

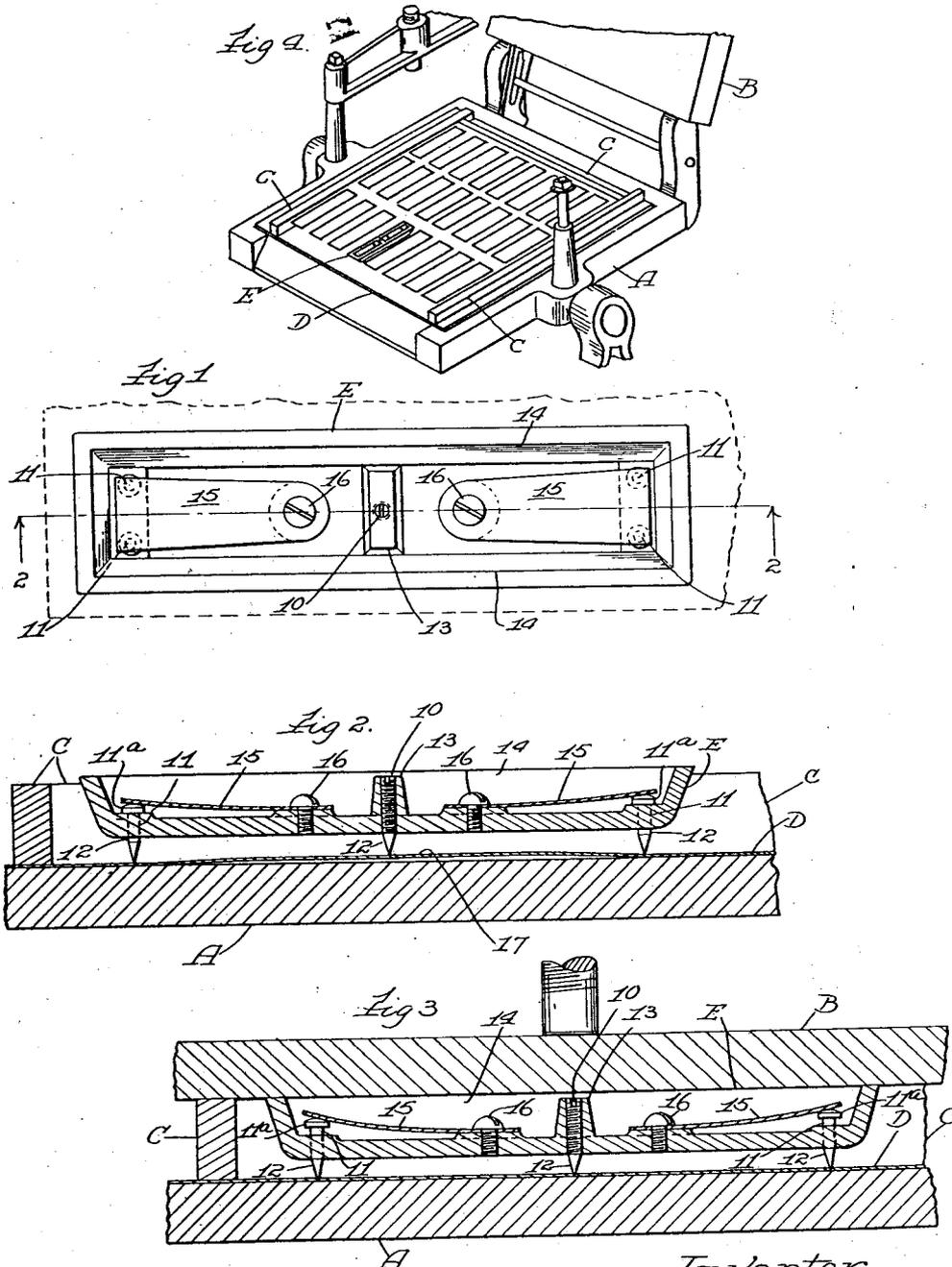
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CORE MEMBER FOR CASTING PRINTING PLATES

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UNITED STATES PATENT OFFICE.

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CORE MEMBER FOR CASTING PRINTING PLATES.

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The purpose of this invention is to provide an improved means for casting printing plates such as stereotype plates and the like in which the printing face is formed upon a papier-mâché matrix, said means being an improved construction of the cores which produce the recesses in the back of the stereotype plate. The invention consists in the elements and features of construction shown and described, and the method of its use, all as set forth in the claims.

In the drawings:—

Figure 1 is a back or top plan view of a core embodying and adapted for use according to my invention, showing in dotted outline a minimum printing plate in the casting of which this core member may be used.

Figure 2 is a section at the line 2—2 on Figure 1, showing also the papier-mâché matrix with which the core co-operates in casting, and also showing the bottom plate of the casting box and the encompassing bars which form the boundary wall of the cavity in which the casting is to be formed.

Figure 3 is a section similar to Figure 2, showing the cover of the casting box applied and forced down upon the core for closing the cavity in which the metal is to flow for forming the printing plate.

Figure 4 is a perspective view of a casting box with the cover swung up and having in position on the bottom, the mold, side bars and a plurality of core members embodying this invention.

In the structure shown in the drawings, A is the bottom of the casting box. B is the cover. C indicates the bars forming the encompassing wall of the mold cavity in which the printing face is to be cast. D is the matrix lodged on the bottom plate. The core which embodies the present invention is indicated as to its entirety by reference letter E. It consists of a hard metal block having a cavity in the upper side, rendering it dish-shaped in the form. Its exterior contour being suitable for forming the customary core cavity in the back of the printing plate. It is characterized for the purpose of the present invention by a plurality of cone-pointed downwardly projecting pins, 10 and 11, 11. These pins are mounted in the bottom web of the core body, E, and project through the same for a distance a little more than the length of their tapered portion or cone points indicated at 12. The core body, E, is formed with an upwardly projecting

boss intermediate its ends and sides shown at 13, said boss being slightly less in height than the encompassing wall, 14, of the core cavity; and the pin, 10, is screwed through this boss and is thereby adjustable with respect to the extent of the protrusion of its cone point from the bottom of the core. The other pins, 11, 11, are mounted in the bottom of the core, loosely to the extent that they are free to slide in their seats; and they are each formed with a stop head, 11^a, at the upper end for limiting their protrusion through the bottom of the core, and they are held yieldingly protruded to this limit by flat springs, 15, 15, secured at one end near the boss, 13, by screws, 16, 16, the other free end resting upon heads of the pins, 11, 11, as seen clearly in Figures 2 and 3. The height of the core body, E, is such that, its height added to the protrusion of the pins, 11, 11, when they are protruded to the limit determined by their heads, 11^a, slightly exceeds the height of the encompassing side bars which are the conventional type height; and the screw, 10, will be adjusted in the core body to make the total height, including its protrusion when thus adjusted, conform to type height, with a slight allowance for possible penetration of the matrix by the points of said pins.

The method of using this core is as follows: The matrix having been placed upon the bottom of the core box, and the encompassing side bars being placed in position upon the matrix for pressing it onto the bottom of the box, the core is placed in position above the matrix, the pins, 10 and 11, being stepped upon the matrix as may be seen in Figures 2 and 3. As is well understood the matrix is liable to be sprung or bowed slightly out of true plane at portions of its area as is represented at 17 in Figure 2, and the purpose of the pins stepped upon it at plurality of positions indicated by the three pins shown in the drawing, (it being understood that the number is not limited to three) is to insure that the matrix is held pressed flat upon the bottom plate of the mold; and this result is effected by mounting all but one of the pins mounted yieldingly as shown, and providing the springs, 15, of sufficient stiffness to force the matrix into flat form, overcoming the resilient resistance of its sprung or bowed portions. When in this position, the margin of the core projects above the plane of the upper edge of the side

bars, C, that is, projects above type height from the bottom of the casting box. The cover is now closed down upon the side bars and made fast by means provided for that purpose, thereby forcing the core body down, bringing its upper edge into the plane of the upper edge of the side bars, the pins, 11, 11, yielding back to whatever extent is necessary, and thereby applying the yielding pressure to the matrix at the points at which the points of the pins rest thereon. It may chance that the points of the pins rest upon upraised portions of the matrix which may therefore be pierced by pin points; but these upraised portions, it will be understood, correspond to depressions in the printing face from which no imprint is to be produced, so that the perforations of the matrix at these points by pins is uninjurious and negligible.

It is to be understood that the springs, 15, may be of sufficient stiffness so as to react through the pins, 11, against the casting formed in the casting box for normally causing ejection of the core body, E, from the finished casting when the cover, B, is removed. However, there may be instances when the casting will adhere to the pins, 11, so tightly as to overcome the tension of the springs, 15, and by turning slightly the threaded adjustable pin, 10, by means of a screw driver or like tool, the core body may be easily dislodged and ejected from the casting by said springs.

I claim:—

1. A core member for casting printing plates having pressure points mounted for protruding from its inner face for stepping on the matrix, said core member comprising a core body less than type height, the pressure points being afforded by pins set through the core body for protruding from the face, means for yieldingly holding the pins protruded, and means for limiting the protruded length, said protruded length being more than the deficiency in type height of the core body; whereby said pressure points stepped upon the matrix uphold the core body to a height in excess of type height.

2. In the construction defined in claim 1, the range of yielding of the pins being slightly more than the normal protrusion of said pins through the core body plus the height that said core body extends in excess of type height.

3. A core member for casting printing plates, having pressure points mounted therein protruding through the inner face, and spring bars by which said pressure points are yieldingly held thrust out through said face.

4. The construction defined in claim 1 having one of the pressure points mounted in the core body adjustably as to the degree of its protrusion from the face, and a plurality of the other points mounted for protruding yieldingly farther than said adjustable point.

5. In the construction defined in claim 1, the pressure points being afforded by pins fitted slidably in holes in the face web of the core body, having their protruding ends cone-pointed for stepping on the matrix, and spring means for holding them yieldingly thrust out, said pins having means at their inner ends for limiting the protrusion of their pointed ends.

6. In combination with a casting box and a cover therefor, a matrix disposed in the bottom of said box, a core body disposed in spaced relation on said matrix, and means carried by said core body for ejecting the same from the casting formed in said casting box, when the cover is removed therefrom.

7. In combination with a casting box and a cover therefor, a matrix disposed in the bottom of said box, a core body disposed in spaced relation on said matrix, and yielding means carried by the core body and removable therewith for normally projecting a portion of said core body above said casting box when the cover is removed and adapted to permit said core body to be forced within the casting box when said cover is applied thereto.

In testimony whereof, I have hereunto set my hand at Chicago, Illinois, this second day of December, 1925.

IRA E. HURLBUT.