

H. M. BARBER.
METHOD OF FORMING STEREOTYPE PLATES.
APPLICATION FILED DEC. 9, 1910.

1,033,371.

Patented July 23, 1912.

2 SHEETS-SHEET 1.

Fig. 2.

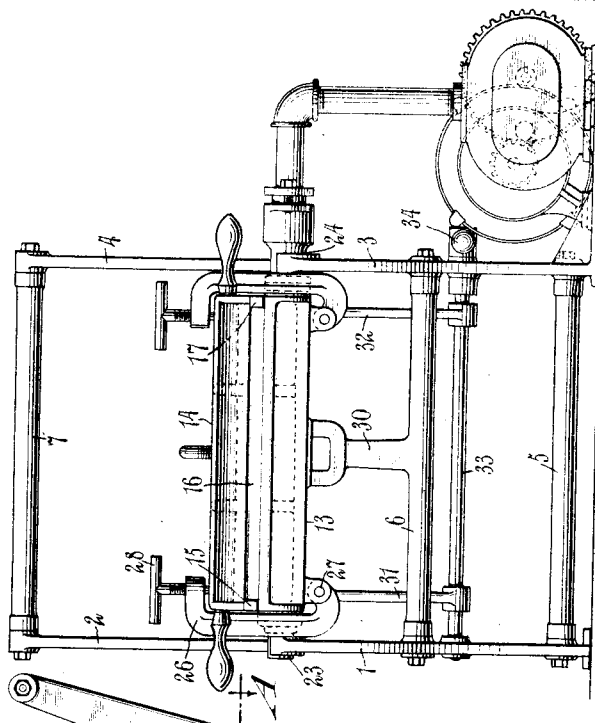
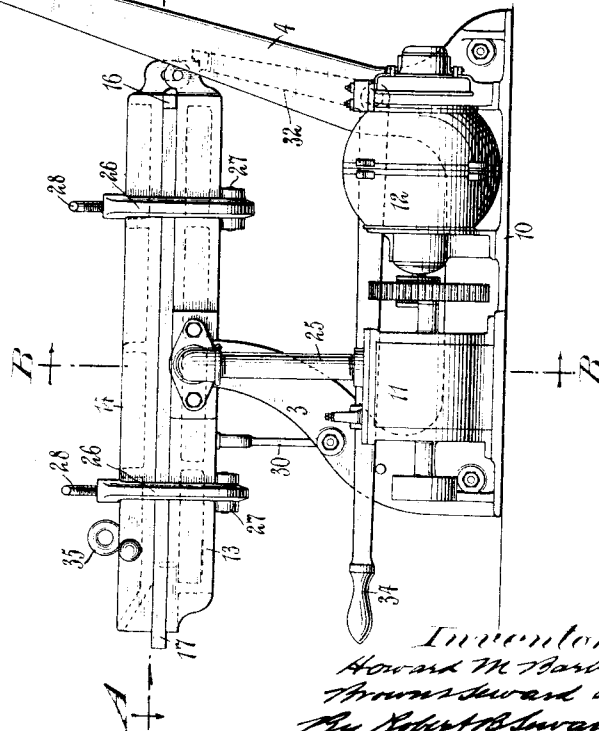


Fig. 1.



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Fig. 4.

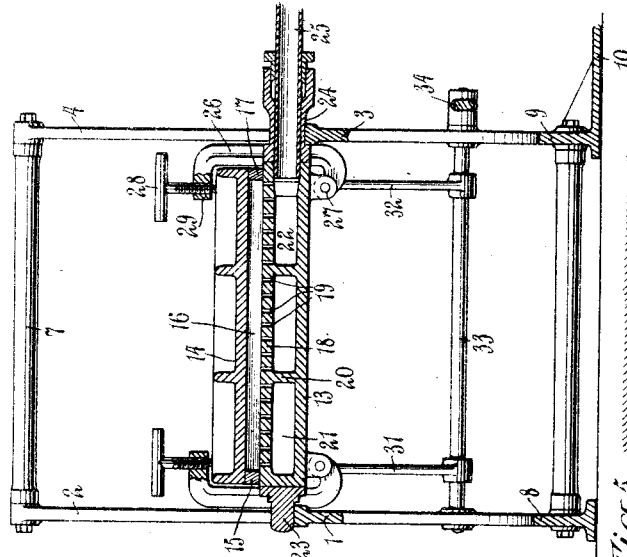
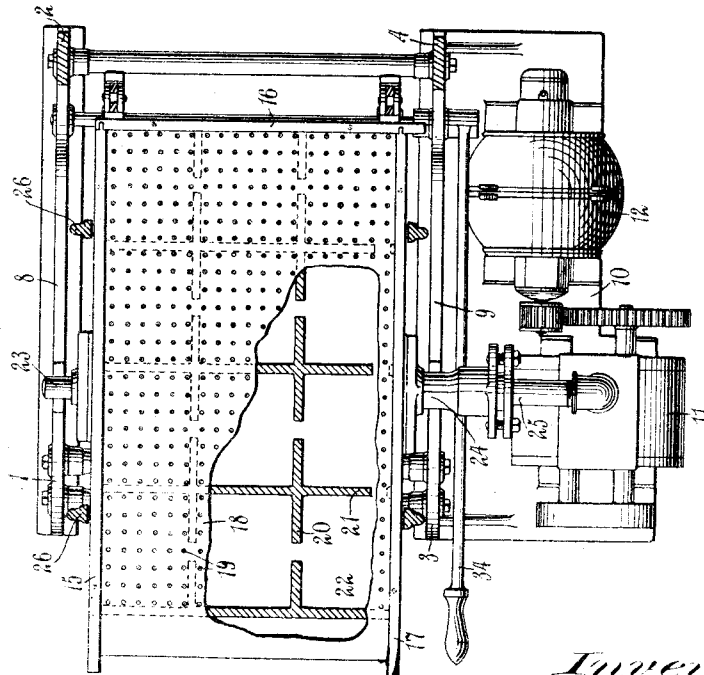


Fig. 5.

Fig. 6.

Fig. 7.

Fig. 3.



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UNITED STATES PATENT OFFICE.

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METHOD OF FORMING STEREOTYPE-PLATES.

1,033,371.

Specification of Letters Patent.

Patented July 23, 1912.

Application filed December 9, 1910. Serial No. 596,479.

To all whom it may concern:

Be it known that I, HOWARD M. BARBER, a citizen of the United States, and resident of Stonington, in the county of New London and State of Connecticut, have invented a new and useful Method of Forming Stereotype-Plates, of which the following is a specification.

The object of my invention is to provide a new method of forming stereotype plates, which method will produce a better plate than heretofore and will produce the same in a more economical and expeditious manner.

In the method of forming stereotype plates as heretofore commonly practised, it has been found extremely difficult if not impossible to hold the matrix by use of mechanical devices, snugly against the surface upon which it rests so as to insure the formation of a stereotype plate having the desired printing face.

The particular object of this invention is to hold the matrix snugly in position upon the surface which it engages, by means of suction.

The present invention is directed to the method of forming stereotype plates in which the back of the matrix is in direct contact with the surface on which the matrix rests.

The method of carrying out my invention is as follows: The matrix is placed with its back in contact with a suction surface such, for instance, as a perforated inner wall of a vacuum pan forming part of a casting box. Means are used for exhausting the air from the vacuum pan and thus causing the matrix to be drawn snugly against the said perforated inner wall by suction exerted through the perforations in said inner wall. The molten stereotype metal is then poured into the casting box onto the face of the matrix while the matrix is held by suction against the surface which it engages.

A means for carrying out my invention is represented in the accompanying drawings, a description of which herewith follows:

Figure 1 represents the casting machine in side elevation, Fig. 2 is a front view of the same, Fig. 3 is a horizontal section taken in the plane of the line A—A of Fig. 1, looking in the direction of the arrows, a portion of the perforated inner wall of the vacuum pan being broken away to illus-

trate more clearly the strengthening partitions which connect the inner and outer walls of the pan, Fig. 4 is a transverse vertical section taken in the plane of the line B—B of Fig. 1, looking in the direction of the arrows, and Figs. 5, 6, 7, show the several steps in the process.

The frame of the casting machine is constructed as follows: The front and rear uprights 1 and 2 at one side of the machine are connected to the front and rear uprights 3 and 4 at the other side of the machine by suitable cross bars 5, 6 and 7. The base for the uprights 1 and 2 is denoted by 8 and the base for the uprights 3 and 4 is denoted by 9, which latter base is extended laterally as shown at 10 to form a suitable support for an exhaust pump 11, and a motor 12, for driving the same. In the present instance, a rotary exhaust pump and an electric motor for driving it are shown.

The casting box of the machine comprises a hollow vacuum pan 13, a cover 14 and removable bars 15, 16, and 17, forming the three side walls of the casting chamber. The inner wall 18 of the vacuum pan is perforated as shown at 19. A plurality of longitudinal and transverse partitions 20, 21, connect the inner wall 18 with the outer wall 22 of the vacuum pan so as to prevent the pan from warping or becoming distorted. The partitions 20 and 21 are cut away as required to permit an open communication between all of the chambers formed by said partitions. The casting box is pivoted to the front uprights 1 and 3 of the frame by providing the vacuum pan 13 with trunnions 23, 24, mounted in the upper ends of said uprights. The trunnion 24 is made hollow and communication from the interior of the hollow vacuum pan to the exhaust pump 11 is established through a pipe 25 extending through said hollow trunnion 24. The pan 13, cover 14 and bars 15, 16, 17, are locked in their closed position by four screw clamps each comprising a yoke 26 hinged to lugs 27 on the vacuum pan 13 and having a clamp screw 28 passing through its overhanging arm 29 into engagement with the top of the cover 14. When the casting box is in its horizontal position, its front portion rests upon a brace 30 uprising from the cross bar 6 and its rear portion rests upon the upper ends of two arms 31, 32, fixed to a rock shaft 33. A

hand lever 34 is also fixed to this rock shaft 33 for swinging the arms 31, 32, out of their supporting engagement with the casting box to permit the box to be swung down into a substantially vertical position for carrying out the casting operation. The cross bar 7 forms a support for the cover 14 when the cover is swung upwardly to open the casting box. The cover 14 may be provided with an eye 35 as a means of attachment to a hoisting device for swinging the cover into its raised position.

In operation, the casting box is brought into its horizontal position and the cover 15 swung back into its open position. The matrix 35 is placed upon the perforated inner wall of the vacuum pan 13. The exhaust pump 11 is then started and the matrix is sucked down onto the inner face of the vacuum pan 13. The removable bars 15, 16, 17, are then placed in position over the edges of the matrix and the cover of the casting box closed on and clamped in the usual manner. The casting metal 36 is then 25 poured into the open end of the box while the matrix is held by suction against the inner wall of the vacuum pan thus insuring the formation of a stereotype plate 37 of superior quality. The box is returned to

its horizontal position, the stereotype plate 30 and matrix removed and the cycle of operations may then be repeated.

What I claim is:—

1. The method of forming a stereotype plate consisting in casting the molten stereotype metal onto the face of a matrix held in position upon a suction surface.

2. The method of forming a stereotype plate consisting in placing a matrix upon a surface, holding the matrix on said surface by suction and then casting the molten stereotype metal onto the face of the matrix.

3. The method of forming a stereotype plate consisting in placing a matrix upon a perforated surface, holding the matrix upon said surface by suction and then casting the molten stereotype metal onto the face of the matrix.

In testimony, that I claim the foregoing 50 as my invention, I have signed my name in presence of two witnesses, this fifth day of December A. D. 1910.

HOWARD M. BARBER.

Witnesses:

A. R. STILLMAN,
KARL G. STILLMAN.