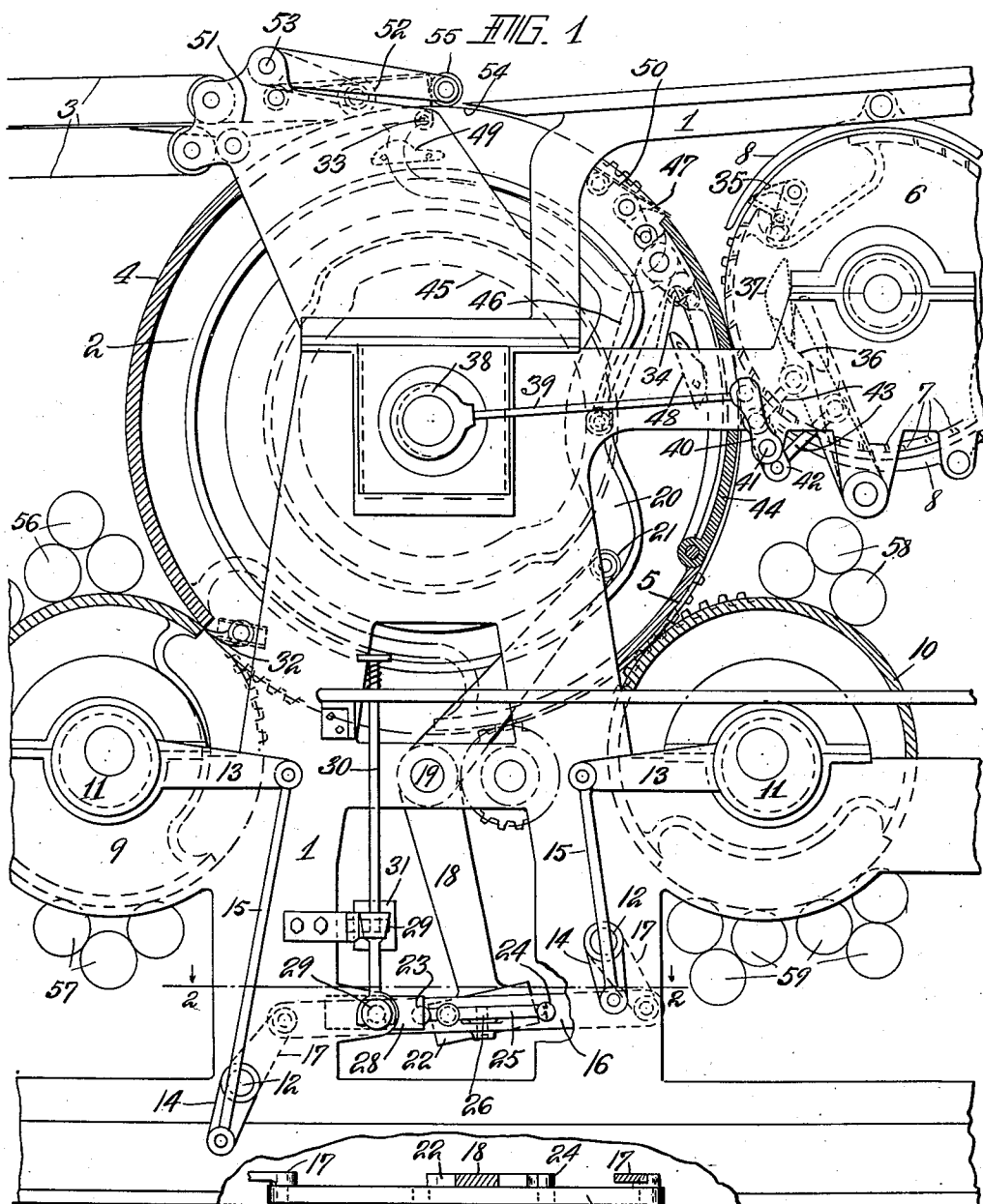


W. SCOTT, DEC'D.
I. & D. J. SCOTT, EXECUTORS.
PRINTING MACHINE.
APPLICATION FILED MAY 10, 1906.

1,060,949.

Patented May 6, 1913.

2 SHEETS-SHEET 1.



Witnesses
Frank Henningsberg
John H. Lightner

FIG. 2

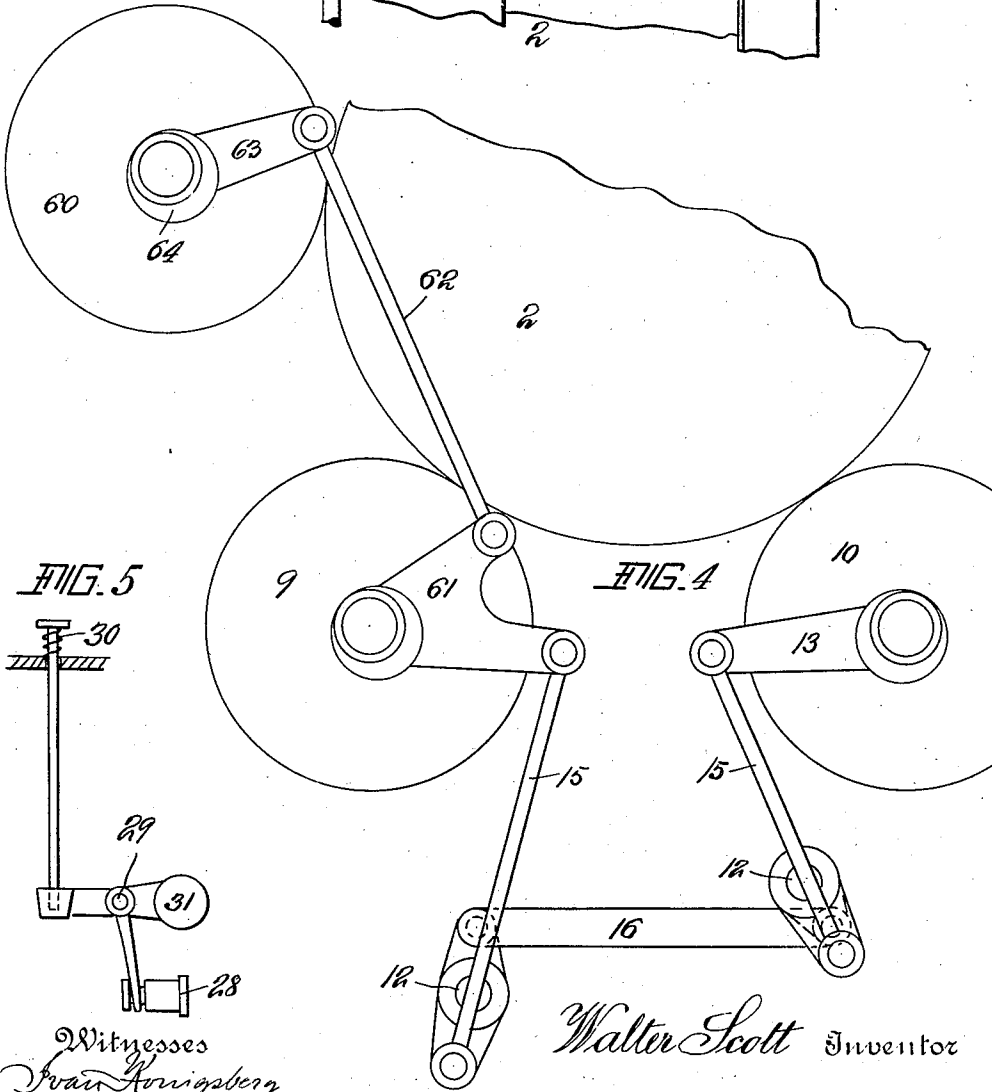
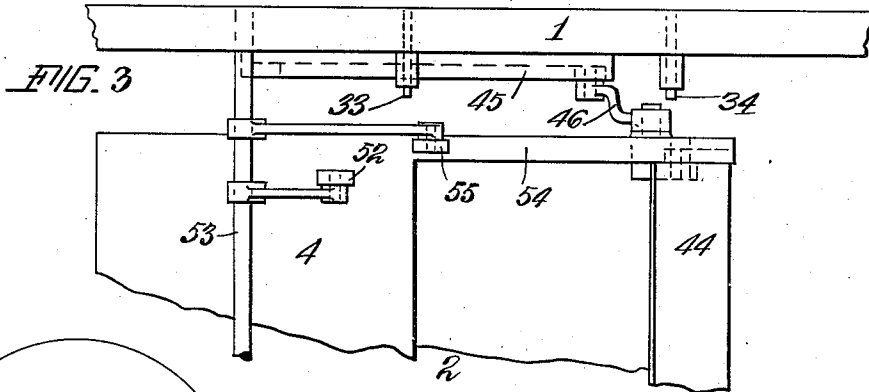
Inventor
Walter Scott
By his Attorney
A. M. Becken

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Witnesses
Frank H. Haysberg
John Haysberg

Walter Scott Inventor
By his Attorney
Alex. M. Decker

UNITED STATES PATENT OFFICE.

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

PRINTING-MACHINE.

1,060,949.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed May 10, 1906. Serial No. 318,058.

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 a one-revolution planographic printing machine.

The main object of the invention is to provide suitable tripping mechanism in connection with a machine of this character, and especially in one in which the form cylinder or cylinders make a number of revolutions to each impression, and wherein the impression cylinder makes but one revolution to each impression and delivers the sheet in front with the printed side up.

Accordingly the invention consists in the features of construction, combination of parts and arrangement of elements as will be more fully hereinafter disclosed.

Other improvements will appear as the specification proceeds.

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

In the said drawings: Figure 1 is a side elevation, partly in section, embodying the invention, of so much of a printing machine as is necessary to the understanding of the invention. Fig. 2 is a detail view in section on the line 2—2 of Fig. 1. Fig. 3 is a plan view of one end of the impression cylinder and adjacent elements. Fig. 4 shows diagrammatically a modification of the arrangement disclosed in Fig. 1. Fig. 5 is a detail view of the actuating device.

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

1 indicates a framework of any suitable construction for properly mounting the parts comprising the machine. 2 is the impression cylinder, which preferably makes, and in the present instance does make, one revolution to each impression. In front of the impression cylinder is located the delivery mechanism indicated by the tapes 3, which latter may lead to any suitable delivery, preferably the well-known printed side up drop delivery.

In order to deliver the sheet in front of a one-revolution impression cylinder with the printed side up, it is desirable to provide the said cylinder with an impression surface and a transfer surface. These are indicated respectively by 4 and 5. Furthermore means, as the transfer cylinder 6 making two revolutions to each impression, are provided for transferring the sheet from one surface to the other. In the present instance the sheet is taken from the impression surface to the transfer surface. The transfer cylinder, in the present instance, is similar to one disclosed in an application filed Jan. 25 1904, Ser. No. 190630 and is provided with the perforations 7 for keeping the body of the sheet up against the circumferential guide 8 and away from the cylinder so as not to smudge the freshly printed sheet.

In the form here disclosed, there are provided preferably a plurality of form members, in the present instance the form cylinders 9 and 10. These make two revolutions to each impression and are therefore inked twice to each impression. It will be understood that some provision must be made to prevent these cylinders from placing the ink on the transfer surface. Instead of tripping these form cylinders automatically once to each impression, as would have to be done in order to prevent the said transfer of ink, I prefer to have the said transfer surface below the level of the pitch circumference of the impression cylinder, as shown, thereby avoiding the necessity of automatically tripping the form cylinders. In order to prevent the said form cylinders from placing the ink on the impression surface when a sheet is missed in feeding, &c., tripping means are provided for tripping both form cylinders, preferably simultaneously during the same cycle of the machine. These means are normally inoperative and are under the control of an actuating device which may be either connected to the automatic feeding machine, if such is used, or, as shown in the present instance, under the control of the operator by means of a foot treadle. These means will preferably take the following form: The cylinders 9 and 10 are mounted in eccentric bushings 11 connected to the rock shafts 12 by means of the arms 13 and 14 and rods 15. A suitable connection as 16 and arms 17 connect the two rock shafts so that they can be moved in unison. 18 indi-

cates a pendulum lever pivoted at 19 and operated once to each impression by means of the cam 20 moving with the impression cylinder, and friction roll 21. On the lower end of the lever 18 is the shoe 22. Mounted slidingly in the connection 16 are the two pins 23 and 24 interconnected by means of the swinging lever 25 pivoted at 26. A spring 27 is provided so that the pin 24 will normally protrude into the path of the shoe 22. During the normal operation of the machine, the shoe having engaged the pin 24 to move the form cylinders into the untripped position, the pendulum lever will move idly back and forth. Mounted slidingly in the framework is the member 28 connected to the stud 29 and foot treadle 30. This member is normally held outward by means of the counterweight 31 or by similar means. When, however, it is desired to trip the form cylinders, the foot treadle will be depressed and the member 28 will engage with the pin 23 and move the latter outward into the path of the shoe 22 which thereupon will engage the said pin 23 and move the form cylinders into their tripped position. When the foot treadle is released, the spring 27 will withdraw the pin 23 and move the pin 24 outward. The shoe 22 will then untrip the cylinders again.

The impression surface of the impression cylinder is provided with the tumbler grippers 32 adapted to be operated by the pins 33 and 34 stationary on the framework so as to close the said grippers to take a sheet at the feeding point, and open the same to release the sheet when it comes opposite the transfer cylinder. The transfer cylinder is provided with the spring seated grippers 35 opened alternately by the pivoted cams 36 and 37 moved into and out of the path of the said grippers by means of the eccentric 38, rod 39, link 40 to stud 41, lever 42 and rods 43.

In order to transfer the sheet properly from the transfer cylinder to the transfer surface, on account of the air pressure coming from within the transfer cylinder, it is desirable to provide a hinged portion 44 on the transfer surface, adapted to be moved outwardly so as to contact with the transfer cylinder by means of the cam 45 stationary on the framework, and lever 46. This cam, however, is so timed that the said hinged portion will be below the pitch circumference of the impression cylinder when it moves past the form cylinders.

The transfer surface is provided with the spring seated grippers 47 operated by the cams 48 and 49 to receive the sheet from the transfer cylinder and to release it so that the throw-offs 50 may place the sheet on the guides 51 of the delivery. In order to facilitate the delivery of the sheet, there are provided the friction rolls 52 which run in

the margin of the sheet and are mounted on the pivot 53 and operated by means of the cam 54 on the impression cylinder and by means of the friction roll 55. The cam 45 is furthermore so timed that the pivoted portion of the transfer surface of the impression cylinder is held outward while the sheet is being delivered, so that the friction rolls 52 may properly cooperate therewith.

In the present instance where a multicolor planographic machine is shown, the form cylinders will preferably be located one forwardly of the vertical center line of the impression cylinder with the ink rolls 56 superposed above the same and with the water rolls 57 located below the form cylinder, while the other form cylinder is positioned rearwardly of the vertical center line of the impression cylinder with the water rolls 58 superposed above the form cylinder and with the inking rolls 59 located below the said form cylinder.

In Fig. 4 is shown a modification in which a third form cylinder 60 is employed. In order to trip this third form cylinder with the other cylinders an arm 61 is provided on the cylinder 9 connected by means of the rod 62 with the arm 63 of the eccentric bushing 64, or any other suitable means may be used for this purpose.

What is claimed is:

1. In a printing machine, an impression cylinder having a relatively stationary impression surface and a relatively movable transfer surface, a transfer cylinder cooperating with the impression cylinder, and means for bringing the movable transfer surface of the impression cylinder into operative relation to the transfer cylinder.

2. In a printing machine, the combination with an impression cylinder making one revolution to each impression, an impression surface on the said impression cylinder, a transfer surface on the said impression cylinder but below the level of the pitch circumference of the cylinder, a form member, a transfer cylinder for transferring the sheet from one surface to the other on the impression cylinder, and a movable portion on the transfer surface adapted to be below the level of the pitch circumference of the impression cylinder when it moves past the form member, and adapted to be moved outward into contact with the transfer cylinder when it moves past the said transfer cylinder.

3. In a printing machine, the combination with an impression cylinder making one revolution to each impression, an impression surface on the said cylinder, a transfer surface also on the said cylinder but below the level of the pitch circumference of the cylinder, a transfer cylinder for transferring the sheet from the impression surface to the

transfer surface, and a hinged portion on the transfer surface adapted to be below the level of the pitch circumference of the impression cylinder when it moves past the form member, and adapted to be moved out so as to coact with the transfer cylinder when it moves past the said transfer cylinder.

4. In a printing machine, the combination with an impression cylinder making one revolution to each impression, an impression surface on the said impression cylinder, a transfer surface also on the said impression cylinder but below the level of the pitch circumference of the said cylinder, a form member, a transfer cylinder for transferring the sheet from one surface to the other on the impression cylinder, a hinged portion on the transfer surface adapted to be below the level of the pitch circumference of the impression cylinder when it moves past the form member, and adapted to be moved outward so as to coact with the transfer cylinder when it moves past the said transfer cylinder, and means for tripping the impression.

5. In a printing machine, the combination with an impression cylinder making one revolution to each impression, an impression surface on the said cylinder, a transfer surface also on the said cylinder but below the level of the pitch circumference of the cylinder, a transfer cylinder for transferring the sheet from the impression surface to the transfer surface, a hinged portion on the transfer surface adapted to be below the level of the pitch circumference of the impression cylinder when it moves past the form member, and adapted to be moved out into contact with the transfer cylinder when it moves past the said transfer cylinder, and means for tripping the impression.

6. In a printing machine, the combination with an impression cylinder making one revolution to each impression, a delivery mechanism located in front of the impression cylinder, an impression surface on the impression cylinder, a transfer surface, on the impression cylinder, below the level of the pitch circumference of the said cylinder, a transfer cylinder for transferring the sheet from the impression surface to the transfer surface, friction rolls for assisting in transferring the sheet from the transfer surface to the delivery mechanism, a form member adapted to contact with the impression surface but not with the transfer surface, a movable portion on the transfer surface adapted to be below the level of the pitch circumference when moving past the

form member, and adapted to be moved out so as to be in contact with the transfer cylinder and with the friction rolls when it moves past the said cylinder and friction rolls.

7. An impression cylinder having a relatively stationary impression surface and a relatively movable transfer surface.

8. In combination, an impression cylinder and a cylinder cooperating therewith, the said impression cylinder having a hinged portion forming a part of the surface of the cylinder, normally lying below the pitch circumference of the impression cylinder, and automatic means for carrying such hinged portion at the time of passing the other cylinder, out into line with the pitch circumference of the impression cylinder so as to cooperate with the surface of the said other cylinder.

9. In a printing machine, the combination with an impression cylinder provided with an impression surface and with a movable transfer surface, a form member arranged to cooperate with the impression surface of the impression cylinder, a transfer cylinder for transferring the sheet on the impression cylinder from one surface to the other, and means for lowering the movable transfer surface below the pitch circumference of the impression cylinder when moving past the form cylinder and for carrying such movable surface outward to cooperate with the transfer cylinder when moving past the said transfer cylinder.

10. In a printing machine, the combination with an impression cylinder making one revolution to each impression, a delivery mechanism located in front of the impression cylinder, an impression surface on the impression cylinder, a movable transfer surface on the impression cylinder, a form cylinder arranged to cooperate with the impression surface, a transfer cylinder for transferring the sheet on the impression cylinder from one surface to the other, and means for lowering the movable transfer surface below the pitch circumference of the impression cylinder when moving past the form cylinder and for moving the transfer surface outward to cooperate with the transfer cylinder when moving past said transfer cylinder.

Signed at New York city this 2d day of May 1906.

WALTER SCOTT.

Witnesses:

MYRON SULZBERGER,
AXEL V. BECKEN.