W. J. ADAM.

PRINTING FORM.

APPLICATION FILED JUNE 12, 1912.

1,089,100.

Patented Mar. 3, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

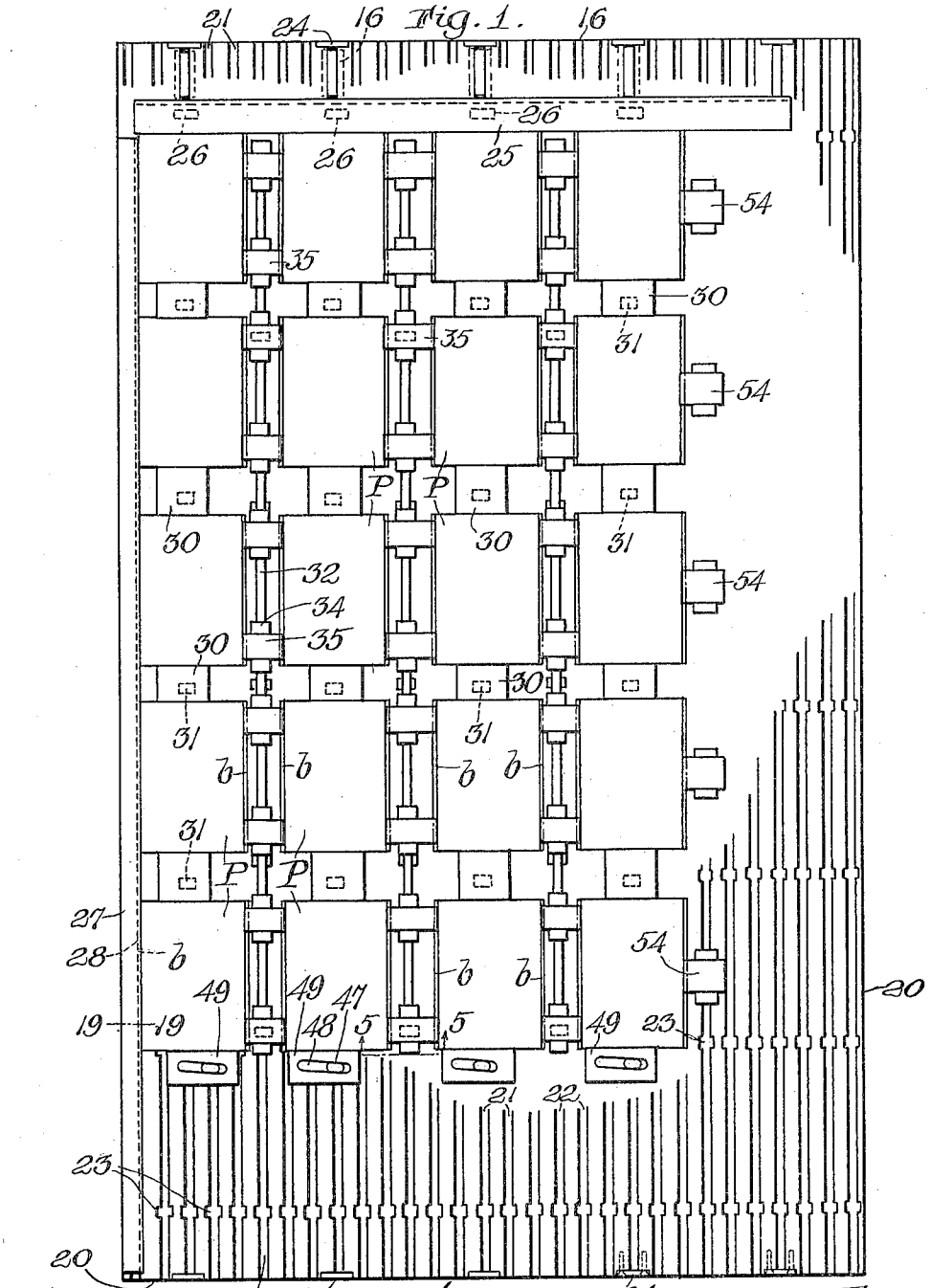
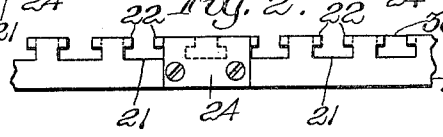


Fig. 2.



Witnesses:

Thomas M. Blair

E. C. Murphy.

Inventor:

William J. Adam.

By Henry J. Miller

Atty.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

W. J. ADAM.

PRINTING FORM.

APPLICATION FILED JUNE 12, 1912.

1,089,100.

Patented Mar. 3, 1914.

2 SHEETS—SHEET 2.

Fig. 3.

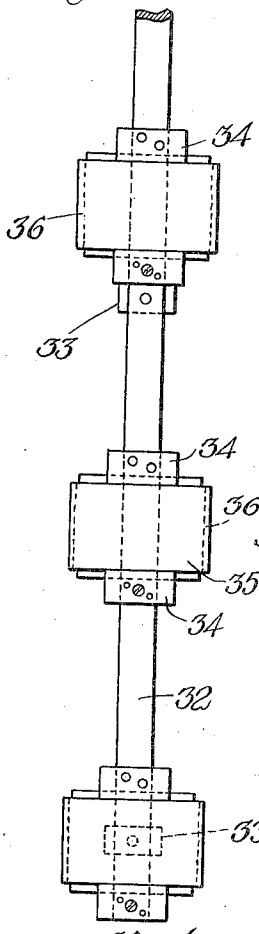


Fig. 4.

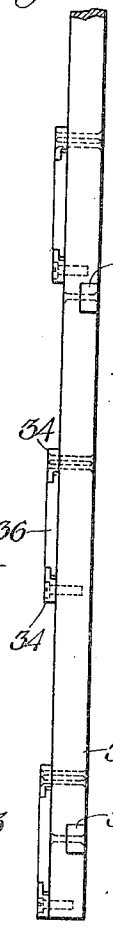


Fig. 8.

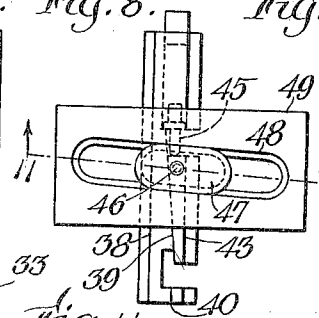


Fig. 9.

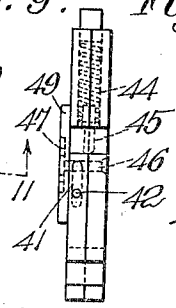


Fig. 10.

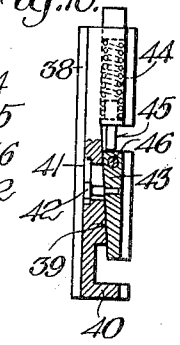


Fig. 11.

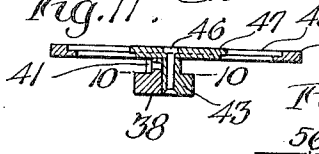


Fig. 13.

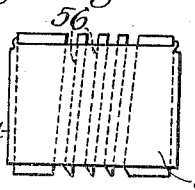


Fig. 12.

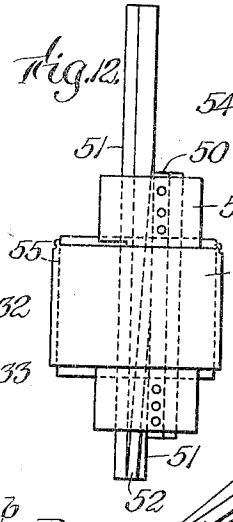


Fig. 14.

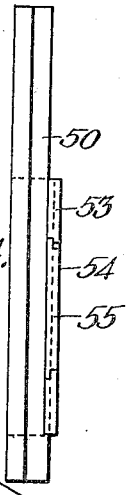


Fig. 15.

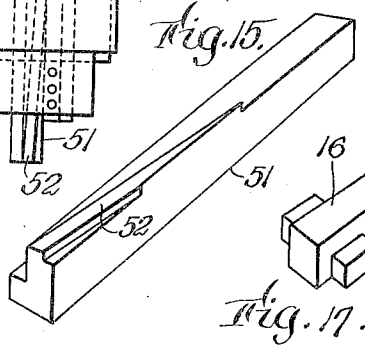


Fig. 16.

Fig. 17.

Fig. 5.

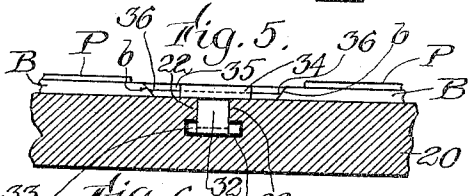


Fig. 6.

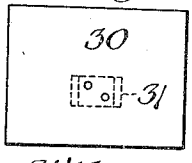


Fig. 7.

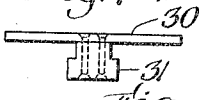
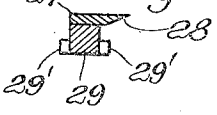


Fig. 19.



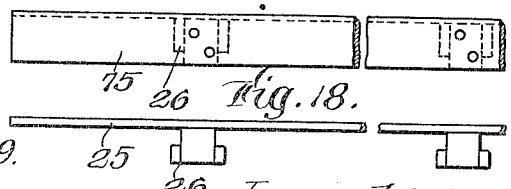


Fig. 18.

Witnesses:
Thomas McBlair,
E. C. Murphy.

Inventor:
William J. Adam
By Henry J. Miller
Atty.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM J. ADAM, OF NORWOOD, MASSACHUSETTS, ASSIGNOR TO THE PLIMPTON PRESS, OF NORWOOD, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

PRINTING-FORM.

1,089,100. Specification of Letters Patent. **Patented Mar. 3, 1914.**

Application filed June 12, 1912. Serial No. 703,186.

To all whom it may concern:

Be it known that I, WILLIAM J. ADAM, of Norwood, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Printing-Forms, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

This invention has reference to improvements in platen forms or similar devices whereby a series of electrotypes or plates having printing surfaces can be relatively associated, spaced, supported and secured so that a single printing impression may be made from all of said electrotypes and other printing plates.

The object of the invention is to so construct a printing form having a form bed, sometimes known in the trade as a block, and printing plate spacing and securing devices that any series of plates adapted to be accommodated or supported by said form bed may be suitably spaced on said platen and secured in position.

Another object of the invention is to improve the construction of the plate spacing devices as well as the plate securing clamps.

Other objects of the invention will appear from the following description.

The invention consists in the novel construction of the form bed.

The invention also consists in the novel furniture or plate spacing and securing devices for said form bed.

The invention also consists in such other novel features of construction and combination of parts as shall hereinafter be more fully described and pointed out in the claims.

Figure 1 represents a plan view of the improved printing bed and its furniture showing a series of printing plates mounted on the form bed and spaced and secured by the furniture. Fig. 2 represents an enlarged end view of a portion of the form bed. Fig. 3 represents a plan view of portions of one of the margin spacers and clamps. Fig. 4 represents a side view of the parts shown in Fig. 3. Fig. 5 represents an enlarged cross sectional view taken as on line 5—5 Fig. 1, showing the manner in which the margin spacer engages the edges of the printing plates. Fig. 6 represents a plan view of one of the end spacing devices. Fig. 7 represents an end view thereof. Fig. 8 represents a plan view of one of the column clamps. Fig. 9 represents a side view thereof. Fig. 10 represents a partial sectional view taken on line 10—10 Fig. 11, showing the manner in which the clamping wedge is mounted. Fig. 11 represents a sectional view taken on line 11—11 Fig. 8. Fig. 12 represents a plan view of one of the side clamps for securing all printing plates of a transverse series of said plates. Fig. 13 represents a plan view of the adjustable clamping plate of one of said side clamps. Fig. 14 represents a side elevation of Fig. 12. Fig. 15 represents a perspective view of the wedge bar of said side clamp. Fig. 16 represents a perspective view of one of the spacer blocks. Fig. 17 represents a plan view of portions of the head gage strip or members. Fig. 18 represents the same in elevation. Fig. 19 represents a sectional view of the side gage strip.

Similar numbers of reference designate corresponding parts throughout.

In carrying this invention into practice in its preferred form I construct the form bed 20 furnished with a series of parallel inverted T shaped grooves having the channel 21, 21 and the lips 22, 22 extending inward over said channels and provided with the openings 23, 23 spaced apart, preferably at regular distances, and having widths substantially equal to the width of the channels 22, 22. Secured to the ends of this form bed 20 are the plates 24, 24 which plates close the ends of certain of said grooves. While the shape of said form bed 20 is preferably rectangular this invention is not limited to a form bed of any particular size and shape.

The purpose of the form bed 20 is to carry or support a series of printing plates which usually comprise bases B, B having bevel edges *b*, *b* and electrotype, stereotype or other printing surfaces P, P. It is to be understood that except as herein specifically referred to the end, head or side edges of said bases may be of any usual shape but preferably are of a shape that approximately conforms to the shape of the spacing or holding members for said edges.

In order to provide a heading and a side margin for the series of printing plates I provide the head gage strip 25, Figs. 1 and 18, having the inverted T shaped projections 26, 26 adapted to be entered through the openings 23, 23 into the grooves 21, 21 and adapted to slide in said grooves. The

side gage strip 27, Figs. 1 and 19, preferably has the bevel edge 28, and the rod 29 having series of cross members 29′, 29′ which may be introduced in to one of the grooves 21 through the entrances 23, 23 and may then slide longitudinally of said groove to positions out of registry with said entrances 23, 23.

The side gage strip 27 is secured in position on the form bed 20 by the engagement of its projection 29′, 29′ in one of the grooves 21, 21, which need not necessarily be the groove 21 nearest the left hand edge as shown in Fig. 1. A series of printing plates P, P are now placed on the form bed 20 with the bevel edges *b*, *b* of the bases of said plates P, P engaged beneath the bevel edge 28 of said strip 27 and said printing plates P, P, are spaced apart by the head or foot spacers 30, 30 having the inverted T shaped projections 31, 31 which are engaged in said grooves 21.

The printing plates P, P are spaced in columns by marginal spacing devices having the rods 32, adapted to be received between the lips 22, 22 of the grooves 21, 21 and having a series of cross pieces 33, 33 spaced apart on said rods 32 so that they may be inserted through the entrances 23, 23 of said grooves 21 and may slide in said grooves beneath said lips 22, 22. On the upper side of said rods 32 are mounted the guides 34, 34 in which the printing plate clamps 35, 35 are transversely slidable to engage by means of their bevel edges 36, 36 the bevel edges *b*, *b* of the printing plate bases B, B. After one column of the printing plates P, P has been arranged along and in engagement with the side gage strip 27, one of these rods 32 is inserted in one of the grooves 21 and the clamps 35, 35 of said rod are pushed through their guides 34, 34 until the bevel edges 36, 36 of said clamps engage the bevel edges *b*, *b* of the printing plate bases B, B. Another column of the printing plates is then placed on the form bed 20 with their bevel edges *b*, *b* beneath the outer bevel edges of the clamping plates 35, 35, the ends of said second column of printing plates are spaced apart by another series of the head or foot spacers 30, 30 and this process is repeated until the desired number of columns of the printing plates P, P have been thus positioned on the form bed 20 when it becomes necessary to secure said columns or rows of printing plates P, P from spreading and becoming disengaged from their several clamping plates 35, 35.

When it is desired to position the strip 25 at a distance from the end of the form bed 20, as shown in Fig. 1 of the drawings I make use of a series of spacing blocks 16, 16 shown in Fig. 19, which are located in the grooves 21 between the head gage strip 25 and the plates 24. Clamps herein called column clamps are utilized at the opposite end portion of the form bed to assist in securing the columns of printing plates. These column clamps are all of similar construction, which is illustrated in detail in Figs. 8 to 11 inclusive of the drawings, and each comprises the member 38 shaped to slide within the grooves 21 and having between its ends the bevel side 39, the clearance 40 and the transverse slot 41 in which latter is slidable the pin 42 secured to the wedge 43 shaped at one side to conform to one side of the groove 21. In the member 38 is a chamber in which is located the spring 44 acting on the pin 45 which bears against the thick end of the wedge 43 whereby the spring 44 acts constantly to push forward the wedge 43 and, in such movement, the bevel side of the wedge riding against the bevel side 39 of member 38 effects the outward movement of said wedge 43 which, when this device is located in one of the grooves 21 effects the frictional engagement of the member 38 and the wedge 43 with the respective sides of said groove. Mounted in the wedge 43 is the pin 46 to the outer end of which is secured the guide plate 47 which is engaged in the slot 48 of the clamping plate 49, said slot 48 extends at an angle with the edge of said plate 49 so that when said plate is moved transversely of the member 38 such plate 49 is guided by said slot 48 in a direction longitudinal of said member 38. In order to utilize these column clamps the member 38 thereof is introduced into a groove 21 and the wedge 43 is pressed against the action of spring 44 along the bevel 39 whereby the wedge is moved inward from the wall of said groove 21 and the member 38 may then be moved along the groove 21 until the edge of its clamping plate 49 bears tightly against one end of a printing plate or other member the movement of which it is desired to resist. The clamp plate 49 is now forcibly moved transversely of its member 38 and, in such movement, is guided by the slot 48 moving against the guide 47 toward the printing plate or other member to be clamped in the nature of a wedge while the retractive movement of said plate 49, along the groove 21, is prevented by the wedge 43 which is forced into holding contact with one side of the groove 21.

In order to secure the cross rows of printing plates and to tighten the same I provide a two part wedge having the members 59 and 51 having when combined a cross sectional shape and size approximately similar to that of the grooves 21. Member 50 has secured thereto the guide plate 53 in or on which is slidable the clamping plate 54 having the bevel edge 55, adapted to engage the bevel edge *b* of a printing plate base B, and said plate 54 has at its under side a series of

diagonally extending grooves 56, 56 in any one of which grooves the diagonally extending rib 52 of the member 51 may act when said member 51 is slid into place beside member 50, so that while these members 50 and 51 are located in the groove 21 the clamping plate 54 is driven toward the side edge of the printing plate by the engagement of the rib 52 of member 51 with said groove 56 of the clamping plate. The utility of the series of grooves 56 in plate 54 is to allow for a certain latitude of preliminary adjustment of such plate 54 with reference to the edge of the printing plate P before the member 51 is moved into place.

By reference to the above description and the drawing it will be seen that the plates 35, 35 operate as printing plate spacing means, to space the side margins of the printing plates, as well as printing plate clamping means to clamp said printing plates to the form bed or base 20. Owing to the fact that the plates 35, 35 are slidably mounted plates 54, 54 effect the tightening of all the printing plates P, P and of the spacing and clamping plates 35, 35 of the cross row of plates P, P to which said plates 54, 54 are applied while at the same time said plates 54, 54 engage and clamp the outer or right hand edges of the plates P, P to which said plates 54, 54 are applied.

It is to be noticed that while the printing plates P, P are spaced and secured to the platen by the overlapping edges of the plates 35, 35 said plates P, P may be adjusted in a direction parallel to the several series of clamping plates 35, 35 and secured in such adjusted positions by the wedge plates 49, 49 of the column securing devices.

The word platen is used herein to indicate a substantially flat plate base, block or similar structure adapted to support printing plates but by the use of said term I do not intend to limit my invention except as herein claimed. Nor do I intend to limit this invention to the particular arrangement of the printing plates on the member 20 shown in the drawing or to the particular location of the strips or gages 25 and 27 on said member 20.

Having thus described my invention I claim as new and desire to secure by Letters Patent—

1. A printing form comprising a form bed having a series of depressions, and a series of printing plate spacing and clamping devices having securing means located in and shiftable longitudinally of said depressions and also having members movable in directions laterally of the shifting direction.

2. A printing form comprising a form bed having a series of grooves, rods adapted to be received by said grooves, and a series of printing plate engaging means carried by and slidable laterally on said rods.

3. A printing form comprising a form bed having a series of grooves of permanent width, rods adapted to be received by said grooves and to be secured therein, guides fixedly mounted on said rods, and printing plate engaging clamps slidable laterally of the rods in said guides.

4. A printing form comprising a form bed, means adjustably mounted thereon and engageable therewith for spacing printing plates in columns and for engaging the edges of said plates, the adjustment being in the direction of length of the columns, said spacing and engaging means including elements movable laterally of the means, and means adapted to be mounted on said bed for exerting pressure on certain plates of all of said columns.

5. A printing form comprising a form bed, means adjustably mounted thereon and engageable therewith for spacing printing plates in columns and for engaging edges of said plates, the adjustment being in the direction of length of the columns, said spacing and engaging means including elements movable laterally of the means, and clamping and tightening means mounted on said bed and adapted to engage the edges of printing plates of one of said columns to tighten the cross rows of said printing plates.

6. A printing form comprising a form bed, having a series of grooves, a series of column printing plate spacing and clamping devices having members located in said grooves, and a series of printing plate clamping means having members located in one of said grooves, said latter clamping means having clamping members movable laterally of the groove length and mechanical means for moving said members, said clamping members being movable in the direction of clamping action of said mechanical means independently of said first-mentioned members.

7. A printing form comprising a form bed having a series of non-communicating grooves, a series of column printing plate spacing and clamping devices movable transversely of said grooves and having members located in said grooves, and a series of printing plate clamping means having movable clamping members, and mechanical means contained within one of said grooves for engaging and moving said clamping members.

WILLIAM J. ADAM.

Witnesses:
HENRY J. MILLER,
ESTHER C. MURPHY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."