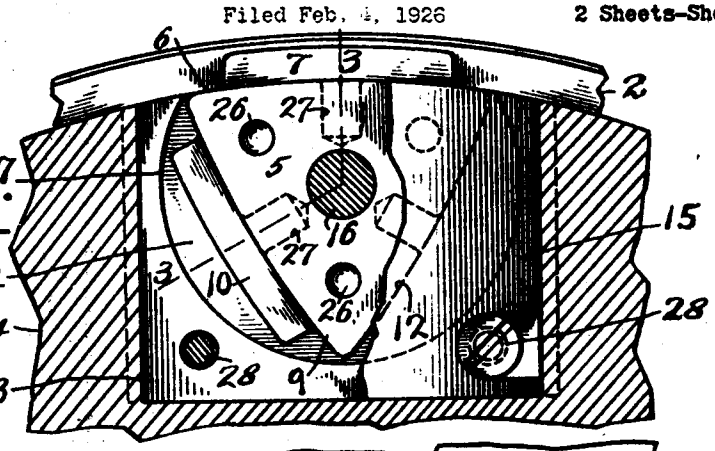
Nov. 22, 1927. 1,649,928

L. A. SCHMIDT

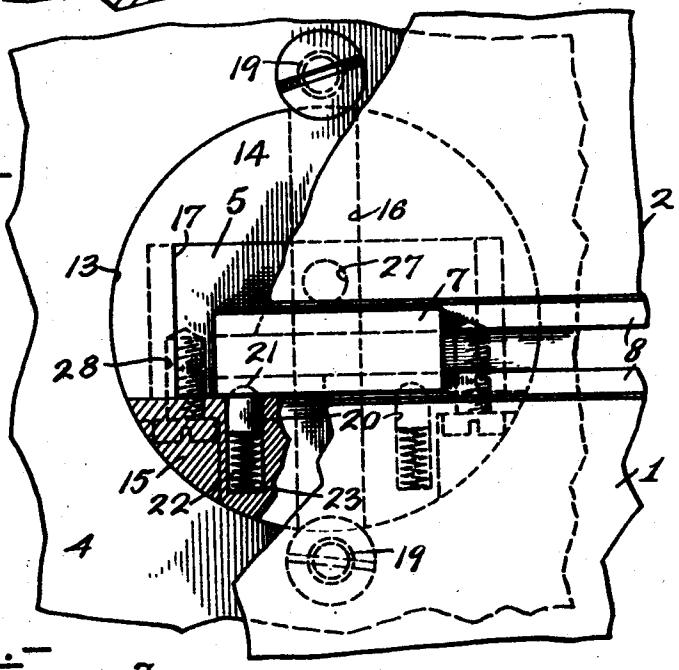
PLATE CLAMP

Filed Feb. 4, 1926 2 Sheets-Sheet 1

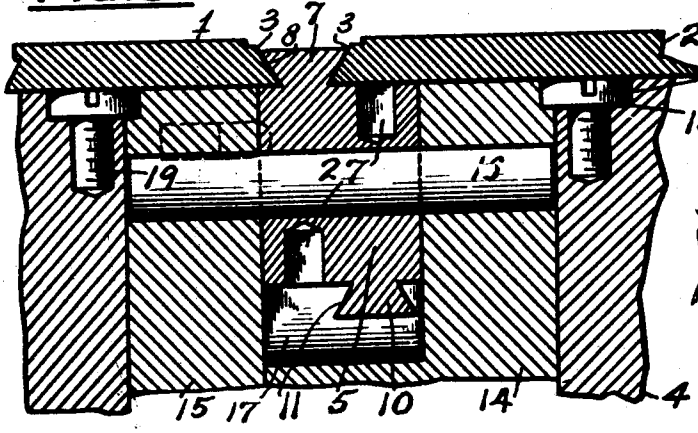
-FIG.1.-



-FIG.2.-



-FIG.3.-



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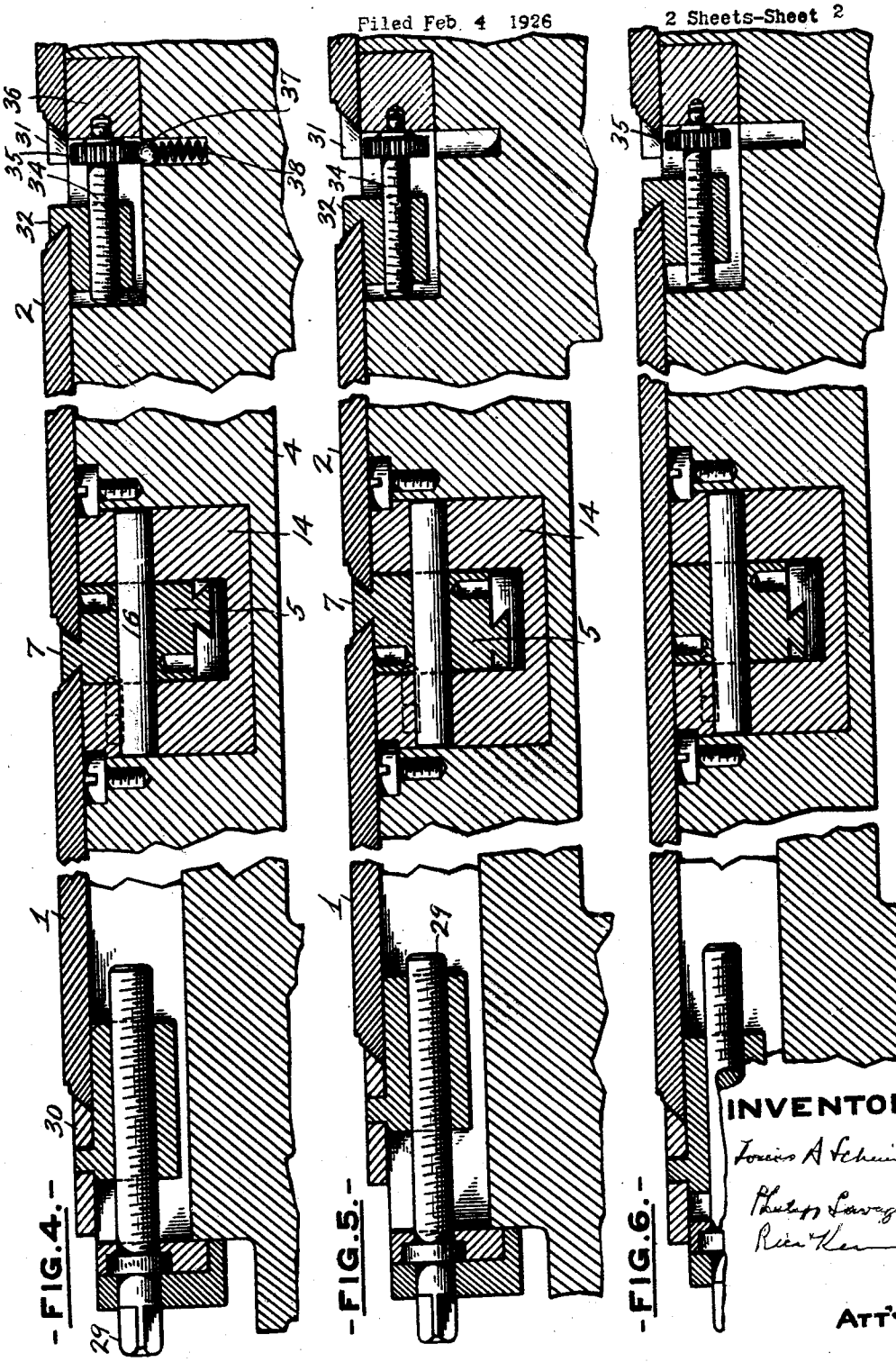
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PLATE CLAMP

Filed Feb. 4 1926 2 Sheets-Sheet 2



-FIG.4.-

-FIG.5.-

-FIG.6.-

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UNITED STATES PATENT OFFICE.

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

PLATE CLAMP.

Application filed February 4, 1926. Serial No. 85,884.

This invention relates to certain improvements in plate clamps.

In printing practice, where stereotype or similar plates are employed, the plates are clamped on the plate supports by means of clamping devices which lap over the edges of the plates and by which the plates are clamped against a suitable abutment so that the plates are rigidly held in position during the printing operation.

In printing certain products, as, for instance, newspapers, the printing is usually effected on rotary machines in which the plate supports are cylinders capacitated to carry a number of plates wide, that is, widthwise of the cylinder. Between two adjacent plates are formed what are usually termed margin spaces, that is, spaces in which no printing is effected, so that the desired margin between the pages is produced. These margin spaces are usually produced by the clamps for clamping the plates in position on the cylinders. It frequently happens that different width products are to be produced on the cylinder. As, for instance, it may be necessary to change from a page six columns wide to one seven and vice versa, and it is very desirable that this change may be quickly made with the least possible loss of time in the adjustment. To effect this, especially when changing from a six column to a seven column plate, an undesirably slow adjustment of the inner clamps has to be done. Furthermore, it is frequently desirable, for special work, to print a double wide page, this page being printed from a double wide plate. Where this is done, it is necessary to remove the clamps entirely from the cylinder. Also, when the cylinder is printing four plates wide the center margin is fixed and the plates are clamped against this. When, therefore, it is desired to take off an inside plate it has been necessary to loosen both the outside and inside clamps.

It is a special object of the present invention to provide a clamp which can be manipulated without removing it from the cylinder or adjusting it endwise, by which plates of different widths may be interchangeably positioned on the cylinder with a quick adjustment, and also a clamp which has provision for permitting the printing of a double wide product without removing the clamp from the cylinder or other plate support.

A further object of the invention is to produce a clamp of simple construction which may be readily installed and which will hold plates firmly in clamped position, and improved means for locking this clamp in adjusted position being also provided.

It is a further object of the present invention to provide a clamp arrangement by which an inside plate may be removed without unlocking the outside or inside clamps, and which at the same time permits the quick change from six to seven columns, or other desired column width of plate.

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

Referring now to these drawings,—

Figure 1 is a side view, partly in section, of the improved clamp, certain parts being broken away to show the construction;

Figure 2 is a plan view, partly in section, of the structure shown in Figure 1;

Figure 3 is a sectional view, the section being taken on line 3—3 of Figure 1;

Figure 4 is a sectional view of a clamping arrangement by which an inside plate may be removed without unclamping the outer and inner clamps, the figure showing a wide plate;

Figure 5 is a similar view showing a narrower plate; and

Figure 6 is a similar view showing a double wide plate.

Referring now to these drawings and first to Figures 1–3, the invention has been illustrated as employed with a plate support capacitated to carry two or more plates wide, two such plates, indicated at 1, 2, being shown, these plates being provided with the usual bevelled edges 3. In the particular construction illustrated, this plate support is

a cylinder, indicated at 4, though it will be understood as to certain of its features the invention is capacitated for use with structures in which plate supports other than cylinders are employed.

In accordance with the invention, a plate clamp is provided which may be manipulated without removing it from the cylinder to permit plates of different widths to be used and which will also permit the use of a double wide page or plate, and in which the clamp adjustment for the different pages may be quickly effected.

Generally speaking, this is effected by a clamp which is provided with two clamping surfaces arranged on different sides of the clamp but in offset relation to each other and by providing the clamp with a plane side. This clamp is so arranged that it may be manipulated to bring either the plane side or either of the plate holding clips into operative position with respect to the surface of the cylinder and, in the best constructions, this manipulating movement will be a rotary one, so that by simply turning the clamp by means of a suitable tool the desired side may be brought into position.

In the particular construction illustrated, therefore, there is provided a clamp which is generally triangular in shape, this clamp being indicated by the numeral 5. One side, 6, of this clamp is provided with a clip 7, this clip having undercut sides 8 corresponding to the bevelled sides 3 of the plates. Another side of the clamp, as side 9, is also provided with a clip 10 having undercut sides 11 corresponding to the bevelled edges 3 of the plates. It will be observed, referring to Fig. 3, that the clips 7, 10, are in offset relation to each other, that is, the clip 10 is formed on one edge of the side 9 of the clamp and the clip 7 is formed on the opposite edge of the side 6, the clamp being wide enough so that this offsetting produces the required variation in the width of the products that are to be produced, as, for instance, one column. With this construction it follows that, assuming the plates 1 and 2 to be seven columns wide, by rotating the clamp to bring the clip 10 into plate clamping position and clip 7 out of plate clamping position, the plates six columns wide may be used by simply setting up the outside clamps, and thus products of different widths may be produced interchangeably on the cylinder.

The third side, 12, of the particular clamp shown is flat or plane and when the clamp is manipulated to bring this toward the surface of the cylinder the clips are moved out of the way so that one double wide plate may be used instead of the two plates, 1, 2.

The clamp may be secured in the cylinder and may be manipulated to effect its functions in various ways. As before stated, however, in the preferred construction the adjustable movement of the clamp is a rotary one. In the particular structure shown the cylinder is recessed, as indicated at 13, to receive a block 14 having a removable face plate 15. This block forms a bearing for a spindle 16 on which the clamp is mounted so that it may have a rotary movement in the block, the block being cut out in a circular fashion, as indicated at 17, to permit the rotation of the clamp. This block may be held in place in various ways. In the particular construction shown the block is cut away to form shoulders 18 which receive the heads of securing bolts 19 which are screwed into the cylinder wall, as clearly shown in Fig. 3.

In the best constructions, means are provided for holding the clamp in adjusted position against accidental movement, these means, however, being such as not to prevent the ready adjustment of the clamp. In the particular construction illustrated, this is effected by plungers 20 having rounded ends 21, these plungers being seated against springs 22 located in sockets 23 formed in the head of cap 15, before referred to. These plungers project slightly into the path of the clamp and are arranged to engage in rounded depressions 26 formed in one face of the clamp, three of these depressions being provided and three plungers so that the clamp is held in any of its three adjusted positions. It will be observed that the plungers not only hold the clamp in position but will readily slide in and out of the depressions when the clamp is manipulated.

Any suitable means for rotating the clamp may be provided. As shown, there are provided three sockets, indicated at 27, one in each side of the clamp, which will receive a suitable tool by which the clamp may be readily adjusted. The head or cap 15 may be secured to the block in any suitable manner, as, for instance, by screw bolts 28.

Referring now to Figures 4, 5 and 6, the operation of the clamp as described will be plain. In addition these figures show an arrangement by which the inside plate 2 may be removed without manipulating the outside plate adjusting bolt 29 and clamp 30, nor the inside rotary clamp 5. As there shown the center margin bar is in the form of a clip 31 and a movable clamp block 32, this block clamping the inner edge of the inner plate 2. Sufficient space is left for the movement of this block to the right, that is, toward the clip 31. By manipulating this block the inner plate can be quickly removed without manipulating the clamps 30 and 5. While the block 32 may be adjusted in various ways, as shown it has threaded thereto a bolt 34 carrying a gear 35, this bolt being supported at its other end in a block 36. Preferably the gear is prevented from accidentally turning by a ball 37 pressed

against the gear by a spring 38. This gear 35 may be turned by any suitable adjusting tool.

While the invention has been shown and described in its preferred form, it will be understood that certain changes may be made in the specific structure and form of the clamp and the means of mounting it in the cylinder without departing from the invention.

What I claim is:

1. In a plate clamp, the combination of a plate support, a clamp positioned in operative relation with the support, clamping surfaces on the clamp arranged in offset relation to each other a distance corresponding to the width of a column or other predetermined section of a plate, and means for manipulating the clamp to bring either surface into operative relation with a plate.

2. In a plate clamp, the combination of a plate support, a clamp positioned in operative relation with the support, clamping surfaces on the clamp arranged in offset relation to each other a distance corresponding to the width of a column or other predetermined section of a plate, a plane surface on the clamp, and means for manipulating the clamp to position any of the surfaces in desired relation with a plate.

3. In a plate clamp, the combination of a plate support, a clamp positioned in operative relation with the support, clamping surfaces thereon of equal width transversely of the clamp, and means for manipulating the clamp to bring either surface into operative relation with a plate.

4. In a plate clamp, the combination of a plate support, a clamp positioned in operative relation with the support, clamping surfaces on the clamp arranged in offset relation to each other a distance corresponding to the width of a column or other predetermined section of a plate, a plane surface on the clamp, means for manipulating the clamp to position any of the surfaces in desired relation with a plate, and means for holding the clamp against movement in any of its adjusted positions.

5. In a plate clamp, the combination of a plate support, a three sided clamp positioned in operative relation with the support, clamping surfaces on two sides of the clamp offset relatively to each other a distance corresponding to the width of a column or other predetermined section of a plate, and a plane surface on the third side, and means for manipulating the clamp to position any of the surfaces in desired relation with a plate.

6. In a plate clamp, the combination of a plate support, a recess therein, a clamp block rotatably mounted in the recess, clamping surfaces on the block arranged in offset relation to each other a distance corresponding to the width of a column or other predetermined section of a plate, either of which may be brought into operative relation with a plate by rotating the block, and means for holding the block in its adjusted position.

7. In a plate clamp, the combination of a plate support, a clamp block pivotally mounted in the support, a clamping surface at the edge of one vertical side of the block, a clamping surface on the opposite edge of another vertical side of the block, either of which surfaces may be brought into operative relation with a plate by rotating the block.

8. In a plate clamp, the combination of a plate support, a recess in the support, a clamp block pivotally mounted in the recess, a clamping surface at the edge of one vertical side of the block, a clamping surface at the opposite edge of another vertical side of the block, a plane surface on the third side of the block, any of which surfaces may be brought into desired relation with a plate by rotating the block, and means for holding the block in any of its adjusted positions.

9. In a plate clamp, the combination of a plate support, a clamp positioned in operative relation with the support and having a clamping surface arranged to one side of the vertical axis of the clamp, and means for rotating the clamp to bring the clamping surface into operative relation with a plate on the support.

In testimony whereof, I have hereunto set my hand.

LOUIS A. SCHMIDT.