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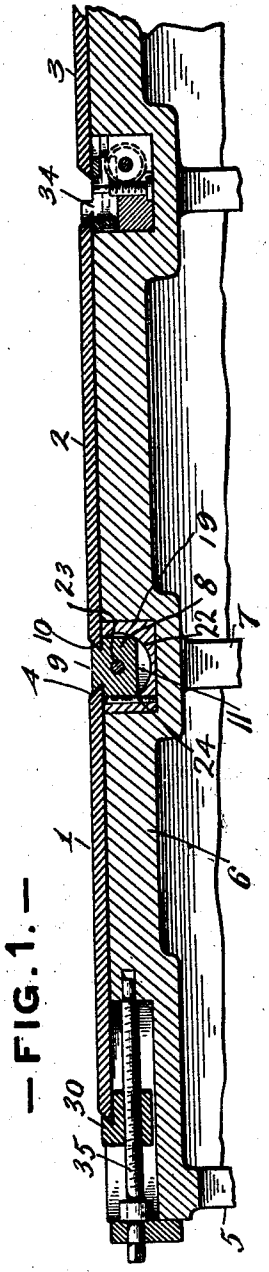
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L. A. SCHMIDT

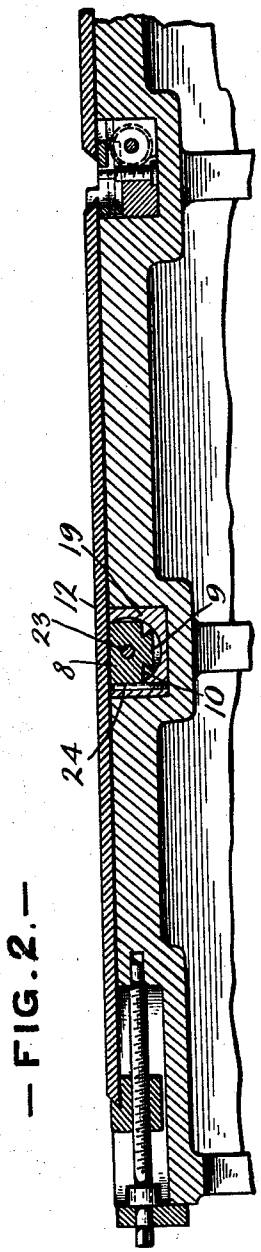
PLATE CLAMP

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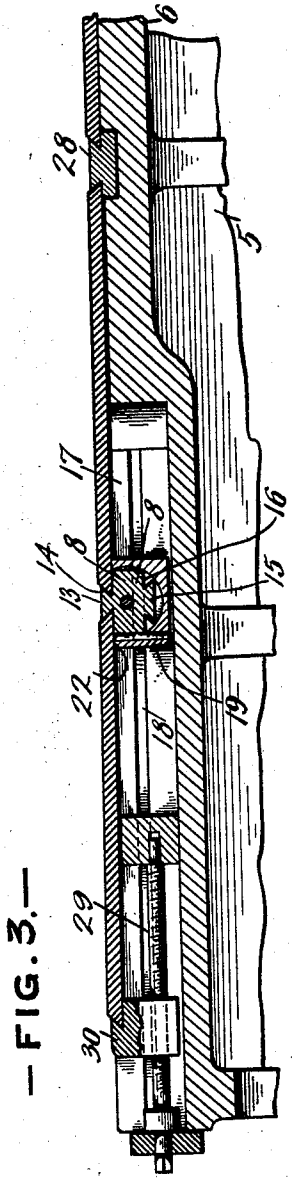
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— FIG. 1. —



— FIG. 2. —



— FIG. 3. —

INVENTOR

Louis A. Schmidt

Phelps Sawyer Rice Kenyon

ATT'YS.

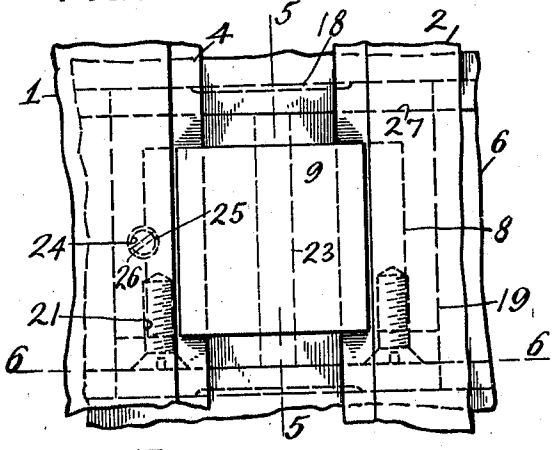
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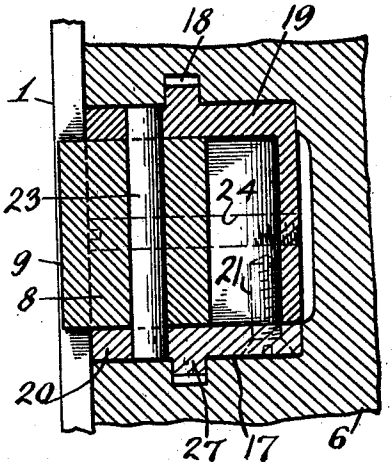
PLATE CLAMP

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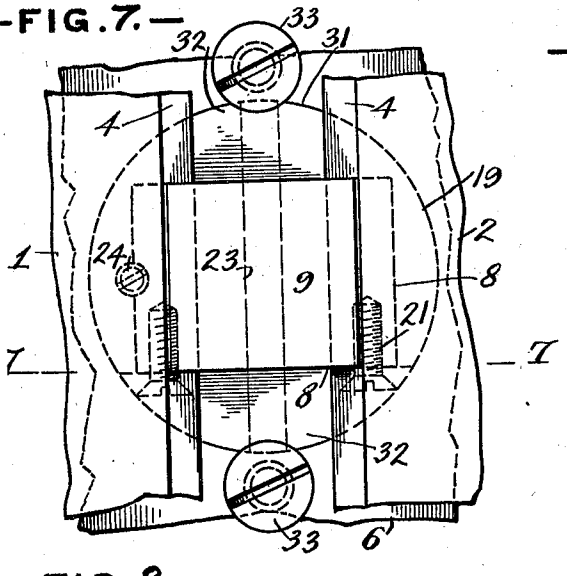
— FIG. 4. —



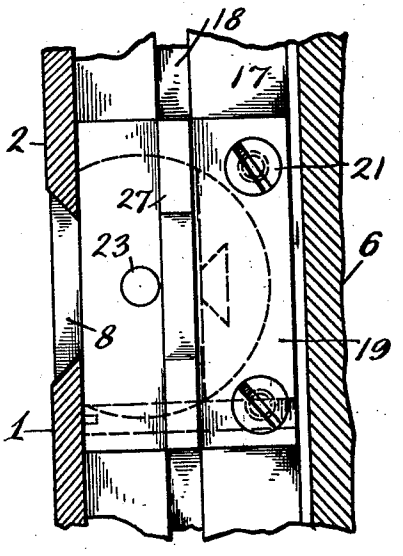
— FIG. 5. —



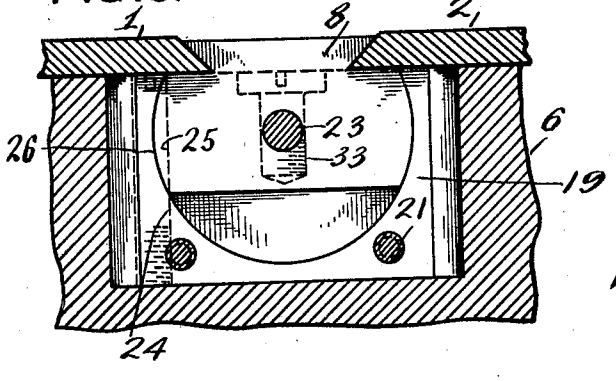
— FIG. 7. —



— FIG. 6. —



— FIG. 8. —



INVENTOR

James A. Schmidt

Philip Sawyer Rice Henry

ATT'YS.

Patented Apr. 3, 1923. 1,450,609

UNITED STATES PATENT OFFICE.

LOUIS A. SCHMIDT, OF NEW YORK, N. Y., ASSIGNOR TO R. HOE AND CO., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

PLATE CLAMP.

Application filed April 12, 1922. Serial No. 551,756.

To all whom it may concern:

Be it known that I, LOUIS A. SCHMIDT, a citizen of the United States, residing at New York city, county of Kings, and State of New York, have invented certain new and useful Improvements in Plate Clamps, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to certain improvements in plate clamps.

In printing methods where stereotype or similar printing plates are employed, these plates are clamped or secured in position on the plate supports by means of clamps, these clamps being provided with clamp engaging faces adapted to lap over the edges of the plate and clamp the plate against a suitable abutment, so as to hold the plate rigidly in position during the printing operation.

In certain class of printing machines, particularly rotary machines, the plate supporting surfaces are cylinders, and these cylinders are capacitated to carry a plurality of plates wide, that is, a number of plates, usually 4, are secured on the cylinders widthwise thereof.

Between two adjacent plates are provided what are usually termed margins or margin spaces in which there is no printing, and usually the plate clamps are formed to provide these margin spaces. It frequently happens, for special work, however, that instead of two single plates a single double wide plate is employed in the printing operation; it further happens that when two single plates are employed with a margin space between them, it becomes desirable to vary the width of this margin space. Where a double wide plate was employed, the clamps were removed from the cylinders, and where it was necessary to change the margin width, the clamps had to be removed from the cylinder or other plate support and another set secured in place having the correct margin width.

It is the especial object of the present invention to provide a plate clamp having at least two of its surfaces differently formed so that the same clamp can be used for clamping two adjacent plates and provide margin spaces of different width without it being necessary for removing the clamp from the plate support, and to provide a clamp which may be used either to clamp two adjacent plates with a margin space between or permit a double wide plate to lie over the clamp without necessitating the removal of the clamp from the plate support.

A further object of the invention is to provide such a clamp which may be readily manipulated to bring the desired surface in the required position, which may be readily installed in the plate support and which may be cheap and simple in manufacture.

With these and other objects not specifically referred to, the invention consists in certain novel parts, arrangements and combinations which will be fully described in connection with the accompanying drawings and the novel features thereof then pointed out in the claims hereunto annexed.

In the drawings—

Figure 1 is a partially broken away sectional side elevation of a multiplate wide plate support showing one form of clamp which may be used to clamp two adjacent plates or to permit a double wide plate to be used, the view in Fig. 1 showing the clamp in operative position between two plates.

Figure 2 is a view similar to Fig. 1 showing the clamp turned to get the clamping surface out of the way and permit a double wide plate to be used.

Figure 3 is a similar view showing the clamp employed for clamping two single plates with a margin space between, the clamp shown in Fig. 3 being arranged to provide two margins of different widths.

Figure 4 is a plan view on an enlarged scale partly broken away of the clamp in operative position between two plates.

Figure 5 is a sectional view of the construction shown in Fig. 4, the section being taken on line 5—5 of that figure.

Figure 6 is a sectional end view of the construction shown in Fig. 4, the section being taken on the line 6—6 of that figure.

Figure 7 is a plan view partially broken away of a construction which may be employed in which the clamp is stationarily secured to the plate support; and

Figure 8 is a sectional view of the construction illustrated in Fig. 7, the section being taken on line 7—7 of that figure.

Referring now to these drawings, the im-

proved clamp has been shown as employed with a plate support capacitated to carry a plurality of plates wide, three such plates, 1, 2, and 3 being shown in Figs. 1 and 3, these plates being the usual stereotype printing plates provided with bevelled edges 4. This plate support may be of any usual or desired character, but in the particular construction illustrated is a cylinder 5 provided with a plate supporting surface 6, the cylinder being strengthened with the usual webs 7.

In accordance with the invention, a plate clamp is provided which may have differently formed faces and the clamp will be mounted in the plate support so that one or the other of these faces may be brought toward the surface of the plate support, as may be required, and in the best constructions this clamp will be formed so that different faces are on opposite sides of the clamp, and the clamp will be mounted so that it can be rotated about an axis to effect the desired disposition of the clamp faces.

Referring first to Figs. 1 and 2, there is shown a clamp 8 having on one side a margin surface 9 provided with undercut sides 10, the angle of the cut being substantially the same as the angle of the bevel 4 of the plates. The height of this clamp engaging surface 9 is arranged to be slightly less than the height of the plates between which the clamp is located so as to provide the margin space, that is, the space between two adjacent plates on which no printing will take place. The opposite side of this block 8 is formed with a plain face 11. The block is dimensioned so that when the clamp is to be used with a double wide plate, indicated at 12 in Fig. 2, the clamp is manipulated to bring the plain surface upward so that it will not project above the surface of the cylinder and the double wide plate will lie over the block.

Referring to Fig. 3, the clamp block 8 is shown as provided with a narrow margin surface 13 having undercut sides 14, and a wide margin surface 15 provided with undercut portions 16, so that by manipulating the clamp block a margin strip of different width will be provided without removing the clamps from the machine. The clamp blocks may be supported so that they may be manipulated to bring the desired face toward the surface of the cylinder in various ways, but in the best constructions the blocks will be mounted so that they may be readily rotated, as by hand. Furthermore, the clamps will be arranged so that they may either be secured in the cylinder surface and have no movement, as shown in Figs. 1, 2, 7 and 8, or so that they may have a sliding movement lengthwise of the surface, as indicated in Figs. 3 to 6, inclusive.

Referring first to the construction shown in Figs. 3 to 6, the cylinder is provided with a recess, indicated at 17, this recess being provided at its sides with grooves 18. Mounted to slide in these grooves is a clamp receiving block 19, which is generally U-shape, one side of this block being formed by a removable cap 20 held to the rest of the block in any suitable way, as by screws 21, this removable cap being provided to permit the assembly of the parts. This block is hollowed out to a semi-circular shape, as indicated at 22, to receive the clamp 8, which has a rotary movement within the block, this movement being effected by mounting the clamp on a spindle 23 which takes bearing in the sides of the block. To hold the clamp in position after it has been manipulated to present the desired surface upwardly toward the surface of the cylinder, locking means are provided which may be in the form of a removable screw 24, this screw taking in grooves 25, 26, cut respectively in one edge of the clamp and one side of the clamp block.

The clamp block is, in the construction shown in Figs. 3 to 6 provided with flanges 27 which take into the grooves 18 in the plate support, the block sliding in these grooves.

In using the clamp shown in Figs. 3 to 6 the clamp block is positioned in the grooves and the clamp manipulated to present the desired margin surface, as for instance, the narrow surface shown in Fig. 3. When the clamp is thus used, the plates 1, 2 are then placed in position, the plate 2, at one edge, abutting against the usual margin stop 28 secured in the cylinder walls. The plates are locked up in this arrangement by means of the usual operating screw rod 29 carrying a clamp 30. By manipulating this rod the plates 1, 2 and the clamps 30 and 8 are moved longitudinally of the cylinder until the plate 2 abuts against the stop 28, whereupon the parts are locked up through the screw rod 29.

In the construction illustrated in Figs. 1, 2, 7 and 8, the clamp block 19 is arranged so as to be secured in the recess 31 in the cylinder, the clamp block being provided with extensions 32 against which may take vertical screws 33 by which the block may be rigidly held in the support.

Where this construction is employed, as shown in Figs. 1 and 2, a movable clamp, such as the clamp indicated at 34, may be provided by which the plate 2 may be locked against one side of the clamp 8, the plate 1 being locked against the other side of the clamp by a screw rod 35 similar to the screw rod 29, before referred to.

With the construction shown and described a very simple and effective clamping device has been provided by which different

margin spaces may be provided in the same plate support without removing the clamps from the support, or a double wide plate may be employed, and two single plates may be locked up with the same clamp without removing it from the support, and the manipulation of the clamp is quick and accurate. While the clamp has been shown in its preferred forms and preferred method of securing it in the cylinder or other plate support for ready manipulation, it will be understood that certain changes may be made in the form of the clamps and method of mounting them, and that the invention is not to be restricted to the exact construction shown and described.

What I claim is—

1. In a plate clamp, the combination of a plate support having a recess, of a clamp in the recess having differently formed faces, and means for rotating the clamp to bring the different faces thereof toward a plate on the support.

2. In a plate clamp, the combination of a plate support having a recess, a clamp in the recess having differently formed faces, and means for manipulating the clamp to bring the different faces toward a plate on the support.

3. In a plate clamp, the combination of a plate support having a recess, a clamp having differently formed faces, and a spindle on which the clamp is rotatably mounted in the recess.

4. In a plate clamp, the combination of a plate support having a recess, of a hollow block in the recess, a clamp in the block having differently formed faces, and a spindle in the block on which the clamp is mounted.

5. In a plate clamp, the combination of a plate support having a recess, a hollow block in the recess, a clamp in the block having differently formed faces, a spindle in the block on which the clamp is rotatably mounted, and means for locking the clamp in either position.

6. In a plate clamp, the combination of a plate support having a recess, a clamp in the recess having margin surfaces of different widths, and means for manipulating the clamp to bring either surface in operative relation, to a plate on the support.

7. In a plate clamp, the combination of a plate support and a plate clamp having margin surfaces of different widths rotatably mounted in the support.

8. In a plate clamp, the combination of a plate support having a recess, a hollow clamp block removably supported in the recess, one wall of which is removable, a spindle supported in the block, a clamp having differently formed faces mounted on the spindle, and means for locking the clamp in operative position.

In testimony whereof, I have hereunto set my hand.

LOUIS A. SCHMIDT.