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PATENTED MAY 12, 1908.

H. W. DEIDRICK.

DIAPHRAGM FOR PRINTING AND DECORATING IRREGULAR SURFACES.

APPLICATION FILED JUNE 25, 1907.

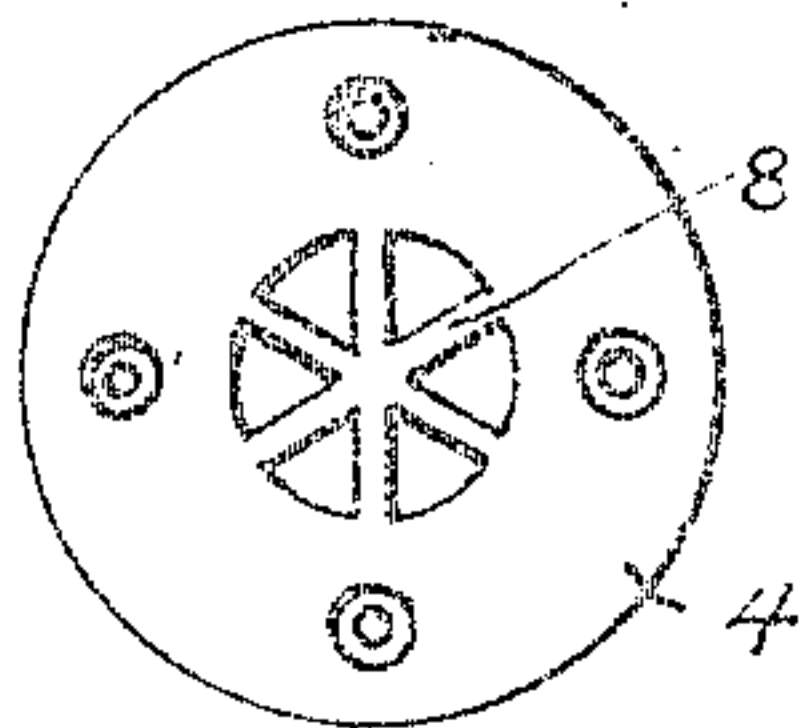


FIG. 2

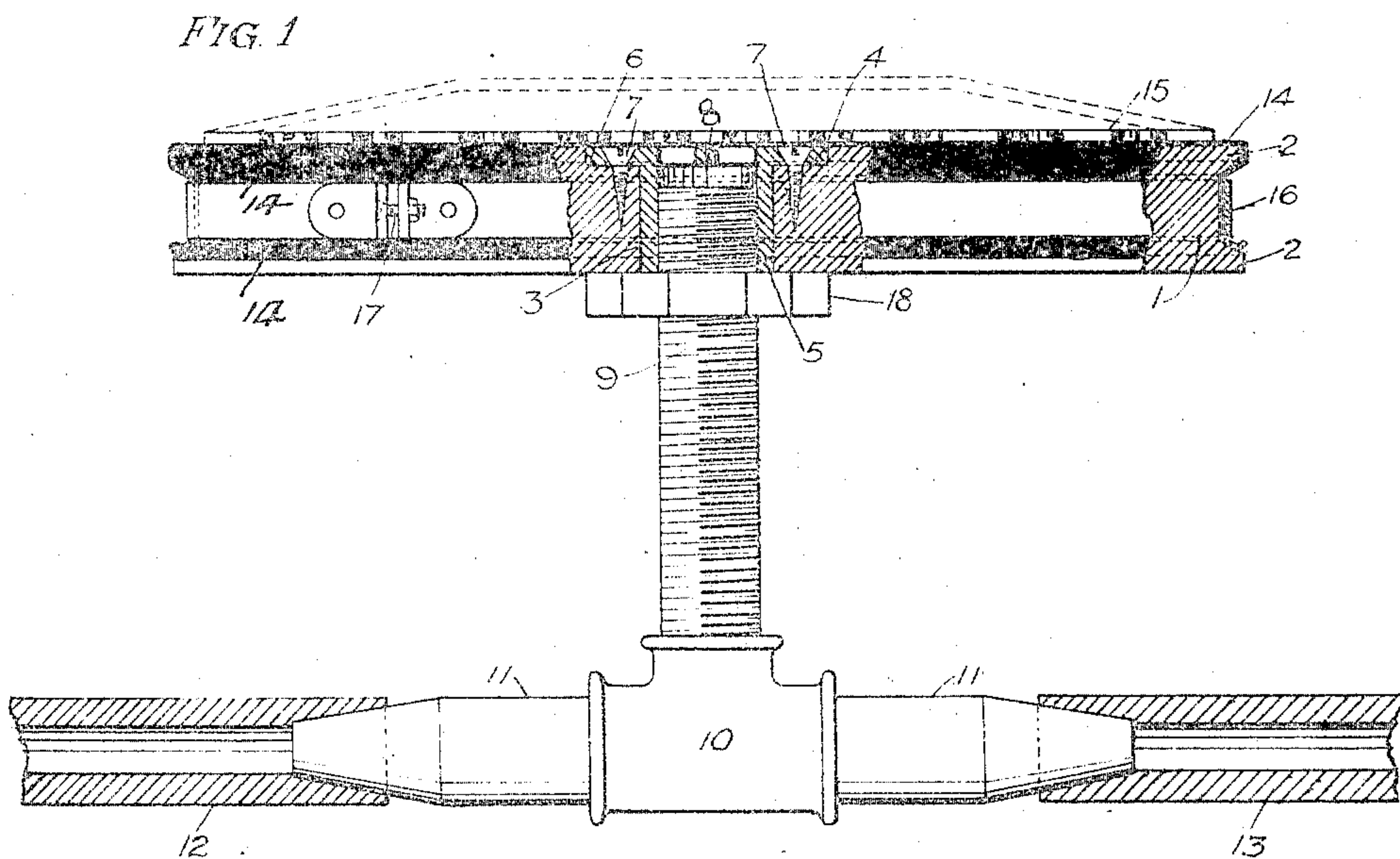
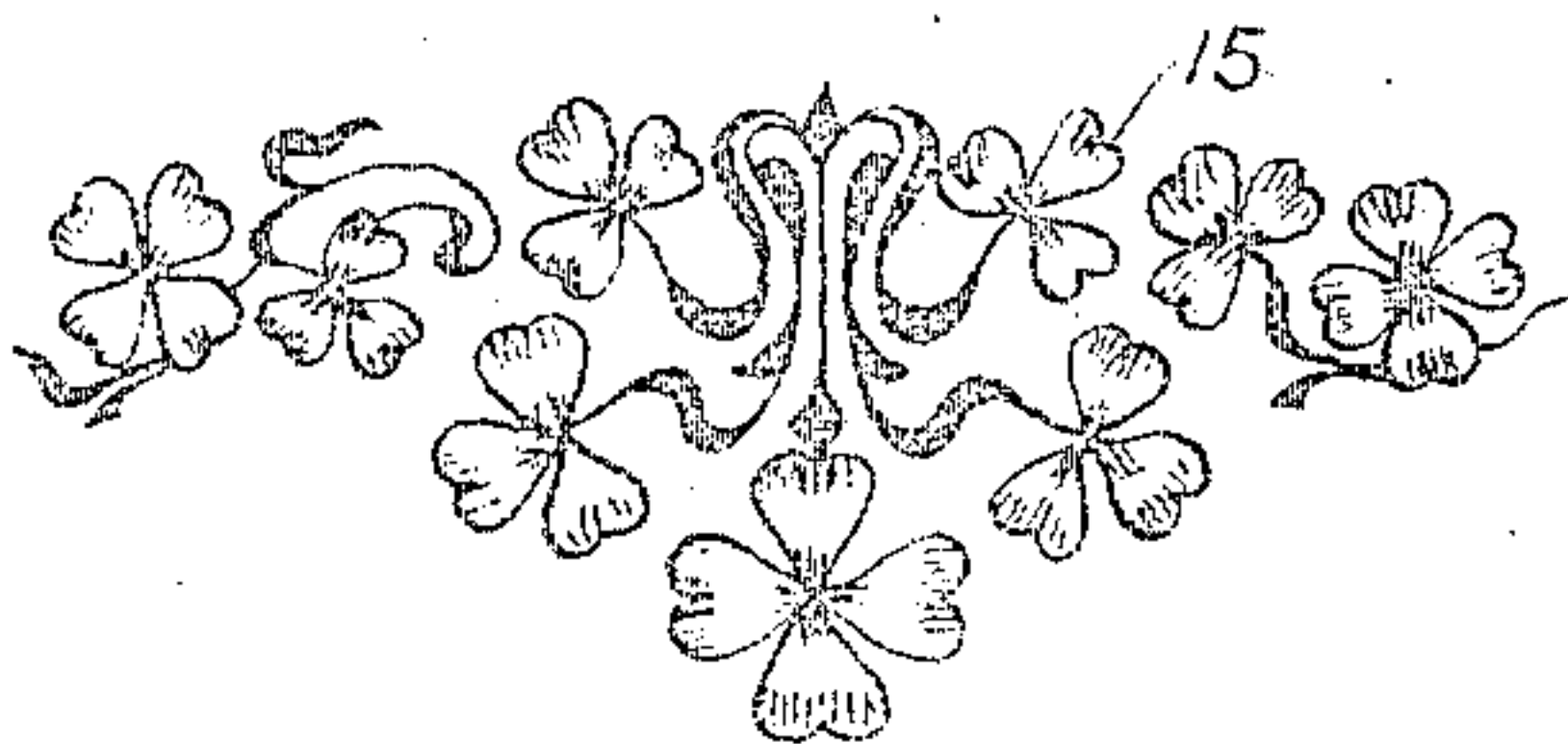


FIG. 5



WITNESSES:

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DIAPHRAGM FOR PRINTING AND DECORATING IRREGULAR SURFACES.

No. 887,315.

Specification of Letters Patent.

Patented May 12, 1908.

Application filed June 25, 1907. Serial No. 380,805.

To all whom it may concern:

Be it known that I, HARRY W. DEIDRICK, a citizen of the United States of America, residing at East Liverpool, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Diaphragms for Printing and Decorating Irregular Surfaces, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in diaphragms for printing and decorating irregular surfaces, as pottery ware, tile, spherical bodies, or any flat, elliptical, cylindrical, conical, convex or concave surfaces, and the invention relates more particularly to the novel, efficient and quick application of air under pressure to that part of the diaphragm where the pressure is most needed, for producing a perfect impression of the type or configuration carried by the diaphragm.

The invention has for its primary object to provide a stationary head and novel means for fastening the diaphragm upon the same.

Another object of this invention is to provide a diaphragm head with a novel air inlet, whereby the diaphragm of the head can be expanded to enter depressions of considerable depth in vessels of pottery ware or the like, thus insuring a positive engagement of the diaphragm with all parts of the surface of the ware being decorated.

I am aware of diaphragm heads having been used wherein air is admitted at the periphery of the heads, but such heads have generally proven defective inasmuch as it is impossible to force the diaphragm into depressions in the pottery ware of considerable depth, or to reach the bottom of a concave surface with satisfactory results. In constructing a diaphragm head in accordance with my invention, I arrange the air inlet whereby the air will impinge the central portion of the diaphragm, and force the same outwardly to insure a positive contact of the diaphragm with all portions of the depressions in a piece of pottery ware or the like when the same is placed on the head, or against which the head is placed.

The detail construction entering into my invention will be hereinafter more fully described and then specifically pointed out in the appended claims, and referring to the drawing forming part of this application, like numerals of reference designate correspond-

ing parts throughout the several views in which:

Figure 1 is an elevation partly in section, of a diaphragm head constructed in accordance with my invention, Fig. 2 is a plan view of the sleeve used in connection with the head, Fig. 3 is a view illustrating a portion of a design adapted to be printed upon a piece of ware by the diaphragm of the head.

To put my invention into practice, I employ a head or disk 1 preferably circular and having peripheral flanges 2. The head or disk 1 is provided with a central opening 3 and with an annular seat 4 surrounding the upper end of the opening 3. In the opening 3 is mounted a sleeve 5 having an annular flange 6 which is secured in the seat 4 by screws 7 or similar fastening means. The end of the sleeve 5 adjacent to the flange 6 is formed with a spider partition 8, for permitting the passage of the air while at the same time retarding the flow and insuring thereby a more perfect distribution of the air passing through the sleeve. The sleeve 5 is interiorly screw threaded to receive the threaded pipe section 9 extending from a T-connection 10, said connection being provided with nipples 11 connecting with pipes 12 and 13.

Mounted upon the outer face of the head or disk 1 is a resilient diaphragm 14 carrying a design or form 15, which serves functionally as the type for printing and decorating pottery ware. The diaphragm 14 is stretched upon the head or disk 1 and held in engagement therewith by a metallic band 16 having its ends detachably connected together, as at 17, said band engaging the head or disk 1 between the peripheral flanges 2. The head or disk 1 is locked in engagement with the threaded pipe section 9 by a lock nut 18.

In dotted lines in Fig. 1 of the drawings, I have illustrated the diaphragm in one of its expanded positions, this being accomplished by admitting air to the sleeve 5 through one of the pipes 12 or 13, one pipe serving as an air inlet while the other pipe serves as an exhaust for the air beneath the diaphragm 14 when the supply of air is cut off and the diaphragm contracts. In admitting air beneath the diaphragm centrally of the head or disk 1, the central portion of the diaphragm will be gradually raised until all parts of the form or design 15 impinge the piece of pottery ware placed over the head and thus marks the same.

My invention simply resides in the novel construction of the head or disk 1, and the manner of admitting air centrally of the head or disk.

5 It is obvious that the device is extremely simple in construction and can be manufactured at a comparatively small expense.

What I claim and desire to secure by Letters Patent, is:—

10 1. In a device of the class described, the combination with an air supply pipe, of a disk having peripheral flanges, said disk having a central opening formed therein, an interiorly threaded sleeve mounted in said
15 opening and adapted to engage the end of said pipe, a resilient diaphragm mounted upon said disk and carrying the design to be printed, a metallic band for holding the edge of said diaphragm, and means for securing
20 the ends of said band together, substantially as described.

2. In a diaphragm head, the combination with an air supply pipe, of a disk, a sleeve mounted centrally of said disk and adapted
25 to receive the end of said air supply pipe, a spider partition formed in the end of said sleeve, a diaphragm detachably mounted

upon said disk and having type, and a band for holding said diaphragm upon said disk.

3. In a device of the class described, the
30 combination with an air supply pipe, of a disk having a central opening therethrough, an interiorly threaded sleeve mounted in said opening and adapted to engage the end of said pipe, a resilient diaphragm mounted
35 upon said disk and carrying the design to be printed, and means for securing the diaphragm to the edges of the disk.

4. In a device of the class described, the combination with an air supply pipe, of a
40 disk, a sleeve mounted centrally of said disk and adapted to receive the end of said air supply pipe, a spider partition formed in the end of said sleeve, a diaphragm detachably mounted upon said disk and having type,
45 and means for holding said diaphragm upon said disk.

In testimony whereof I affix my signature in the presence of two witnesses.

HARRY W. DEIDRICK.

Witnesses:

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H. LEE GARRETT.