

F. WAITE.
 ROTARY PRINTING MACHINE.
 APPLICATION FILED JUNE 18, 1910.

970,000.

Patented Sept. 13, 1910.

2 SHEETS—SHEET 1.

FIG. 1.

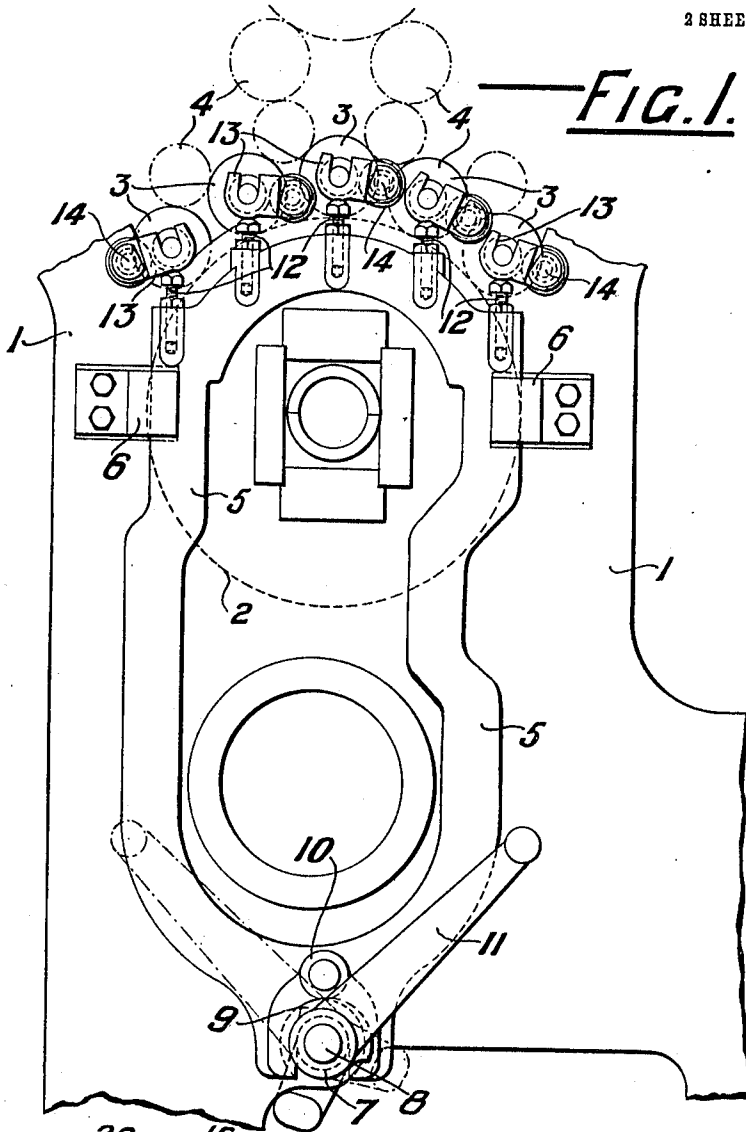
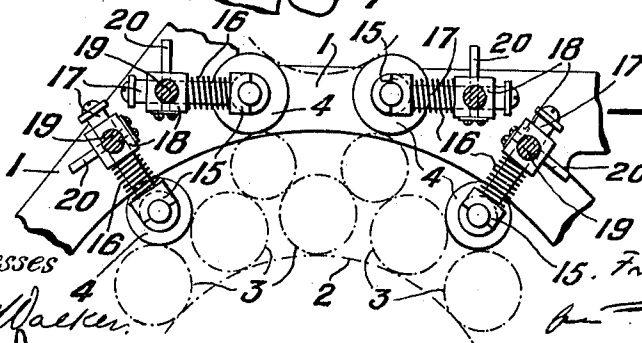


FIG. 3.



Inventor.

Witnesses

C. M. Walker.
W. H. Lamb.

15. Fred Waite
per R. L. Davis.

Attorney.

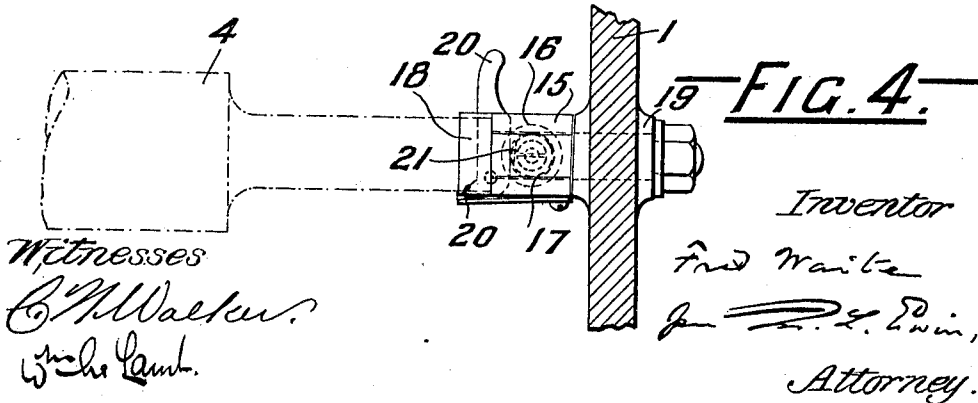
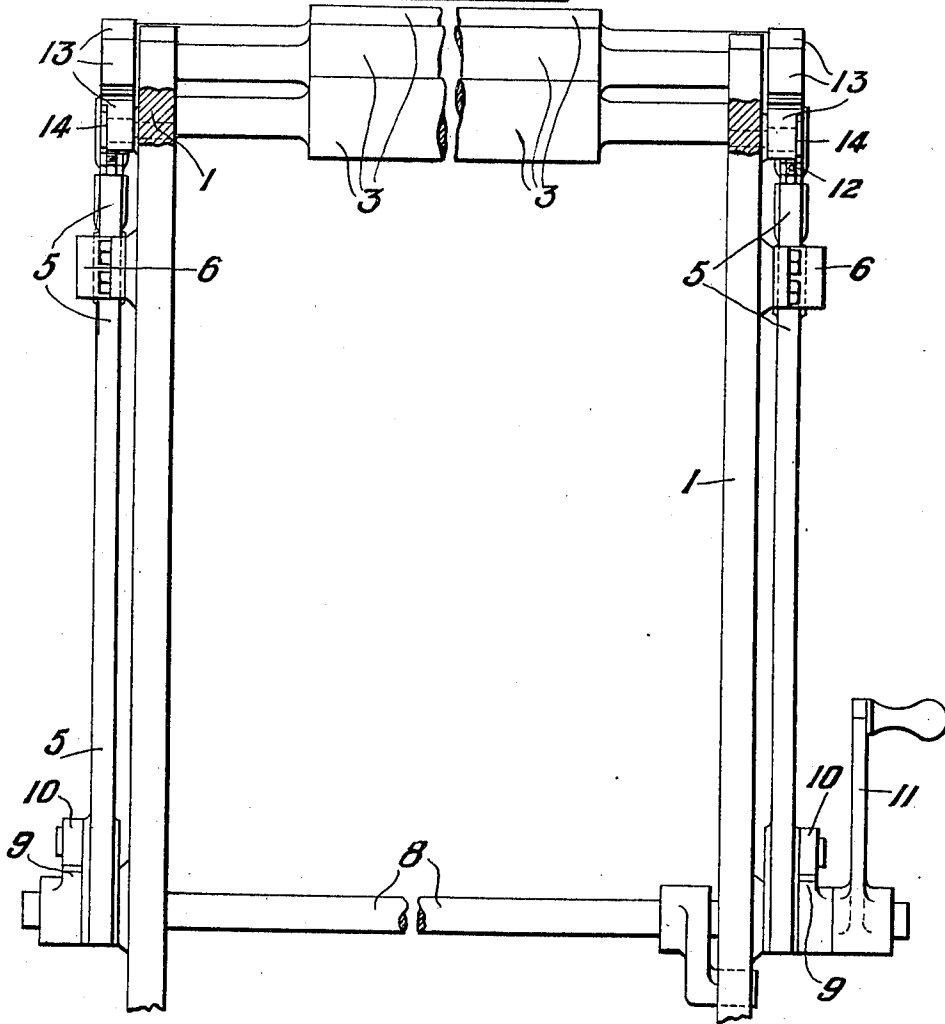
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2 SHEETS—SHEET 2.

FIG. 2.



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UNITED STATES PATENT OFFICE.

FRED WAITE, OF OTLEY, ENGLAND.

ROTARY PRINTING-MACHINE.

970,000.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed June 18, 1910. Serial No. 567,574.

To all whom it may concern:

Be it known that I, FRED WAITE, a subject of the King of Great Britain, residing at Otley, in the county of York, England, have invented certain new and useful Improvements in Rotary Printing-Machines, and of which the following is a specification.

In printing machines of the rotary lithographic type, it is necessary to provide suitable mechanism for raising the inking rollers from the plate or printing cylinder when desired and also for adjusting the pressure with which the said rollers may rest upon the plate or rotary surface to be inked.

The object of this present invention is to provide means whereby the various inking rollers may be readily lifted away from the cylinder and their pressure accurately adjusted from the outside of the machine; and the said arrangements are not only designed to provide these advantages in respect to the rollers which are actually in contact with the cylinder to be inked, but they enable other intermediate rollers to be easily removed and replaced in the machine with the minimum of labor and expenditure of time.

According to my invention I provide a vertically sliding frame at each side of the machine, preferably on the outside of the machine framework, which frames are adapted to be moved up and down by a hand-lever or other suitable means; and on the upper end of each of the side frames vertical adjustment screws or other adjustable stops are provided, the upper ends of which come immediately below or coincide with bearing arms carrying the ends of the rollers required to be lifted and adjusted and these bearing arms are carried on studs attached to the framework of the machine in such a manner that on regulating the position of the said arms by means of the adjustment screws on the side frames the inking rollers are correspondingly moved either up or down. The vertically sliding side frames rest on stops which limit their downward movement, and when in this lowest position the adjustment screws are regulated so as to lower the bearing arms sufficiently to permit the inking rollers to bear with the requisite degree of pressure on the surface to be inked, by which perfect regulation of the supply of ink is secured.

The intermediate inking rollers, which

run in contact with pairs of rollers, are held up to their work by means of half bearings which are thrust forward against the ends of the said rollers by means of springs carried on rear extensions of the said half bearings, and the said rear extensions are made slidable in swivel blocks fulcrumed inside the machine framework; while these swivel blocks are provided with catches or clamps, which on the half bearings being drawn inward toward their rocking centers, hold the said half-bearings in the inward position. On releasing the catches the half bearings are extended to their normal positions or held up to their work by means of the springs; and when it is desired to remove an intermediate inking roller from the machine, the roller is pulled back so as to compress the springs on to the half bearing extensions and cause the catches to hold the said half bearings in the contracted position until the roller has been replaced or another one substituted, when on releasing the catches the bearings return to their normal positions and retain the said inking roller in position.

In order that my invention may be clearly understood, I will proceed to describe the same with reference to the accompanying drawings; wherein:—

Figures 1 and 2 are respectively a side elevation and a front elevation of a portion of a rotary printing machine, showing the mechanism for raising the inking rollers from the printing cylinder and for adjusting the pressure of the said inking rollers upon the said cylinder. Fig. 3 is a side elevation of a portion of the same rotary printing machine, showing the half bearings for carrying the intermediate inking rollers; and Fig. 4 is a front elevation, drawn to an enlarged scale, showing one of the half bearings in engagement with a roller. In the drawings, 1 represents the framework of the machine, 2 is the printing cylinder, 3 the inking rollers adapted to run in contact with the said cylinder, and 4 the intermediate inking rollers.

Referring particularly to Figs. 1 and 2, I provide at each side of the machine framework 1 a side frame 5, which frames 5 are adapted to slide vertically in fixed guides 6 with their lower ends passed over collars 7 formed on a rock shaft 8 carried across the machine. This rock shaft is provided with cams 9 working in conjunction with

runners 10 situated on the side frames 5, and the said rock shaft 8 is fitted with a hand-lever 11 by which the shaft 8 is actuated so as to move the sliding side frames 5 up and down as required; and on the upper end of each of the side frames 5 vertical adjustment screws 12 are provided situated immediately below provided bearing arms 13 which carry the ends of the inking rollers 3 required to be lifted and adjusted. These bearing arms 13 are each independently pivoted to the framework 1 on independent studs 14, so that on regulating the position of the said arms 13 by means of the adjustment screws 12 the inking rollers 3 are correspondingly moved either up or down. The vertically sliding side frames 5 normally rest upon the collars 7 of the rock shaft 8, and when in this lowest position the adjustment screws 12 are regulated so as to lower the bearing arms 13 sufficiently to permit the inking rollers 3 to bear with the requisite degree of pressure on the surface of the cylinder 2 to be inked by which perfect regulation of the ink supply is secured, while by lifting the vertically sliding side frames 5 all the inking rollers 3 are simultaneously lifted away from the cylinder 2.

Referring particularly to Figs. 3 and 4, each of the intermediate inking rollers 4 is held up to its work by two end devices, each consisting of a half bearing 15 which is thrust forward against the ends of the roller by a spring 16 carried on a rear extension 17 made slidable in a swiveling block 18 fulcrumed at 19 inside the machine framework 1, which swivel block 18 is provided with a spring catch 20 adapted, on the bearing 15 being receded, to engage within a notch 21 formed in the extension 17 and hold the said bearing in the inward position. When it is desired to remove an intermediate inking roller 4 from the machine, the said roller is pulled back so as to compress the springs 16 on the half bearings extensions 17 and cause the catches 20 to hold the half bearings 15 in the contracted position until the roller has been replaced or another one substituted, when on releasing the catches 20 the bearings 15 return to their normal positions and retain the inking roller up to its work.

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

1. In a rotary lithographic printing machine; the combination with the machine framework, the printing cylinder and its inking rollers, of bearing arms pivoted to the machine framework and carrying the inking rollers which make contact with the surface of the printing cylinder to be inked, side frames made vertically slidable in the machine framework and being provided with adjustable stops engaging beneath the

pivoted bearing arms of the cylinder contacting inking rollers, hand-operated means on the machine framework adapted to move the side frames up and down and cause the bearing arms to be rocked on their pivots to raise the contact inking rollers away from the printing cylinder when desired, and means for carrying the intermediate inking rollers to allow of their movement in unison with the movement of the cylinder contacting inking rollers.

2. In a rotary lithographic printing machine; the combination with the machine framework, the printing cylinder and its inking rollers, of bearing arms pivoted to the machine framework and carrying the inking rollers which make contact with the surface of the printing cylinder to be inked, side frames made vertically slidable on the machine framework and being provided with screws forming adjustable stops engaging beneath the pivoted bearing arms of the cylinder contacting inking rollers for adjusting their pressure on the printing cylinder, means such as cams operated by a hand-lever adapted to move the side frames up and down and cause the bearing arms to be rocked on their pivots to raise the contact inking rollers away from the printing cylinder when desired, and means for carrying the intermediate inking rollers to allow of their movement in unison with the movement of the cylinder contacting inking rollers.

3. In a rotary lithographic printing machine; the combination with the machine framework, the printing cylinder and its inking rollers, of bearing arms pivoted to the machine framework and carrying the inking rollers which make contact with the surface of the printing cylinder to be inked, side frames made vertically slidable on the machine framework and being provided with vertical adjustment screws forming stops engaging beneath the pivoted bearing arms of the cylinder contacting inking rollers for adjusting the pressure of the said rollers on the surface of the printing cylinder, means actuated by a hand-lever adapted to move the side frames up and down and cause the bearing arms to be rocked on their pivots to raise the contact inking rollers away from the printing cylinder when desired, and means for carrying the intermediate inking rollers to allow of their movement in unison with the movement of the cylinder contacting inking rollers and for enabling the said intermediate inking rollers to be easily removed and replaced in the machine.

4. In a rotary lithographic printing machine; the combination with the machine framework, the printing cylinder and its inking rollers, of mechanism for enabling the inking rollers to be readily lifted away

from the printing cylinder and for accurately adjusting the pressure of the said inking rollers, together with means for removably retaining each intermediate inking
5 roller up to its work comprising two end devices each consisting of a half bearing normally thrust forward by a spring carried on a rear extension made slidable in a
10 swiveling block fulcrumed inside the machine framework, said swivel block being

provided with a catch adapted on the bearing being receded against the spring to engage a notch formed in the extension and hold the bearing in the inward position.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

FRED WAITE.

Witnesses:

JASON SAVILLE,

FREDERIC THOMAS HUNTER.