Dec. 1, 1942. A. B. GUTH 2,303,355

METHOD OF INKING

Filed April 7, 1941

Fig. 1.

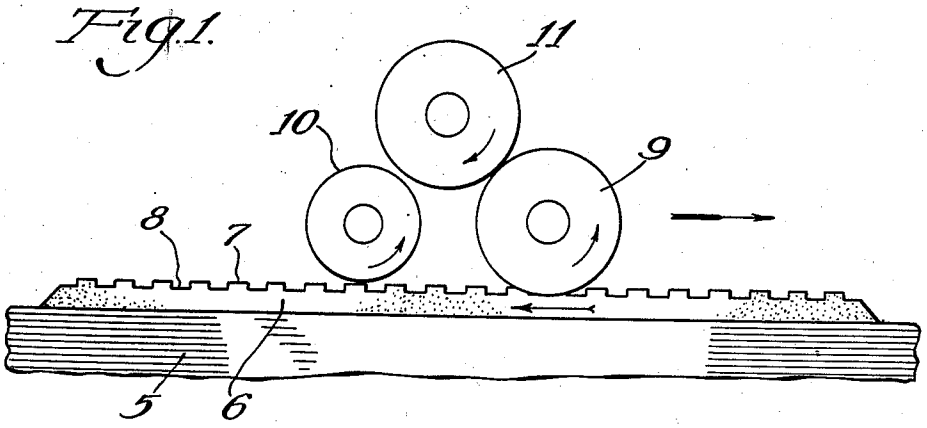
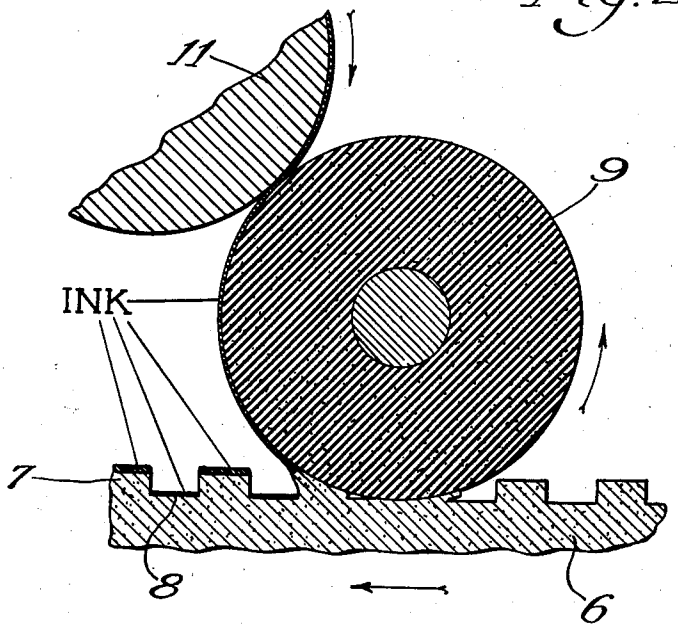


Fig. 2.



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METHOD OF INKING

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4 Claims. (Cl. 101—426)

The present invention relates to printing apparatus and particularly to a novel printing plate and the inking thereof.

Heretofore, insofar as I am aware, it has been customary in the preparation of printing plates and in the inking thereof to roll the inking roller across the printing plate, the surface of the printing plate being so prepared that first, raised portions are to be inked, in which case the depressed portions are not contacted by the ink or are ink repellent; second, depressed portions are to be inked, in which case the depressions are filled with ink and the raised portions are wiped clear or are ink repellent, and third, the distinction between the ink receiving and non-ink receiving parts of the plate are purely accomplished by making the printing surface ink repellent or ink attracting, the parts to be printed in this case being ink attracting.

In accordance with the present invention I provide a printing plate, the surface of which has the portions which are to receive the greatest amount of ink higher than the other portions. The material used is such that the printing plate is resilient and the higher portions are more resilient than the lower portions, that is, softer and hence more easily depressed. I combine this printing plate with an inking roller combination wherein the inking roller is rotated in such direction that the surface thereof first engaging the plate is moving in the same direction as the roller moves across the plate. In other words, the roller surface is wiping the plate surface in the same direction that the roller is traversing the plate. In order that the invention may be more clearly understood the printing plate and roller combination is illustrated in the accompanying drawing wherein—

Fig. 1 is a diagrammatic sketch showing a cleaning roller, an inking roller and an oscillating transfer roller in connection with a printing plate and a platen or bed upon which the printing plate is fixed; and

Fig. 2 is an enlarged fragmentary view illustrating more in detail the operation of inking the printing plate.

Referring now in detail to the drawing, the numeral 5 indicates a bed plate of a printing machine upon which a printing plate 6 is mounted. The printing plate 6 has its printing surface made up of raised portions 7 and depressed portions 8 which in accordance with well known practice delineate the pattern to be printed.

The printing plate is inked by means of an inking roller 9 which forms part of an inking roller assembly composed of a cleaning roller 10, an oscillating or ink transfer roller 11 and the usual mechanism by which ink is fed to the transfer roller for spreading on the inking roller itself.

It will be understood that suitable drive means are provided for rotating the several rollers and for causing the roller assembly to traverse the bed plate and the printing plate mounted thereon. In accordance with my invention I rotate the inking roller so that the surface thereof engaging the printing plate is wiping across the printing plate. In other words, as the roller advances, the surface thereof in engagement with the printing plate rotates in the same direction as the roller advances. The ink is thus being wiped off onto the printing plate.

The printing plate itself is preferably composed of a colloidal type of material such as is used in collotype printing. My plate however differs from the usual collotype plate because it is resilient and is so developed that the higher portions are softer or more yielding than the deeper portions of the plate. All portions are much the same in that none of them is ink repellent.

In the inking operation the inking roller is pressed down on the printing plate with sufficient pressure to flatten the raised portions substantially so that in advance of the inking roller and to the rear of it these portions bulge up slightly as shown in Fig. 2 of the drawing. I find that by this combination of printing plate and inking roller I pile up a greater volume of ink upon the higher portions of the plate than upon the lower portions. This appears to be due to the fact that the higher portions maintain wiping contact with the inking roller for a greater peripheral distance than the valleys or lower portions of the plate. Those parts of the printing plate which are in greatest relief will print darkest upon a copy sheet, while those parts which are less in relief will print lightly or not at all, depending upon the pressure that is applied by the inking roller. The ink of course must be of such consistency that it will not run from the higher to the lower portions of the plate.

From the foregoing description it is believed that the nature of my invention will be readily apparent to those skilled in this art. Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. A method of inking a printing plate having a printing part comprising resilient ink receiving portions at different levels arranged to form the printing image, said method comprising pressing an ink coated roller against the surfaces of said

portions and thereby compressing the higher level portions more than the lower level portions and causing the roller to traverse the printing plate and simultaneously rotating the roller in a direction to wipe the ink it carries onto the printing portions as they emerge from beneath the roller.

2. A method of inking a printing plate having a printing part comprising resilient ink receiving portions at different levels arranged to form the printing image, said method comprising pressing an ink coated roller against the surfaces of said portions and thereby compressing the higher level portions more than the lower level portions and causing the roller to traverse the printing plate and simultaneously rotating the roller to give it a higher surface speed than the speed at which it advances across the printing surface and in a direction to wipe the ink it carries onto the printing portions as they emerge from beneath the roller.

3. A method of inking a printing plate having a printing part comprising resilient ink receiving portions at different levels arranged to form the printing image, said method comprising pressing an ink coated roller against the surfaces of said portions with sufficient pressure to bring all said portions to substantially a common level as they pass under the roller and rotating the roller in a direction to wipe the ink from the roller onto the printing surface as the surface emerges from beneath the roller.

4. The method of coating a resilient member having its surface made up of hills and valleys so that the higher portions receive the thicker coatings comprising the traversing of said surface by a coating member having a coating material thereon, pressing the coating member against the surface to flatten the hills and advancing the coated surface of said coating member in a direction to wipe the coating thereon onto the surfaces of said hills and valleys as said surfaces emerge from beneath the coating member.

ADALBERT B. GUTH.