

A. HATHAWAY.
Paper Ruling-Machines.

No. 134,883.

Patented Jan. 14, 1873.

Fig 1.

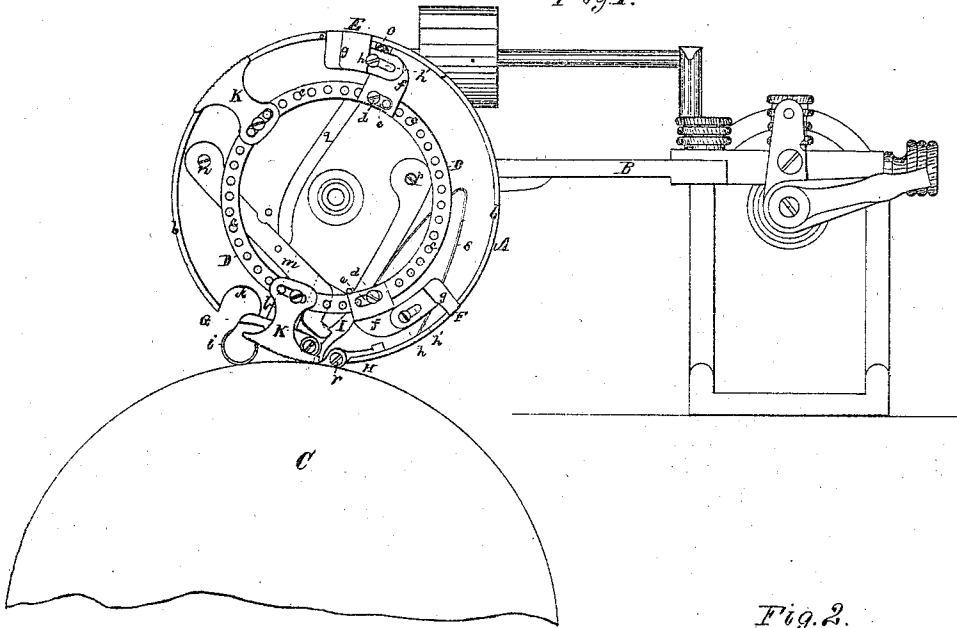
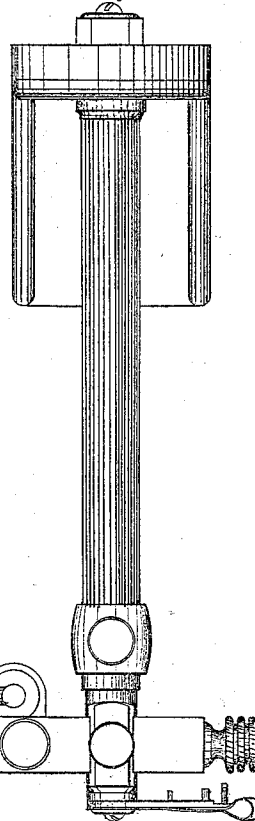


Fig 2.



Witnesses

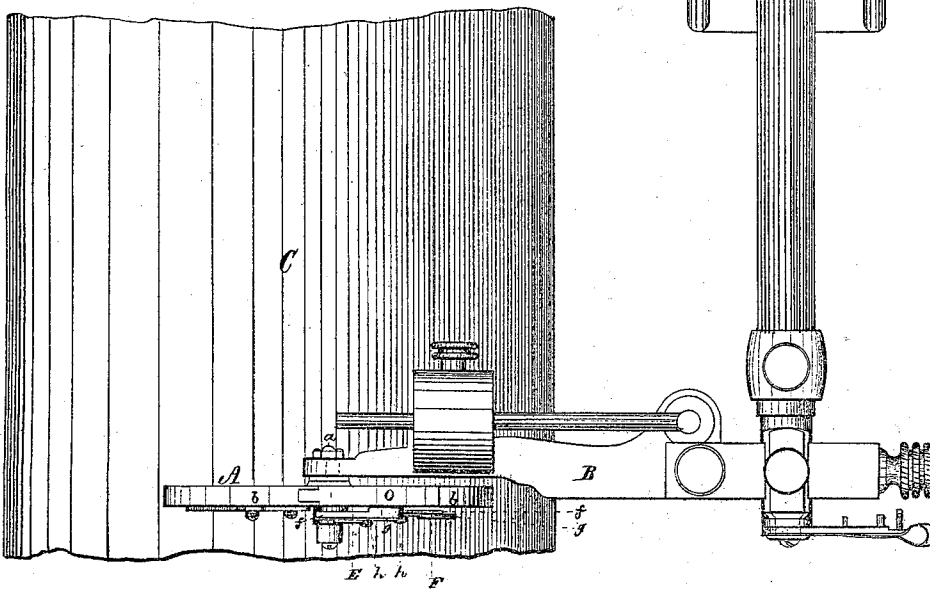
Alfred Hathaway.

S. N. Piper

by his attorney.

J. N. Miller

R. H. Ledy

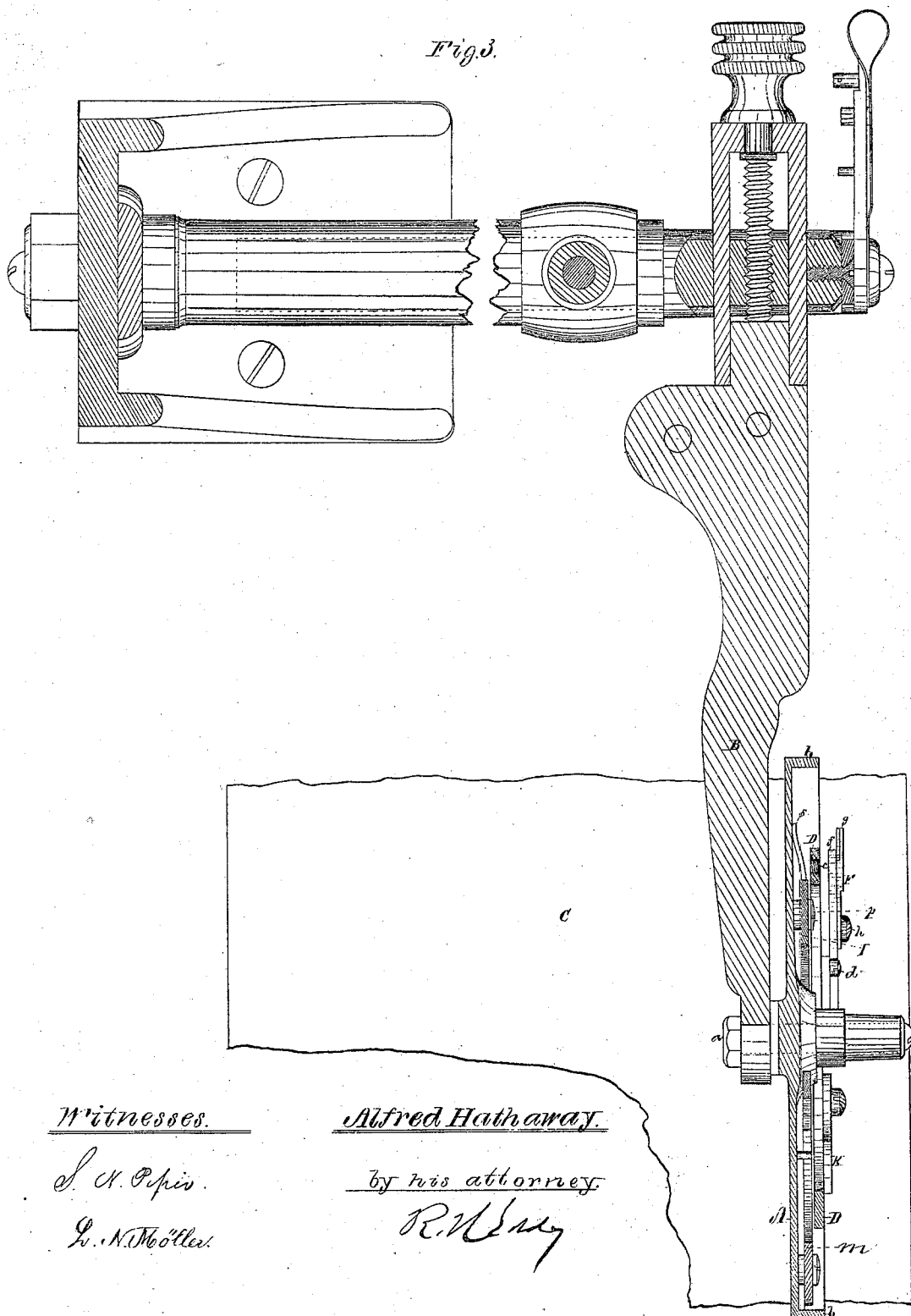


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Fig. 3.



Witnesses.

S. A. Phipps.

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by his attorney

R. W. May

UNITED STATES PATENT OFFICE.

ALFRED HATHAWAY, OF FREETOWN, MASSACHUSETTS.

IMPROVEMENT IN PAPER-RULING MACHINES.

Specification forming part of Letters Patent No. 134,883, dated January 14, 1873.

To all whom it may concern:

Be it known that I, ALFRED HATHAWAY, of Freetown, of the county of Bristol, of the State of Massachusetts, have invented a new and useful Improvement in Paper-Ruling Machines, and for the purpose of raising out of action the pins thereof to form during the process of ruling paper one or more of what are termed "headings," or unruled spaces; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 denotes a side elevation, Fig. 2 a top view, and Fig. 3 a horizontal section of such mechanism.

In the drawing, A denotes a circular disk pivoted to an arm, B, projecting from a rock-shaft, such disk being arranged with the arm, as shown, over and directly over the bed or endless-apron roller C of a paper-ruling machine. The said disk should be capable of turning freely on the journal *a* projecting from the arm, and be provided with a flange, *b*, extending from one side of it at its circumference, all being as shown. There is arranged within the said flange, and concentrically therewith, a flat ring, D, pierced with a series of screw-holes, *c*, arranged at equal distances apart around it. The ring D is placed at a short distance from and parallel to the disk A, and secured thereto at intervals by studs or connections extending from one to the other. The said ring is to support one or more cams, E F, fastened to the ring by clamp-screws *d* going through slots *e* in such cams, and being screwed into holes in the ring, all being as shown. These cams E F, during a revolution of the disk, are intended to so act upon a lever or some device extending from or making part of or connected with the pen-carrier of the ruling-machine as to cause the pens to be raised and held out of action upon the paper while each cam may be passing the device against which it may so act. Each of the cams I usually make in two parts, *f g*, as shown, connected by a clamp-screw, *h*, going through a slot, *h'*, in one of such parts, and being screwed into the other. This enables each cam to be adjusted, or increased or diminished in width, as may be required, after hav-

ing been placed in position approximately. Furthermore, there is applied to the flanged disk A, to cause it to adjust itself to the proper position for the reception of and action upon each sheet of paper, a mechanism which may be thus described: A bent arm, G, pivoted to the disk and arranged as shown, carries a friction-wheel, *i*, fixed to one side of it, the disk being notched or recessed, as seen at *k*, to receive the said wheel while it may be in the act of passing over the feed-apron roller. Over the arm, and connected with it by a link, *l*, is another arm, *m*, pivoted to the disk at *n*. A part or arcal portion, *o*, of the flange of the disk is movable or separate from the rest, and is hinged at one end to the disk A, there being jointed to such part *o* a pitman, *q*, extended to the arm *m*, as shown.

In advance of the arm G is a wedged lever or foot-piece, H, upon whose shorter arm the lower end of a latch, I, rests, the pivots of the lever and latch being represented at *p* and *r*, and the latch being provided with a spring, as shown at *s*.

When the friction-wheel *i* of the arm G, during each revolution of the disk, first strikes the endless apron on the roller, the rotation of the disk will be arrested and the disk will be in the correct position for a sheet of paper to be applied to it. The endless apron continuing in motion will carry the sheet of paper forward and force its advanced edge over the foot-piece H and against the spring-latch I in a manner to force the latter out of engagement with the arm *m*. As soon as this takes place the wheel *i* and arm G will be free to rise upward and the disk will revolve, the arcal part *o* being forced upward.

During the revolution of the disk the cams will effect the necessary elevations of the pens out of action upon the paper, and while the arcal part *o* may be passing across the feed-apron roller it (the said arcal part) will be forced back to place in the periphery of the disk, and in so doing will cause the arm G and wheel *i* to be advanced so as to project the wheel beyond the disk. When thus projected beyond the disk the wheel *i* will be latched in position by the latch I taking upon the end of the arm *m*, and thus when the wheel *i* may next be brought around against the endless

apron such wheel will stop further rotation of the disk A or set it for reception of the next sheet of paper.

In order to insure the disk moving with the paper at the proper time or times, more especially while the cam or cams may be in action, as explained, I affix to the ring D one or more serrated sectors, K K, such being formed and applied to the ring in manner as shown. The arcal periphery of each sector has its radius of curvature equal to that of the periphery of the disk, the arc being serrated or toothed.

Immediately after the sheet of paper may have effected the disengagement of the latch

from the arm *m* the edge of the sheet will pass out of the disk or away from the latch I and the foot-piece H, such being caused by such parts being moved away from the sheet.

I claim as my invention as follows—that is to say:

The combination of one or more serrated sectors K, the disk or wheel A and its cam or cams, stop-wheel, and the mechanism for operating and latching such stop-wheel, in manner as set forth.

ALFRED HATHAWAY.

Witnesses:

R. H. EDDY,
J. R. SNOW.