

capacity but feeds damp at a uniform controllable rate irrespective of the amount of ink it is scavenging. Its adoption involves no change whatever to the press.

The Principle

The Spiralchrome roller achieves the theoretical ideal envisaged by L. Coates' arrangement devised in 1937². This separated the dual duties of the "brass" roller by allotting the scavenging to independent copper rider rollers running on the dampers, and completely chromium plating the "brass" roller.

According to this arrangement the copper riders avidly collect all the ink that is picked up by the dampers, and the chromium-plated "brass" roller confines itself to feeding water since it has been passivated as for a bi-metal plate and refuses any ink that comes in contact with it.

Nevertheless, two considerations militated against the adoption of this arrangement. Firstly, the machine designers were reluctant to add to their already lavishly be-rollered machines, even if the considerable difficulty of introducing two extra removable rollers could have been surmounted. Secondly, bi-metal plates were not at that time in common use in this country and there was therefore not so much need for an improved damping system as there is now.

The idea of the dual-purpose *Spiralchrome* Scavenging Roller necessitated having the chromium and brass (or copper) areas on the same roller. In order to ensure uniform damping and scavenging, careful thought was given to the disposition and proportioning of the damping and scavenging areas. The ultimate pattern adopted takes the form of equally-spaced, narrow helices of chromium leaving alternate helical areas of basic brass or copper-plated steel between.

The chromium areas can be relied on to feed damp forward, when passivated as for bi-metal plates, while the brass or copper areas, being thoroughly ink receptive, will scavenge to their full capacity. Since the chromium areas will keep free of ink they will always carry

the same quantity of water, while the copper or brass areas will never feed water, but will collect ink until the film is so thick that it cannot be held for purely mechanical reasons.

This "barber's pole" pattern proves in practice to be ideally suitable and gives alternate damping and scavenging attention to each damper in quick succession, the result being as effective as L. Coates' original arrangement and much more practical.

The proportion of brass and chromium found in practice to be most suitable for average work is one of chromium to two or three of brass. On those presses where the procedure is to try to keep the "brass" roller clean and water receptive by the use of chromic acid, or other reagents, the reduced water feed area of the *Spiralchrome* roller restores the fountain roller tooth adjustment back to the middle of the range. Formerly it was difficult, especially on bi-metal plates, not to feed too much water on the minimum setting.

Adherents of the old school of thought on damping and scavenging tried to maintain uniform damping by repeated tooth adjustment until the "brass" roller carried a continuous film of ink. This often meant that the maximum number of teeth was barely adequate to cause enough beads of water to reach the dampers.

These difficulties are completely avoided by the use of the *Spiralchrome* Roller, which feeds exactly the right amount of damp for any kind of plate, on any machine, from the time the required feed rate has been set to the end of the run.

It may be argued that the fountain roller should be chromium-plated, but this has not been found necessary. It is recommended, however, that a fabric covered fountain roller be used as this ensures a good and constant water feed.

Experience shows that when a *Spiralchrome* Roller is used dampers keep cleaner and production increases because there are fewer stops.

1. Brit. Pat. Appln. No. 12332/51.
- 2 B.P.488.444.

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