No. 767,202. PATENTED AUG. 9, 1904.

J. C. BONNEAU.

STEREOTYPE MATRIX PRESS.

APPLICATION FILED MAR. 1, 1904.

NO MODEL.

Fig. 1.

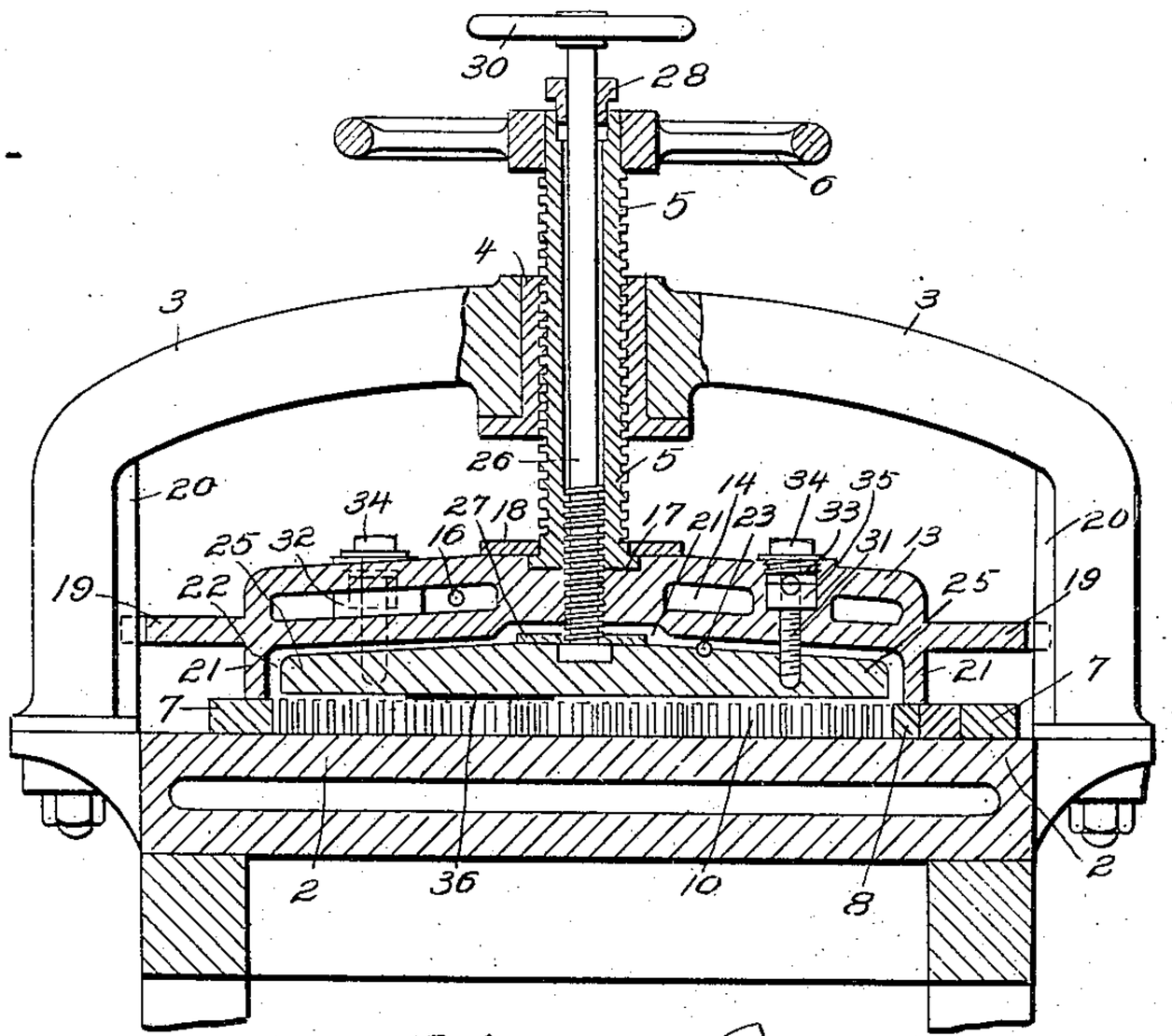
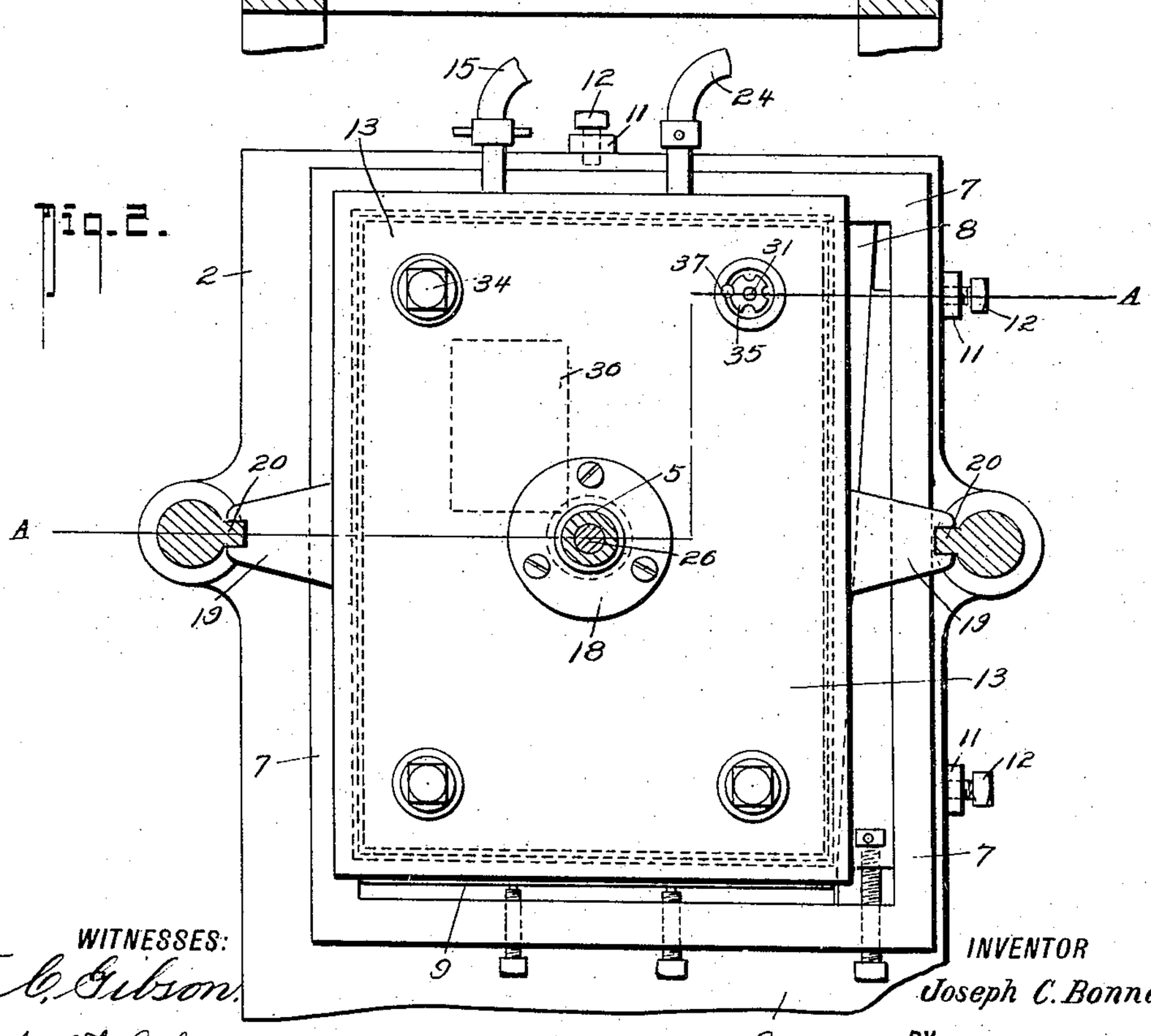


Fig. 2.



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No. 767,202. Patented August 9, 1904.

UNITED STATES PATENT OFFICE.

JOSEPH C. BONNEAU, OF VANCOUVER, CANADA.

STEREOTYPE-MATRIX PRESS.

SPECIFICATION forming part of Letters Patent No. 767,202, dated August 9, 1904.

Application filed March 1, 1904. Serial No. 196,096. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH CASIMIRE BONNEAU, a citizen of the Dominion of Canada, residing at the city of Vancouver, in the Province of British Columbia, Canada, have invented a new and useful Improvement in Stereotype-Matrix Presses, of which the following is a specification.

My invention relates to an improved press for producing a stereotype-matrix, and is designed to be used in conjunction with the invention revealed in my United States Patent No. 743,812, of November, 1903. The invention there referred to consists in the application of compressed air as a medium for holding the matrix-pulp in close contact with the type-matter, and in the practical application of the principle there exemplified to the production of a matrix where half-tone work is introduced the pulp over the half-tone requires to be pressed more tightly than the type-matter, so as to bring it into closer contact with the plate and bring out fully the slighter graduations of light and shade. This under ordinary circumstances is done by rolling under pressure; but as the fluid-pressure is designed to dispense with such manual work I have devised the press which is the subject of this application so that a direct pressure may be brought to bear on the half-tone supplementary to the fluid-pressure which is holding the pulp onto the type during the operation of drying. The means by which I accomplish this is fully described in the following specification and illustrated in the drawings which accompany it.

Figure 1 is a vertical cross-section on the line A A in Fig. 2, showing the application of my improvements to a steam-heated matrix-press; and Fig. 2, a plan of the same with the cross-girder and hand-wheels removed.

In the drawings, 2 represents the table of an ordinary steam-heated press such as is used for drying matrices, and 3 the cross-frame which carries the nut 4 of the screw 5, which operates the upper member of the press by means of the hand-wheel 6. A chase-frame in position on the table is represented by 7, and its side and end tightening strips by 8 and 9, respectively, the type-matter being indicated by 10.

On one side and end of the table 2 are secured the stops 11, having screws 12, against which the edges of the chase-frame 7 may be set and by which its position under the press may be adjusted.

13 indicates the steam-jacketed upper member of the press, the steam-space 14 of which is supplied by a flexible pipe 15 through an aperture 16, and to the center of this member is connected the screw 5, by which it is raised and lowered, by a collar 17 on the screw under a plate 18, secured by screws to 13. The upper press member 13 is prevented from turning by members 19, which engage guides 20 on the uprights of the cross-frame 3.

Instead of the upper member 13 having a flat under surface, as is usual with presses of this description, the border 21 downwardly projects, as shown, and has a planed surface that will seat on the chase-frame and its side and end tightening members 8 and 9 and be just clear of the type-matter in the chase. The upper member of the press may thus be screwed down by hand, and a gasket being interposed between it and the chase, as described in my previous patent before cited, an air-tight joint will be made between the upper member of the press and the chase. Compressed air is admitted to within the recess 22 through an aperture 23 from a flexible pipe 24.

Thus far the apparatus described is merely an application of my patent previously referred to.

In order to apply a direct pressure on a half-tone plate which may be in any part of the chase and which half-tone is always slightly above the plane of the surface of the type, I provide within the recess 22 a plate 25, the length and breadth of which are just within those of the type-matter and which has a planed under surface. This plate is supported and may be raised and lowered by a screwed stem 26, connected to the plate 25 by a collar under a plate 27. The screwed portion of the stem engages a nut portion within the screw 5, and the upper end passes through the screw 5 and is furnished with a packed gland 28 to

prevent escape of the compressed air from within the recess 21. A small hand-wheel 30 enables the plate 25 to be raised and lowered, as desired.

Toward each corner of the plate 25 is secured a stud 31, which passes upward through a boss 32, through the steam-space 14, and in a recess 33, which is closed with a screw-plug 34. Each stud has a nut 35, by which the downward limit of the plate 25 may be adjusted to the requirements of the work. These studs and nuts also sustain the plate 25 level if a half-tone should happen to be out of the center of the chase, as indicated at 36 by the thick line in Fig. 1 and the dotted lines in Fig. 2. To facilitate accurate adjustment of the nuts 35 and to secure them in a desired position, a pin 37 may be inserted, as shown in the open recess in Fig. 2, and the nut may be provided with several grooves in its periphery to afford graduation.

In the operation of the device the chase of type is placed on the table against the stop-screws 12, and the pulp-sheet and its gasket are placed over the type. The plate 25 having been adjusted to the required limit of its downward movement necessary to give the desired pressure on the half-tone plate, it is lifted clear by means of the central screw-stem 26. The upper member 13 of the press is then screwed down by means of the hand-wheel 6 until the border 21 makes an air-tight joint on the chase-frame surrounding the type-matter, and the air-pressure may then be turned into the space 22 and the drying proceeded with. The plate 25 may then be screwed down, and it will bear tightly on the surface of the half-tone plate 36, which projects above the plane of the type-matter, and will press the pulp while soft into general irregularities of its surface. During the process of drying the plate 25 may be lifted from time to time to give the hot compressed air access to the pulp over the half-tone and facilitate the drying, and toward the final stages of drying when the pulp is setting the plate 25 may be again screwed down on the half-tone, and the matrix will receive a clear and distinct impression from it as it dries hard.

It will be obvious that where no half-tone work is in the chase the plate 25 may be run up within the recess 22 and clear of the pulp, which will then be pressed into the type solely by the air-pressure.

Although described as applied to a steam-heated press, the design is equally applicable to one heated in any manner.

Having now particularly described my invention and the manner of its operation, I declare that what I claim as new, and desire to be protected in by Letters Patent, is—

1. In a press for producing a stereotype-matrix by a fluid-pressure applied to the surface of the pulp-sheet; a means for applying a supplementary pressure to any particular portion of the chase which stands above the general plane of the type-surface.

2. In a press for producing a stereotype-matrix comprising in combination with the press proper including a cover-plate having a downwardly-projecting border to seat on the chase-frame and to provide a recess over the type-matter; a second plate held in said recess, a means for raising and lowering said second plate.

3. In a press for producing a stereotype-matrix frame including a cover-plate having a downwardly-projecting border to seat on the chase-frame and form a recess over the type-matter in the chase; a second plate held in said recess and means for adjusting said second plate independently of the cover-plate, and means for raising and lowering said second plate and cover-plate simultaneously for the purposes specified.

4. In a press for producing a stereotype-matrix having a downwardly-projecting border on the upper press member designed to seat on the frame of a chase on the table of the press and form a recess over the type-matter in the chase and means for admitting a fluid-pressure to within the recess; a plate within the recess, means exterior to the recess for raising and lowering such plate, and means for limiting the downward movement of any portion of the plate beyond a desired plane.

5. In a press for producing a stereotype-matrix, the combination with an upper and lower press member of a border downwardly projecting from the under side of the upper member, a plate within the recess formed by such border, an externally-operable means for raising and lowering such plate and pressing it upon the type-matter in the chase, and limiting studs and nuts at each corner of the plate by which the downward movement of the plate may be varied and limited.

6. In a press for producing a stereotype-matrix; the combination with a heated table having a heated upper member operable by a screw and hand-wheel; of a downwardly-projecting seat on such upper member designed to form an air-tight joint on the frame of a chase on the table and leave a recess over the type-matter in the chase, means for admitting a fluid-pressure to within such recess, a plate having a limited vertical movement within said recess, a stem connected to the plate and extending upward through the upper press member and through the center of its operating-screw, such stem having a screwed portion in engagement with a corresponding thread in the operating-screw of the upper press member and a hand-wheel at its upper end, a stud secured toward each corner of the plate and projecting upward into a capped recess in the upper side of the upper press member, and means for limiting the downward movement of such studs.

7. In a press for producing a stereotype-ma-

trix having an upper press member operable with a hand-wheel 6 and screw 5; the combination of the border 21 forming a recess 22, the aperture 23 admitting air to within the recess, the plate 25 within such recess having a screwed stem 26 connected to a plate by the washer 27, the gland 28 at the upper end of such stem, and the hand-wheel 30, the studs 31 having nuts 35 in recesses 33 provided with caps 34, and the pin 37 to retain the nut in any desired position of adjustment.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH C. BONNEAU.

Witnesses:

ROWLAND BRITTAIN,

ELLICE WEBBER.