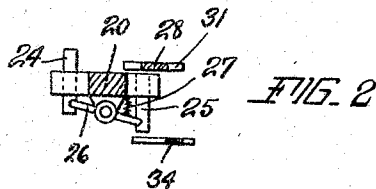
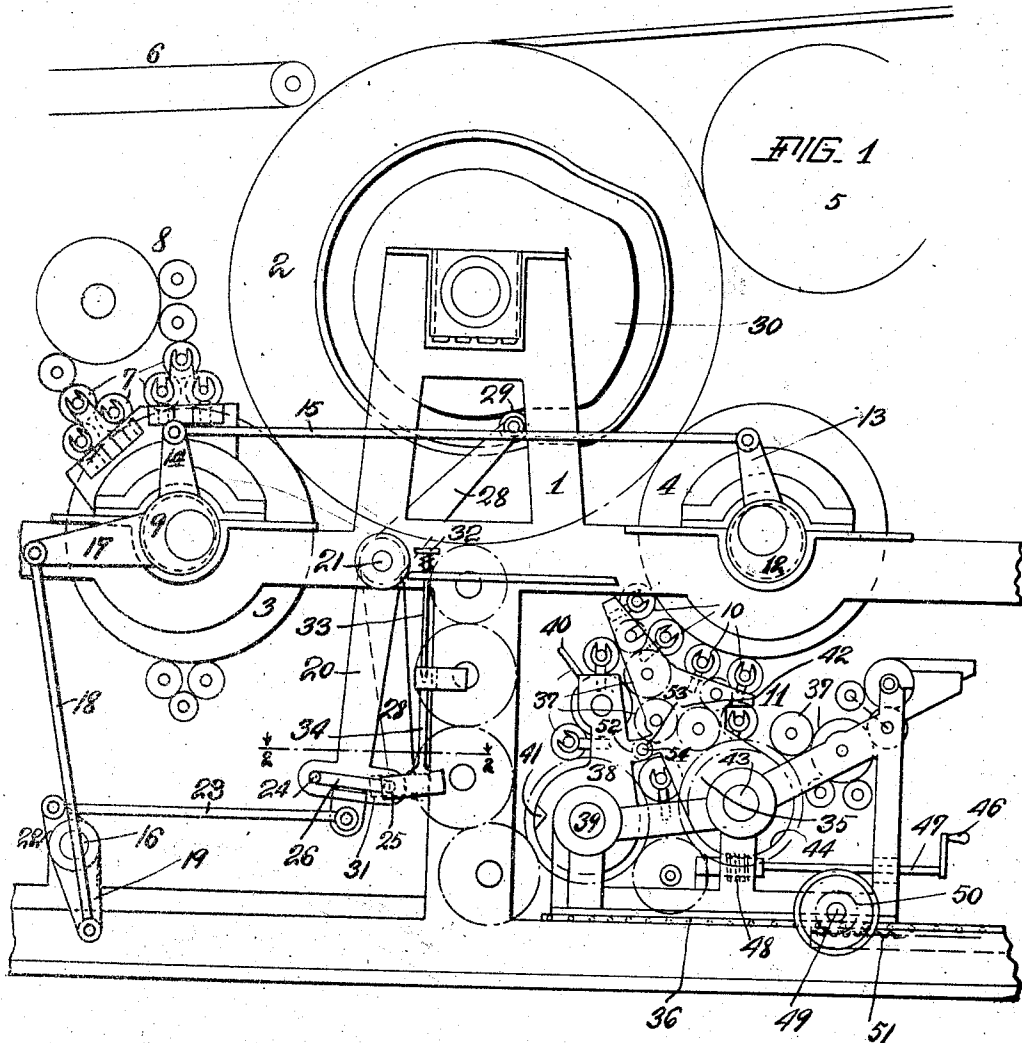


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PRINTING MACHINE.
APPLICATION FILED JUNE 5, 1906.

1,021,897.

Patented Apr. 2, 1912.



Witnesses
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UNITED STATES PATENT OFFICE.

WALTER SCOTT, OF PLAINFIELD, NEW JERSEY; ISABELLA SCOTT AND DAVID JOHN SCOTT EXECUTORS OF SAID WALTER SCOTT, DECEASED.

PRINTING-MACHINE.

1,021,897.

Specification of Letters Patent.

Patented Apr. 2, 1912.

Application filed June 5, 1906. Serial No. 320,240.

To all whom it may concern:

Be it known that I, WALTER SCOTT, a citizen of the United States of America, and a resident of Plainfield, Union county, New Jersey, have invented certain new and useful Improvements in Printing-Machines, of which the following is a specification.

The present invention relates generally to printing machines, and has more particularly reference to improved means for tripping the impression.

In the prior art, when the impression is tripped, which is done either by moving the impression cylinder out of contact with the form cylinder or vice versa, it has been customary to lift the form rolls off the form so as to prevent an accumulation of ink thereon. Usually the inking rolls are located above the form cylinder and therefore lend themselves readily to being lifted. In planographic machines, however, it is sometimes necessary to locate the inking rolls underneath the form cylinder in order that the form may be dampened after each impression and before being inked again. With this construction it has been found extremely difficult to cause the said inking rolls to exert the proper pressure upon the form. The object of the present invention is to obviate this difficulty.

Accordingly the invention consists in the hereinafter described features of construction, combination of parts and arrangement of elements.

In the accompanying drawings the invention is embodied in a preferred and concrete form, but changes of construction may be made without departing from the spirit of the invention.

In the said drawings: Figure 1 is a side elevation of so much of a printing machine as is necessary to the understanding of the improvements, embodying the invention. Fig. 2 is a detail view on section line 2-2 of Fig. 1.

Similar characters of reference indicate corresponding parts in the different views.

1 indicates a framework of a suitable construction for properly mounting the parts.

2 is the impression cylinder, in the present instance making one revolution to each impression.

3 and 4 indicate two form carrying cylinders which in the present instance make a plurality of revolutions to each impres-

sion. The impression cylinder may be provided with an impression surface only, and the sheet may be delivered in the rear of the said impression cylinder by means of the cylinder 5. Or as shown in the application filed by me on the 25th day of May, 1906, Ser. No. 318,615, the impression cylinder may be provided with both an impression and a transfer surface in which case the cylinder 5 would transfer the sheet from one surface to the other, and the sheet would then be delivered in front of the impression cylinder over the tapes 6 leading to a suitable delivery. This is so well understood in the art that it is unnecessary to elaborate on the same.

The form cylinder 3 which is located in front of the impression cylinder has superposed the form rolls 7 forming a part of the inking apparatus 8. The said form cylinder is further mounted in bearings 9, which are shown here as eccentric bushings, permitting a movement of the said cylinder outwardly and downwardly out of contact with the impression cylinder and form rolls or inking apparatus.

The form cylinder 4 which is located in the rear of the impression cylinder is provided with the form rolls 10, forming part of the inking apparatus 11, and located underneath the said form carrying cylinder and extending in an upwardly direction from the under side thereof. This form cylinder is mounted in bearings 12, which are shown here as eccentric bushings, permitting a movement of the said cylinder outwardly and upwardly out of contact with the impression cylinder and form rolls or inking apparatus. By this means the necessity for lifting the form rolls is obviated.

Any suitable means may of course be used for tripping and untripping the said form cylinders, but preferably there is associated with the tripping means an actuating device, which may either be set in motion by an automatic feeding machine, if such is used, when a sheet is missed in feeding, or, as shown in the present instance, the actuating device is under the control of the operator.

The detailed construction of these parts is as follows: The arm 13 of the cylinder 4 is connected to the arm 14 of the cylinder 3 by means of the rod 15. 16 is a rock shaft connected to the arm 17 of the cylinder 3

by means of rod 18 and lever 19. 20 indicates a lever pivoted on the stud 21 and connected to the rock shaft 16 by means of the arm 22 and link 23. At its lower end, this lever 20 carries two sliding pins 24 and 25 interlocked with each other by means of the centrally pivoted lever 26. By means of the spring 27, the pin 24 normally protrudes from its sleeve. Mounted independently on the stud 21 is the lever 28, one end of which is provided with the roller 29 engaging with the cam 30 making one revolution to each impression, and the other end of which is provided with a shoe 31 adapted to engage whichever of the two pins 24 and 25 is in its path. As previously stated, the pin 24 normally protrudes, and the shoe 31 engaging therewith, the parts, if tripped, will be moved into the position shown in Fig. 1, that is in their untripped position. The parts will then remain in this position while the lever 28 moves idly back and forth. If, however, the pin 25 is now caused to protrude, the lever 28 will move the parts into their tripped position by reason of the shoe 31 engaging with the said pin 25. It will therefore be seen that the tripping means are normally inoperative.

The actuating device in the present instance takes the following form: Connected to the foot treadle 32 there is a rod 33 engaging with one end of the bell crank 34. The other end of the said bell crank engages with the pin 25 so that when the foot treadle is depressed the said pin 25 is caused to protrude. Preferably the inking apparatus 11 is mounted in a movable carriage 35 sliding on the rollers 36. In order to withdraw the carriage from the form carrying cylinder it is necessary to slide it under the same. As the form rolls extend upwardly from the under side of the said cylinder, it is necessary to collapse the said form rolls and also the distributing rolls 37. In order to effect this there is loosely pivoted a bracket 38 on the shaft 39 in which bracket are mounted some of the distributing rolls. This bracket is provided with a handle 40 by means of which the said bracket can be swung downward until the stop 41 is encountered. 42 indicates a second bracket mounted loosely on the shaft 43 and provided with the worm wheel 44. On this bracket are mounted the form rolls 10 and the distributing rolls 37. After the bracket 38 has been moved down, the bracket 42 may likewise be lowered by turning the hand wheel 46 attached to the shaft 47 which carries the worm 48 engaging with the worm wheel 44. The carriage 35 can now be withdrawn by rotating the shaft 49 carrying the pinion 50 engaging with the stationary rack 51. Suitable means as the ears 52 having apertures 53 through which the pin 54 extends are preferably

provided for locking the two brackets together when in their uppermost position. The worm and worm wheel will act as a locking device, but if desired additional means can be used for locking the second bracket 42 to the framework. It is to be understood that the two form cylinders may be tripped one after the other instead of simultaneously, should that be necessary by reason of the distance apart of the form cylinder or otherwise.

What is claimed is:

1. In a printing machine, the combination with two cylinders, one of which is a form carrying cylinder, and form rolls located underneath the form carrying cylinder, of means for imparting a combined upward and outward movement to the form carrying cylinder, thereby moving the said form carrying cylinder out of engagement with the other cylinder and with the form rolls, the said means being normally inoperative, and devices for causing said means to be automatically operated.

2. In a printing machine, the combination with an impression cylinder, a form carrying cylinder, form rolls superposed above the same, a second form carrying cylinder, form rolls underneath the second form carrying cylinder, and means for moving each form carrying cylinder out of engagement with the impression cylinder and its form rolls, one cylinder moving downwardly and outwardly and the other moving upwardly and outwardly.

3. In a printing machine, the combination with an impression cylinder, a form carrying cylinder, an inking apparatus superposed above the same, a second form carrying cylinder, an inking apparatus underneath the said second form cylinder, and means for moving each form carrying cylinder out of engagement with the impression cylinder and its inking apparatus, one cylinder moving downwardly and outwardly and the other cylinder moving upwardly and outwardly.

4. In a printing machine, the combination with a form carrying cylinder, of an inking apparatus having form and distributing rolls extending circumferentially and upwardly on the underside of said form carrying cylinder, two collapsible brackets carrying the form and distributing rolls adapted to be separately lowered, and a movable carriage supporting the inking apparatus whereby the inking apparatus can be withdrawn from underneath the form carrying cylinder when the brackets are collapsed.

5. In a printing machine, the combination with an impression cylinder, of a form carrying cylinder located in front of the impression cylinder, form rolls superposed above the same, bearings for the said form carrying cylinder permitting it to move

downwardly and outwardly away from the form rolls and impression cylinder, a second form cylinder located rearwardly of the impression cylinder, form rolls located underneath the said second form cylinder, bearings for the said second form cylinder, permitting it to move upwardly and outwardly away from the form rolls and impression cylinder, and tripping means for effecting the movement of the said form cylinders.

6. In a printing machine, the combination with an impression cylinder, of a form carrying cylinder located in front of the impression cylinder, form rolls superposed above the same, bearings for the said form carrying cylinder permitting it to move downwardly and outwardly away from the form rolls and impression cylinder, a second form cylinder located rearwardly of the impression cylinder, form rolls located underneath the said second form cylinder, bearings for the said second form cylinder permitting it to move upwardly and outwardly away from the form rolls and impression cylinder, and tripping means for effecting the movement of the said form cylinders, normally inoperative, and an actuating device for rendering the tripping means operative.

7. In a printing machine, the combination with an impression cylinder, of a form carrying cylinder located in front of the impression cylinder, inking apparatus superposed above the same, bearings for the said form carrying cylinder permitting it to move downwardly and outwardly away from

the inking apparatus and impression cylinder, a second form cylinder located rearwardly of the impression cylinder, inking apparatus located underneath the said second form cylinder, bearings for the said second form cylinder, permitting it to move upwardly and outwardly away from the inking apparatus and impression cylinder, and tripping means for effecting the movement of the said form cylinders.

8. In a printing machine, the combination with an impression cylinder, of a form carrying cylinder located in front of the impression cylinder, inking apparatus superposed above the same, bearings for the said form carrying cylinder permitting it to move downwardly and outwardly away from the inking apparatus and impression cylinder, a second form cylinder located rearwardly of the impression cylinder, inking apparatus located underneath the said second form cylinder, bearings for the said second form cylinder permitting it to move upwardly and outwardly away from the inking apparatus and impression cylinder, and tripping means for effecting the movement of the said form cylinders, normally inoperative, and an actuating device for rendering the tripping means operative.

Signed at New York city this 31 day of May 1906.

WALTER SCOTT.

Witnesses:

GEO. A. MARSHALL,
AXEL V. BEEKEN.