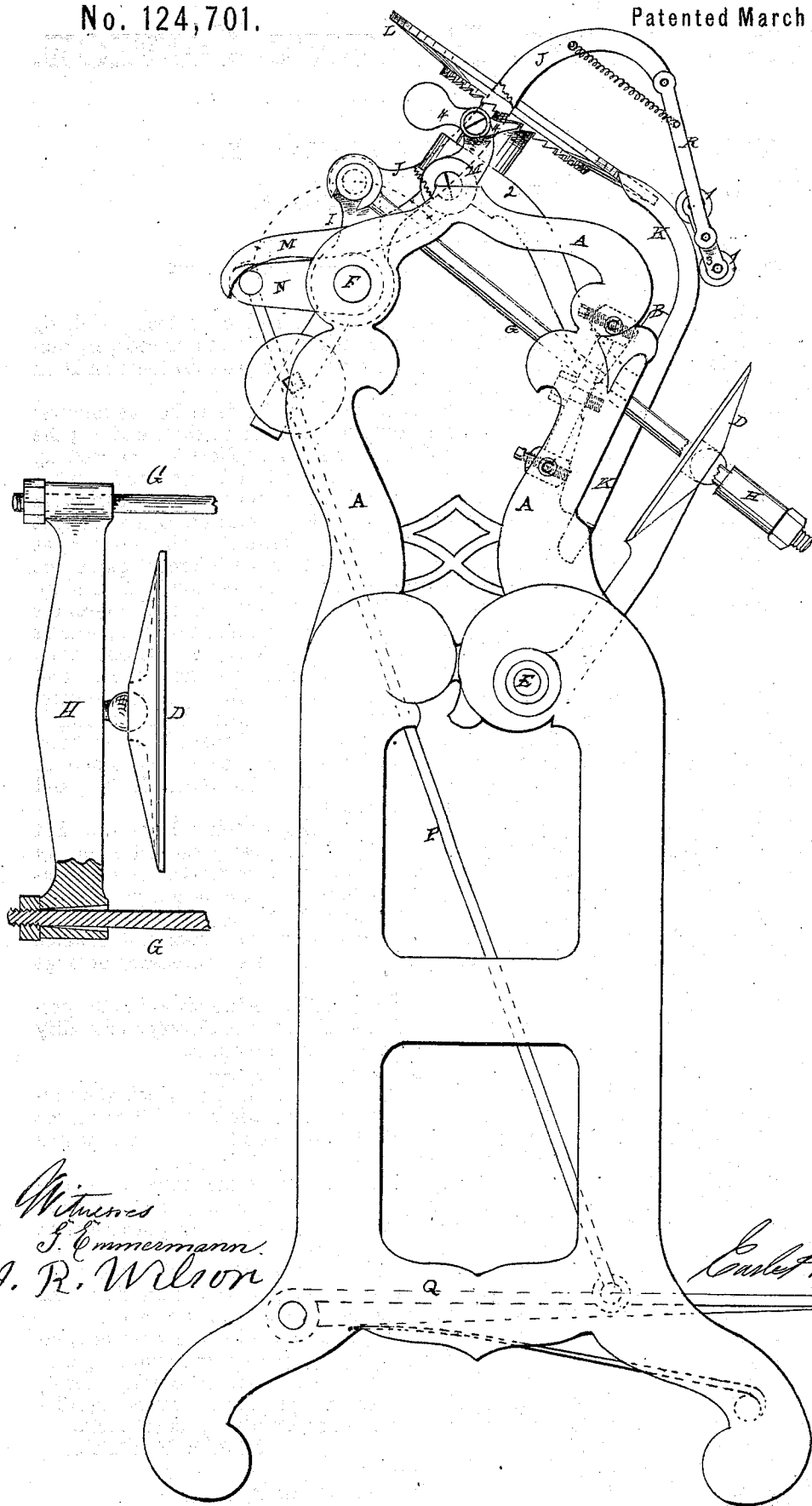


EARLE H. SMITH.

No. 124,701.

Printing Press.

Patented March 19, 1872.



Witnesses
J. Emmersmann.
C. R. Wilson

Earle H. Smith

UNITED STATES PATENT OFFICE.

EARLE H. SMITH, OF NEW YORK, N. Y.

IMPROVEMENT IN PRINTING-PRESSES.

Specification forming part of Letters Patent No. 124,701, dated March 19, 1872.

To whom it may concern:

Be it known that I, EARLE H. SMITH, of the city, county, and State of New York, have invented certain Improvements in Printing-Presses, whereof the following is a specification:

These improvements relate to those presses which use a bed and platen; and the object is to produce a complete press, embodying strength and economy of construction, compactness, and simplicity.

To enable others to make and use my invention, I will proceed to describe the same.

Referring to the annexed drawing, A represents the sides of a suitable frame, sustaining the various parts of the machine. B is the type-bed, supported and held in position by connection with fixed cross-beams, the ends of which are secured to the side frames at C, and such bed is adjustable on said beams toward and away from the platen D. The platen is operated or moved to and away from the bed with a swinging motion, by means of arms I fixed to a shaft, F, which arms communicate with the platen, through the agency of connecting-rods G—one at each side of the platen—and a platen-beam, H, reaching across the platen from side to side. The said connectors G are arranged to pass between the outside of the bed and the inside of the frames A, whereby it becomes practicable to have all parts of the machine to work inside of the main frame and thus protect them from accidental injury. To said platen-beam, at its mid-length, a ball is made fast, which sets into a socket therefor at the center of the platen. This arrangement insures the application of the pressure at that point, and permits the platen-beam to accommodate any variation in the action of the arms I. Affixed to the shaft F are arms J, (which may or may not be parts of the arms I,) for operating the inking-rollers. The arms J in the operation of the press do not pass down by the type-bed, and the bearings of said rollers are therefore arranged in journal-carriers 3, attached to the lower extremities of swinging levers R, which are pivoted to the arms J. L is the revolving plate for holding and distributing the ink upon the rollers. Said plate has ratchet-teeth on the under side, which are engaged intermittently by a pawl 4, at the end of a lever, M, and said lever has motion imparted to it by the arm N or any suitable cam on the shaft F. This shaft, representing the driving-shaft of

the machine, is turned by a foot-pedal, Q, through the medium of a rod or rods, P, running directly from the pedal to the arm N on said shaft.

The operation may be described as follows: In the downward motion of the treadle Q the shaft F is turned, the rollers are carried up over the form or type and onto the ink-plate L. At the same time the points of connection of each end of the connectors G are brought into line with the center of the shaft F, at which juncture the platen is forced against the type producing the impression. In the upward motion of the treadle Q the inking-rollers retrace their path over the ink-plate L, bearers K, and form, inking the type a second time, while the arm N operates the lever M and pawl 4, turning the ink-plate part of a revolution, and the platen returns to the required position for repeating the operation. It therefore requires but one movement down and up to ink the type twice, distribute the ink, and give the impression.

In the above description I have specified the simplest and cheapest construction of my improved press, and consider the plan preferable for small sizes; but in larger presses the shaft is arranged to rotate continuously, and such additional shafts and gear and balance wheels are introduced as are necessary for large and heavy work.

I do not, therefore, confine myself to the precise details specified, but shall vary and modify them as circumstances require.

I claim as my invention—

1. Combining the arms I, to which the connectors G are attached, in one with the arms J that work the inking-rollers, substantially as specified.

2. The combination of the arms I, the connectors G, the self-accommodating platen-beam H, and vibrating platen, for the purposes and substantially as described.

3. Arranging the connectors G to work between the type-bed and the main frame, for the purposes and substantially as specified.

4. The combination, with the fixed bed, vibrating or swinging platen, and revolving ink-plate, of the inking-rollers, levers R, arms J, shaft F, lever and pawl M 4, arm N, treadle-rod and treadle, substantially as set forth.

EARLE H. SMITH.

Witnesses:

WM. H. JOHNSON,
E. B. BARNUM.