

No. 758,486.

PATENTED APR. 26, 1904.

B. J. SUCH.
PRINTING ROLLER.
APPLICATION FILED JUNE 6, 1903.

NO MODEL.

Fig 1

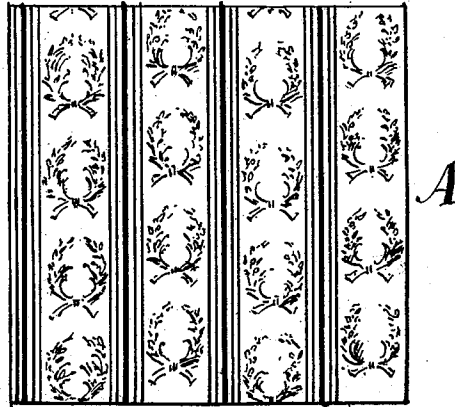


Fig 3

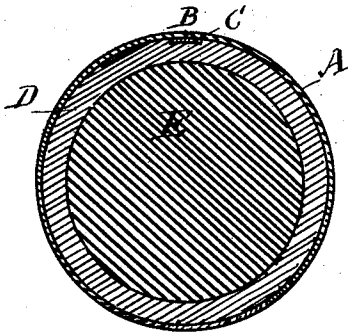
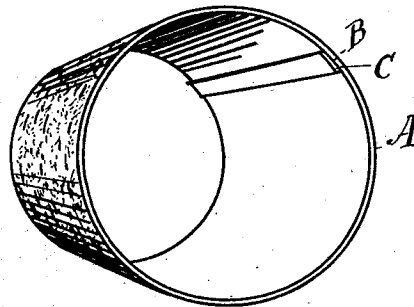


Fig 2



Benjamin J. Such

Inventor

Witnesses

Henry B. Kieberger
Fred H. Barclay

UNITED STATES PATENT OFFICE.

BENJAMIN J. SUCH, OF WASHINGTON, DISTRICT OF COLUMBIA.

PRINTING-ROLLER.

SPECIFICATION forming part of Letters Patent No. 758,486, dated April 26, 1904.

Application filed June 8, 1903. Serial No. 160,401. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN J. SUCH, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Printing-Rollers for Printing Patterns or Decorative Designs, of which the following is a specification.

The purpose of my invention is to provide printing-rollers for printing continuous photo-engraved or etched patterns or designs of various sizes, which rollers may be interchangeably mounted upon a common shaft or spindle.

In the accompanying drawings, which illustrate my invention, Figure 1 represents a flat metal plate upon which a design or pattern has been photo-engraved or etched. Fig. 2 is a perspective view of the same plate rolled to cylindrical form. Fig. 3 is a transverse sectional view through the complete roller and its supporting shaft or spindle.

In carrying out my invention a photo-engraved or etched pattern or design is formed on one surface of the flat metal plate A, Fig. 1, ordinarily covering the entire surface of the plate. The plate is then rolled to cylindrical form, as shown in Fig. 2, the design being made to match where the two ends meet, making a continuous and uninterrupted pattern. The two meeting ends of the plate abut, as shown at B, and are held in close contact by a narrow strip of thin metal C, which extends longitudinally within the cylinder covering the seam B and is soldered to the meeting ends of the cylinder. A butt-joint is thus formed at the meeting edges of the cylinder. The metal cylinder thus formed is then arranged concentrically about a spindle or shaft E, which is either the shaft upon which the roller is to be mounted or a shaft having the same diameter and the same form in cross-section as the shaft which is to carry the roller. This shaft is smaller in diameter than the interior of the metal cylinder, and the space between the shaft and the cylinder is filled with a firm and compact substance which forms a backing and support for the cylinder. Metal which fuses at a low temperature may be used for this filling or

lining; but as the heat of the molten metal causes the metal cylinder to expand and bulge, thereby producing inequalities and depressions in the printing-surface which can only be overcome by overlays, I prefer to use a plastic material, such as cement or gypsum, which is poured in a plastic state into the space between the roller and the metal cylinder and allowed to set and harden. In this way the printing-surface of the metal cylinder, being first made perfectly true, remains so when backed by the filling of hardened plastic material, such as cement or gypsum, and I thus avoid the necessity of overlaying to bring up or rectify depressions in the printing-surface, which is difficult, if not impracticable, in the case of a printing-roller working against an impression-cylinder, as I purpose having it. Furthermore, as the pattern is formed upon the metal cylinder before the filling is inserted it is also a difficult or impractical operation to rectify depressions or irregularities in the cylinder, if such exist, after the filling is inserted without destroying the pattern, and it is therefore desirable to employ filling which will not in any way warp or bend the metal cylinder.

The strip of thin metal C, which I term a "seam-cover and retaining-strip," not only serves to hold the abutting ends of the metal cylinder in close contact, but it also covers the seam and prevents the hot solder or molten metal from oozing through the joint and destroying the pattern, as well as retaining the filling.

After the filling has become sufficiently set or hardened the roller, consisting of the metal cylinder and the filling or lining, may be forced off of the shaft or spindle, and it may then be replaced when desired or applied to another shaft of the same dimensions for the purpose of printing. All of the printing-rollers formed upon the same shaft will have axial openings of the same form and diameter, while the cylinders may vary in diameter according to the size of the photo-engraving.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A printing-roller adapted to be mounted

upon a shaft or spindle and comprising a photo-engraved metal plate bent into cylindrical form and having its meeting edges abutting, forming a continuous printing-surface, and a filling or lining of suitable firm material within said cylinder, said filling having an axial opening conforming to the shaft upon which the roller is to be mounted.

2. A printing-roller adapted to be mounted upon a shaft or spindle and comprising a photo-engraved metal plate bent into cylindrical form and having its meeting edges abutting, forming a continuous printing-surface, and a filling or lining of hardened plastic material within said cylinder, said filling having an axial opening conforming to the shaft upon which the roller is to be mounted.

3. A printing-roller adapted to be mounted upon a shaft or spindle and comprising a photo-engraved metal plate bent into cylindrical form and having its meeting edges secured together by a butt-joint, forming a continuous printing-surface, and a filling or lining of suitable firm material within said cylinder, said filling having an axial opening conforming to the shaft upon which the roller is to be mounted.

4. A printing-roller adapted to be mounted upon a shaft or spindle and comprising a photo-engraved metal plate bent into cylindrical form and having its meeting edges secured together by a butt-joint, forming a continuous printing-surface, and a filling or lining of hardened plastic material within said cylinder, said filling having an axial opening conforming to the shaft upon which the roller is to be mounted.

5. A printing-roller adapted to be mounted upon a shaft or spindle comprising a photo-engraved metal plate bent into cylindrical form and having its meeting edges abutting to form a continuous printing-surface, a metal seam-cover and retaining-strip within the cylinder secured to the abutting ends of the cylinder and covering the joint or seam between said ends, and a filling of suitable firm material within said cylinder, said filling having an axial opening conforming to the shaft upon which the roller is to be mounted.

6. A printing-roller adapted to be mounted upon a shaft or spindle comprising a photo-engraved metal plate bent into cylindrical form and having its meeting edges abutting to form a continuous printing-surface, a metal seam-cover and retaining-strip within the cylinder secured to the abutting ends of the cylinder and covering the joint or seam between said ends, and a filling of hardened plastic material within said cylinder, said filling having an axial opening conforming to the shaft upon which the roller is to be mounted.

7. The combination with a shaft or spindle of a printing-roller mounted thereon and comprising a photo-engraved metal plate bent into the form of a cylinder and having its meeting edges secured together by a butt-joint, and a filling of suitable firm material between said shaft and cylinder, forming a support and backing for the latter.

8. The combination with a shaft or spindle of a printing-roller mounted thereon and comprising a photo-engraved metal plate bent into the form of a cylinder and having its meeting edges abutting, and a filling of hardened plastic material between said shaft and cylinder, forming a support and backing for the latter.

9. A printing-roller comprising a photo-engraved metal plate bent into cylindrical form and having its meeting edges abutting, a metal seam-cover and retaining-strip, within the cylinder, secured to the abutting ends of the cylinder, and covering the joint or seam between said ends, and a filling of suitable firm material within the cylinder, forming a support and backing for the same.

10. A printing-roller comprising a photo-engraved metal plate bent into cylindrical form and having its meeting edges abutting, a metal seam-cover and retaining-strip within the cylinder, secured to the abutting ends of the cylinder, and covering the joint or seam between said ends, and a filling of hardened plastic material within the cylinder, forming a support and backing for the same.

BENJAMIN J. SUCH.

Witnesses:

HENRY B. HEIBERGER,
A. J. CHIPMAN.