

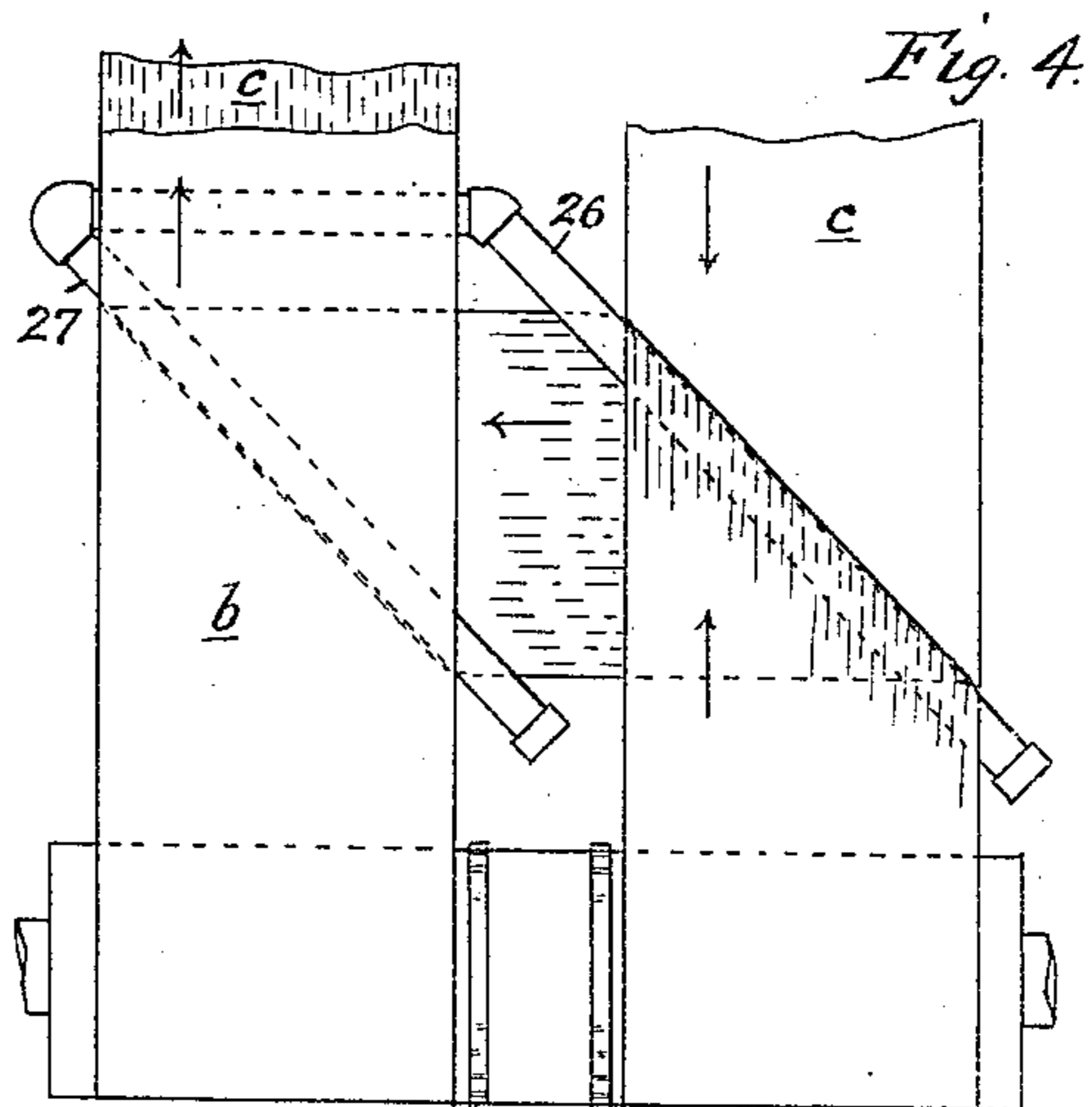
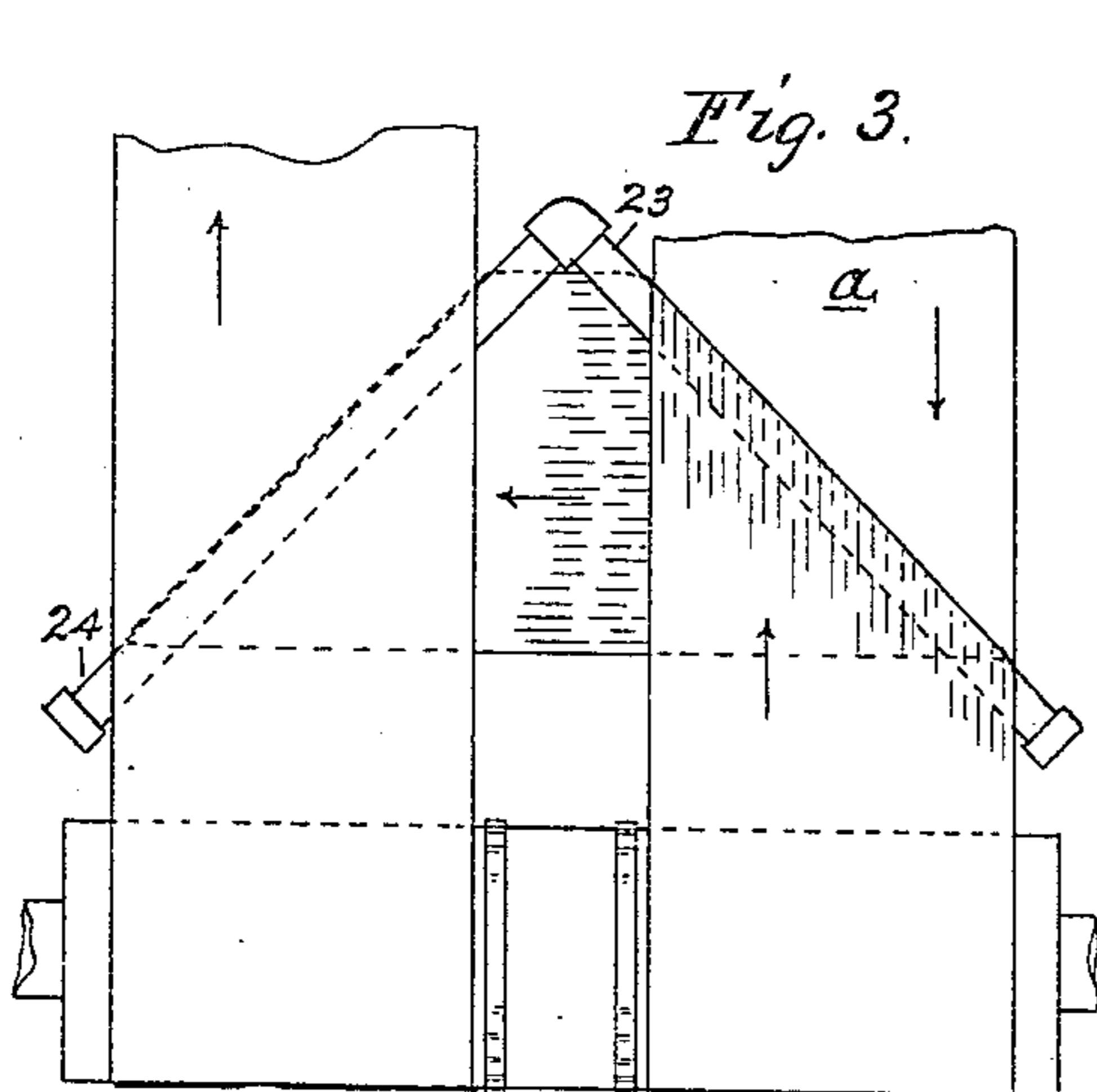
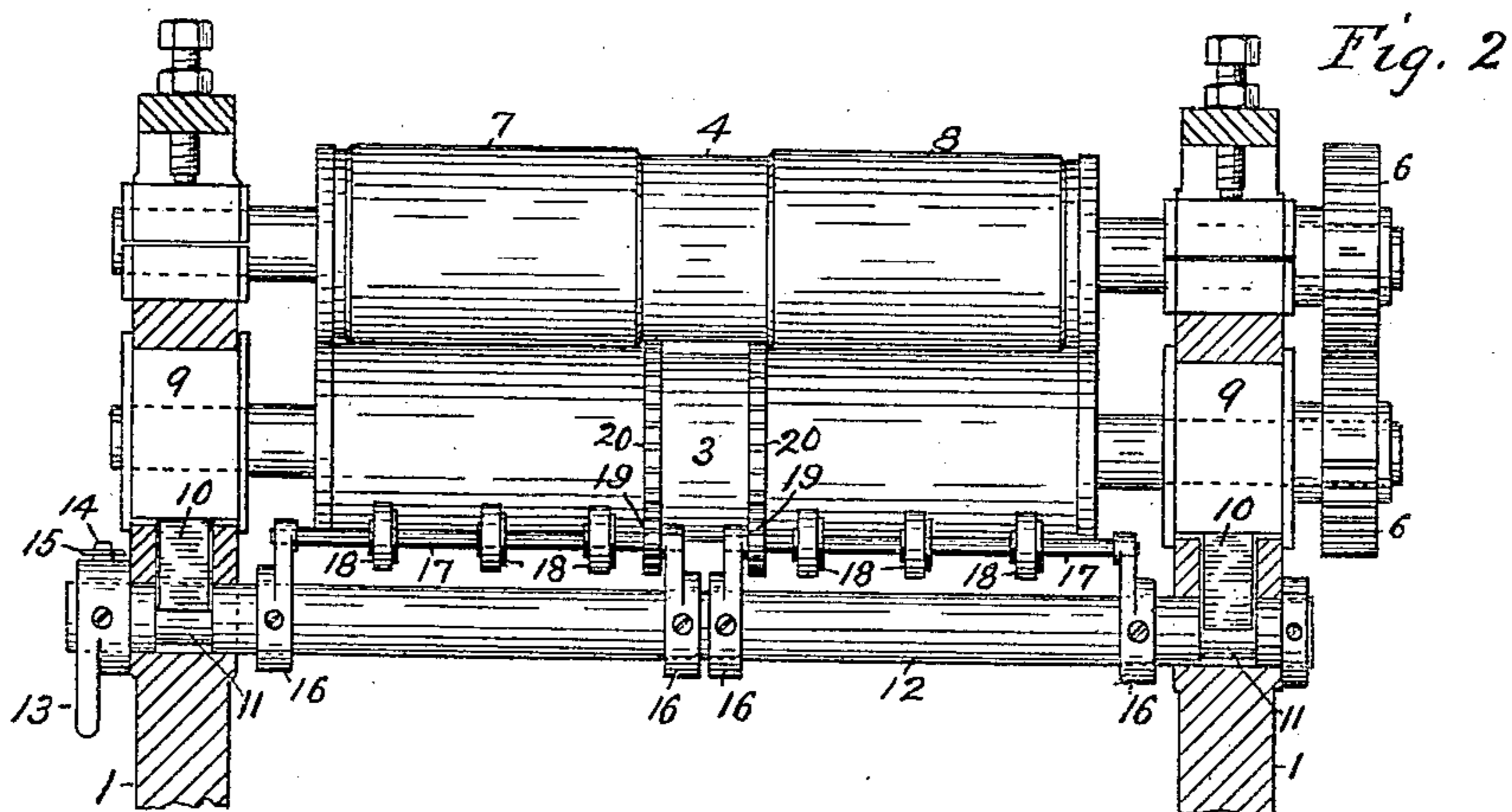
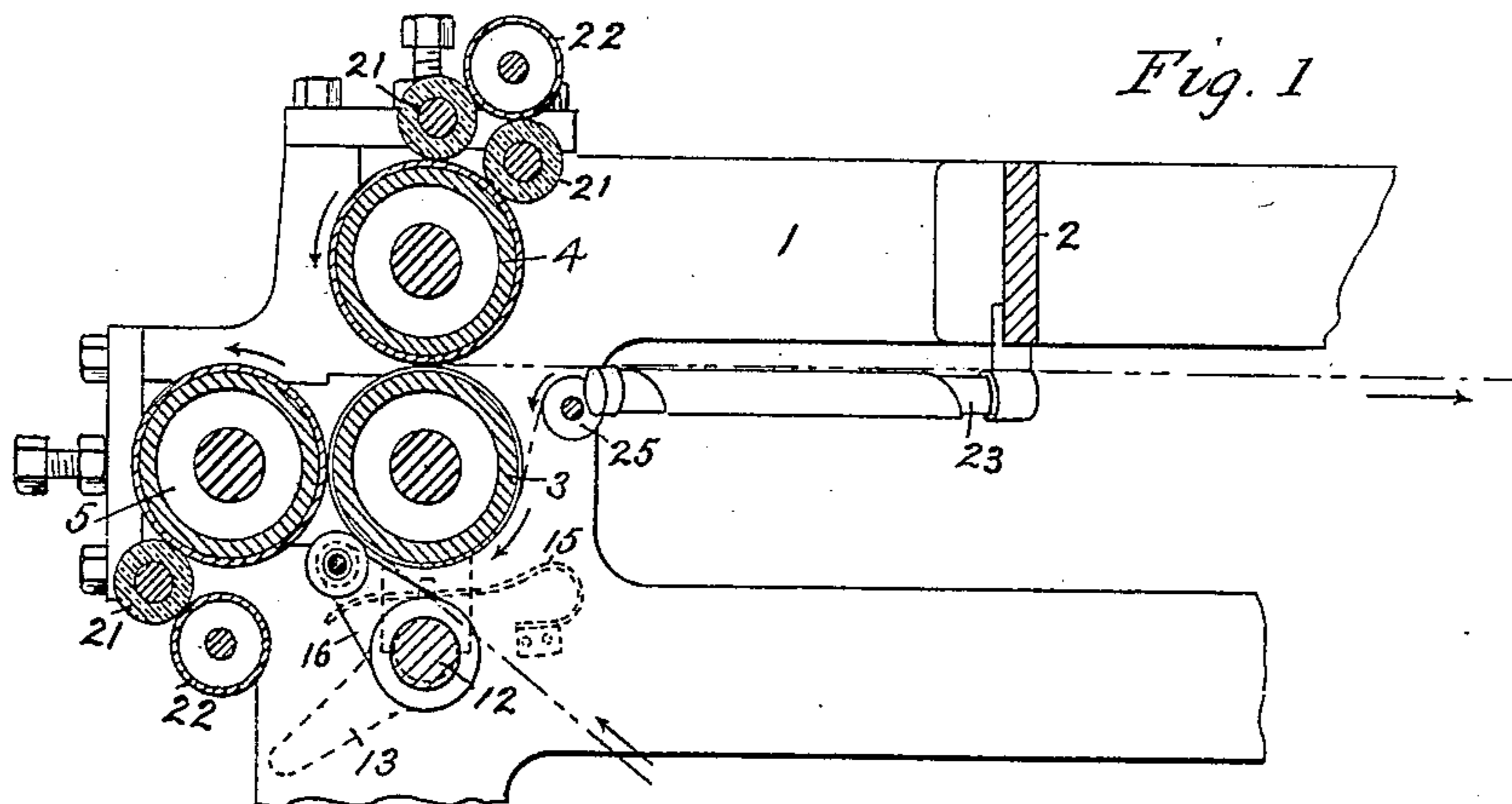
F. M. TURCK.

WEB PRINTING PRESS.

APPLICATION FILED NOV. 2, 1908. RENEWED DEC. 30, 1909.

948,261.

Patented Feb. 1, 1910.



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UNITED STATES PATENT OFFICE.

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WEB-PRINTING PRESS.

948,261.

Specification of Letters Patent.

Patented Feb. 1, 1910.

Application filed November 2, 1908, Serial No. 460,562. Renewed December 30, 1909. Serial No. 536,225.

To all whom it may concern:

Be it known that I, FREDERICK M. TURCK, a citizen of the United States, and resident of Rosebank, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Web-Printing Presses, of which the following is a specification.

The invention relates to improvements in web-printing presses, and is more especially an improvement upon the machine shown and described in my prior patent No. 830,751, dated September 11th, 1906, and comprises an arrangement of mechanism in connection with turning-bars for printing both surfaces of a single web of paper, or for printing two separate webs and collecting the same in superposed relation.

In practice, and particularly when printing-couples of reduced diameters are used in connection with turning-bars, considerable difficulty is experienced in obtaining perfect register of the printed surfaces by reason of the frictional resistance of the bars to the travel of the web, which causes the latter to slip somewhat over the impression-cylinder, particularly at such points of the printing revolution in which the tractive force of the forms becomes inoperative.

The object of the invention is to provide means for supplementing the tractive force of the impression-cylinder to insure perfect register, and also to afford facilities for the introduction and adjustment of the web.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like characters of reference are used to designate like parts throughout the several views, and in which;—

Figure 1 is a sectional side elevation of a portion of a printing-press embodying my invention. Fig. 2, a side elevation of one of the printing-couples with its coacting mechanism, the side-frames of the press being shown in section. Fig. 3 is a diagrammatic view showing the manner in which a single web may be turned for printing upon both its surfaces by the same printing-couple; and Fig. 4 is a diagrammatic view showing the manner in which two webs may be printed and collected in superposed relation.

In the drawings, numeral 1 designates the

side-frames of the press, provided with a cross-brace 2, and having suitable bearings or boxes in which are rotatably mounted the impression-cylinder 3, the upper form-cylinder 4, and the lateral form or numbering cylinder 5, the form and impression cylinders being geared together as indicated by gears 6, which in turn may be driven from a convenient source, not shown.

Upon the form-cylinders are secured in the usual manner the plates or forms 7 and 8, and the opposing impression-cylinder is provided with the customary impression covering. The boxes for the latter cylinder are indicated by 9, and they are vertically slidable in the frames and supported upon blocks 10, carried by the eccentric portions 11 of shaft 12, the latter being mounted in the frames and adapted to be actuated for making a partial revolution by the hand-lever 13, fixedly secured thereon. Upon the hub of the hand-lever is secured a pin 14, which engages a perforation in the yielding spring-bar 15 to retain the boxes 9 in their uppermost position for the engagement of the printing-couples, the spring-bar, which is fixed at one end to the frame of the press, may readily be disengaged from the pin 14 by elevating its opposite or free end to permit the rotation of the shaft for the lowering of the impression-cylinder. Upon the shaft 12 is also fixedly secured two pairs of journal-arms 16, in which are rotatably mounted the shafts 17, carrying the traction-disks 18, adapted for longitudinal adjustment thereon and rotatable therewith, for exerting a tension upon the impression-cylinder to impel the web. The traction-disks, preferably constructed of yielding material, fixed upon a central metallic hub and shiftably secured with set-screws, not shown, are positively driven by pinion-gears 19, secured to the shafts 17, the pinions being engaged by the gear-wheels 20 secured upon the impression-cylinder; the diameters of the gear-wheels and pinion-gears respectively correspond with those of the impression-cylinder and traction-disks to insure a common peripheral speed of the latter.

The inking mechanism for the form-cylinders may be of any approved construction and as herein shown is indicated by the form-rollers 21 and the distributing-rolls 22, adapted to extend the full length of the

cylinders for inking the double forms or plates secured thereon.

Referring more especially to Fig. 3, numerals 23 and 24 indicate fixed turning-bars of common construction, supported preferably in an adjustable manner upon the frames of the press. The web is led from a conveniently disposed roll to the point *a* and over a printing section of the impression-cylinder 3 to engage the forms 8 on the form-cylinders for printing upon one surface of the paper, after which the web is led over the bars 23 and 24 and the leading-roll 25, and then returned to the opposite printing section of the impression-cylinder for printing the opposite surface of the paper. In passing over the impression-cylinder the web is urged in contact therewith by the traction-disks 18 with a sufficient degree of tension to insure it against slipping over the cylinder and to overcome the frictional resistance of the turning-bars to the travel of the web, the disks being disposed along their supporting shaft to avoid offsetting the printed matter upon the web.

For introducing the web through the press, a single movement of the hand-lever 13 releases the traction-disks from the impression-cylinder and lowers the latter for disengagement with the form-cylinders and thereby permitting the web to be readily adjusted between the disengaged parts, and by moving the hand-lever in the opposite direction the several members are jointly re-engaged and secured against displacement by the pin 14 acting in connection with the spring-bar 15.

In Fig. 4 is shown an angular arrangement of the turning-bars in connection with the impression-cylinder in which one side of two separate webs *b* and *c* may be printed; the web *c* after passing over the impression-cylinder is laterally transferred under web *b* by the turning-bars 26 and 27, and the two webs are then collectively conveyed for the further action of the press.

It will be obvious that with the use of the two form-cylinders various characters may be printed in like or different colors, and by suitably adjusting the turning-bars a perfect register of the printed surfaces may be obtained.

It is to be understood that while I illustrate and describe the preferred embodiment of the invention, it is susceptible of various changes as regards its form, proportions, detail construction, and arrangement of parts without departing from the essential spirit and scope or sacrificing any of the advantages of the invention.

What I claim as my invention and desire to secure by Letters Patent, is:—

1. In a web-printing press, the combination with rotatable form and impression cylinders and a supporting-frame therefor, of

a rock-shaft mounted adjacent the impression-cylinder, arms carried by the rock-shaft, a rotatable shaft mounted in the arms, traction-disks mounted on the rotatable shaft and adapted to exert a pressure upon the impression-cylinder to impel the web, a pin relatively fixed with said rock-shaft, a spring-bar secured to the frame and having a perforation adapted to engage the pin, and a hand-lever secured to the rock-shaft.

2. In a web-printing press, the combination with rotatable form and impression cylinders, of a rock-shaft mounted adjacent the impression-cylinder, arms carried by the rock-shaft, a rotatable shaft mounted in the arms, traction-disks mounted on the rotatable shaft and adapted to exert a pressure upon the impression-cylinder to impel the web, interengaging driving gears between the impression-cylinder and traction-disks, a hand-lever secured to the rock-shaft, and means for locking the traction-disks in engagement with the impression-cylinder.

3. In a web-printing press, the combination with form and impression cylinders and a supporting-frame therefor, of boxes slidably mounted in the frame and adapted to rotatably support the impression-cylinder, blocks slidable in the frame and adapted to movably support the boxes, a rock-shaft mounted in the frame and having eccentric portions engaging the blocks, arms carried by the rock-shaft, a rotatable shaft mounted in the arms, traction-disks secured to the rotatable shaft and adapted to exert a pressure upon the impression-cylinder to impel the web, and a hand-lever secured to the rock-shaft.

4. In a web-printing press, the combination with web-turning bars, form and impression cylinders and supporting-frames therefor, of boxes slidably mounted in the frames and adapted to rotatably support the impression-cylinder, blocks slidable in the frames and adapted to movably support the boxes, a rock-shaft mounted in the frames and having eccentric portions engaging the blocks, arms carried by the rock-shaft, a rotatable shaft mounted in the arms, traction-disks mounted on the rotatable shaft and adapted to exert a pressure upon the impression-cylinder to impel the web, and means for actuating and locking said rock-shaft.

5. In a web-printing press, the combination with form and impression cylinders and a supporting-frame therefor, of boxes slidably mounted in the frame and adapted to rotatably support the impression-cylinder, blocks slidable in the frame and adapted to movably support the boxes, a rock-shaft mounted in the frame and having eccentric portions engaging the blocks, arms carried by the rock-shaft, a rotatable shaft mounted in the arms, traction-disks secured to the

rotatable shaft and adapted to exert a pressure upon the impression-cylinder to impel the web, a pin relatively fixed with said rock-shaft, a spring-bar secured to the frame and
5 having a perforation adapted to engage the pin, and a hand-lever secured to the rock-shaft.

Signed at New York, in the county of New York and State of New York, this twenty fourth day of October A. D. 1908.

FREDERICK M. TURCK.

Witnesses:

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