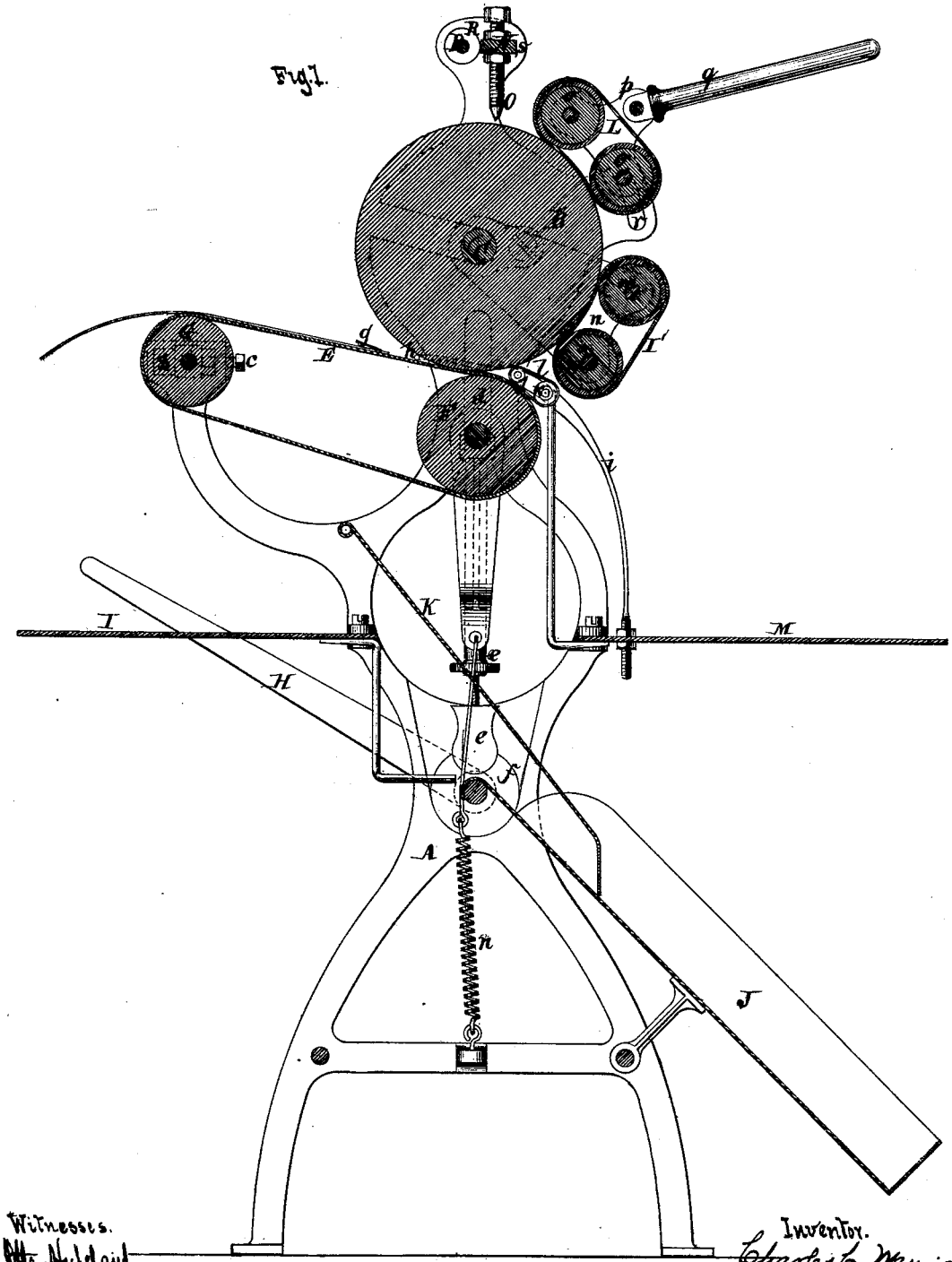
3 Sheets—Sheet 1.

C. C. MAURICE.

LITHOGRAPHIC PRINTING-PRESS.

No. 191,696. Patented June 5, 1877.

Fig. 1.



Witnesses.
Otto Muhlland
Louis E. Miller.

Inventor.
Charles C. Maurice
per
Van Santvoord & Hauff
his attys.

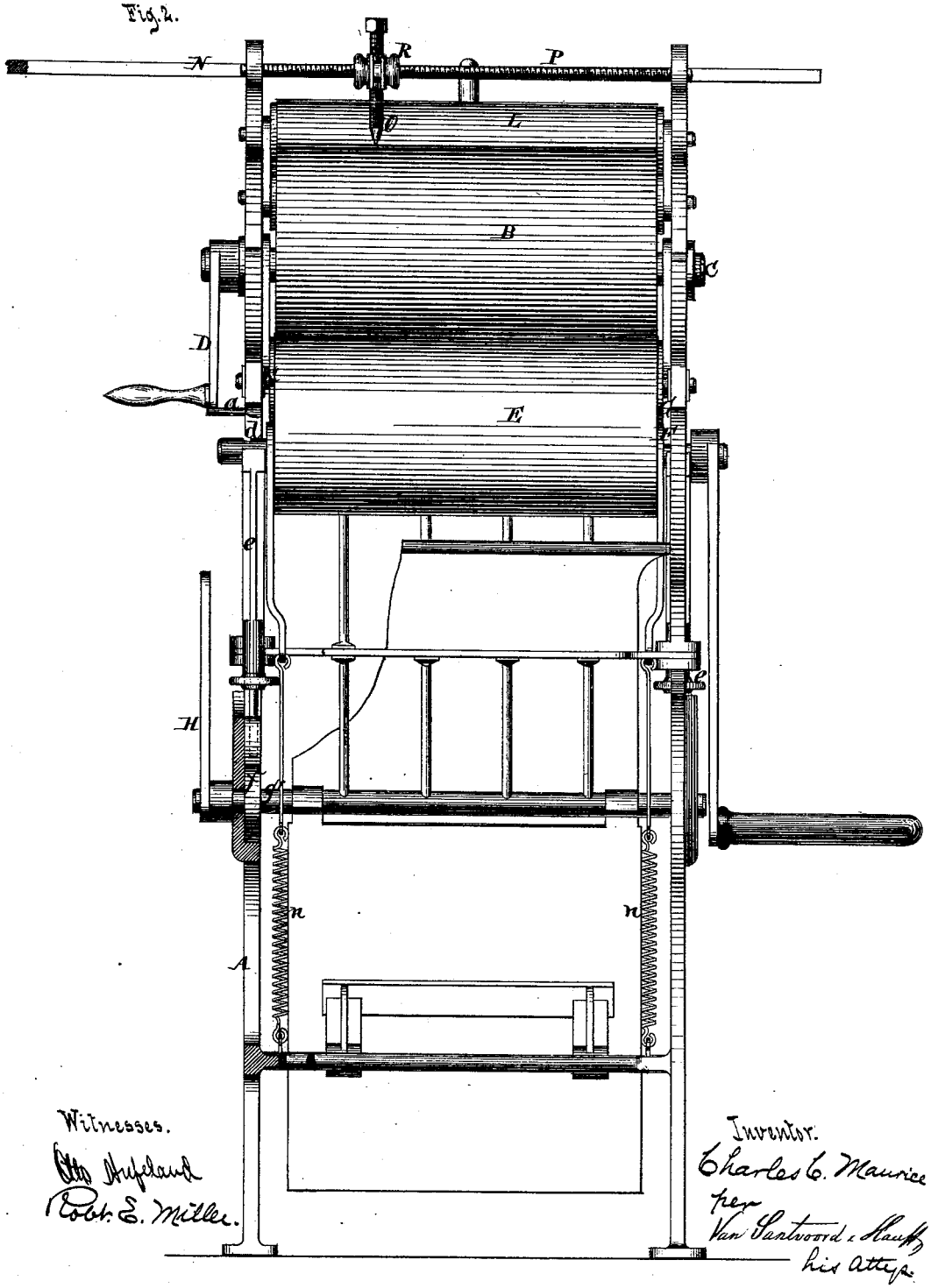
3 Sheets—Sheet 2.

C. C. MAURICE.

LITHOGRAPHIC PRINTING-PRESS.

No. 191,696. Patented June 5, 1877.

Fig. 2.



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Otto Hufeland
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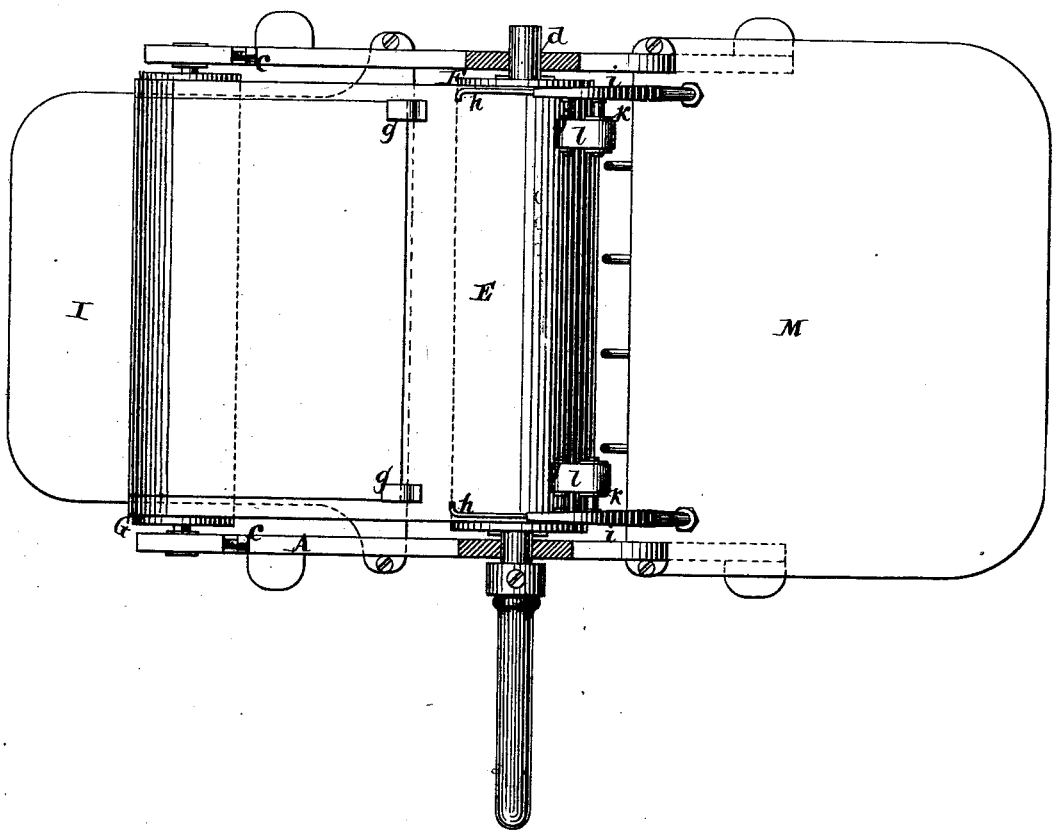
3 Sheets—Sheet 3.

C. C MAURICE.

LITHOGRAPFIC PRINTING-PRESS.

No. 191,696. Patented June 5, 1877.

Fig. 3.



Witnesses.
Robt. E. Miller
Otto Hufsland

Inventor.
Charles C. Maurice
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UNITED STATES PATENT OFFICE.

CHARLES C. MAURICE, OF NEW YORK, N. Y.

IMPROVEMENT IN LITHOGRAPHIC-PRINTING PRESSES.

Specification forming part of Letters Patent No. **191,696**, dated June 5, 1877; application filed November 10, 1876.

To all whom it may concern:

Be it known that I, CHARLES C. MAURICE, of the city, county, and State of New York, have invented a new and useful Improvement in Lithographic-Printing Presses, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a vertical section of Fig. 2. Fig. 2 is a sectional front view; and Fig. 3 is a top view with the cylindrical stone removed.

Similar letters indicate corresponding parts.

This invention relates to certain improvements in lithographic presses in which are embodied a cylindrical stone containing the design to be printed; and my invention consists of a novel combination of parts, which will be fully hereinafter described, a preliminary explanation being therefore deemed unnecessary.

In the drawing, the letter A designates a frame, which forms the bearings for the working parts of my press. B is a cylindrical stone, which is mounted on a shaft, C, the bearings of which are so arranged that the same, together with the stone, can be readily taken out of the frame. On one end of this shaft is secured a crank, D, which serves to turn the stone round when it may be required, and which also co-operates with the stop or register *a*, for the purpose of bringing the stone in the proper position before printing.

Below the cylindrical stone B is situated the endless apron E, that is stretched over the rollers F G. The shaft of the tension-roller G has its bearings in suitable boxes fitted into horizontal slots *b* in the frame A, and said boxes are exposed to the action of set-screws *c*, by means of which the apron E can be adjusted and retained at the proper tension. The shaft of the pressing-roller F has its bearings in vertical slots *d* in the frame, and it rests upon standards *e e*, the lower ends of which are rounded and stepped in sockets formed in the edges of disks *f*, which are mounted on a rock-shaft, *g'*. A hand-lever, H, serves to turn this rock-shaft, and by depressing this hand-lever the standards *e e* are raised and the roller F is pressed up against the cylindrical stone. The standards *e e* are made in two parts, which are connected together by screw-rods, so that by turning these screws the position of the pressing-roller F in relation to the cylindrical stone can be regulated.

On the apron E are secured two fingers, *g g*, against which the edge of the sheet to be printed on is placed, and which serve to carry said sheet through between the cylindrical stone and the pressing-roller. With these fingers and with the endless apron co-operate two pointers, *h h*, which extend over the edges of the endless apron, one directly opposite the other, Fig. 3. After the sheet of paper has been placed on the apron E, under the fingers *g*, the apron is turned until the inner edge of the sheet comes in line with the pointers *h h* before the pressing-roller F is raised.

In the example shown in the drawing said pointers project from spring-arms *i i*, which carry the tape-rollers *j k*; but the pointers may be secured in position by any other suitable means.

The blank sheets are placed on a table, I, which is secured to the frame A, and each sheet, after having been printed upon, is deposited in the piling-trough J. This purpose is effected by the action of tapes *l*, which extend over the rollers *j k*, that are mounted in the arms *i i*, as previously stated. These arms are elastic, so that they can give when the pressing-roller F is raised, and they serve to keep the tapes in close contact with the apron E as the same passes over the roller F, so that the printed sheets are turned down in the piling-trough. A chute, K, assists in guiding the sheets into this trough. When the hand-lever H is turned up the pressing-roller F sinks down by its own weight, assisted by springs *n*, which are connected by straps attached to the axle of the pressing-roller.

The damping apparatus consists of an endless apron, I', of buckskin, felt, cloth, or other absorbent material, which is stretched over two rollers, *m*, which are covered with flannel or other equivalent material, and which have their bearings in straps *n*, that swing on the shaft of the cylindrical stone inside of the frame A. By this arrangement the damping-apron is held in contact with a comparatively large

portion of the cylindrical stone, and by applying to said apron from time to time a wet sponge, the operation of damping can be effected to good advantage.

The inking apparatus consists of an endless apron, L, of leather or other suitable material, that is stretched over two rollers, *o o*, which have their bearings in a frame, *p*, which is provided with a handle, *q*. The shaft of one of the rollers *o* projects beyond the side pieces of the frame *p*, so that the same can be introduced into slots *r*, formed in arms or brackets which project from the main frame A.

When the inking apparatus is supported in these slotted brackets, the apron L bears upon a comparatively large portion of the cylindrical stone, and the ink previously applied to said apron is readily transmitted to the surface of the stone. On the main frame A is secured an ink-slab, M, and by taking the inking apparatus out of its slotted brackets and carrying it backward and forward over said ink-slab, the apron L is supplied with the requisite quantity of ink.

In the top of the main frame are two slots, *s*, which form the guides for a slide-bar, N, in which is secured a cutting-tool, O. Near to the slide-bar N, and parallel to the same, is situated a screw-rod, P, which is firmly secured in the main frame, and on which is fitted a nut, R, which is provided with a groove to receive a tooth which projects from the edge of the slide-bar N. By turning the nut backward and forward, therefore, a reciprocating motion is imparted to the slide-bar, and the cutting-tool O is carried back and forth over the surface of the cylindrical stone. Said tool is fastened in a screw, which is tapped in a socket in the slide-bar, so that by turning said screw the tool can be brought to bear on the surface of the stone or raised from the same.

For the operation of my press, one, two, or three persons may be employed. After transferring any job to the cylindrical stone by the usual process, the blank paper is placed on the table I, the damping apparatus is moistened, and the cylindrical stone is turned two or three times by means of the crank D, the stop *a* having been turned out of the path of said crank. The inking apparatus is fed with ink and secured in the frame A, one of the blank sheets is placed on the apron E and fixed between the fingers *g g*, and then said apron is moved so as to bring the inner edge of said sheet in line with the pointers *h h*. The cylindrical stone is turned four or five times, so as to supply its surface with ink, and when it is stopped the crank D is brought up against the stop *a*. The pressing-roller is forced up by the hand-lever H, and it is then turned by a crank secured to its shaft until the sheet has passed clear through between said pressing-roller and the cylindrical stone. The pressure is taken off, and the same operations are repeated to print upon the next sheet. During these operations one person is required to attend to the damping and inking, one to feed the blank sheets and make the pressure, and one to turn the crank for printing; or one or two persons can attend to all these operations in the proper succession.

When a new job is to be transferred to the cylindrical stone, its surface is turned off and polished by means of the tool O. In this case the inking and damping devices are removed.

The turning and polishing of the printing-cylinder are done by turning the crank D with the left hand and the nut R with the right hand.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the revolving cylindrical stone of a lithographic press and the slotted bracket attached to the frame A, of the removable frame *p*, having a handle, *q*, and bearing the rollers *o o*, and the inking-apron L, passing around said rollers, as and for the object hereinbefore set forth.

2. The combination of the endless carrying-apron E, pressing-roller F, cylindrical stone B, tapes *l*, running on rollers supported by elastic arms, and piling-trough J, all constructed and operating substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 2d day of November, A. D. 1876.

CHARLES C. MAURICE. [L. S.]

Witnesses:
W. HAUFF,
ROBT. E. MILLER.