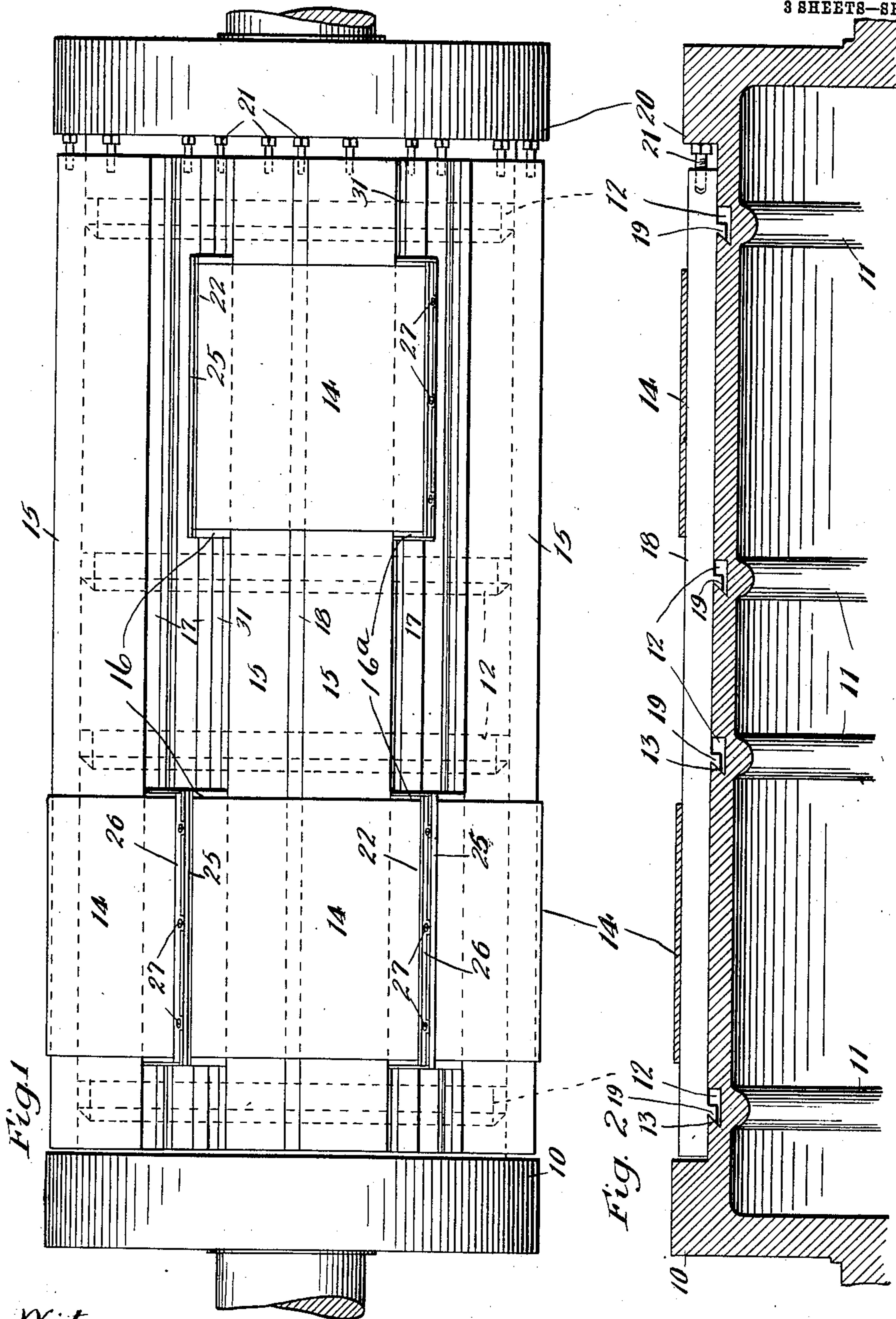


M. A. DROITCOUR.
 PRINTING CYLINDER AND PLATE.
 APPLICATION FILED JULY 17, 1909.

960,005.

Patented May 31, 1910.

3 SHEETS—SHEET 1.



Witnesses:

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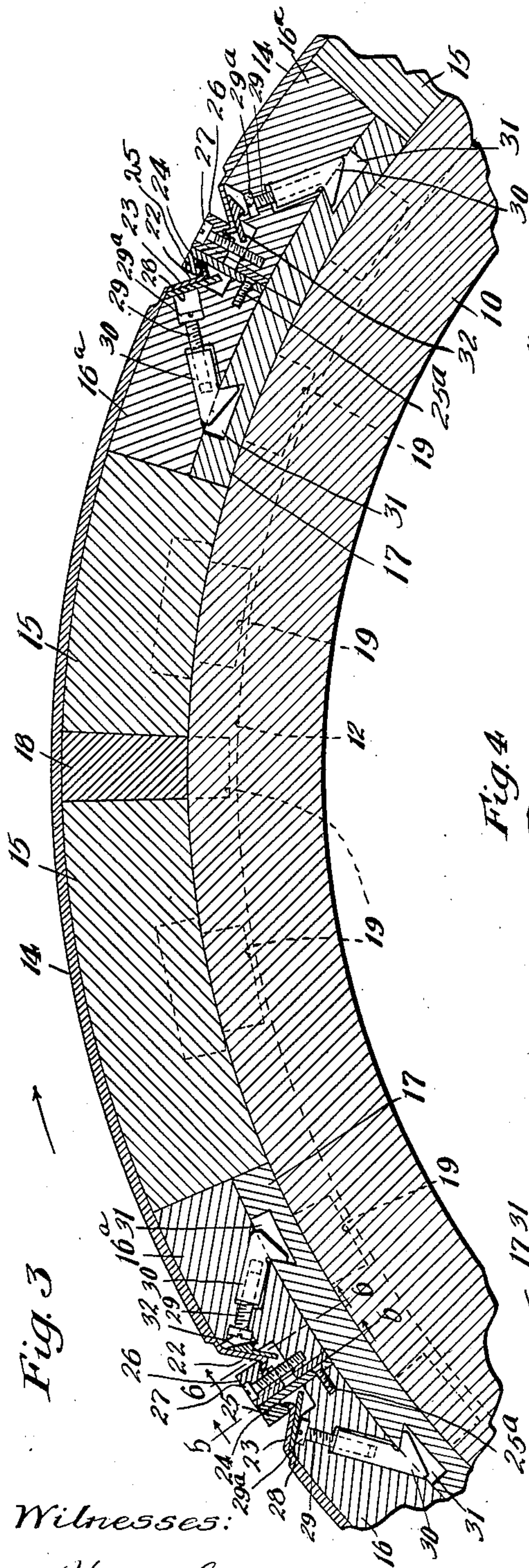
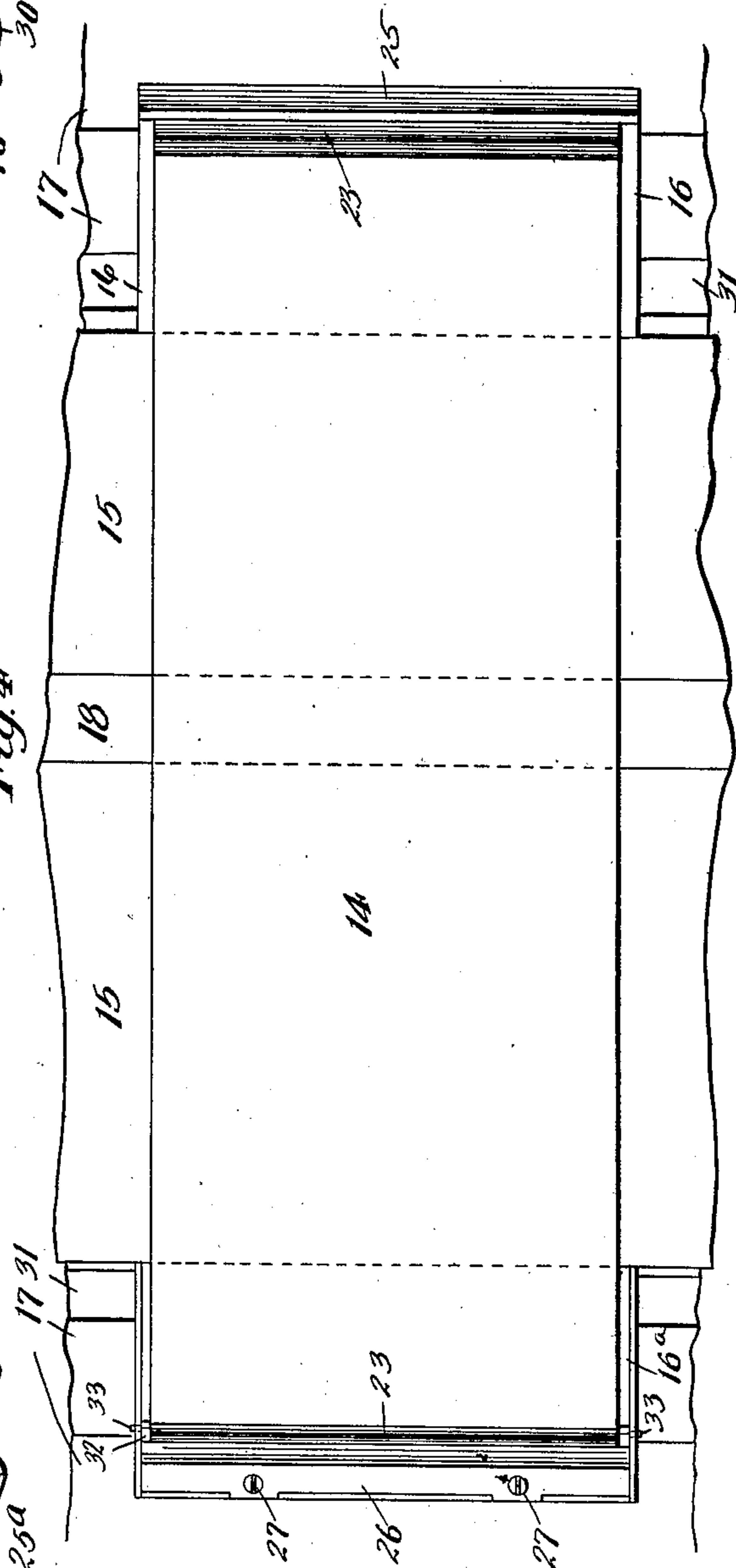


Fig. 3

Fig. 4



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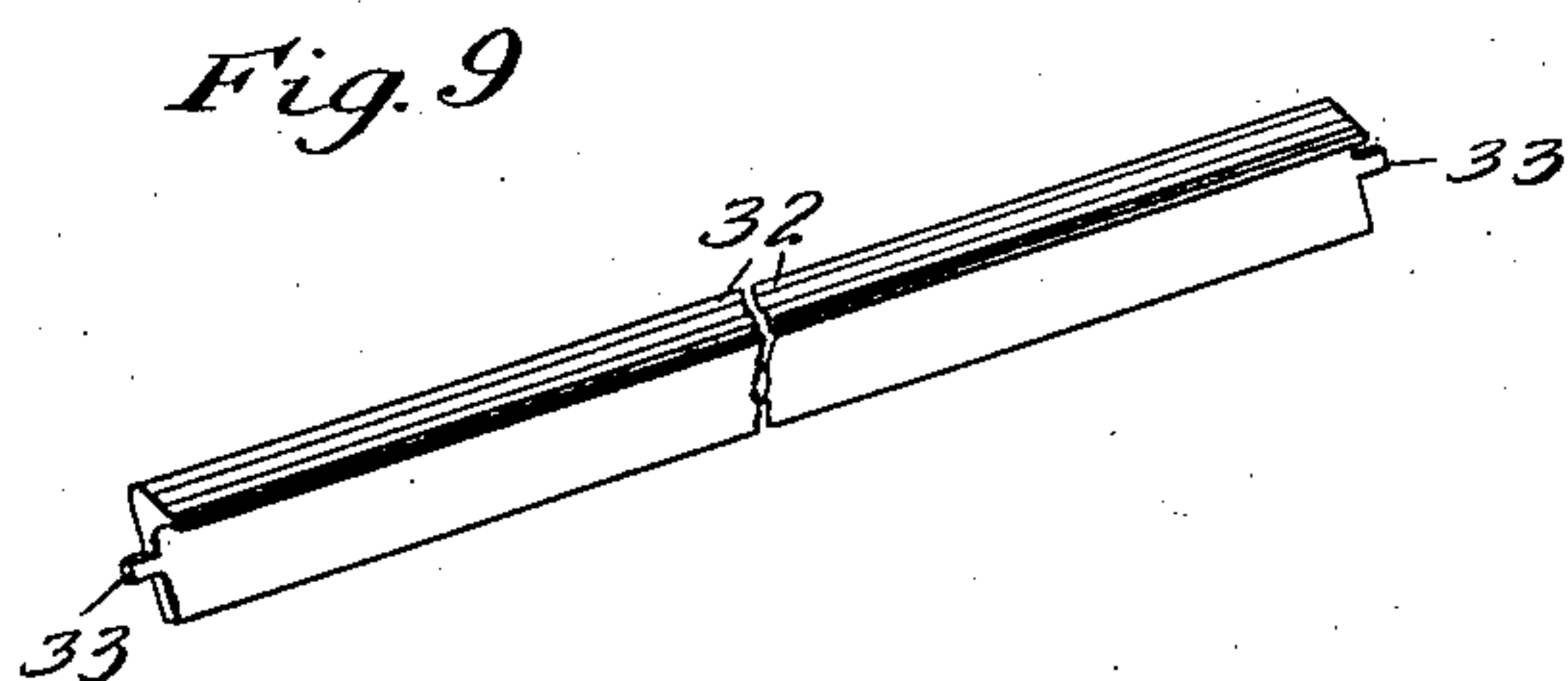
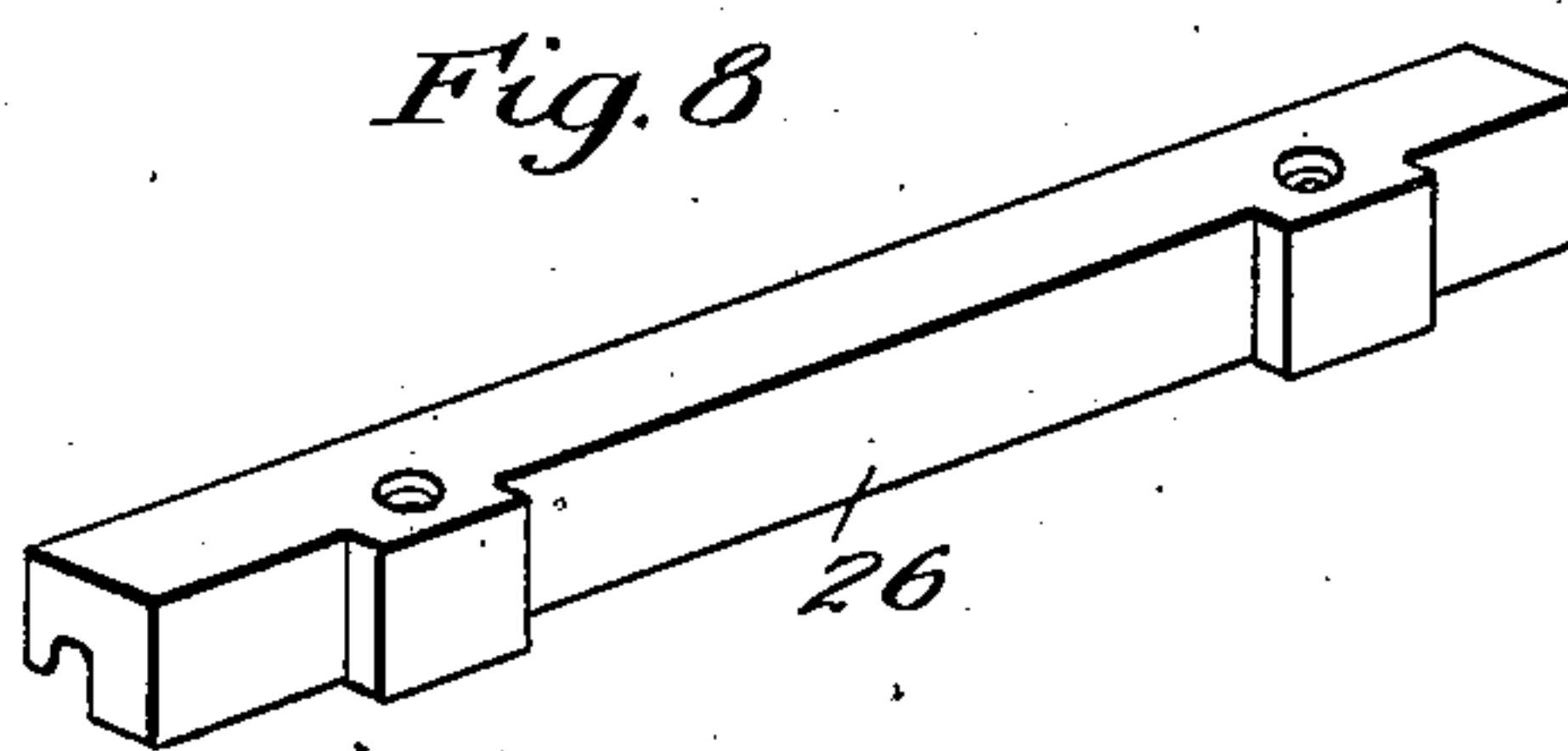
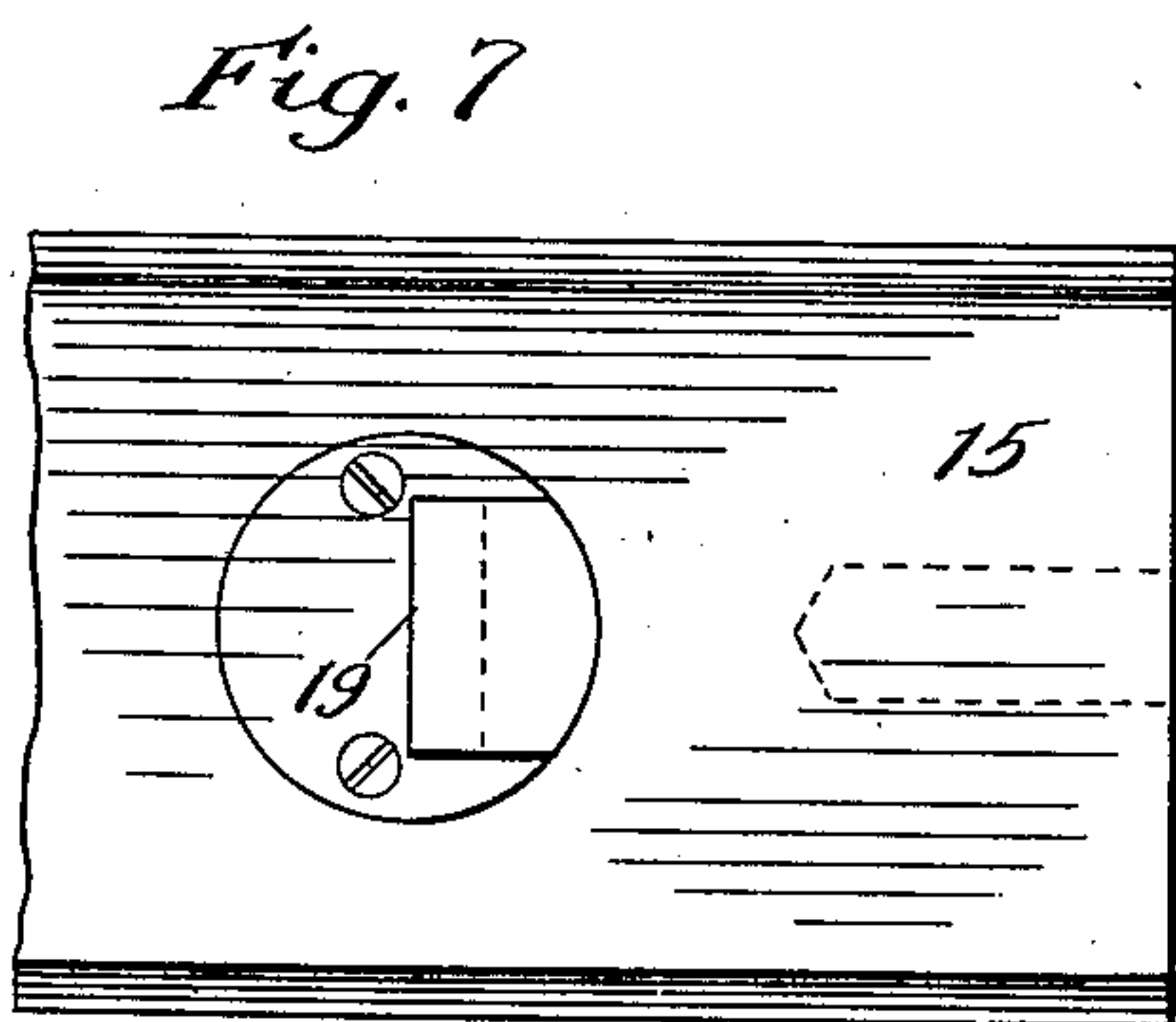
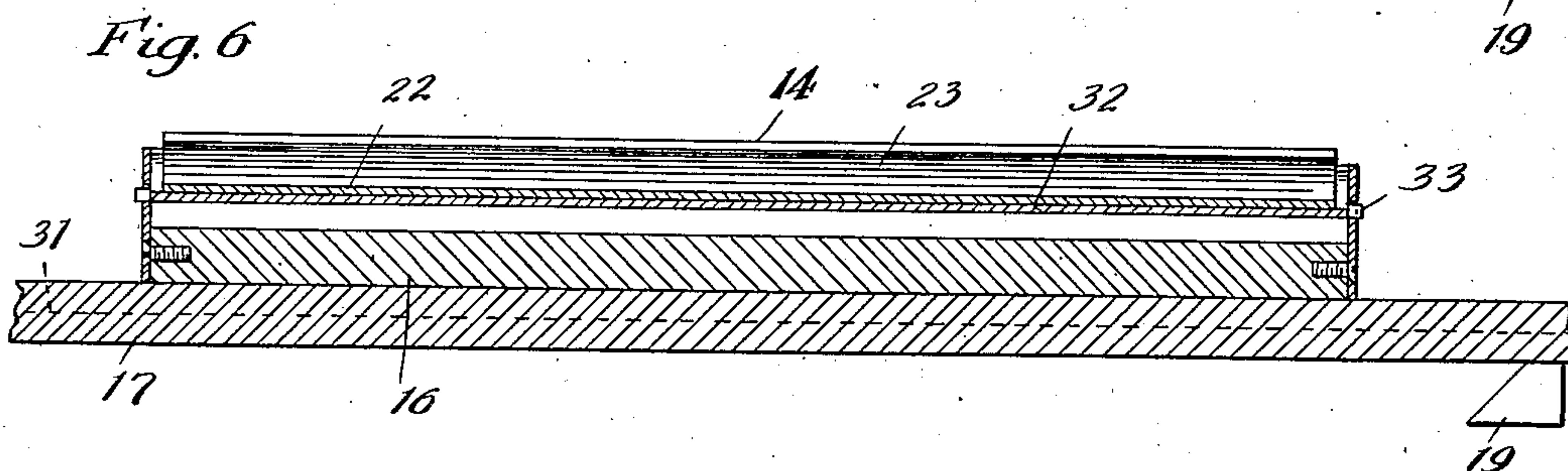
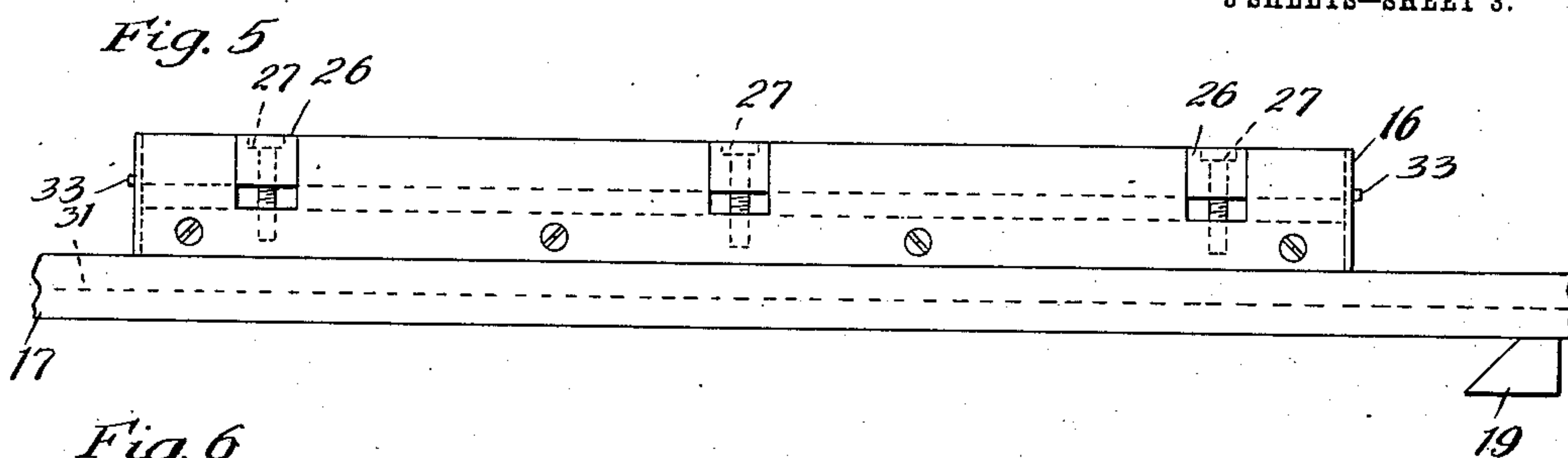
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UNITED STATES PATENT OFFICE.

MICHAEL A. DROITCOUR, OF CHICAGO, ILLINOIS, ASSIGNOR TO MIEHLE PRINTING PRESS & MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

PRINTING CYLINDER AND PLATE.

960,005.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed July 17, 1909. Serial No. 508,094.

To all whom it may concern:

Be it known that I, MICHAEL A. DROITCOUR, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Printing Cylinders and Plates, of which the following is a specification.

This invention relates to the construction of printing cylinders of printing presses and to the manner of securing the printing plates thereon.

The nature of my improvements is disclosed in the description given below, and the improvements are also illustrated in the accompanying drawings in which—

Figure 1 is a plan view of my improved cylinder; Fig. 2 is a longitudinal section thereof; Fig. 3 is a partial transverse section; Fig. 4 is a plan of the printing plate shown in Fig. 3. Figs. 5 and 6 are sections on the lines 5—5 and 6—6 respectively of Fig. 3; Fig. 7 is a partial bottom view of one of the printing plate supporting blocks; Fig. 8 is a perspective of one of the bars used to secure the ends of the printing plates and Fig. 9 is a perspective of the rocking tightener also used in attaching the plates.

In said drawing 10 represents the body of the printing cylinder. It is provided with interior ribs 11 and its surface is provided with annular grooves 12 over each of said ribs, one wall of the grooves being cut under as seen at 13. The type plates which are shown at 14 are supported from the cylinders by blocks 15 which are of full height, and by other blocks 16 16^a and 17 which are of less height and are placed one on the other, their united height being the same as that of the blocks 15. I also employ filler blocks 18 which also engage the annular grooves 12 of the cylinder. The blocks 16 16^a do not need to be the full length of the cylinder as is the case of blocks 15, 17 and 18, but should be long enough to support the type plates 14 and they are secured to blocks 17 as explained below.

To secure the supporting blocks to the cylinder I provide such of them as come in contact with the cylinder with depending hooks 19 adapted to engage the undercut wall 13 of the grooves 12, and in order that such hooks may be formed into engagement in the grooves, I provide upon the ends of the blocks a series of clamping screws 21

adapted to contact with the head 20 of the cylinder and thereby impart longitudinal movement to the blocks and force them away from the head 20 toward the opposite end of the cylinder. These screws are readily operated so as to tighten any block desired or to release it. By means of these screws it will be seen that the blocks upon which they bear will be rendered perfectly secure upon the cylinder so that neither the centrifugal force caused by the rotation of the cylinder or the suction exerted in the printing operation will be able to force them outward from the cylinder.

In preparing the cylinder for the application of printing plates I arrange the supporting blocks in accordance with the nature of the work to be done. The full height blocks 15 and 18 are placed so that they will support the body of the plate, and two of the low blocks 17 are then placed so they will come under the ends of the plate, and then preparatory to positioning the plates I secure the short blocks 16 and 16^a to the blocks 17. This I have done by means of diagonal hooks 30 and screws 29 having enlarged heads 29^a. The blocks 16 16^a are recessed to receive such hooks and screws and the blocks 17 are provided with longitudinal grooves 31 having one wall undercut, so that the hooks may engage such wall. By turning the screws 29 the hooks will be tightened in the groove by the resistance of the metal to the head 29^a.

I illustrate in the detailed view Fig. 3 a printing plate which may be of any ordinary construction but it should be provided at the top and bottom edges with flexible margins 22 by means of which it may be secured upon the supporting blocks. These end margins are bent into the form shown in Fig. 3 preliminarily, so that when positioned and tightened the end portions of the plates will have no tendency to bulge or depart from their proper plane, as they might do if the bend was first given them at the time of putting the plates upon the cylinder. These margins consist in a downwardly inclined portion 23 and an upturned lip 24 at the bottom of such incline. The upturned lips 24 are adapted to catch under the overhanging hook edges of retainers 25 and 26 extending across the edges of the plate and secured to the blocks. The retainers 25 are adapted to be held in place

by screws 25^a entering the blocks 16 and the retainers 26 are provided with screws 27 entering the block 16^a and holding the retainer down to its work. In positioning the plate 14 the margin 22 at its forward end is first engaged under the retainer 25 and a filler 28 of any desired or needed thickness is placed under the inclined portion 23. After thus securing the parts at the forward end of the plate I secure the rear end of the plate by engaging its upturned lip 24 under the retainer 26 and force the screws of said retainer inward. In thus forcing the retainer 26 to its innermost position I cause a rocking of the tightener 32 which strains the plate and renders the same very taut.

The fillers 28 are adapted to be varied not only in thickness, but they may be made of different thickness in different portions, that is to say one end of the filler may be thicker than the other end. This causes a skewing of the plate, which is often a great convenience in getting it into register with other parts of the work being done, and it also acts to lock the plate and to adjust it.

It will be noted that the blocks 15, 17 and 18 are all adjustable, and can be placed anywhere upon the cylinder where they are required, and blocks 16 and 16^a can be adjusted lengthwise of blocks 17.

I claim:—

1. The printing cylinder, provided with undercut annular grooves, in combination with plate supporting blocks, and having depending hooks adapted to enter said grooves, some of said blocks being of full height and others of partial heights, means for forcing said blocks lengthwise to cause the engagement of the hooks in the grooves, short length blocks adapted to be placed on the partial height blocks, and means for locking the said short length and partial height blocks together.

2. The printing cylinder having undercut annular grooves, in combination with plate supporting blocks provided with means for engaging said annular grooves, some of said blocks of partial height, means for forcing the blocks lengthwise to cause the locking engagement of said means in the annular grooves, short length blocks adapted to be placed on the said partial height blocks, and means for locking such short length and partial height blocks together.

3. The combination with the cylinder and plate supporting blocks secured to the cylinder, of plate retainers for the ends of the plates, said retainers being secured to the blocks and having overhanging hook edges, and a printing plate having margins with lips for engaging said hook edges and fillers 28 inserted under the margins to keep the lips engaged.

4. In combination, a cylinder, blocks having hooks on their under side adapted to

engage corresponding recesses in the cylinder, and means for forcing the blocks endwise to lock the hooks in the recesses and secure the blocks in position; with short blocks, means for adjustably attaching the short blocks to the other blocks, and plate retaining devices attached to said short blocks.

5. In combination, a cylinder provided with annular undercut grooves, longitudinal blocks provided with hooks adapted to engage said grooves, and means for forcing the said blocks endwise to lock the hooks in the grooves, some of said blocks being longitudinally grooved; with short blocks adjustably attached to the longitudinally grooved blocks, and plate retaining devices on the short blocks.

6. In combination, a cylinder, a plurality of grooved blocks having hooks on their under side adapted to engage corresponding recesses in the cylinder, and means for forcing the blocks endwise so as to lock the hooks in the recesses and retain the blocks in position; with short blocks provided with hooks adapted to engage the grooves in the grooved blocks to lock the short blocks thereto, and plate retaining devices attached to said short blocks.

7. In combination, longitudinally grooved blocks, short blocks superposed on the grooved blocks, adjustable hooks attached to said short blocks and engaging the grooves, and plate retaining devices on the short blocks.

8. In combination, a supporting surface for printing plates, and a plate retainer having a hooked edge; with a printing plate having a margin provided with a lip adapted to engage the hooked edge of the retainer, and a filler plate inserted under the margin of the printing plate to lock the hooked edge of the latter in engagement with the retainer.

9. In combination with a printing surface support having a beveled edge, and a plate retaining device adjacent said beveled edge; with a printing plate having a downwardly bent margin adapted to fit over the beveled edge of the supporting surface and having lips adapted to engage the plate retainer, and a filler plate inserted between the margin and the beveled edge of the support to hold the lips in engagement with the retainer.

10. In combination, a supporting surface, and plate retainers at the opposite sides of the printing surface, a printing plate superposed on said surface and having downwardly bent margins provided with lips engaging the retainers, and filler plates inserted under the said margins to hold the lips in engagement with the retainers.

11. In combination, blocks having beveled edges, and plate retainers on the blocks adjacent the beveled sides; with a printing plate having bent margins overlying the beveled

sides of the blocks and provided with lips engaging the retainers, and filler plates inserted between said margins of the plate and the beveled portions of the blocks.

5 12. In combination, a cylinder, the plate supporting blocks thereon, laterally adjustable short blocks having beveled sides, and plate retainers adjacent the beveled sides of said blocks; with a printing plate having
10 downwardly bent margins overlying the beveled sides of the short blocks and provided with lips engaging the retainers, and filler plates inserted between the said margins of the plate and the said beveled sides of the
15 blocks.

13. In combination a printing press cylinder having a plurality of undercut annular grooves in its periphery with detachable plate supporting blocks having depending
20 hooks adapted to enter said grooves, and means for forcing the blocks endwise to cause the locking engagement of the hooks in the grooves.

14. In combination a printing press cylinder
25 der provided with a plurality of undercut annular grooves in its periphery, in combination with detachable plate supporting

blocks of various widths each having hooks adapted to enter said grooves, and means for forcing said blocks endwise so as to cause
30 the locking engagement of the hooks in the grooves.

15. In combination, a cylinder having flanged ends and intermediate annular undercut grooves, with a block having hooks
35 on its under side adapted to engage the grooves in the cylinder, and means engaging the end of the block and the adjacent flange on cylinder for forcing the block endwise to lock the hooks in the recesses and
40 thereby retain the block in position.

16. In combination, a printing press cylinder having a flanged end and a plurality of annular grooves, a plurality of blocks
45 having hooks on their under side adapted to engage the grooves in the cylinder, and bolts in the ends of the blocks engaging the cylinder flange for forcing the blocks endwise so as to lock the hooks in the grooves and thereby secure the blocks in position.

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Witnesses:

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