(No Model.)

D. J. MURNANE & F. W. DROSTEN.

METHOD OF PRODUCING CYLINDRICAL PRINTING ROLLERS.

No. 445,932. Patented Feb. 3, 1891.

Fig. I.

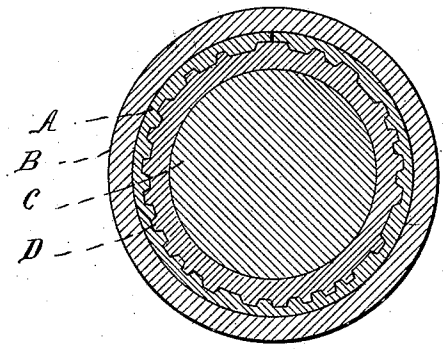
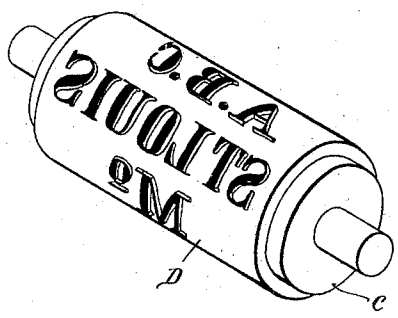


Fig. II.



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UNITED STATES PATENT OFFICE.

DANIEL J. MURNANE AND FREDERICK W. DROSTEN, OF ST. LOUIS, MISSOURI.

METHOD OF PRODUCING CYLINDRICAL PRINTING-ROLLERS.

SPECIFICATION forming part of Letters Patent No. 445,932, dated February 3, 1891.

Application filed December 13, 1889. Serial No. 333,659. (No model.)

To all whom it may concern:

Be it known that we, DANIEL J. MURNANE and FREDERICK W. DROSTEN, both of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Methods of Printing, of which the following is a full, clear, and exact description.

Our invention relates to an improved method of producing cylindrical printing-rollers, the object being to produce an accurate printing-surface upon a roller, which, when being used, is passed over the surface to be printed upon.

Our invention consists in features of novelty pointed out in the claim.

In the accompanying drawings, which illustrate the manner of carrying out our invention, Figure I is a transverse section of the outside cylinder, the inside core, and the intermediate cast and papier-maché matrix; and Fig. II is a perspective view of the finished roller with the core or spindle within it.

In carrying out our improved method a papier-maché or other suitable cast or matrix A is taken from the surface or face of the object or type to be printed, and this matrix A is bent into a cylindrical shape and may be placed within a metal tube B, having a slight draft or incline to permit the matrix to be withdrawn after the casting is done. After placing the matrix in the tube or cylinder a core or spindle is placed within it centrally and a suitable composition D is then poured into the tube or cylinder, (the inner wall of which is formed by the matrix A with the design to be produced presented inwardly,) and after the composition becomes hardened the roller thus formed, together with the matrix, is withdrawn from the tube or cylinder B, and the matrix being removed from the roller D the latter is ready for use in printing, as the design or matter on the face of the matrix has been reproduced on the surface of the roller. The roller may then be passed over the surface upon which it is desired to produce the printing, and it will thus be observed that by the use of our improved method a printing-surface on a roller may be very cheaply and quickly produced.

We are aware that it is not new to form a matrix and secure it face inward in a cylindrical holder; but such is not the equivalent of our invention, for it will be understood from the preceding description that we use a matrix which when rolled and placed into the cylinder fits the interior of the latter exactly, and therefore no special means for holding it snugly against the walls of the cylinder are at all necessary. Hence our method differs from those heretofore practiced, in that we use a sufficient length of papier-maché to form a perfectly cylindrical matrix exactly the size of the interior of the outer cylinder, to the inner walls of which latter the matrix closely conforms by virtue of its normal tendency to spring outward or unroll. The cylinder therefore need be nothing more than a plain tube, whereas heretofore it has been necessary to provide such cylinder with special means for holding the segmental matrices in place.

We claim as our invention—

The improved method of producing a cylindrical printing-roller herein described, the same consisting in forming a matrix on a single sheet of material whose length is equal to the circumference of the roller to be produced, placing said matrix-face inward into a cylinder whose inner circumference is equal to the length of said matrix, then placing a core or spindle centrally within the matrix, then pouring a suitable composition into the matrix-cylinder, then withdrawing the roller and matrix, and finally removing the matrix from the surface of the roller, substantially as specified.

DANIEL J. MURNANE.
FRED. W. DROSTEN.

In presence of—
E. S. KNIGHT,
A. M. EBERSOLE.