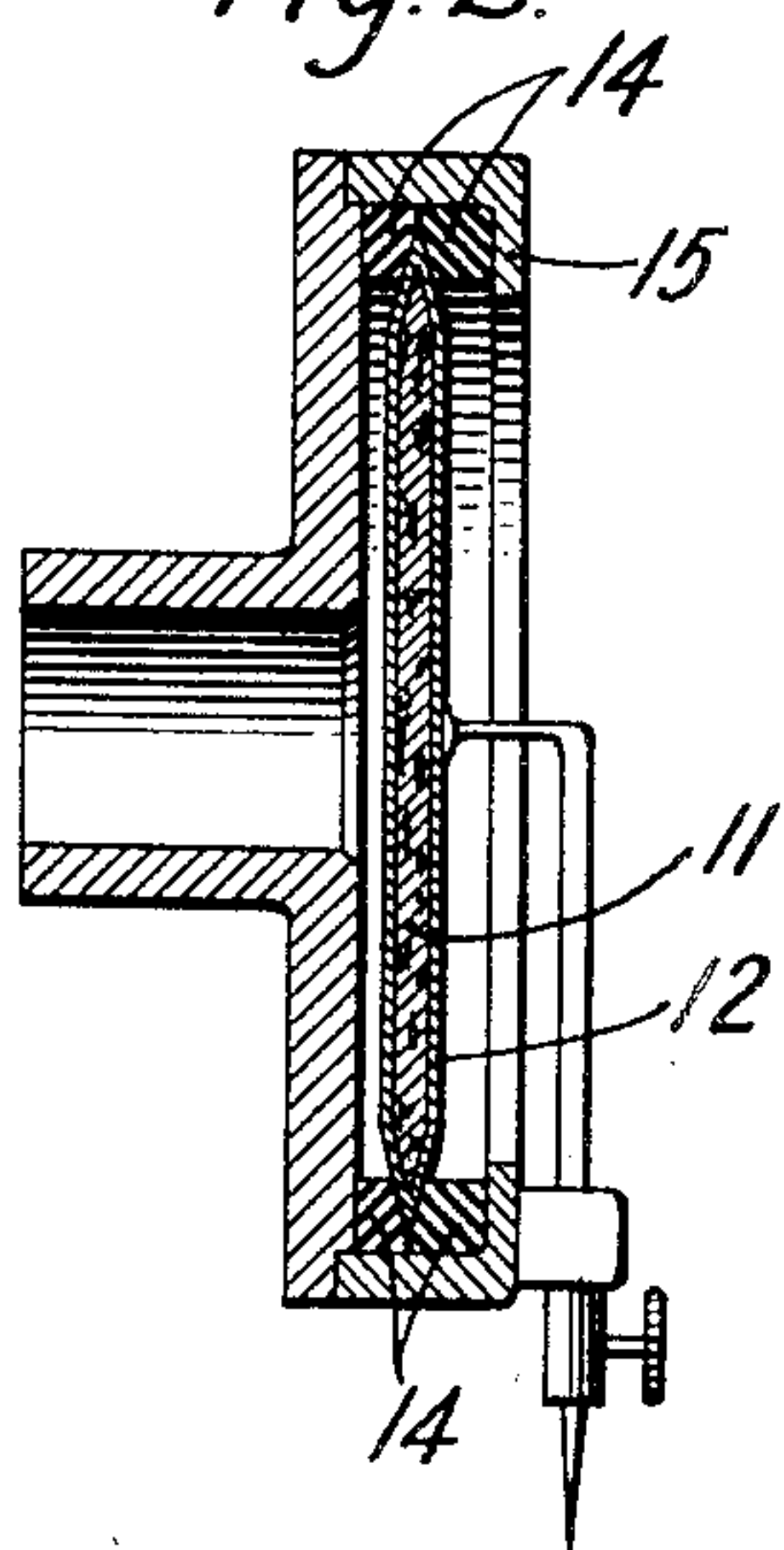


Fig. 2.



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UNITED STATES PATENT OFFICE.

NEWMAN H. HOLLAND, OF MONTCLAIR, NEW JERSEY, ASSIGNOR TO BELL TELEPHONE LABORATORIES, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

ACOUSTIC DIAPHRAGM.

Application filed June 12, 1926. Serial No. 115,471.

This invention relates to acoustic diaphragms and more especially to such diaphragms for use in phonographs or loud speakers as sound radiators.

5 The object of this invention is to provide a diaphragm which has high elastic reactance and small mass and which can be economically produced.

10 In accordance with this invention a diaphragm is produced by carbonizing a piece of organic material and then coating or plating it with a material impervious to moisture.

15 A preferred form of the invention is described hereinafter in connection with the attached drawings in which Fig. 1 is a front view of the diaphragm and Fig. 2 shows the diaphragm in section and mounted in a phonograph sound box.

20 Referring particularly to Fig. 2 the mid-portion 11 of the diaphragm is of cork or other material which has been carbonized by the well known process of dry distillation so that only a cellular or honeycomb structure of carbon remains. This piece so treated is 25 then coated with a thin film 12 of a substance which is moisture proof. Such a substance may be copper, aluminum or similar material and may be electrochemically deposited or applied as a foil. It is essential that this 30 coating be very thin so that the mass is not

materially increased and although a metallic coating is not necessarily required it is preferred.

Especial care must be taken if a liquid coating is used since the liquid may penetrate 35 slightly and also fill the holes left after carbonizing, thereby adding weight. At the same time, due to the penetration, there may not be a complete covering of the surface permitting absorption of moisture, which would 40 also increase the weight.

The outer edge of the diaphragm is preferably reduced in thickness and is clamped between rings 14 of a resilient material such as rubber. Clamping ring 15 holds the rings 45 14 in position.

What is claimed is:

1. An acoustic diaphragm comprising a body portion of carbonized organic material coated with a material impervious to mois- 50 ture.

2. An acoustic diaphragm comprising a body portion of carbonized cork coated with a material impervious to moisture.

3. An acoustic diaphragm comprising a 55 body portion of carbonized organic material covered with a coat of metal.

In witness whereof, I hereunto subscribe my name this 10th day of June A. D., 1926.

NEWMAN H. HOLLAND.