(No Model.) 2 Sheets—Sheet 1.

C. V. STEINBACH.

MACHINE FOR BENDING PRINTERS' RULES.

No. 251,804. Patented Jan. 3, 1882.

Fig. 1.

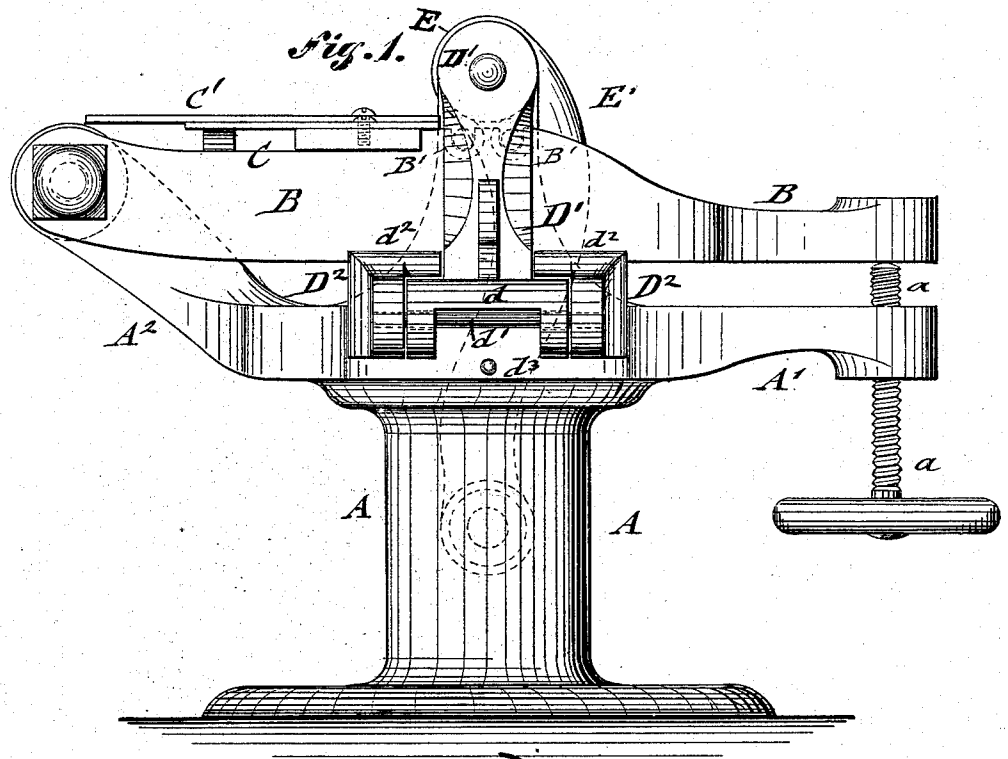
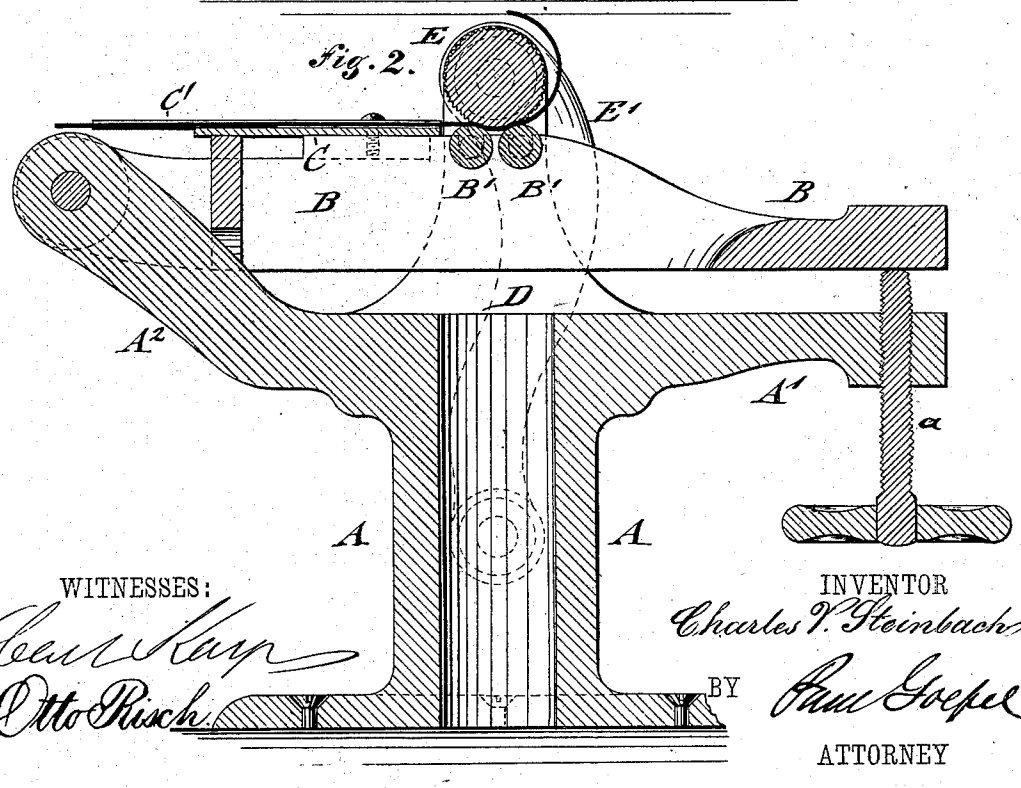


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

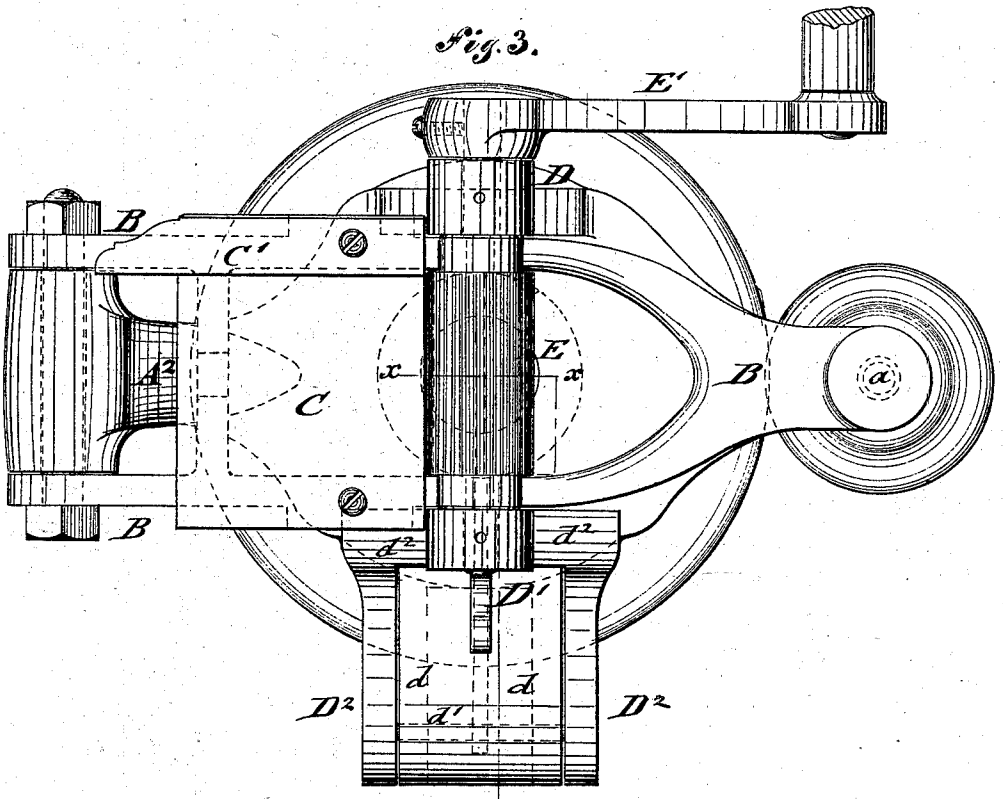
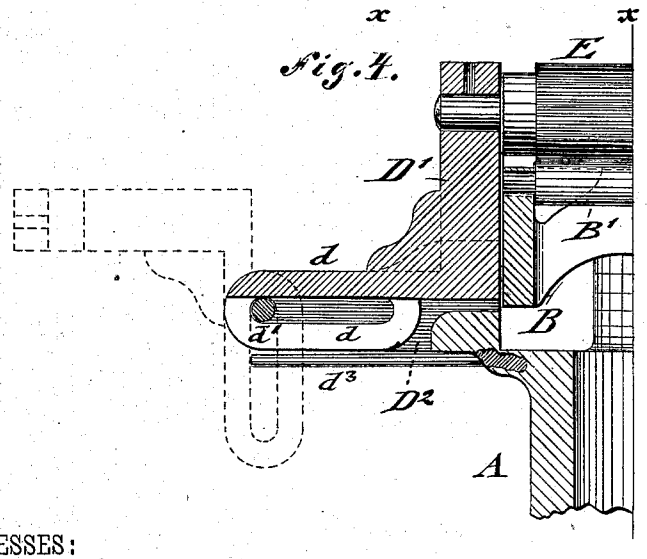


Fig. 4.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR BENDING PRINTERS' RULES.

SPECIFICATION forming part of Letters Patent No. 251,804, dated January 3, 1882.

Application filed May 9, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES V. STEINBACH, of the city, county, and State of New York, have invented certain new and useful Improvements in Machines for Bending Printers' Rules, of which the following is a specification.

This invention has reference to an improved machine for bending brass rules, leads, &c., to any desired degree of curve for use in printing-offices, so as to do away with the difficult manipulation of the rules by hand, produce a more regular and uniform curvature, and dispense with the loss of material incidental to the inefficient mechanical appliances heretofore used for this purpose.

The invention consists of a machine for bending printers' rules, which supports in suitable bearings on a fixed standard an upper ribbed curving-cylinder, which is revolved by a hand-crank and supported in bearings of side standards, of which one is laterally movable and capable of being thrown sidewise, so as to remove conveniently small rules bent into circular shape. Below the upper bending-cylinder are arranged two smooth bending-rolls, which are supported on a vertically-adjustable frame, that is hinged at its rear end to a fixed arm of the supporting-standard and provided back of the bending-rolls and cylinder with a platform and fixed side gage. The front end of the hinged roller-frame rests upon a set-screw at the end of a fixed front arm of the main standard.

In the accompanying drawings, Figure 1 represents a side elevation of my improved machine for bending printers' rules. Fig. 2 is a vertical longitudinal section; Fig. 3, a plan view; and Fig. 4, a detail vertical transverse section of the same on line $x\ x$, Fig. 3, showing the laterally-movable side standard of the bending-cylinder.

Similar letters of reference indicate corresponding parts.

By reference to the drawings, A represents the main standard of my improved machine for bending printers' rules, which standard is provided with a circular base-flange for being screwed to a bench or other support.

From the main standard A extends in one direction a straight arm, A′, and in opposite direction thereto a second upwardly-curved arm, A^2, to which is hinged a roller-carrying frame, B, that carries at its central part two smooth bending-rolls, B′. The roller-carrying frame B is adjusted at its front end by means of a vertical set-screw, *a*, carried by the arm A′, said set-screw being turned by a hand-wheel at the lower end. The adjustable frame B is furthermore provided, back of the bending-rolls B′, with a fixed horizontal platform, C, and a side gage, C′, along which the rules are moved and guided toward the bending-rolls B′. The main standard A is furthermore provided at both sides of the frame B with vertical side standards, D D′, which support in suitable journal-bearings intermediately above the rolls B′ a curving-cylinder, E, that is arranged with longitudinal ribs and revolved by a hand-crank, E′, secured to one end of its shaft.

The side standard D is preferably, like the arms A′ A^2, cast in one piece with the main standard A, while the standard D′, at the opposite side of the same, is made laterally movable, being guided by means of a laterally-extending and slotted base, *d*, along a fixed transverse pin, *d′*, supported by sidewise-extending lugs or brackets D^2, which are cast in one piece with the main standard A. The inner ends of the lugs D^2 are provided with inwardly-projecting portions d^2, which overlap the base *d* of the movable standard D′, and retain the same firmly when in position for supporting the shaft of the curving-cylinder E, as shown in Figs. 3 and 4. When the side standard D′ is moved sidewise, clear of the projections d^2, until its slotted base d^2 is stopped by the fixed pin *d′*, it can be swung on the pin *d′* downward until stopped by a fixed stop-pin, d^3, on standard A, and retained thereby in horizontal position. When the movable side standard D′ is thus moved out of the way small rules which have been bent into circular shape can be readily removed from between the rolls without in the least injuring the completeness of their shape.

When bending larger arc-shaped curves it is not necessary to throw the standard sidewise and downward, as the rules can be removed at the opposite side of the rolls. The degree

of curve, whether plain or serpentine, is constantly under the control of the operator, who adjusts the set-screw to suit.

The machine is simple, solid, and powerful, and permits the bending of rules of all kinds rapidly and conveniently into accurate and graceful curves or entire circles, resulting in a saving of time in bending, and in the production of better work in printing.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a machine for bending printers' rules, the combination of smooth bending-rolls supported in a vertically-adjustable frame with a ribbed curving-cylinder above the same, and with a platform and side gage secured to the adjustable frame at one side of the bending-rolls, substantially as set forth.

2. In a machine for bending printers' rules, the combination of the supporting main standard A and a hinged and adjustable supporting-frame, B, carrying the lower bending-rolls, B′, platform C, and side gage, C′, with a ribbed curving-cylinder, E, above the rolls B′, substantially as described.

3. In a machine for bending printers' rules, the combination of the main standard A, having arms A′ A^2 extending therefrom in opposite direction, with a roll-supporting frame, B, which is hinged to one standard, A′, and adjusted by a set-screw, *a*, at the end of the opposite standard, substantially as set forth.

4. In a machine for bending printers' rules, the combination of the supporting main standard A, having side standards, D D′, and guide-brackets D^2, extending to one side thereof, with an upper curving-cylinder, E, hinged and adjustable frame B, and lower bending-rolls, B′, the side standard D being stationary, while the side standard D′ is laterally movable in the guide-brackets D^2, and adapted to be retained thereby or to be thrown down for removing circularly-bent rules from the bending-rolls, substantially as specified.

5. In a machine for curving printers' rules, the main frame A, having sidewise-extending lugs or brackets D^2, provided with a fixed transverse guide-pin, *d′*, and projections d^2, in combination with a laterally-movable side standard, D′, having a slotted base, *d*, and with a fixed projecting stop-pin, d^3, on the main standard A, substantially as specified.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 22d day of April, 1881.

CHARLES V. STEINBACH.

Witnesses:
PAUL GOEPEL,
CARL KARP.