July 14, 1942. A. J. BUELTMANN 2,289,480

STEREOTYPE CASTING BOX

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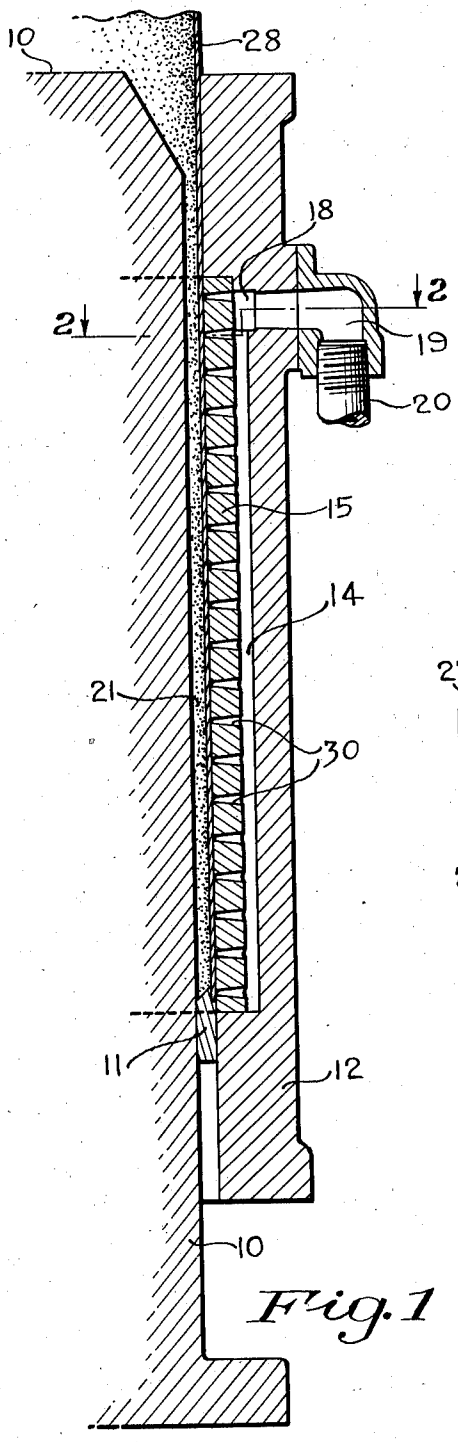


Fig. 1

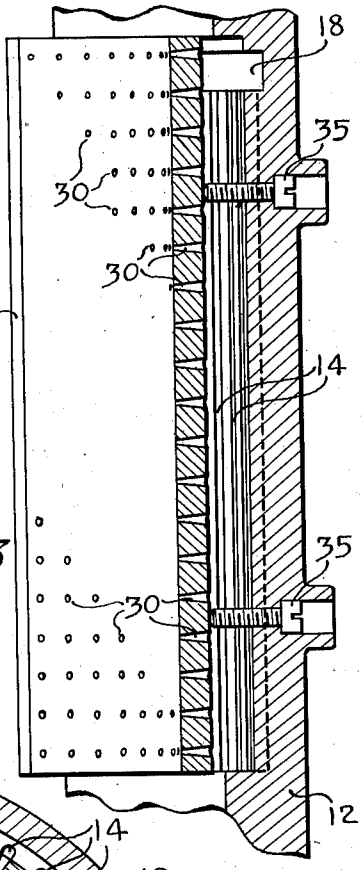


Fig. 3

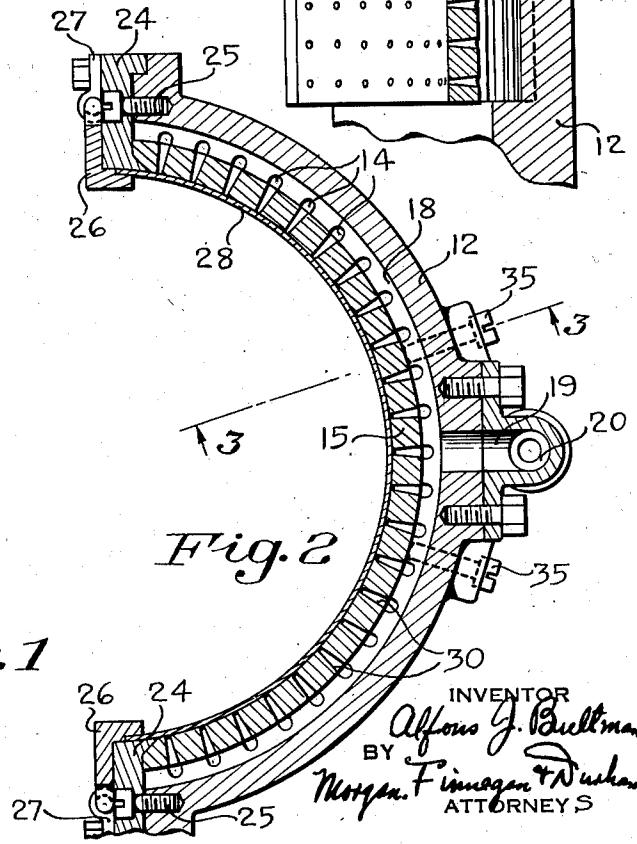


Fig. 2

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STEREOTYPE CASTING BOX

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3 Claims. (Cl. 22—5)

The present invention relates to stereotype casting and more particularly to novel and improved vacuum stereotype casting boxes.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

The accompanying drawing, referred to herein and constituting a part hereof, illustrates ones embodiment of the invention, and together with the description, serves to explain the principles of the invention.

Of the drawing:

Figure 1 is a fragmentary, vertical sectional view of a typical and illustrative embodiment of the present invention;

Figure 2 is a horizontal sectional view taken on the line 2—2 of Figure 1; and

Figure 3 is a fragmentary, vertical sectional view taken on the line 3—3 of Figure 2, with the core removed.

The present invention has for its object the provision of a novel and improved vacuum casting box for casting of stereotype plates. A further object is the provision of an improved vacuum casting box which is capable of producing superior plates over a long period of time and can be readily cleaned. The invention also provides a casting box for the production of stereotype printing plates in which the matrix supporting suction member may be removed and easily cleaned so as to maintain it at maximum efficiency.

According to the present embodiment of the invention the casting box, as illustratively shown for casting curved newspaper printing plates, comprises a removable core or drag cooperating with a stationary cope or back, both the cope and drag being substantially semi-cylindrical, and the back or cope being provided with a removable, substantially unyielding, foraminous plate, spaced from the back and sealed with respect thereto so that suction applied to the space between the plate and the back may be applied to the foraminated portion of the plate to hold the matrix tightly during the casting operation. The foraminations in the removable backing plate are preferably enlarged rearwardly or away from the matrix, and are substantially equally spaced over the entire surface of the backing plate. Clamping and sealing means are provided which are removable to release the backing plate and normally secure and seal the backing plate to the backing member, and other means are provided for positively moving the backing plate away from the back to facilitate its removal.

It will be understood that the foregoing general description, and the following detailed description as well, are exemplary and explanatory of the invention, but are not restrictive thereof.

Referring now in detail to the accompanying drawing which shows the present preferred and illustrative embodiment of the invention, the invention is shown as applied to a stereotype casting box for the casting of semi-cylindrical newspaper printing plates and comprises the usual semi-cylindrical core 10, and arcuate member 11 and a cooperating backing member 12 which is recessed to receive the relatively unyielding backing plate 15 of semi-cylindrical shape fitted into a cavity in the concave face of the backing member 12. The backing plate 15 is preferably seated against the contacting concave face of the backing member 12 which is formed with a plurality of vertically extending parallel ducts 14 which communicate with a duct 18 at the top of the chamber merging into the duct 19 to which is attached the vacuum pipe 20. Thus the backing plate 15 is securely supported and always presents a true cylindrical face towards the convex face of the core 10 between which is the casting chamber 21.

Means are provided for securing the backing plate 15 in the position shown in the drawing, and for this purpose a clamping rail 24 extends vertically at each of the vertical edges of the backing plate 15, these rails being secured to the backing member 12 by means of the screws 25 so that the plate 15 is securely held in its proper position. Rails 24 are provided with the usual matrix holding bars 26 pivotally mounted thereon by means of the brackets 27 so that the matrix 28 may be clamped and held in arcuate position by means of its vertical edges substantially conformed to the arcuately concave surface of the backing plate 15.

For applying the vacuum to the rear face of the matrix, that is to its convex or unimpressed face, the backing plate 15 is provided with a relatively large number of rather small apertures 30 which are uniformly distributed over its surface and extend through the thickness of the plate from the matrix supporting side and

are alined with the vertical channels **14** so that the suction from the pipe **20** is equally applied to each of the apertures **30**. The apertures are preferably relatively small adjacent the matrix and enlarge gradually away from the matrix. This gradual enlargement insures that small particles of the matrix will not obstruct the holes and thereby shut off the application of suction to the rear face of the matrix **28**, and similarly preventing the clogging of these holes by particles of stereo metal, as well as facilitating cleaning of the holes.

In order to facilitate removal of the plate **15** for cleaning after the screws **25** and clamping rails **24** have been removed, screws **35** are threaded into the backing member **12** and project forwardly and radially towards the backing plate **15**. Figure 2 shows these screws **35** in their normally retracted position, while Figure 3 shows them in the projected position after having moved the backing plate **15** so as to enable it to be easily removed. Screws **35** bear directly against the backing plate, and when it is to be removed, they may be screwed in, freeing the plate **15** and thereby allowing it to be easily removed for cleaning.

After the plate **15** has been removed, it can be easily and thoroughly cleaned and any of the holes **30** which are clogged by stereo metal or otherwise may be cleared by brushing or by pushing the obstructing metal through the plate from the concave side.

The invention in its broader aspects is not limited to the specific mechanisms shown and described but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

What I claim is:

1. In a stereotype plate casting box having a cope, including a removable matrix supporting plate perforated for holding the matrix by suction, said cope being channelled to provide suction at the perforations of the plate, each of the perforations being enlarged away from the matrix to prevent the accumulation of obstructing matter in the perforations.

2. In a stereotype plate casting box having a cope, including a removable matrix supporting plate perforated for holding the matrix by suction, said cope being channelled to provide suction at the perforations of the plate, each of the perforations being enlarged away from the matrix to prevent the accumulation of obstructing matter in the perforations, and means for positively moving the plate away from the cope.

3. A stereotype plate casting box including a curved backing member recessed to receive a perforated backing plate, channels on the backing member communicating with the perforations, means for clamping and sealing the backing plate to the backing member, means for applying suction to the channels and the perforations and means for positively moving the plate away from the backing member.

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