No. 641,440. Patented Jan. 16, 1900.

W. H. DEIDRICK.

DECORATING MACHINE.

(Application filed June 16, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

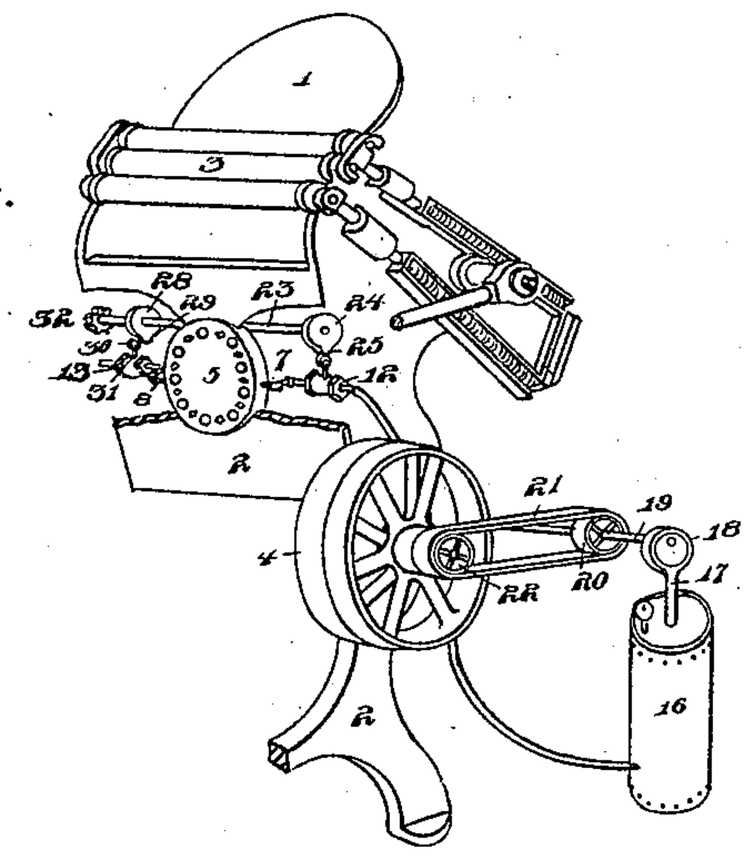


Fig. 2.

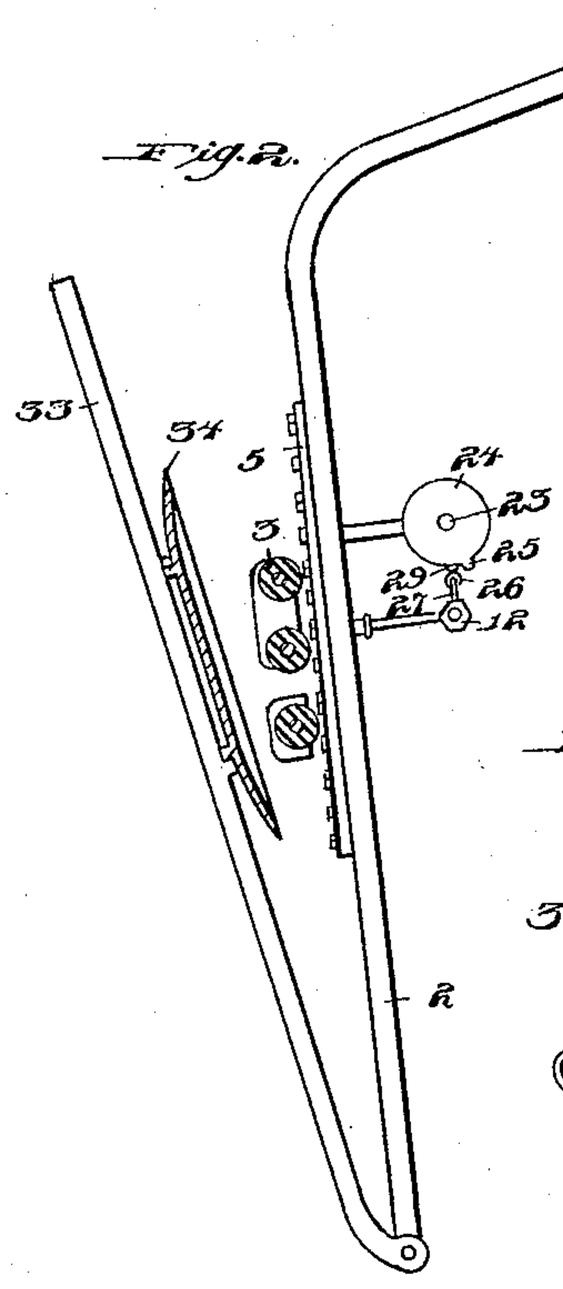


Fig. 3.

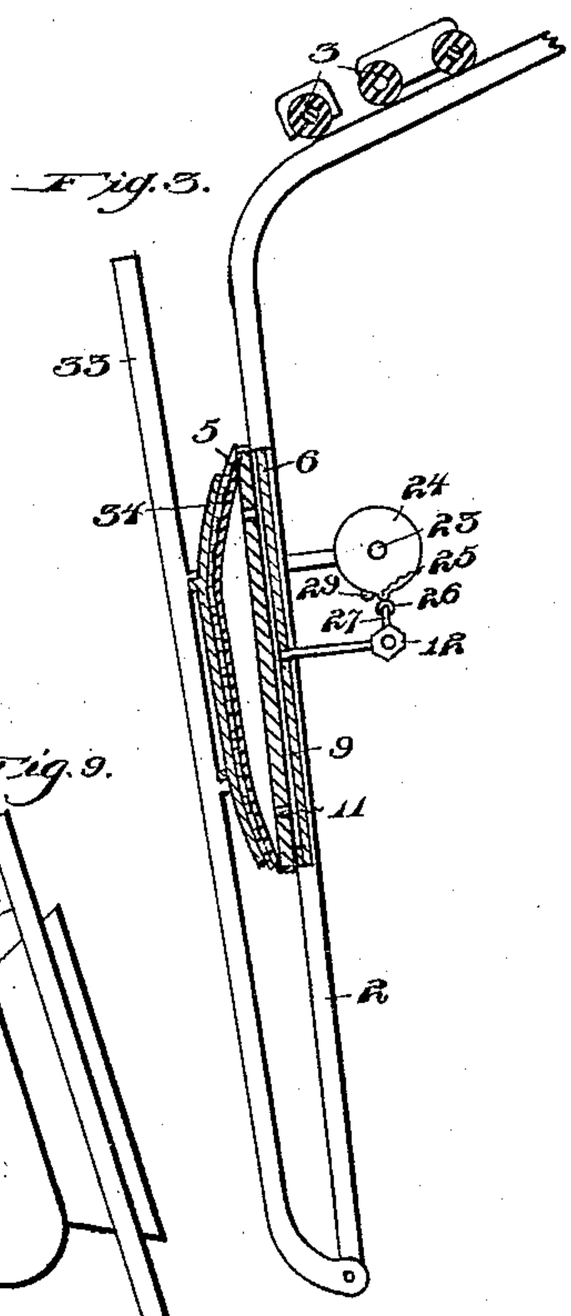


Fig. 8.

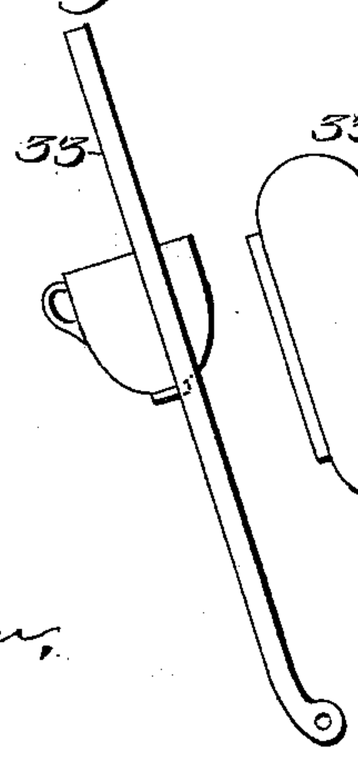
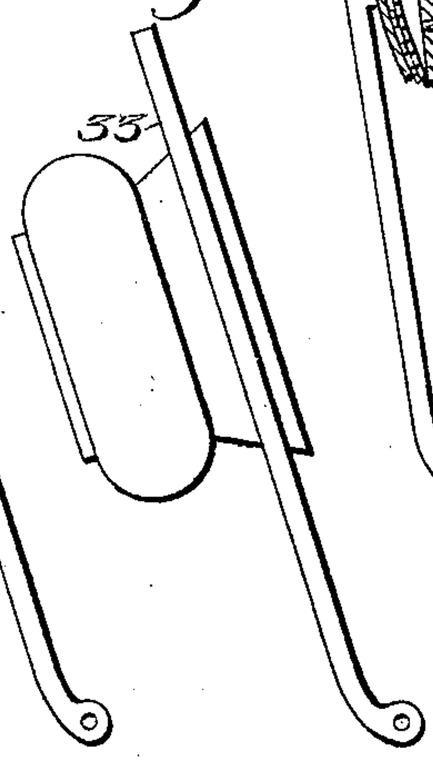


Fig. 9.



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(No Model.) 2 Sheets—Sheet 2.

Fig. 4.

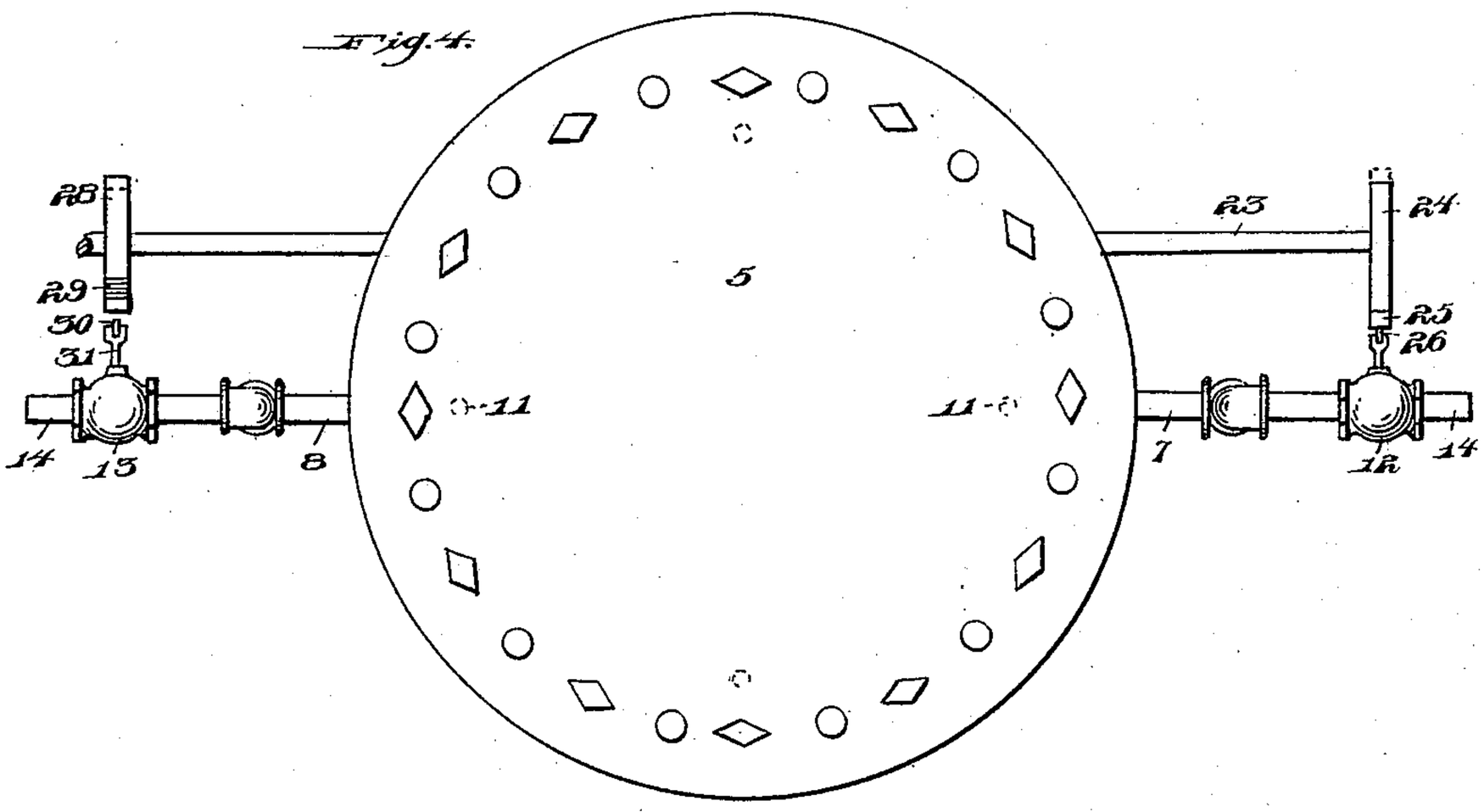


Fig. 5.

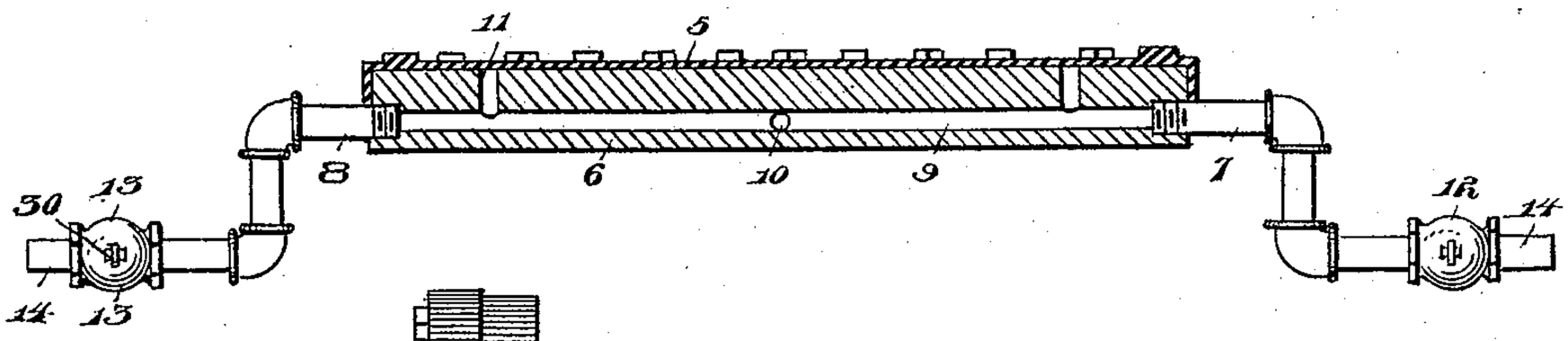


Fig. 6.

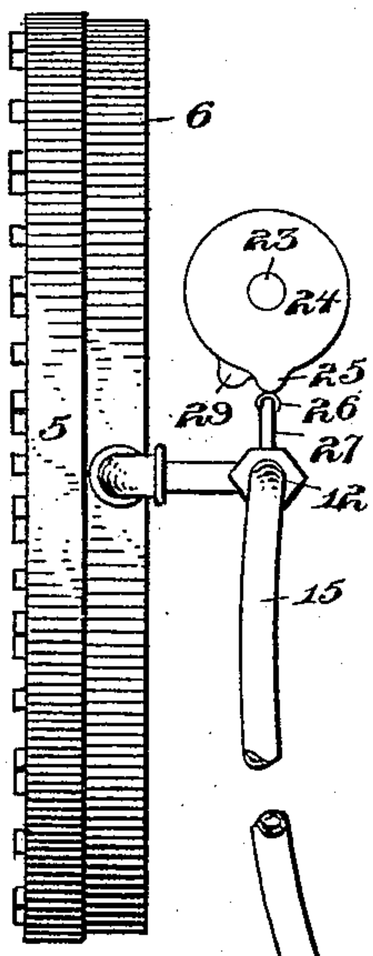
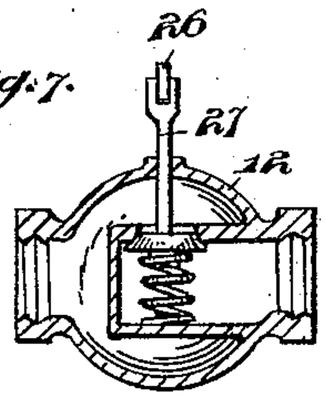
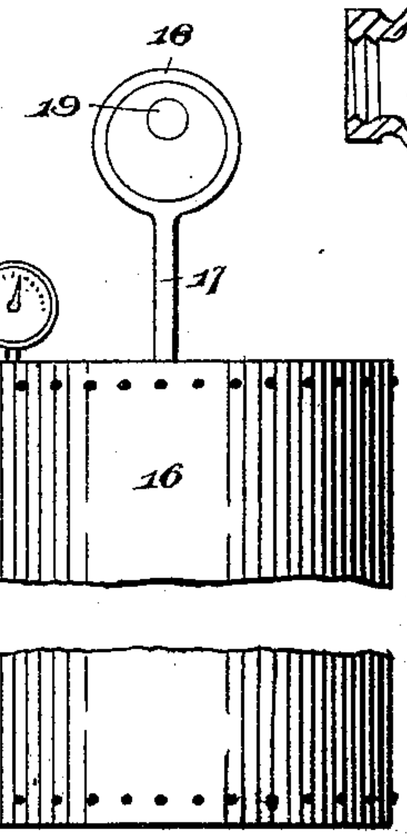


Fig. 7.





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UNITED STATES PATENT OFFICE.

WILLIAM H. DEIDRICK, OF EAST LIVERPOOL, OHIO.

DECORATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 641,440, dated January 16, 1900.

Application filed June 16, 1899. Serial No. 720,813. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. 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 Automatic Decorating Devices for Dishes, Tile, Glassware, and the Like, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in attachments for printing-presses and the like, and more particularly to that class employed for printing upon flat, elliptical, or any uneven surfaces.

My invention is particularly adapted to be employed in connection with the decoration and ornamentation of pottery, earthenware, floor and wall tiling, glassware of all descriptions, lamp-chimneys, shades, and the like, and has for its further object to construct a device which may be advantageously employed for printing upon concave or convex surfaces.

Another object of my invention is to construct a novel attachment that will operate in conjunction with an ordinary printing-press when the latter in its operation reaches a predetermined point.

With the above and other objects in view the invention further consists in the novel construction, combination, and arrangement of parts to be hereinafter more particularly described, and pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference will be employed to designate similar parts throughout the several views, in which—

Figure 1 is a perspective view of a printing-press, partially broken away, with my improved attachment applied thereto. Fig. 2 is an enlarged side elevation of a portion of the press, showing the printing-diaphragm in its normal or contracted position. Fig. 3 is a similar view showing the diaphragm in an inflated or expanded position. Fig. 4 is an enlarged front elevation of the diaphragm. Fig. 5 is a longitudinal sectional view of the same. Fig. 6 is a side elevation of the same, showing the diaphragm connected to the air-pump. Fig. 7 is an enlarged detail vertical sectional view of the air-inlet valve. Fig. 8 is a detail view showing the impression plate or platen constructed to receive cups and the like, and Fig. 9 is a like view showing the impression plate or platen constructed to receive a cuspidor.

Referring to the drawings by reference-numerals, 1 indicates the printing-press; 2, the frame; 3, the inking-rolls, and 4 the drive-pulley.

The reference-numeral 5 indicates a diaphragm which is constructed of any suitable flexible material and carries upon its outer face any suitable design, configuration, or characters, as may be desired. The body portion 6 of this diaphragm is provided with a suitable air-inlet and an air-outlet which are designated by the reference-numerals 7 and 8, respectively. An air-passage 9 is formed in the said body portion and communicates with an air-passage 10, which extends at right angles to the air-passage 9, said air-passages 9 and 10 also communicating with an upwardly-extending air-passage 11.

The air-inlet 7 is provided with an air-inlet valve 12, and the air-outlet 8 has arranged therein an exhaust-valve 13, the valves 12 and 13 being constructed alike and are operated alternately. A nipple 14 is connected to the air-inlet valve 12 and is adapted to receive a flexible tube 15, which is connected to a pump 16, the latter being operated by a rod 17, carrying an eccentric 18, connected to a shaft 19, carrying a pulley 20, which is driven by an endless belt 21, operating over the pulley 22, attached to the drive-pulley 4.

In the rear of the frame 2 is mounted a horizontal shaft 23, carrying a disk 24, said disk having a projection 25, which is adapted to engage the head 26 of the valve-stem 27 of the air-inlet valve 12. A like disk 28 is secured near the other end of the shaft 23 and likewise carries a projection 29, which is adapted to engage the head 30, operating the valve-stem 31 of the exhaust-valve 13, the end of the shaft 23 being provided with a cog-wheel 32, to which power is applied in any suitable manner.

The reference-numeral 33 indicates the impression plate or platen, which carries on its inner face the article upon which the impres-

sion is to be made. In Fig. 2 I have shown a plate 34.

In Figs. 8 and 9 I have shown a slight modification of the platen or impression plate adapted for use in printing upon such articles as cups, cuspidors, and the like, the impression plate or platen being provided with a suitable recess to receive the article to be printed, which may be held therein in any suitable manner.

The operation of the device is as follows: Power being communicated to the printing-press in the ordinary manner will cause the pump to operate, and assuming that the rod 23 is being rotated as the impression plate or platen is brought into close proximity to the article that is to be printed the projection 25 will engage the head 26 of the valve-stem, thereby opening the valve and allowing the air to inflate the diaphragm, which will conform to and print upon the uneven, concave, or convex surface, as the case may be. At this point of the operation the projection 29 of the disk 28 will engage the head 30, depressing the valve-stem and opening the exhaust-valve. The diaphragm will then again assume its normal position until the next operation takes place. The valves 12 and 13 are always normally closed and operate alternately, as described. The inking-rolls will pass over the face of the printing-diaphragm in the ordinary manner with each operation.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a printing-press, a flexible diaphragm suitably secured thereto provided with designs or characters on its one face, air-passages arranged therein, and means connected to the said press for alternately supplying and exhausting air to and from the said diaphragm, substantially as described.

2. In a printing-press, a flexible diaphragm suitably secured thereto and provided with designs or characters on its one face, air-passages arranged therein, means connected to the said press for alternately supplying and exhausting air to and from the said diaphragm, and an impression or platen plate adapted to carry an article to engage the diaphragm when the platen-plate is operated, substantially as set forth.

3. In a printing-press, a flexible diaphragm suitably secured thereto, air-passages arranged therein, a supply-pipe connected to the said diaphragm and a suitable air-supply, a valve arranged in the said pipe, an exhaust-pipe connected to the said diaphragm, a valve arranged in said exhaust-pipe, and means connected to the said press for operating the said valves alternately, substantially as described.

4. In a printing-press, a flexible diaphragm suitably secured thereto, air-passages arranged therein, a supply-pipe connected to the said diaphragm and a suitable air-supply, a valve arranged in the said pipe, an exhaust-pipe connected to the said diaphragm, a valve arranged in said exhaust-pipe, means for operating the said valves alternately, and an impression or platen plate suitably connected to the said press adapted to carry an article to engage the said diaphragm when the platen-plate is operated, substantially as set forth.

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

WILLIAM H. DEIDRICK.

Witnesses:
JOHN NOLAND,
ALBERT J. WALKER.