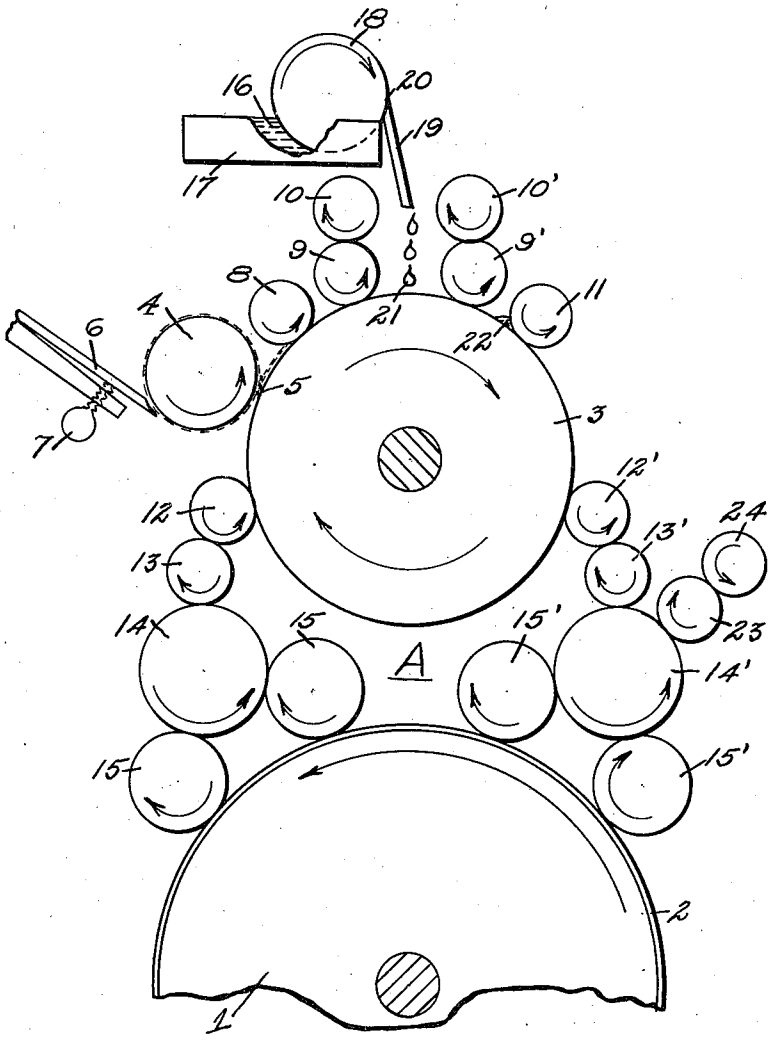
March 8, 1938. J. G. GOEDIKE 2,110,216

DUAL PURPOSE DISTRIBUTING SYSTEM FOR ROTARY OFFSET AND LITHOGRAPHIC PRESSES

Filed Sept. 10, 1937



Inventor
John G. Goedike
BY
Adam Richmond.
Attorney

Patented Mar. 8, 1938 2,110,216

UNITED STATES PATENT OFFICE

2,110,216

DUAL PURPOSE DISTRIBUTING SYSTEM FOR ROTARY OFFSET AND LITHOGRAPHIC PRESSES

John G. Goedike, San Antonio, Tex.

Application September 10, 1937, Serial No. 163,249

7 Claims. (Cl. 101—148)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

This invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to rotary offset and lithographic presses and particularly to improvements in the ink and water distributing roller systems of these presses, which dampen the plate surface with water and apply ink to the design which is represented by the ink sensitive areas of the plate surface.

One of the objects of the invention is to provide a dual purpose ink and water distributing system for rotary offset and lithographic presses whereby the mutually repellent substances of lithographic offset ink and water are distributed simultaneously through the distributing system of the press to the plate surface thereof.

Another object of the invention is to provide a water and ink feed for supplying water and ink to the surface of an ink distributing drum cylinder of a rotary offset and lithographic press whereby the water and ink are simultaneously distributed to the plate cylinder of the press by an identical roller system.

Another object of the invention is to provide additional rollers on the distributing system of a rotary offset or lithographic press for gathering up any paper, lint or dust from the plate surface of the press.

In the type of rotary, offset and lithographic presses in use for lithographic, photo-litho offset work and deep etch lithography where water is fed direct to the plate surface of the press by a separate water distributing system, it has been found that the work is not as satisfactory as compared with the work produced when the water is distributed to the plate surface simultaneously with the ink.

Also in the operation of an offset press on long runs considerable difficulty is encountered due to lint from the paper which is deposited on the plate surface of the press and eventually works up to the distributing rollers thereof.

This invention applies to a slight elaboration of the present form of ink distributing system of rotary, offset and lithographic presses whereby a water feed is applied to the ink distributing roller system, thereby converting the system from the single purpose of ink distribution to the dual purpose of distributing the mutually repellent substances, lithographic offset ink of a greasy nature and water, and to provide means for removing the lint which accumulates on the press.

In this distributing roller system all of the rollers that are in actual contact and all of the rollers that contact the plate surface are ink distributors, or in other words, each and every roller that is in actual contact is ink sensitive and rolled solid with ink on the surface and simultaneously each and every roller in actual contact distributes water which is carried on and distributed by the inked surface.

With the above and other objects and advantages in view the invention consists of certain features of construction and operation of parts which will hereinafter appear.

In order that my invention may be readily understood reference is had to the accompanying drawing in which corresponding parts are indicated by like reference characters and in which the drawing is a diagrammatical view of a rotary, offset or lithographic press having my invention applied thereto.

In the illustrated embodiment characterizing the invention A indicates generally a rotary offset or lithographic press comprising a plate cylinder (1) on which is mounted a lithographic plate (2) containing the design to be printed and an ink and water distributing system including an ink distributing drum or roller (3).

The ink for the ink distributing drum (3) is obtained from a slowly rotating ink fountain roller (4) that is in true alignment with the ink distributing drum, but set out of actual contact therewith by a gap (5) between .005 of an inch to .015 of an inch. Contact is gained between these rollers (3) and (4) by the depth of the layer of ink which is moulded on the surface of the ink fountain roller by a steel blade (6) which is adjustable by a thumb screw (7), to vary the depth of the layer of ink thereby varying the amount of ink fed to the ink drum (3). One edge of the adjustable steel blade (6) intercepts the surface of the slow rotating ink fountain roller (4) thereby forming a reservoir for ink.

In this method of feeding ink to the ink distributing drum, the ink from the fountain roller (4) jumps the gap (5) and the consistency of the ink used permits this action. In order to take care of any splashing of the ink due to the high speed of the distributing drum (3), a small distributing roller (8) is provided which rolls the ink back against the surface of the drum and assists the distribution of the ink. This method of feeding the ink to the ink distributing drum eliminates the necessity for the present type of ductor

roller and its attendant reciprocating action and mechanism, and interrupted feed of ink.

The ink is distributed in the direction of travel of the distributing drum (3) and in turn passes under distributing rollers (9) and (9'), which contacts with distributing rollers (10) and (10'), and thence under a close contact distributing roller (11). The ink on the ink distributing drum (3) is conveyed to the plate cylinder (1) by means of a duplicate set of connecting distributing rollers (12) and (12'), (13) and (13'), riders (14) and (14'), from which it is distributed to form rollers (15) and (15') and thence to the plate cylinder (1) in contact therewith.

The dampening portion of the dual purpose distributing system comprises a source of water supply (16) which is contained within a water trough (17) having a water fountain roller (18) rotatably mounted therein. The water fountain roller is partially submerged in the water and carries the water on its surface to the upper edge of a scraper (19) having a flat surface, which may be made of wood, rubber, steel or the like. The water at the line of contact (20) with the surface of the fountain roller (18) is diverted from the surface of the fountain roller and runs down the flat surface of the scraper to the lower edge thereof from which it falls in drops (21) to the surface of the distributing drum or roller (3). The distributing drum (3) rotating in the direction of the arrow causes the water to pass under the distributing roller (9') having the distributing roller (10') in contact therewith which has the effect of spreading the water to an even film which travels with and on the surface of the distributing drum (3) to the line of contact with the close contact distributing roller (11) and at this point if the water is in excess on the surface of the distributing drum a bead (22) of water will form and only sufficient water will pass this line of contact to permit the successful operation of the press. The bead (22) at the line of contact of the distributing drum (3) is the visible indication of the water feed and as it enlarges the action of the water fountain roller (18) may be stopped as this bead may enlarge to a depth between the roller to $\frac{2}{16}$ of an inch without spilling at the ends which is due entirely to the surface tension of the water. The film of water in turn contacts the connecting distributing rollers (12) and (12') and this film of water is split in turn by these rollers (12) and (12'), which reduces the film on the ink distributing drum (3) at this point for the reception of the ink on the drum (3), as it passes to the line of contact with the layer of ink on the surface of the ink fountain roller (4). The distribution of the water continues from the connecting distributing rollers (12) and (12') to connecting distributing rollers (13) and (13'), which contact with the riders (14) and (14') from which it is distributed to the form rollers (15) and (15') and thence to the plate cylinder (1) of the press. In the direction of travel of the plate cylinder (1) as indicated by the arrow, the set of connecting distributing rollers (12) and (13), rider (14) and the form rollers (15) will receive less water than the set of connecting distributing rollers (12') and (13'), rider (14') and the form rollers (15'). The distributing drum or roller (3) is termed the ink drum in the separate distributing system, but in this dual distributing system it is fully as much a water drum.

In order to gather up any paper, lint or dust which is deposited on the plate cylinder and eventually works up to the distributing rollers, two distributing rollers (23) and (24) are provided. In a complete revolution of the press the surface of the plate (2) is turned under the form rollers (15) and (15') and the first of the form rollers (15') will gather any paper, lint or dust from the plate surface and carry it up to the rider (14'). The two rollers (23) and (24) are mounted above the rider (14') as lint gatherers. The roller (23) in contact with the rider (14') will gather the lint from the surface of the rider (14') and connecting with the roller (24) continue to gather lint until a point is reached where the lint must be removed which is easily done by washing the surface of the rollers (23) and (24).

It will thus be seen that I have provided a highly novel and efficient form of a dual purpose distributing system for rotary offset and lithographic presses, which simultaneously distributes the mutually repellent substances, ink of a greasy nature, and water, to a lithographic or photolitho offset plate surface by an arrangement of rollers in actual contact. The rollers in actual contact in the system being subject to various arrangements and the system could be accomplished by several means. Even though I have herein described my invention as comprising certain details of construction and operation of parts, it is nevertheless to be understood that various changes may be made therein without departing from the spirit or scope of the invention.

Having described my invention, what I claim as new and wish to secure by Letters Patent is:

1. The method of simultaneously inking and dampening printing surfaces of rotary offset and lithographic printing members, which consists in feeding water in the form of drops from a source of supply to a distributing system, transmitting the water together with a film of ink to a printing surface through said distributing system, whereby an ink repellent coating of water will be applied to the non-design portions of the printing surface, and ink will be applied to the design portions of said surface.

2. In a printing press, the combination with a printing member, inking mechanism for applying ink to said member, a dampening mechanism for supplying water to said inking mechanism, said dampening mechanism comprising a source of water supply, a water feed roller mounted thereon and means for dropping water from said roller to said inking mechanism.

3. In a printing press, the combination with a printing member, inking mechanism for supplying ink to said member including a high speed distributing drum and a slow speed ink fountain roller having a layer of ink provided thereon, said roller adapted to apply ink to said distributing drum by the thickness of the layer of ink on the surface thereof and means for dropping water on said distributing drum.

4. In a printing press, the combination with a printing member, inking mechanism including a slow speed ink fountain roller and a high speed ink and water distributing drum, means for supplying ink to said drum, means for dropping water thereon, and means for transmitting the ink and water from said drum to said printing member, said last mentioned means comprising a duplicate set of ink rollers including riders, ink distributing and form rollers.

5. In a printing press, the combination with a printing member, a mechanism for applying ink and water to said member including a high speed

distributing drum, a mechanism for applying ink to said drum, said mechanism comprising a slow speed ink fountain roller having ink provided thereon, said ink fountain roller being out of contact with said drum, and adapted to apply ink to said drum by the drum contacting with the ink on said roller, an adjustable blade in contact with said roller, a distributing roller in contact with said drum for rolling back ink on said drum to the surface thereof, a duplicate set of distributing rollers in contact with the upper portion of said drum, means for transmitting the ink from said drum to said printing member, said means comprising a duplicate set of contact distributing rollers, riders and form rollers, a drip water feed for supplying water to said printing member through said drum and said duplicate set of contact distributing rollers, riders and form rollers and a distributing roller in close contact with said drum for regulating the water supplied to said printing member.

6. In a printing press, the combination with a printing member, an ink and water distributing system including a distributing drum, means for supplying ink and water to said drum, means for transmitting the water together with a film of ink from said drum to said printing member, said last mentioned means comprising ink rollers including a duplicate set of riders, ink distributors and form rollers, and additional rollers contacting one of said riders for gathering up lint from the printing member.

7. The method of simultaneously inking and dampening printing surfaces of rotary offset and lithographic printing members, which consists in feeding a dampening fluid in the form of drops from a source of supply to a distributing system, transmitting the dampening fluid together with a film of ink to a printing surface through said distributing system, whereby an ink repellent coating of dampening fluid will be applied to the non-design portions of the printing surface, and ink will be applied to the design portions of said surface.

JOHN G. GOEDIKE.