

W. SCOTT.

INKING APPARATUS FOR PRINTING MACHINES.

No. 396,612.

Patented Jan. 22, 1889.

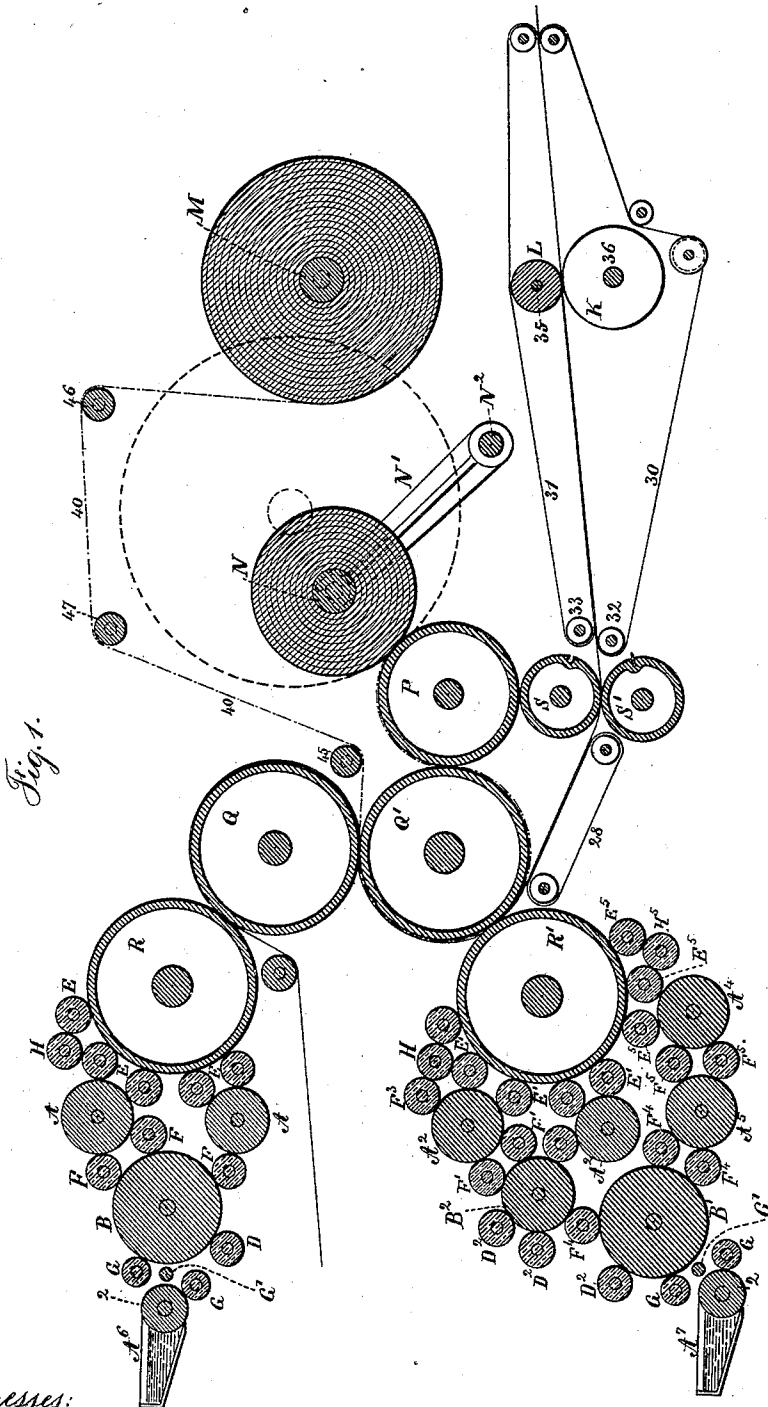


Fig. 1.

Witnesses:
J. Nail
Chas. A. Smith

Inventor
Walter Scott
 by *Leonard W. Serrell* atty

(No Model.)

3 Sheets—Sheet 2.

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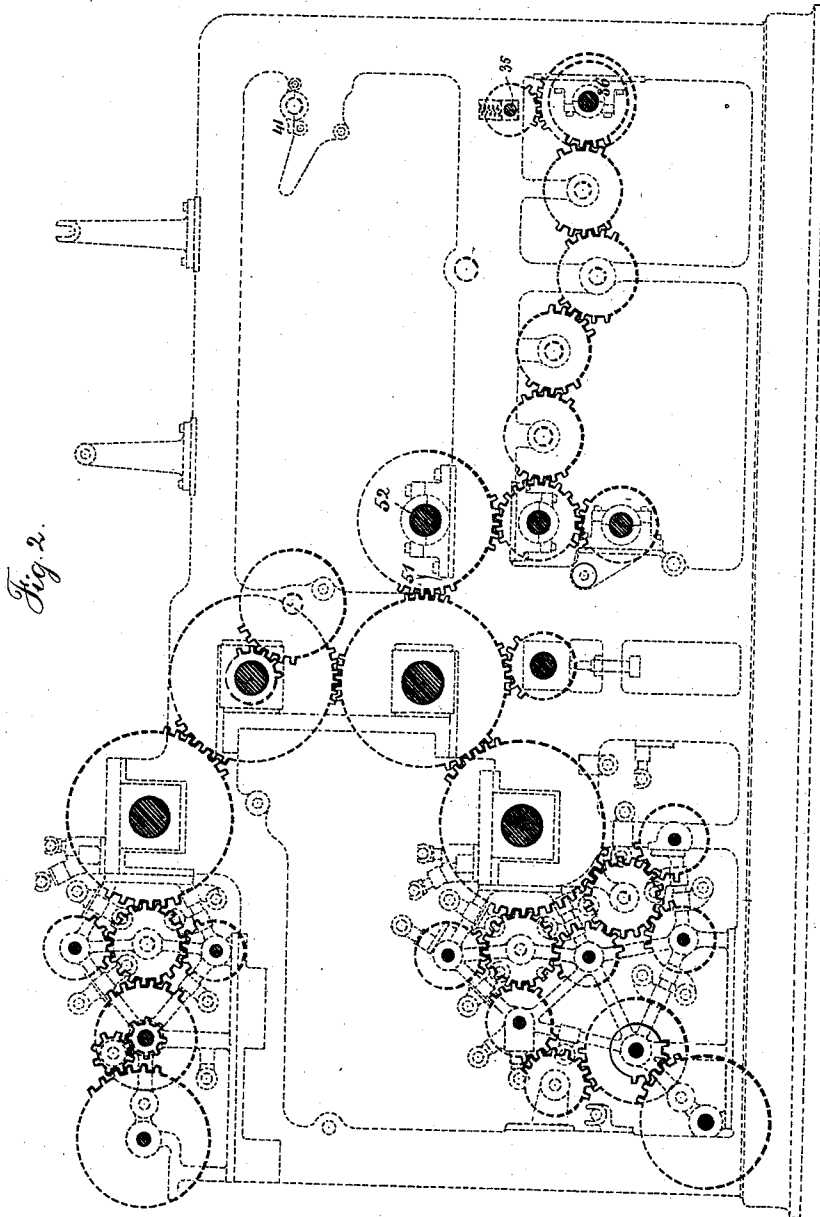


Fig. 2.

Witnesses:
J. Stait
Chr. A. Smith

Inventor:
Walter Scott
per Lemuel W. Serrell atty.

(No Model.)

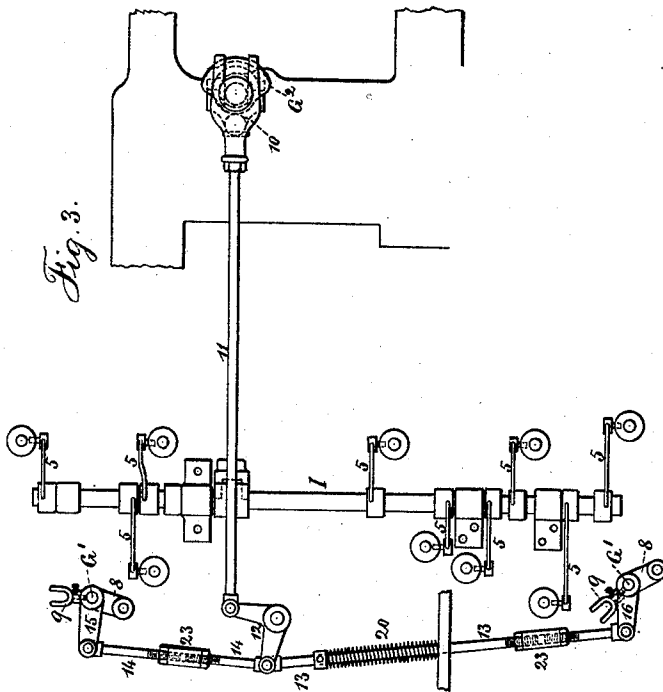
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UNITED STATES PATENT OFFICE.

WALTER SCOTT, OF PLAINFIELD, NEW JERSEY.

INKING APPARATUS FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 396,612, dated January 22, 1889.

Application filed October 10, 1887. Serial No. 251,872. (No model.)

To all whom it may concern:

Be it known that I, WALTER SCOTT, of Plainfield, in the county of Union and State of New Jersey, have invented an Improvement in Inking Apparatus for Printing-Machines; of which the following is a specification.

This inking apparatus is specially intended for use in printing illustrated newspapers or periodicals, in which it is very important to thoroughly work and distribute the ink upon the engraved blocks or plates to obtain perfect impressions.

In the drawings, Figure 1 is a vertical section of my improved press. Fig. 2 is an elevation illustrative of the mechanism for revolving and moving the respective parts, and Fig. 3 is a detached view of the arms and connections for moving the inking-rolls.

The type-cylinders R R' are of any desired character for receiving types or plates, and where there are pictures or illustrations to be printed they are to be placed upon the cylinder R'.

The impression-cylinders Q Q' are preferably of the same size as the type-cylinders, and they are usually arranged as shown, the second impression-cylinder being below the first impression-cylinder, so that the web of paper will pass beneath the type-cylinder R, over the impression-cylinder Q, and around between the cylinders Q Q', and between the second type-cylinder, R', and the second impression-cylinder, Q', and from these the web of paper passes between the cutter-cylinders S S', and is conveyed away, as hereinafter stated.

The ink is supplied from the two ink troughs or fountains A⁶ A⁷, which are of ordinary construction, each containing an ink-roller, 2, to which a slow rotary movement is communicated.

B B' are ink-distributing cylinders adjacent to the ink-troughs, and I make use of two ink-distributing cylinders, A A, and intermediate composition rolls, F, in connection with the ink-distributing cylinder B and two ink-distributing cylinders A², and an intermediate ink-distributing cylinder, B², and the composition rollers F' in connection with the cylinder B' and ink-trough A⁷.

The composition rollers E are adapted to

apply the ink upon the types of the type-cylinder R. I have shown five of these composition rollers E, four of which are in contact with the ink-distributing cylinders A A, and there is a metal inking-roller, H, that transfers the ink to the fifth one of these composition rollers, and I also employ a composition roller, D, vibrated endwise to aid in distributing the ink upon the cylinder B.

The five composition rollers E', made use of in connection with the type-cylinder R', correspond to the composition rolls E, and I prefer to make use of an additional composition roller, F², between the upper distributing-cylinder A² and the metal ink-roll H.

The cylinder B² occupies the same relation to the cylinders A² and composition distributing-rolls F' that the cylinder B and rolls F do to the cylinders A; but I employ composition roller F⁴ to transfer the ink from the distributing-cylinder B' to the cylinder B², and I use three composition vibrating rollers, D², in contact with the cylinders B' and B², as represented.

To assist in the inking of the forms upon the type-cylinder R', I make use of composition rollers E⁵, receiving ink from the cylinder A⁴, which in turn is supplied from the ink-distributing cylinder B' by the composition rollers F⁴, cylinder A⁵, and rollers F⁵, and there is an intermediate cylinder, H⁵, between two of the composition rollers E⁵.

Having thus stated the general arrangements of the inking-rollers and cylinders, I remark that certain of these cylinders receive an endwise vibratory motion from the rock-shaft I and arms 5, each arm being provided with a pin at the end passing in between collars upon the shaft of the roller or cylinder, as usual, and I prefer to vibrate the cylinders A A and roller D and the cylinders A² A² A⁵ and rollers D² D² D² from this one rock-shaft I.

The frame is constructed with reference to the easy removal of the composition rollers, and the bearings for the rollers H H⁵ and F⁵ are preferably adjustable to insure the proper surface contact between the respective rolls.

In printing-presses doctor-rollers have been made use of to transfer the ink from the roller in the ink-trough to the first distributing-cylinder; but such roller is in contact about half the time with the ink-roller and the other half

the time with the distributing-cylinder. I make use of two ductor-rolls, G G, to each ink-fountain roll, and support these upon a rock-shaft, G', with arms 8 that carry the axis of the respective ductor-rolls, so that when the rock-shaft G' is vibrated in either direction one ductor-roll will be receiving ink from the roll 2 and the other ductor-roll will be spreading the ink upon the distributing-cylinder B or B', thereby enabling me to subdivide the ink-supply, and in order to insure the proper contact of the ductor-rolls in the two positions I adjust the bearings or journal-boxes 9 nearer to or farther from the rock-shaft G'.

The ductor-rolls and rock-shaft acting in connection with the ink-distributing cylinder B' are the same as those used with the cylinder B, and the two rock-shafts G' receive their motions from one cam, G², which acts through the roller 10 and rod 11 upon the bent lever 12 and the links 13 and 14 to the crank-arms 15 and 16 on the respective rock-shafts G', and it is preferable to employ a spring, 20, that acts to counterpoise the weight of the parts and press the roller 10 toward the cam G², and the links 13 and 14 should be made in two parts with right and left hand screws and screw-sleeves 23, so as to adjust the parts and insure the proper contact of the ductor-rolls with the fountain-rolls and distributing-cylinders respectively.

The tympan-sheet 40 is drawn off the roll M and through the press by the action of the type-cylinder R' and impression-cylinders G G', and it is guided by the rolls 45 46 47, and the winding-up roll is on the arms N' of the draft N²; but I remark that no claim is made herein to the means for operating said tympan, as the same forms the subject of a separate application for patent, filed April 17, 1888, Serial No. 270,935. The web of paper as it is passed from the roll in between the type-cylinder R and impression-cylinder Q receives the first impression, and the second impression between the type-cylinder R' and impression-cylinder Q' is to be the picture or illustrated impression, as the ink will be distributed upon the type-cylinder R' in the most perfect manner. The web of paper passes off upon the belts 28, that are arranged on the lines of the margins, so as not to blur the impression, and the paper after it is cut between the cylinders SS' passes along upon the tapes 30 and beneath the tapes 31, there being rollers 32 and 33, around which the tapes or belts pass, and I apply the nipping-pulleys K L upon the respective shafts 35 and 36, which nipping-pulleys are placed

so as to act upon the margins only of the paper, and they are sufficiently distant from the cutting-cylinders S S' for the back end of the sheet to be cut and partially separated from the web before the forward end of the sheet reaches such nipping-pulleys K L, and the shaft 35 is supported in spring or yielding bearings, so that the nipping-pulleys L act with a yielding pressure to nip the paper against the pulleys K, and the speed of the belts and nipping-pulleys is greater than the speed of the web when being printed, so that the sheets are separated and properly forwarded to the folding-fly or other delivery device.

I claim as my invention—

1. The combination, with the ink-fountain roller and the ink-distributing cylinder, of two ductor-rolls, a rock-shaft between the ductor-rolls, and arms extending out in opposite directions and supporting such ductor-rolls, and mechanism for vibrating the rock-shaft and moving the ductor-rolls simultaneously into contact with the fountain-roll and distributing-cylinder, respectively, substantially as set forth.

2. The combination, with the ink-fountain roll and the ink-distributing cylinder, of two ductor-rolls, a rock-shaft and arms extending out in opposite directions and carrying the ductor-rolls, and adjustable bearings upon the arms for one of the ductor-rolls, substantially as set forth.

3. The combination, with the ink-fountain roll and ink-distributing cylinder, of two ductor-rolls, a rock-shaft and arms carrying the ductor-rolls, a crank-arm upon the rock-shaft, an adjustable link, a lever, and a cam and connecting-link for giving motion to the parts, substantially as set forth.

4. The combination, with the two ink-fountains and their rolls and the ink-distributing cylinders, of two ductor-rolls to each ink-fountain roll, a rock-shaft and arms for the ductor-rolls, crank-arms on the ends of the respective rock-shafts, adjustable links connected to the said rock-shaft and connected to each other at their ends, and mechanism, substantially as specified, for giving motion to the adjustable links and moving the ductor-rolls simultaneously, substantially as set forth.

Signed by me this 23d day of September, 1887.

WALTER SCOTT.

Witnesses:

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W. L. SERRELL.