F. M. TURCK.

ROTARY PRINTING PRESS.

APPLICATION FILED FEB. 29, 1908.

910,610.

Patented Jan. 26, 1909.

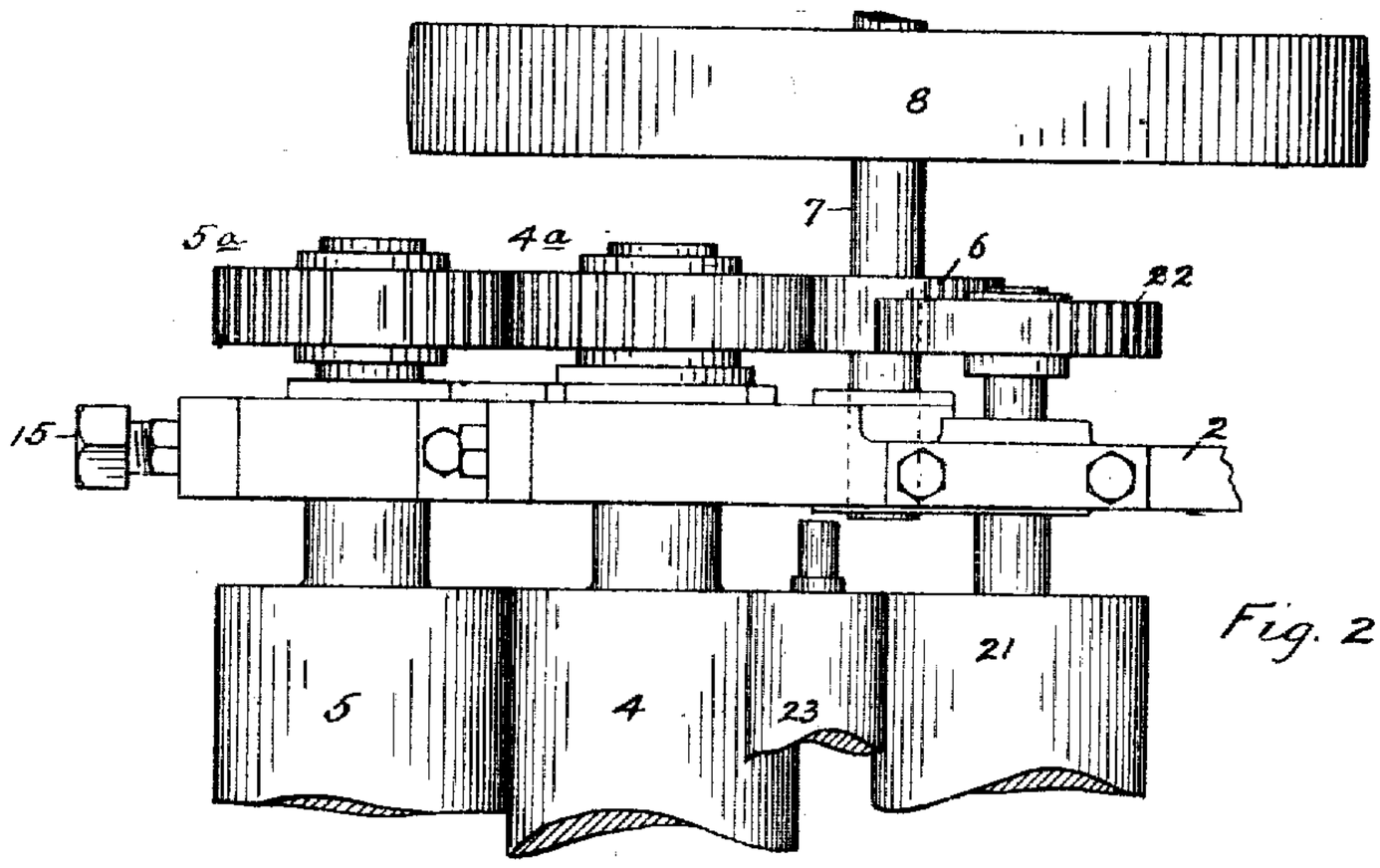

Fig. 2

Fig. 4

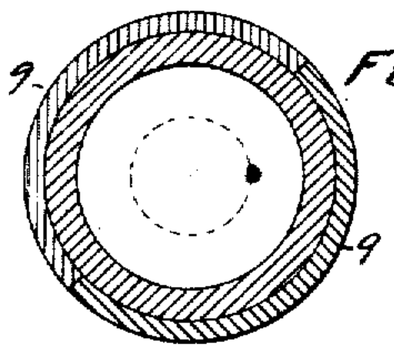

Fig. 1

Fig. 3

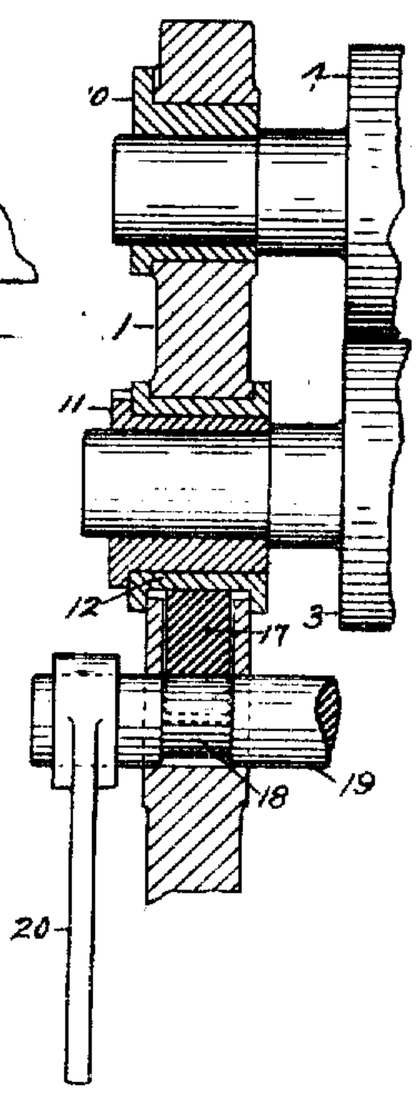

Fig. 5

Witnesses:
John G. Mueller.
[illegible]

Inventor
Frederick M Turck
By his Attorney Wm Bodge

UNITED STATES PATENT OFFICE.

FREDERICK M. TURCK, OF ROSEBANK, NEW YORK, ASSIGNOR OF ONE-HALF TO CHARLES W. TRACY, OF MONTCLAIR, NEW JERSEY, AND ONE-HALF TO JOHN L. OBERLY, OF NEW YORK, N. Y.

ROTARY PRINTING-PRESS.

No. 910,610. Specification of Letters Patent. Patented Jan. 26, 1909.

Application filed February 29, 1908. Serial No. 418,486.

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 Rotary Printing-Presses, of which the following is a specification.

The invention relates to improvements in rotary printing-presses of the class described in my prior patent No. 830,751, dated September 11th, 1906, and to which reference may be had for a full description of the complete machine.

The present invention includes a single impression cylinder co-acting with a pair of type cylinders upon a web of paper, and the object is to provide means for readily varying the diameters of the several cylinders to secure an increased printing range for the machine, whereby several sizes of printed sheets may be obtained.

A further object provides for the rapid and accurate operative adjustment of the several cylinders.

The invention also provides means for releasing the pressure upon the impression cylinder to permit the web of paper to be introduced or threaded and accurately adjusted in relation to the several parts comprising the machine.

In describing the invention in detail reference is had to the accompanying drawings, forming 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 side elevation of a part of the machine pertaining to the present invention. Fig. 2 is a ground plan of a portion of the rear frame of the machine, in which are journaled one end of the several cylinders with their respective driving gear. Fig. 3 is a transverse sectional view of a part of the front frame, illustrating the journal-boxes carrying the opposite end of the cylinders. Fig. 4 is a detail transverse section of one of the cylinders. Fig. 5 is a spacing block adapted for use in connection with the lower type cylinder.

Numerals 1 and 2 designate respectively a portion of the front and rear frames of the press, each of which frames being provided with corresponding journal-boxes adapted to receive the impression cylinder 3, the upper type cylinder 4, and the lower type cylinder 5. The several cylinders have secured upon their rear journal ends, exterior of the frame, driving gears whose pitch diameters conform with that of their respective cylinders, as indicated by the dotted circles 3, 4 and 5, the gears for cylinders 4 and 5 being respectively designated by 4^a and 5^a. These gears intermesh with one another and are in turn driven by the pinion-gear 6, fixed upon the shaft 7, the latter being journaled in the frame and provided with a driving pulley 8.

The impression cylinder is provided with the usual blanket and connecting means therefor, and to the two type cylinders are affixed the printing forms with their necessary attachments.

When it is desired to increase the diameters of the printing couples, consisting of the impression cylinder and the two type cylinders, a two part jacket 9, (see Fig. 4) preferably formed of metal, is removably secured to the body of each of the cylinders and over the jackets, are secured respectively the aforementioned blanket and printing forms. Driving gears corresponding to the increased diameter of the cylinders replace the former ones and these operatively engage with one another and with the pinion gear 6.

The changes in the diametrical dimensions of the printing couples are accomplished without the removal of the several cylinders from their journal-boxes and without disturbing the horizontal path of the printed web, the latter object being essential in the further action of the press and the former purpose insures a considerable saving of time in its operation. For the accomplishment of these objects with respect to the upper type cylinder 4, journal-boxes 10 are provided having eccentric boxes to receive the journals of the cylinder, the boxes being rotatably mounted in the frames and secured in operative position with bolts. Upon the removal of the bolts, pin-wrenches may be utilized to engage the bolt perforations in the boxes to turn the latter for properly positioning the dual-size cylinder indicated by the broken circles 4 and 4^b, such position permitting the respective cylinder-gears to engage the common pinion-gear 6 and to co-

incide at their lowermost part with a common tangent line for engagement with corresponding gears on the impression cylinder.

The impression cylinder 3 is mounted in eccentric journal-boxes 11, rotatably mounted in vertically-sliding boxes 12, which latter are guided by the frames of the press and by the side blocks 13. The construction and action of the eccentric journal-boxes 11 are similar to that of boxes 10, in that it permits the dual size impression cylinders 3 and 3^b and their connected gears to respectively engage their corresponding type cylinders and gears 4 and 4^b.

The lower type cylinder 5 is mounted in the horizontally-slidable journal-boxes 14, which are guided and supported by the frames of the press. The operative position of this type cylinder with respect to its co-acting impression cylinder 3, is maintained by the adjusting-screws 15, which urge the journal-boxes against the fixed side blocks 13. The adjustment of these boxes in relation to side blocks 13 for the accommodation of the enlarged type cylinder 5^b, acting in connection with the enlarged impression cylinder 3^b, is obtained by interposing spacing-blocks 16, shown in detail in Fig. 5.

The frames 1 and 2 are provided with recesses below the sliding boxes 12, and within the recesses are mounted the carrier-blocks 17 which engage eccentrics 18, formed on shaft 19, the latter being rotatably mounted in the frames of the press and actuated by the hand lever 20 to operate the carrier-blocks for raising and lowering the sliding boxes 12, which support the impression cylinder.

It will be evident that by means of the adjusting-screws 15 the operative contact between type cylinder 5 and impression cylinder 3 may be released, and through the operation of the hand lever 20 the impression cylinder may be separated from the upper type cylinder 4, whereby the web of paper may be introduced between the printing couples and through the machine and its position properly adjusted.

21 designates an ink-distributing cylinder adapted to be rotated through its connected driving gear 22 from the pinion gear 6, and is arranged to receive a supply of ink from an ink fountain in the usual manner, and 23 and 24 indicate conventional form rollers for applying the ink to the printing cylinders.

As the operation of the various parts of the machine have been set out in detail and in the connection wherein they coöperate with each other it is believed a recapitulation of the entire operation is unnecessary. It is apparent, of course, while I illustrate and describe the preferred embodiment of the invention it is susceptible of various changes as regards its form, proportion, 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 rotary printing press, the combination with printing cylinders arranged for variable diameters and a supporting-frame therefor, of journal-boxes rotatable in said frame and provided with eccentric bores engaging the journal-ends of one of said printing cylinders, means for securing the journal-boxes in rotative adjustment, boxes slidable in said frame, journal-boxes rotatable in said slidable boxes and provided with eccentric bores engaging the journal-ends of the opposing printing cylinder, a shaft rotatable in the frame and provided with eccentric sections, blocks slidable in the frame and engaging the eccentric sections on said shaft for supporting the slidable boxes, and a hand-lever secured to said shaft.

2. In a rotary printing press, the combination with printing cylinders arranged for variable diameters and a supporting-frame therefor, said cylinders having corresponding interengaging driving gears, of journal-boxes rotatable in said frame and provided with eccentric bores engaging the journal-ends of one of said printing cylinders, an axially-fixed driving gear rotatably mounted in the frame, means for securing said journal-boxes in rotative adjustment, boxes slidable in said frame, journal-boxes rotatable in said slidable boxes and provided with eccentric bores engaging the journal-ends of the opposing printing cylinder, a shaft rotatable in the frame and provided with eccentric sections, blocks slidable in the frame and engaging the eccentric sections on said shaft for supporting the slidable boxes, and a hand-lever secured to said shaft.

3. In a rotary printing press, the combination with one of the cylinders of a printing couple arranged for variable diameters and a supporting-frame therefor, of boxes slidable in said frame, journal-boxes rotatable in said slidable boxes and provided with eccentric bores engaging the journal-ends of said cylinder, a shaft rotatably mounted in the frame and provided with eccentric sections, blocks slidable in the frame and engaging the eccentric sections on said shaft for supporting the slidable boxes, and a hand-lever secured to said shaft.

Signed at New York in the county of New York and State of New York this twenty-fifth day of February A. D. 1908.

FREDERICK M. TURCK.

Witnesses:
O. A. H. TYLER,
JOHN G. MUELLER.