

W. J. MAIN.
 INKING DEVICE FOR PRINTING MACHINES.
 APPLICATION FILED JAN. 26, 1909.

971,765.

Patented Oct. 4, 1910.

3 SHEETS—SHEET 1.

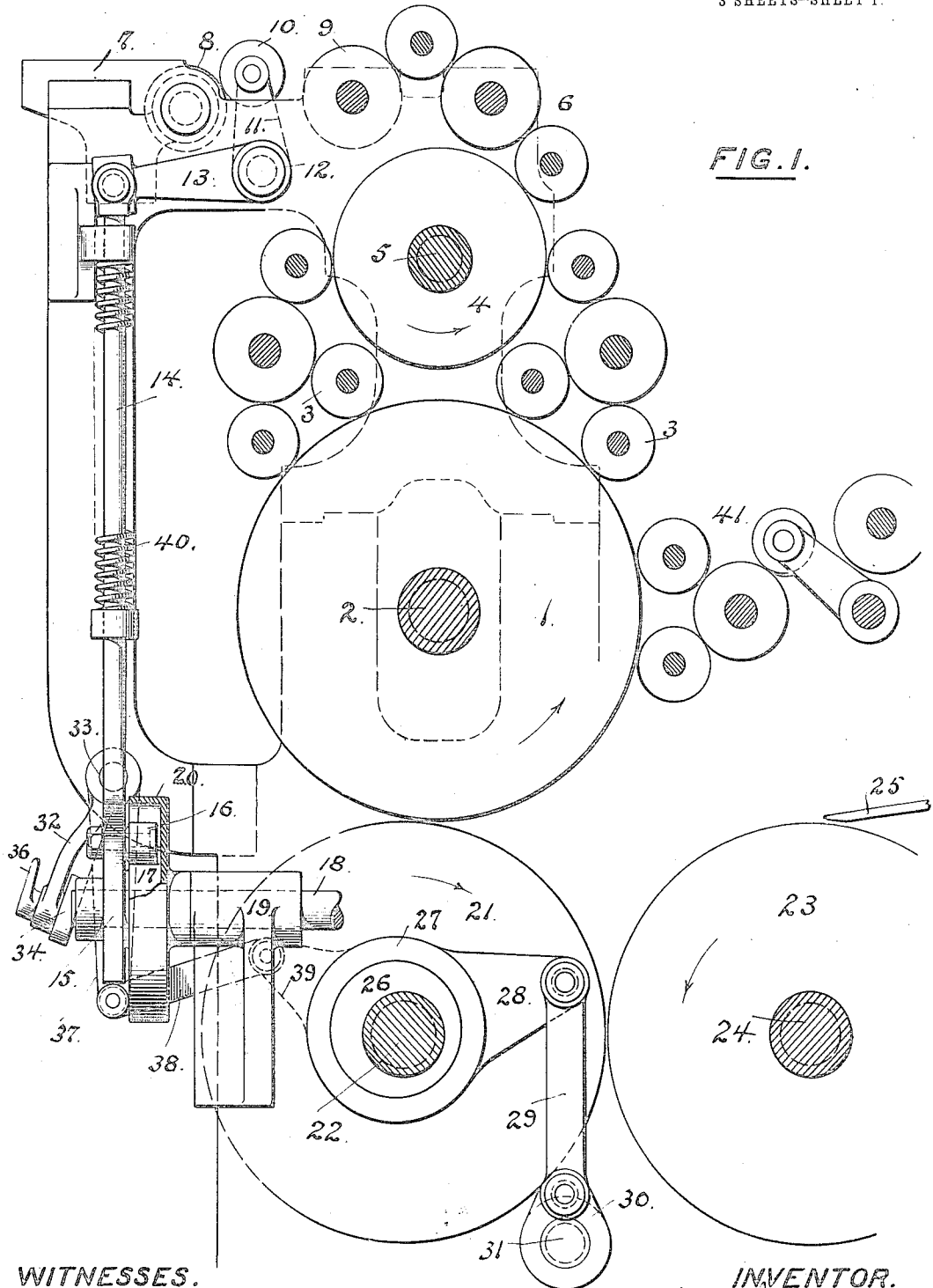


FIG. 1.

WITNESSES.

W. D. Smith.
 A. White

INVENTOR.

William J. Main
 by Philip S. Sawyer & Rose Kennedy
 ATT'YS.

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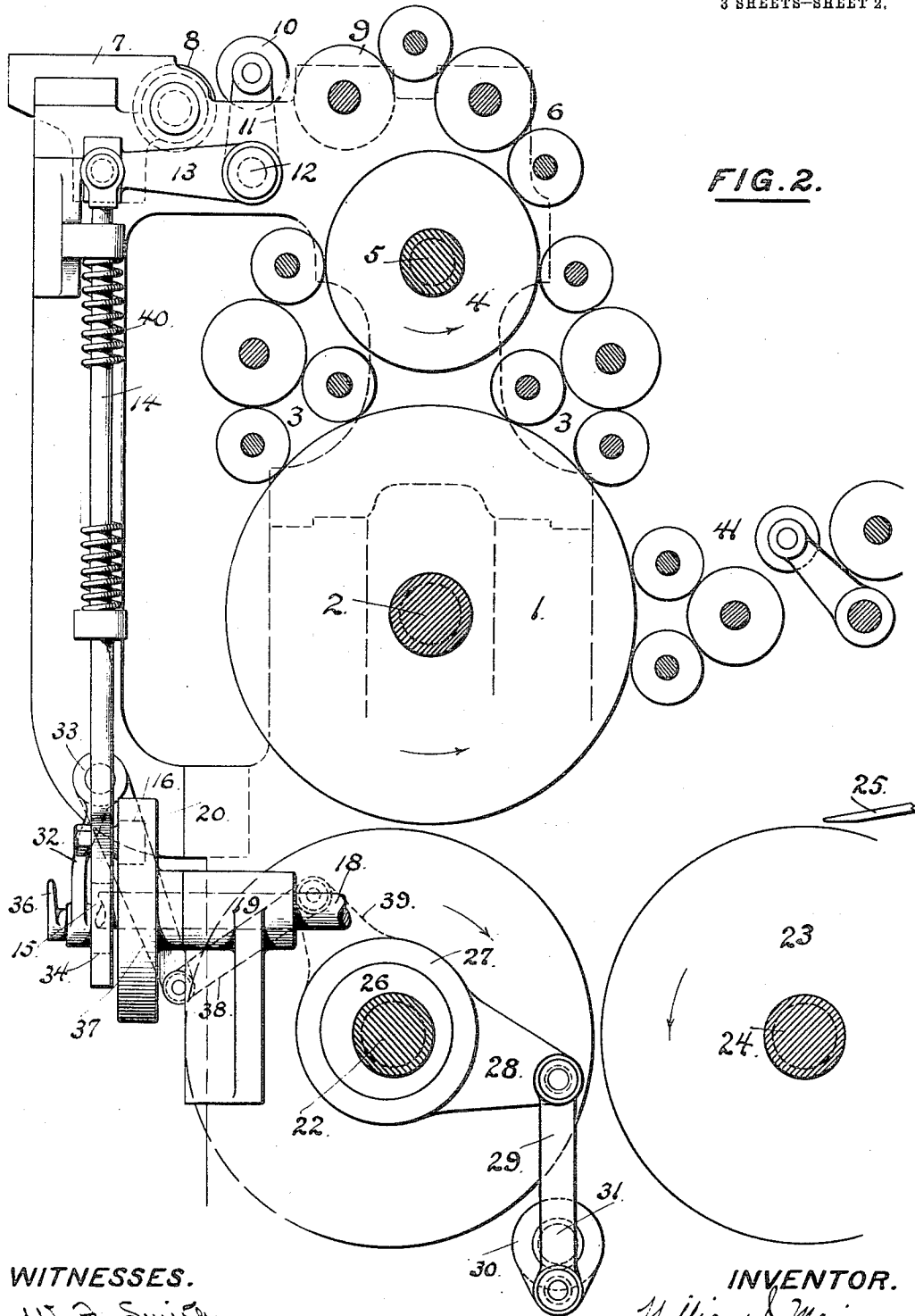


FIG. 2.

WITNESSES.

W. F. Smith
 A. Mente

INVENTOR.

William J. Main
 by Philip P. Sawyer & Rice Kennedy

ATT'YS.

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3 SHEETS—SHEET 3.

FIG. 3.

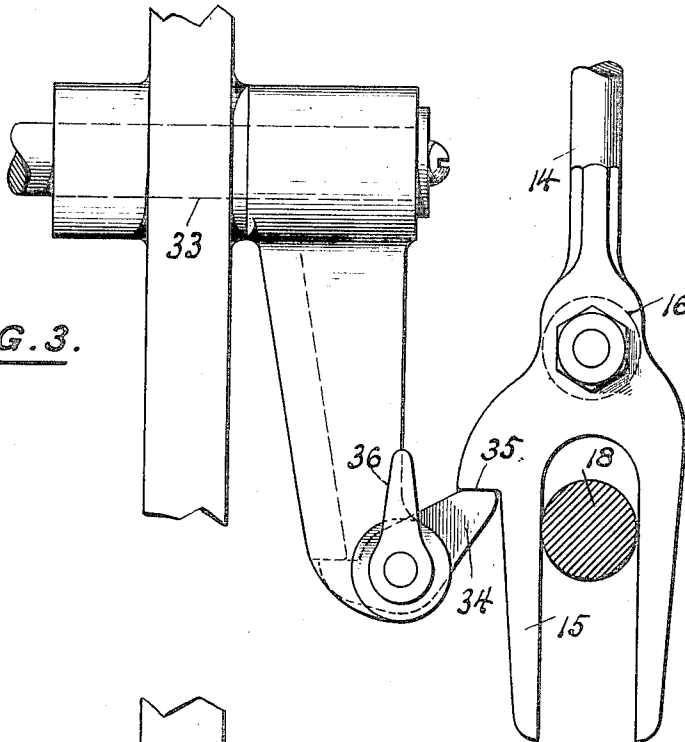
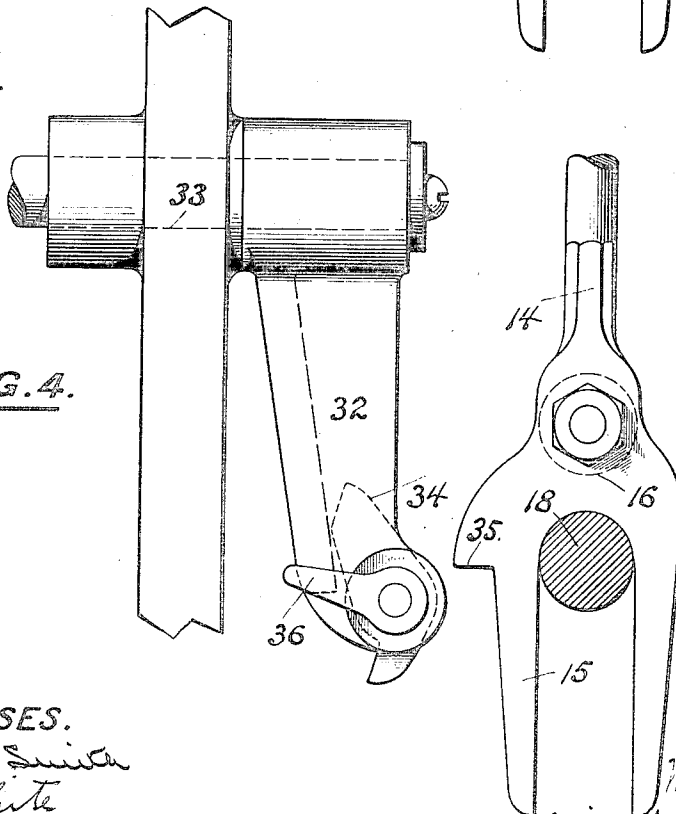


FIG. 4.



WITNESSES.

W. R. Smith
 A. White

INVENTOR.

William J. Main
 by Philip J. Sawyer, R. S. Kennedy
 ATT'YS.

UNITED STATES PATENT OFFICE.

WILLIAM J. MAIN, OF WESTPORT, CONNECTICUT, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO R. HOE AND CO., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

INKING DEVICE FOR PRINTING-MACHINES.

971,765.

Specification of Letters Patent.

Patented Oct. 4, 1910.

Application filed January 26, 1909. Serial No. 474,299.

To all whom it may concern:

Be it known that I, WILLIAM J. MAIN, a citizen of the United States, residing at Westport, county of Fairfield, and State of Connecticut, have invented certain new and useful Improvements in Inking Devices for Printing-Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to certain improvements in inking devices for printing machines.

In certain classes of printing machines, and particularly those in which the printing is effected by providing a design carrying cylinder, such, for instance, as a cylinder having a planographic printing surface which transfers its design to a cooperating printing member, as, for instance, a cylinder, it is customary to provide means for interrupting the printing relation between the design carrying cylinder and the cooperating member, this being usually effected by moving the cooperating printing member out of contact with the design carrying cylinder.

It is the object of this invention to produce an improved printing machine employing a design carrying cylinder which receives its ink from a fountain, and a cooperating printing member which receives the design from the cylinder, the construction being such that the means by which the ink is transferred from the fountain to the design cylinder will be rendered inoperative whenever the printing member is out of printing relation with the design carrying cylinder.

With this and other objects not specifically referred to in view, the invention consists in certain constructions and in certain parts, improvements and combinations as will be hereinafter fully described and then specifically pointed out.

Referring to the accompanying drawings—
Figure 1 illustrates in diagrammatic side elevation one form of printing machine embodying the invention. Fig. 2 illustrates the construction shown in Fig. 1, certain of the parts being illustrated in a different position.
Figs. 3 and 4 are detail views.

Referring to the drawings which illustrate

one embodiment of the invention, 1 indicates a design carrying cylinder mounted on a shaft 2 suitably supported in bearings in the frame of the machine. In the particular machine shown, this cylinder is inked by form rolls 3 which in turn receive ink, through suitable intermediate rolls, from a central distributing roll 4 mounted on a shaft 5. The central distributing roll 4, as shown, receives its ink from a train of rolls 6, the ink for this train of rolls being obtained from a fountain 7 which may be provided with the usual fountain roll 8. Suitable transferring means is employed for transferring the ink from the fountain roll 8 to the first roll 9 of the train 6. This means, in the particular machine illustrated, consists of a ductor roll 10. Suitable operating means will be provided for the ductor roll when this form of transferring means is employed. As shown, the ductor roll is mounted in arms 11 carried on a rock-shaft 12, this shaft being provided with an operating arm 13 having secured thereto a rod 14 provided with a fork 15 at its lower end, this rod also carrying a cam roll 16. The cam roll 16 runs on the surface of a cam 17 mounted on a driven shaft 18, one of the bearings for this shaft being indicated at 19. This shaft 18 may be driven in any suitable way, as, for instance, by a gearing (not shown) deriving its motion from the printing couple of the machine. If desired the cam 17 may be surrounded, as shown, with a box guard, as 20.

While the printing means which cooperates with the design carrying cylinder may be varied, in the particular machine illustrated, it includes a printing cylinder 21 mounted on a shaft 22 and an impression cylinder 2 mounted on a shaft 24, the impression cylinder being shown as receiving its sheets from a feed-board indicated at 25. Means will be provided for interrupting the printing relation between the printing member and the design carrying cylinder, this being effected, in the particular machine shown, by moving the printing cylinder 21 into and out of contact with the design carrying cylinder.

While the means for moving the printing member may be varied and will vary ac-

according to the type employed. in the particular machine shown, the shaft 22 is mounted in an eccentric bearing 26 fast to a sleeve 27 having an operating arm 28 extending therefrom which is connected by a link 29 to a crank arm 30 on a shaft 31 which is rotated when desired by any suitable means, (not shown).

In machines embodying the invention, means will be provided for preventing or permitting the operation of the ink transferring means according as the printing member is out of or in printing relation with the design carrying cylinder. While this means may be varied, in the construction illustrated, there is provided a trip comprising an arm 32 mounted on a short shaft 33 suitably supported in the frame, this arm being provided with a movable toe or block 34 which may be arranged to engage a shoulder 35 formed on the fork 15 of the rod 14. This block, in the particular construction shown, is pivoted in the arm 32 and is provided with an operating handle 36. In the particular construction shown, the shaft 33 is provided with an operating arm 37 connected by a link 38 to an arm 39 fast on the eccentric bushing. With the construction illustrated, when the eccentric bushing is rocked from the position shown in Fig. 1 to the position shown in Fig. 2, by which movement the cylinder 21 is moved out of printing relation with the design carrying cylinder 1, the shaft 33 is, through the connections illustrated, rocked so as to bring the block 34 underneath the shoulder 35 on the forked rod 14. When, therefore, the printing cylinder 21 is moved out of printing relation with the design carrying cylinder 1, the ink supply for the design carrying cylinder is cut off at the fountain.

Under certain circumstances, it may be desirable to permit the inking mechanism to operate notwithstanding the fact that the printing member is out of printing relation with the design carrying cylinder, as, for instance, when it is desired to run the machine for the purpose of inking up. In the best constructions, therefore, means, which may vary in construction, will be provided for effecting this. The construction already described accomplishes this very satisfactorily. By turning the pivoted block 34 from the position shown in Fig. 3 to the position shown in Fig. 4, the rod 14 will be forced, by its spring 40, to follow the cam, notwithstanding the fact that the printing cylinder 21 is out of printing relation with the design carrying cylinder 1.

When the cylinder 1 is provided with a planographic printing surface, the usual damping devices, indicated at 41, will be employed.

Changes and variations may be made in the construction by which the invention is carried into effect. The invention is not, therefore, to be confined to the particular construction herein shown and described.

What is claimed is:—

1. The combination with a design carrying cylinder, of a rotary printing couple co-operating therewith, inking devices for the design carrying cylinder including a fountain and ductor roll, means including a rod and cam for operating the ductor, means for moving the printing cylinder of the couple into and out of contact with the design carrying cylinder, and connections between the cylinder moving means and the rod and operating directly on the rod whereby the rod is caused to be in or out of operative relation with its cam according as the printing cylinder is in or out of contact with the design carrying cylinder.

2. The combination with a design carrying cylinder, of a rotary printing couple, inking devices for the design carrying cylinder including a ductor and fountain, means including a rod and cam for operating the ductor, a trip acting directly on the rod for preventing the rod from being effectively operated by the cam, means for moving the printing cylinder of the couple into and out of contact with the design carrying cylinder, and connections between said moving means and the trip.

3. The combination with a design carrying cylinder, of a rotary printing couple, inking devices for the design carrying cylinder including a ductor and fountain, means including a rod and cam for operating the ductor, a trip for preventing the rod from being effectively operated by the cam, means for moving the printing cylinder of the couple into and out of contact with the design carrying cylinder, connections between said moving means and the trip, and means carried by the trip for rendering the trip inoperative.

4. The combination with a design carrying cylinder, of a rotary printing couple, inking devices for the cylinder including a fountain and ductor, a rod and cam for operating the ductor, a trip including an arm and a movable operating part mounted thereon for holding the rod in inoperative position with respect to the cam, means for moving the printing cylinder of the couple into and out of contact with the design carrying cylinder, and connections between said means and the trip.

5. The combination with a design carrying cylinder, of a rotary printing couple co-operating therewith, inking devices for the design carrying cylinder including a fountain and ductor, a rod and cam for operating

the ductor said rod having a shoulder there-
on, a swinging arm having a movable block
thereon for engaging the shoulder on the
rod, means including an eccentric sleeve for
5 moving the printing cylinder of the couple
into and out of contact with the design car-
rying cylinder, and connections between the
eccentric sleeve and the arm.

In testimony whereof, I have hereunto set
my hand, in the presence of two subscribing 10
witnesses.

WILLIAM J. MAIN.

Witnesses:

F. W. H. CRANE,
LOUIS ROEHM.