

(No Model.)

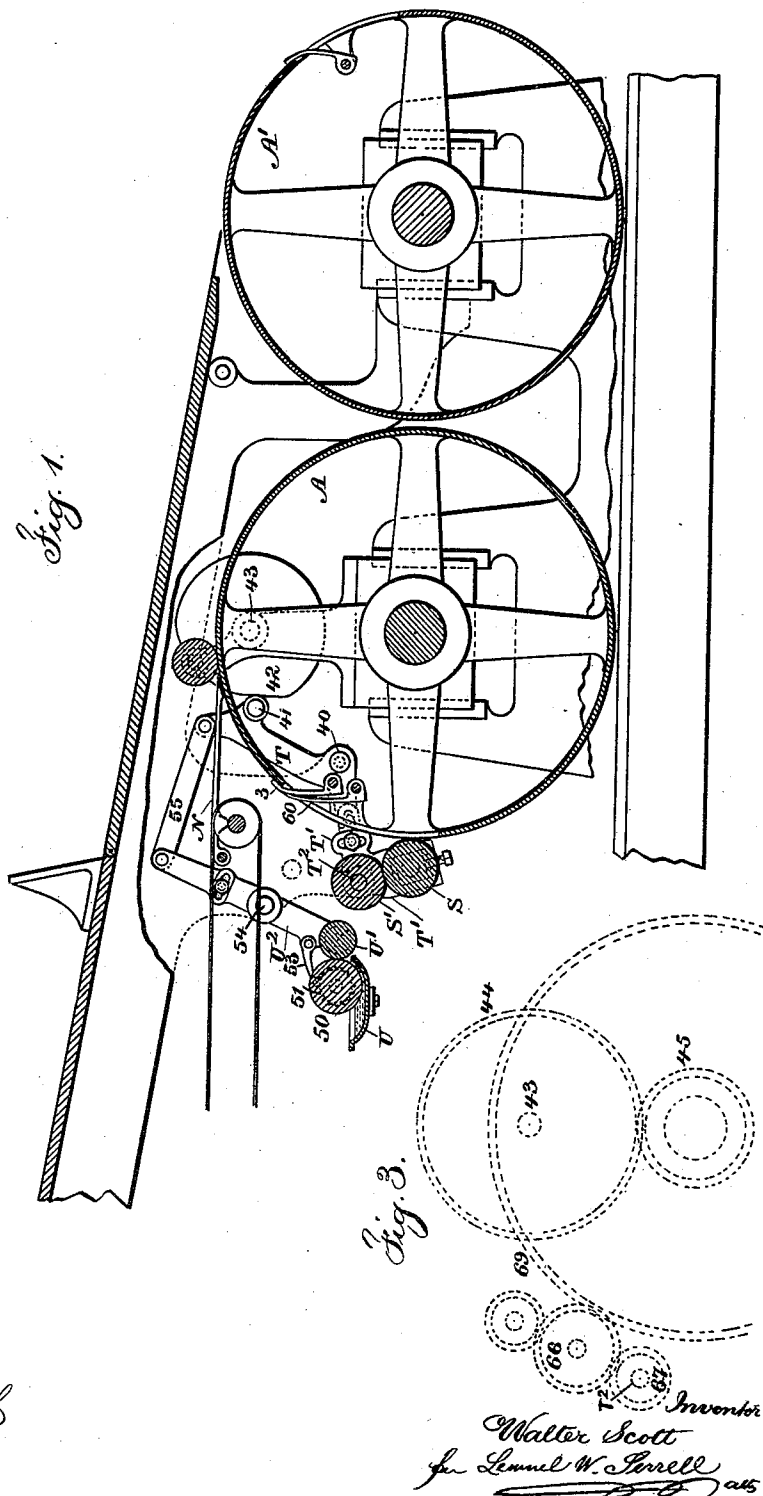
2 Sheets—Sheet 1.

W. SCOTT.

OFFSET MECHANISM FOR PRINTING PRESSES.

No. 463,844.

Patented Nov. 24, 1891.



Witnesses
Chas. N. Smith
J. Strait

Inventor
Walter Scott
per Lemuel W. Torrell atty

(No Model.)

2 Sheets—Sheet 2.

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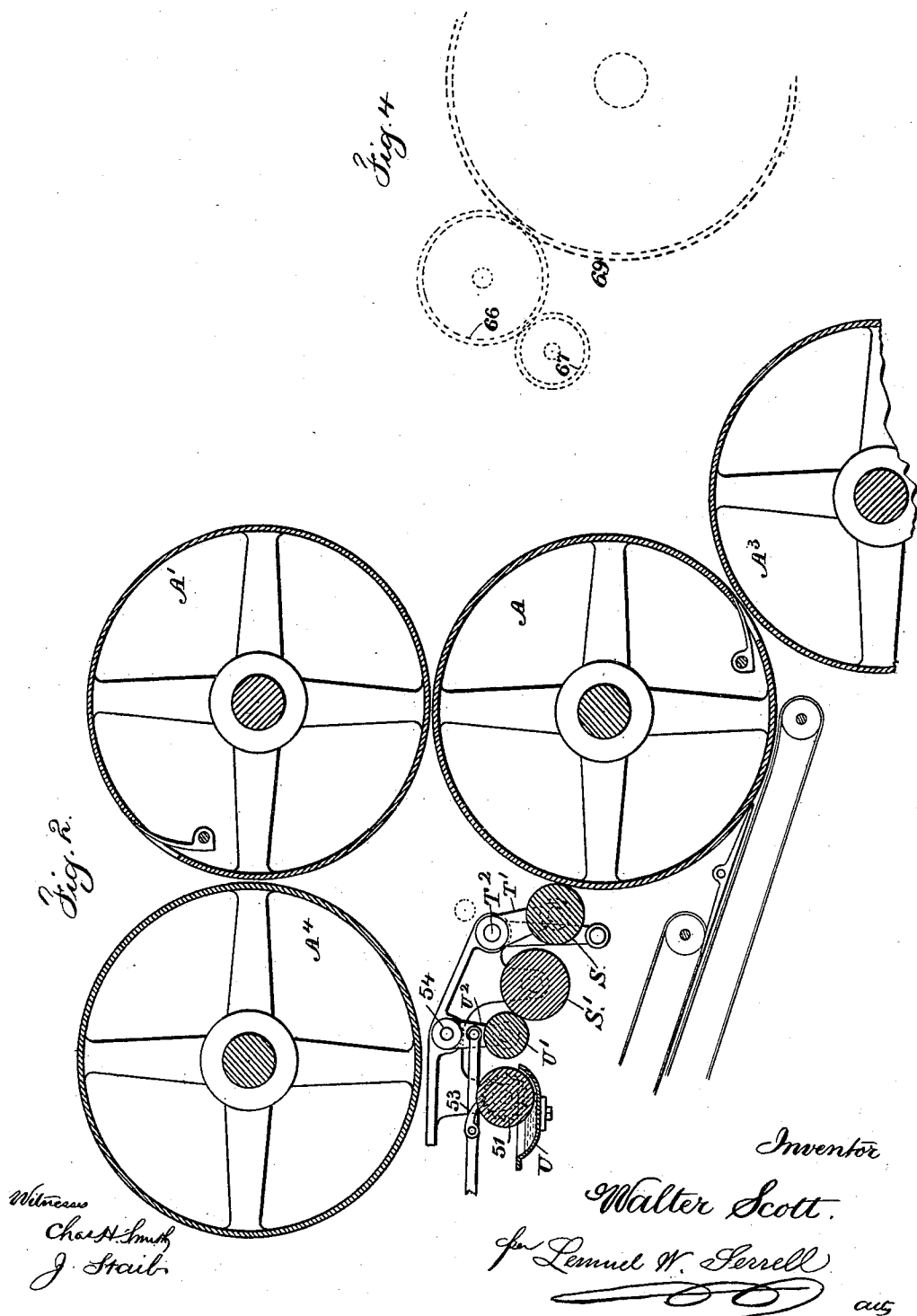


Fig. 4

Inventor

Walter Scott.

for Lemuel W. Ferrell

all,

UNITED STATES PATENT OFFICE.

WALTER SCOTT, OF PLAINFIELD, NEW JERSEY.

OFFSET MECHANISM FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 463,844, dated November 24, 1891.

Original application filed March 6, 1890, Serial No. 342,902. Divided and this application filed November 3, 1890. Serial No. 370,123. (No model.)

To all whom it may concern:

Be it known that I, WALTER SCOTT, a citizen of the United States, residing at Plainfield, in the county of Union and State of New Jersey, have invented an Improvement in Offset Mechanism for Printing-Presses, of which the following is a specification.

My invention relates to the employment of devices upon web-printing presses or such presses in which both sides of a sheet or web are printed one after the other whereby an offset or transfer of the ink from the first impression is prevented by the application of an oily substance to the surface of the second impression-cylinder.

In the drawings, Figure 1 is a diagrammatic section showing the impression-cylinders in connection with the oiling-rolls. Fig. 2 is a similar view showing the parts of a web-press. Figs. 3 and 4 are diagrams illustrating the gearing.

The paper is supplied to the first impression-cylinder A' by any suitable means. It may be from a web or separate sheets, and it receives its first impression and then is reversed in passing to the second impression-cylinder A. When the paper is supplied in sheets to a reciprocating-bed printing-press, it preferably is passed in at the upper part of the cylinder A', Fig. 1, and discharged upon the bridge-bars N and tapes at the upper part of the cylinder A. If the present invention is applied to a rotary press, the sheets are fed to the first impression-cylinder A', Fig. 2, and pass down between that and the plate or printing-cylinder A², and thence around the second impression-cylinder A and in contact with the plate or printing-cylinder A³, and thence pass away below the oiling apparatus.

The arrangement of the apparatus shown in Fig. 1 will be first described: The roll S is adapted to be brought into contact with the cylinder A and the roll S' is adjacent to and in contact with the roll S, and these rolls S S' are between levers T' upon the shaft T² of the roll S', which shaft forms the fulcrum, and one of the levers T' is acted upon by the lever T, that has its fulcrum 40 upon the frame of the machine, and there is a roller 41 upon the lever T adjacent to the cam 42, that is upon the shaft or gudgeon 43, and receives

its motion from the gear-wheel 44, driven by the pinion 45 upon the shaft of the impression-cylinder A, so that this lever T is rocked by the cam 42, and this cam 42 makes one revolution for two revolutions of the cylinder A. Hence the oiling or set-off roll S is brought into contact with the surface of the cylinder A as the sheet of paper is carried off upon the bridge-bars N, and the roll S is swung back out of contact with the cylinder A at the time the grippers 3 carry the sheet over such cylinder A and pass down for the sheet to receive the second impression.

There is a trough U of suitable size for holding oil and in which is a roller 50, having upon its end a ratchet-wheel 51, (see dotted lines, Fig. 1,) and the ductor-roll U' is supported by the vibrating levers U² on the rock-shaft 54, and upon one of which levers U² is a pawl 53, that acts against the ratchet-wheel 51 to move the same and the roll 50 around progressively, and the levers U² are swung with their rock-shaft 54 by the link 55, connecting with the upper end of the lever T and to an adjustable arm upon one of the levers U², and the extent of motion is such that the ductor U' is moved first into contact with the roller 50 in the oil-trough and then into contact with the roller S'. Thereby the proper quantity of oil is transferred from the ductor U' to the roller S', and it is preferable to give a continuous rotary movement to the rollers S S' by a gear-wheel 66, that gears into a wheel 67 upon the shaft of the roller S', and said gear 66 receives motion from a gear 69 upon the shaft of the impression-cylinder A, which gear is the same size as said impression-cylinder. Thereby the rolls S S' will be moving at the same surface speed as the cylinder A, and when the roll S in contact with the cylinder A the surface of the cylinder will be oiled by the roll S sufficiently to prevent the ink from the first impression on the sheet adhering to the surface of such impression-cylinder A.

The roll S, that applies oil, is often called a "set-off" roller, and it moves at the same surface speed as the impression-cylinder, and the devices that bring it into contact and out of contact with such impression-cylinder are automatic.

It is to be understood that the throw-off fingers 60 upon the second impression-cylinder A are to be brought into action every second revolution to raise the advancing end of the sheet and cause it to pass over the bridge-bars N as it is delivered.

The present application is a division of my application, Serial No. 342,902, filed March 6, 1890, in which is shown devices for supplying and delivering separate sheets by hand or from belts, together with a modification of the oiling device.

When the oiling apparatus is arranged as in Fig. 2, the roll S, that applies oil to the cylinder A, may be drawn back out of the way of the grippers as they pass, and may remain in contact at all other times with the surface of the cylinder A; but in the arrangement shown in Fig. 1 the roller S has to be drawn back during the passage of the sheet. In the arrangement shown in Fig. 2 the roll S does not always remain in contact with the roll S'; but the roll S' is constantly rotated in the proper direction by the gears 66 and 67, the gear 66 being in gear with a wheel 69 on the axis of the second impression-cylinder A or on the axis of type-cylinder A¹, and the roll S is out of contact only momentarily while moving from A to S', or the reverse.

Any suitable cam-and-lever connections are used for moving the respective rock-shafts 54 and T² and crank-arms and rolls U' and S.

The operation of the devices shown in Fig. 2 being the same as in Fig. 1, the previous description applies to the same, except in the particulars before set forth.

I am aware that a liquid such as oil has been supplied to the surface of the impression-cylinder by a roll or by stationary wipers or by a belt moving in an opposite direction to the surface of the cylinder. I therefore do not limit myself to the surface speed of the surface that is in contact with the impression-cylinder.

I claim as my invention—

1. The combination, with the impression-cylinder and grippers in a printing-press and means for supplying the sheets, of an oiling-roll for applying oil to the surface of the impression-cylinder, and mechanism, substantially as specified, for moving the oiling-roll out of contact with the impression-cylinder

at the time the sheet-holding device is passing such oiling-roll, substantially as set forth.

2. The combination, with the impression-cylinder in a printing-press, of a trough for oil or similar liquid, a roller in such trough, an oil-roll S', a ductor-roll, and means for moving it into and out of contact with the trough-roll and the oil-roll, and a set-off roll and means for moving the same into and out of contact with the impression-cylinder, substantially as specified.

3. The combination, with the impression-cylinder of a printing-press, of a set-off or oiling roller rotating at an equal surface speed therewith, and mechanism whereby the set-off roller is automatically moved into or out of contact with the impression-cylinder at definite intervals of the latter's rotation.

4. The combination, in a printing-machine, of an impression-cylinder, a cam rotated in unison with the impression-cylinder, a rock-shaft and arms, a continuously-revolving roll and means for supplying oil to the same, and a set-off roll supported by the rock-shaft arm and moved into and out of contact with the impression-cylinder, substantially as set forth.

5. The combination, in a printing-machine, of a feeder for the oil or other liquid, a roll receiving a supply of the oil periodically and gearing for revolving the same continuously and at the surface speed of the impression-cylinder, a set-off roll and swinging bearings for the same, and means for moving such set-off roll into and out of contact with the impression-cylinder, substantially as set forth.

6. The combination, with the impression-cylinder in a printing-press, of a trough for oil or similar liquid, a roller in such trough, an oil-roll and means for revolving the same at the surface speed of the impression-cylinder, a ductor-roll and means for moving it into and out of contact with the trough-roll and the oil-roll, and a set-off roll in contact with the oil-roll and means for moving the same into and out of contact with the impression-cylinder, substantially as specified.

Signed by me this 31st day of October, 1890.

WALTER SCOTT.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.