

J. J. JANEWAY.

MANUFACTURE OF PRINTING ROLLS.

No. 178,528.

Patented June 13, 1876.

Fig. 1

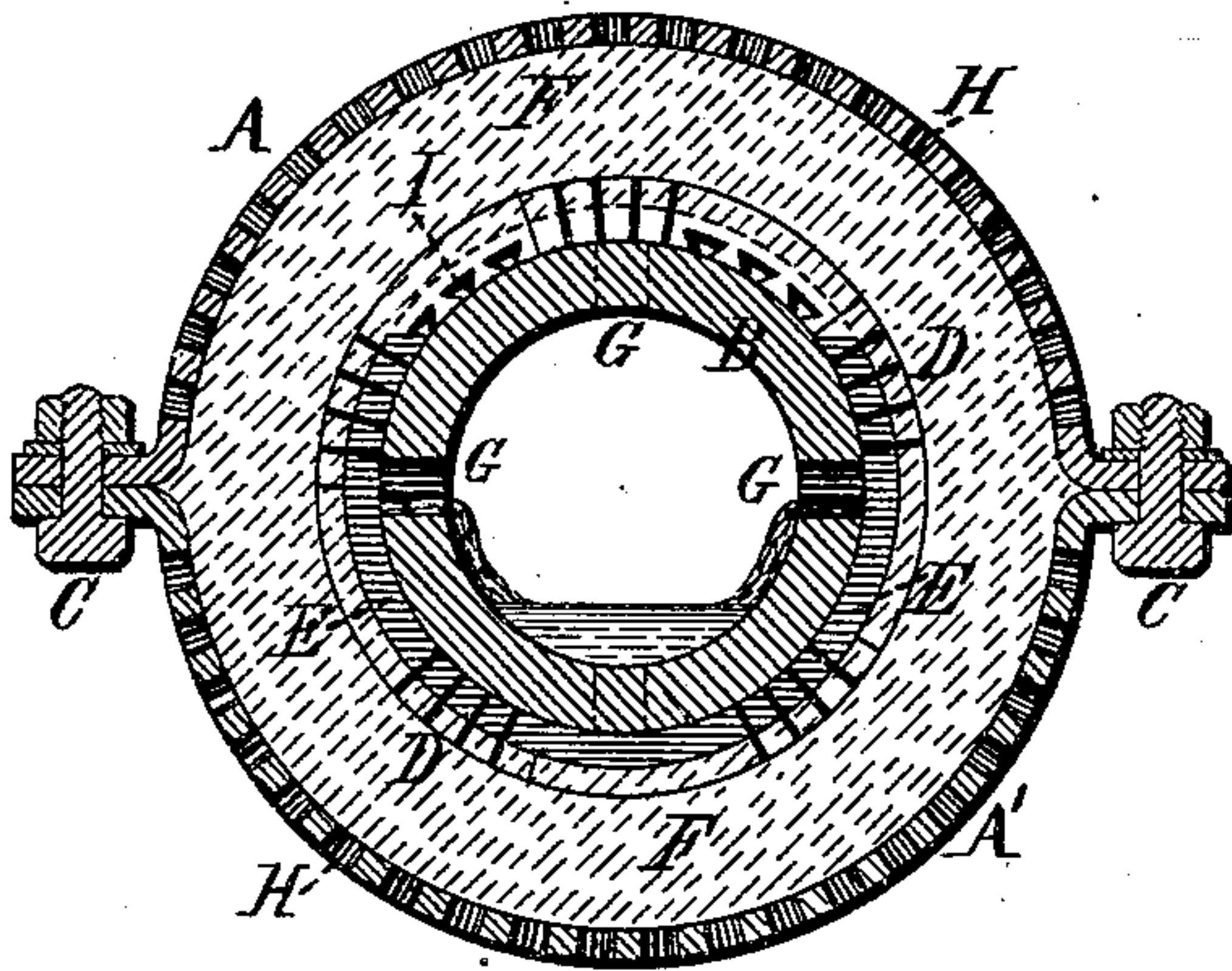


Fig. 2

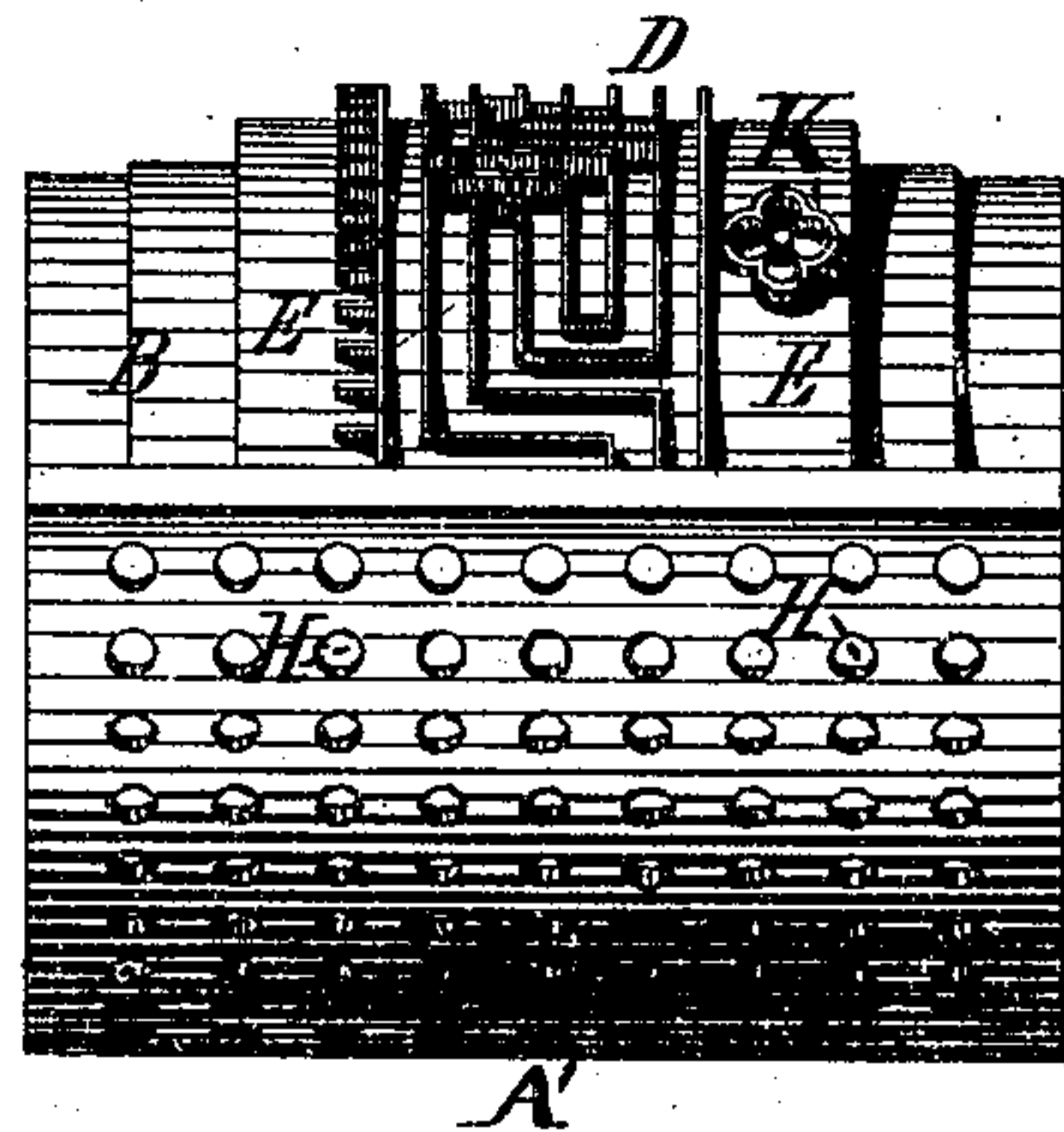


Fig. 3

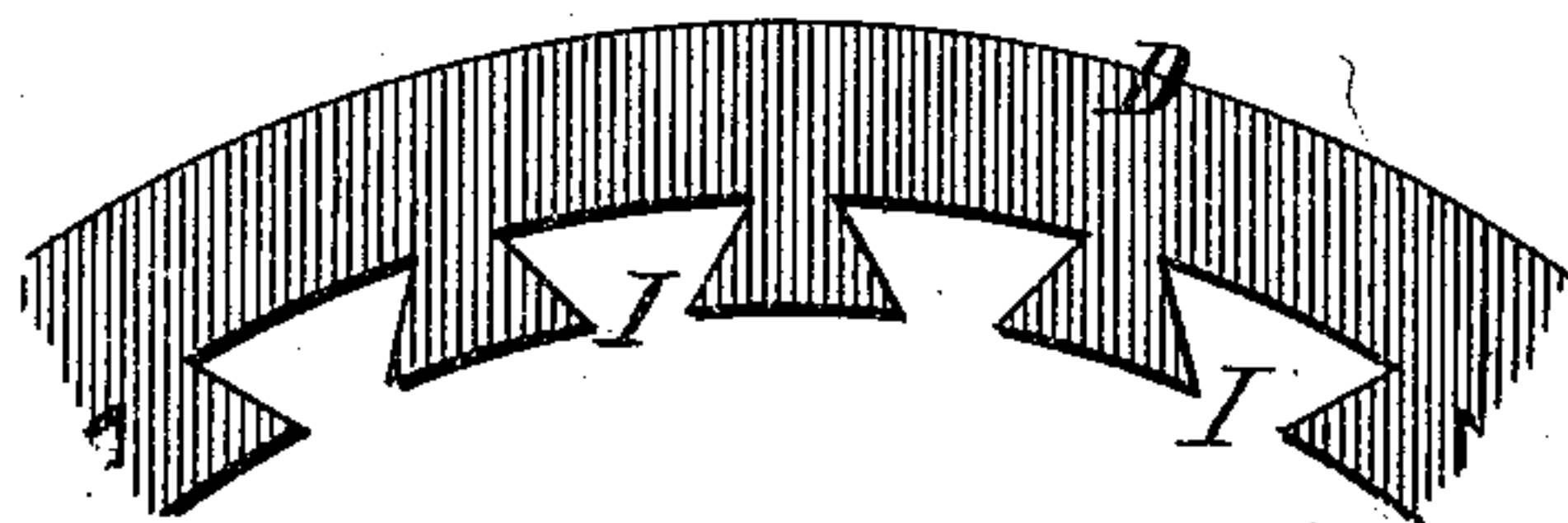


Fig. 4

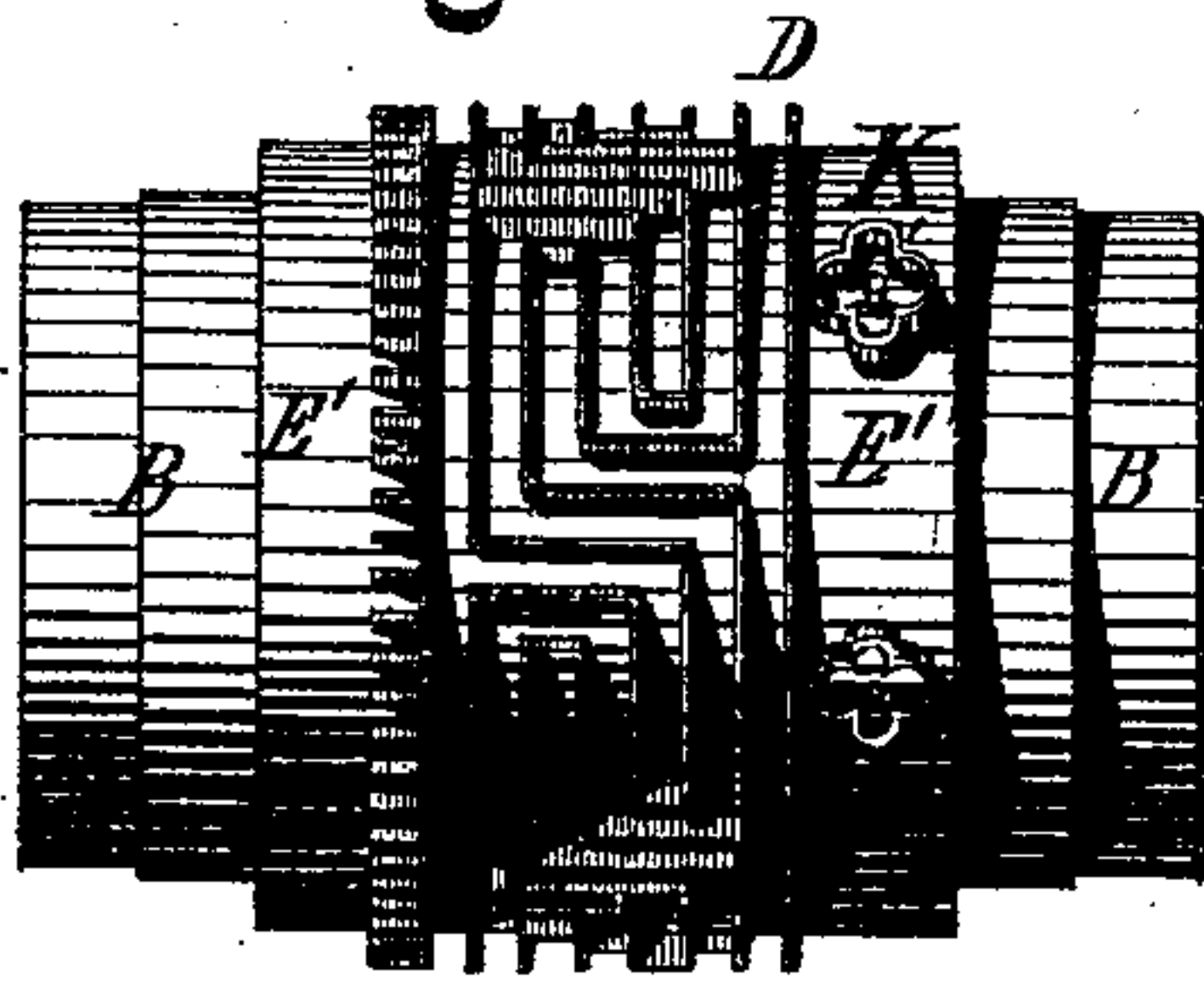
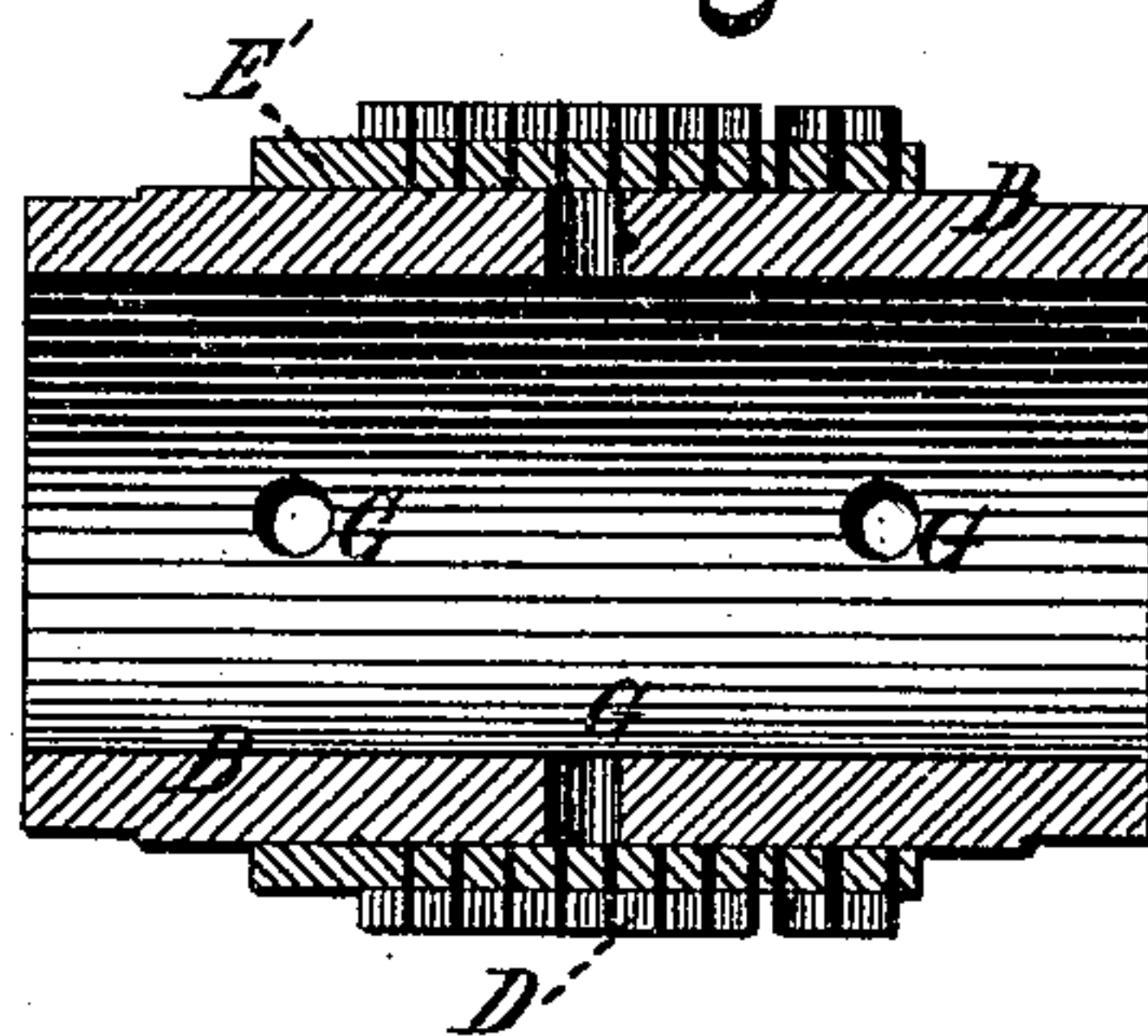


Fig. 5



Witnesses:

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UNITED STATES PATENT OFFICE.

JACOB J. JANEWAY, OF NEW BRUNSWICK, NEW JERSEY.

IMPROVEMENT IN THE MANUFACTURE OF PRINTING-ROLLS.

Specification forming part of Letters Patent No. 178,528, dated June 13, 1876; application filed February 8, 1876.

To all whom it may concern:

Be it known that I, JACOB J. JANEWAY, of the city of New Brunswick, in the State of New Jersey, have invented a new and useful Improvement in the Manufacture of Printing-Rolls, of which I hereby declare the following to be a full, clear, and precise description, such as will enable others skilled in the art to which my process appertains to comprehend and employ it, reference being had to the accompanying drawings, forming part of this specification, of which—

Figure 1 is a transverse sectional elevation of my roll in process of securing the outline plates or pins at the stage of melting out of the wax; Fig. 2, a side elevation of my roll at the stage when the plates or pins have been set up in the wax, the upper section of the flask being removed; Fig. 3, an enlarged side elevation of a convenient form of outline-plate; Fig. 4, a side elevation of the finished roll; and Fig. 5, a longitudinal sectional elevation of the same.

My invention relates to the manufacture of printing-rolls for paper hangings or other purposes, and has for its object, first, an effective, cheap, simple, and durable method of securing the outline plates or pins which form the figure to the body of the roll; and, second, the production of a printing-roll, the outline plates or pins of which are secured to the body by molten material flowed around or through perforations in them, and then allowed to harden on the roll, rigidly and unfailingly securing the plates or pins in proper position.

For the better information of the public, I will proceed to describe my invention in detail. A shaft or shell of any metal or alloy, but preferably of iron, perforated at different points with holes, is first taken and surrounded or wrapped with a layer of bees-wax, or bees-wax mixed with rosin, or of cerin or spermaceti, or of any substance of analogous nature and kindred properties, the layer being previously cast or otherwise prepared, and, when upon the shaft or shell, dressed off by planing or turning. The outline plates or pins, which are formed of brass or other material, perforated or nitched, if desired, as shown in Fig. 3, or not so perforated or nitched, are then pressed or driven to any re-

quired depth into the wax, which, by its cohesion, holds them firmly in place. The roll thus prepared is then completely varnished with collodion or shellac, dissolved in alcohol or copal, or any other water-proof varnish or fluid, and the same allowed to set and thoroughly dry. The roll is then incased in a perforated cast-iron or other flask, cage, or mold, made for convenience in sections, and the entire flask then completely packed full of, and the prepared roll covered up by, a mixture of plaster-of-paris, or the same mixed with asbestos, asphalt, or kaolin, or of clay or other suitable material, which is allowed to become hard, the moisture from the same in drying exuding through the perforations in the flask.

When these preliminary stages have been gone through with, heat is applied by steam-pipe, hot iron, or other means to the interior of the roll, serving to melt the wax and permit its escape in a melted state through the perforations in the body of the roll. After the wax has run completely out, it will be readily comprehended that in its place is left a hollow annular space around the roll, the free extent and continuity of which is broken only by the inner or nitched portions of the outline-plates before embedded in the wax, their outer portions being now embedded and held fast in the same position in the plaster, which is now again thoroughly dried and heated through, and into the annular space is then poured molten type-metal, lead, other metal or alloy, or sulphur or glass or like material, through the perforations in the roll or through any opening in the plaster, which, flowing in, completely fills up once more the space left open by the flowing out of the wax, spreads from plate to plate through the notches in the same, or underneath the plates when there are no notches and the plates are not driven entirely home, and forms, when hardened, a casting, so to speak, upon the roll, in which are embedded, in their proper position and relation, the outline plates or pins. The flask is now taken apart, and the plaster broken away, when the roll is finished and ready for use.

In the drawings, B represents the body of the roll; A A', the flask; H, the perforations in the same; C, the bolts connecting it; D, the

outline-plates; K, an outline-pin; I, the notches in the plates; G, the perforations in the roll; E, the layer of wax (shown in Fig. 1), flowing out under a supposed application of heat; F, the plaster-of-paris; and E' the hardened lead in the finished roll.

The chief advantages are the simplicity, cheapness, and accuracy of my process, and the lightness—saving wear in the journals—and durability of my roll.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The process of securing outline plates or pins to the body of printing-rolls, herein described, by coating the roll with wax, driving the plates into the wax, coating the whole with water-proof varnish, incasing the roll thus prepared in a cage, filling the cage with

plaster-of-paris, and allowing the same to harden, melting out the wax by heat, and flowing molten material into the annular space made vacant by the melting of the wax, all substantially in the manner shown and described.

2. A printing-roll, to the body of which are fixed outline plates or pins, having in their bases dovetailed notches or perforations, which, being embedded in the molten metal coating said body, secure the plates or pins in place on the roll, substantially as described.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

J. J. JANEWAY.

Witnesses:

J. A. BLISH,

WILLARD P. VOORHEES.