

J. Ames.
Ruling, Stamping & Drying Paper.
No. 1,709. Patented Jul. 31, 1840.

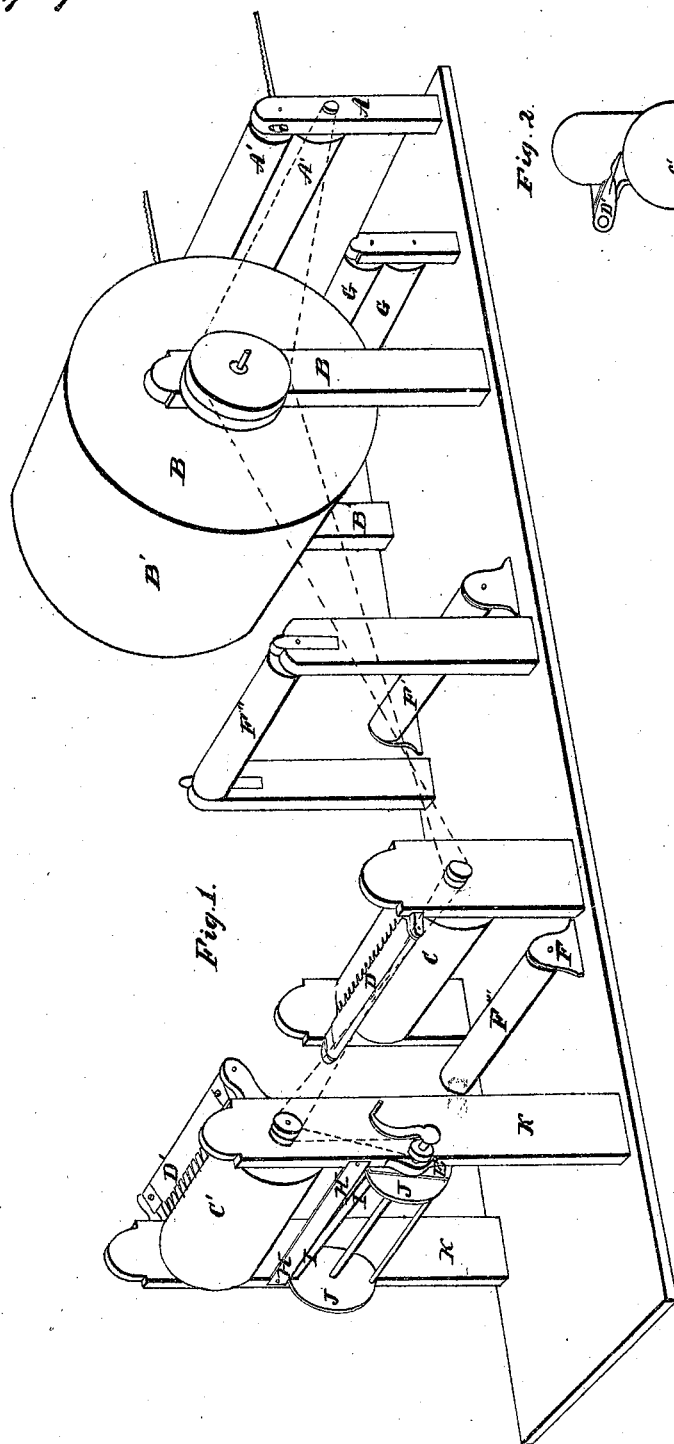
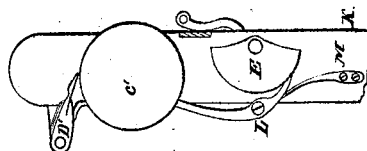


Fig. 1.

Fig. 2.



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MANUFACTURE OF PAPER, COMBINING THE OPERATION OF MAKING, RULING, AND CUTTING THE PAPER AT ONE PROCESS.

Specification of Letters Patent No. 1,709, dated July 31, 1840.

To all whom it may concern:

Be it known that I, JOHN AMES, of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful machine for ruling paper as it is delivered in a continuous sheet from the drying-cylinder of the machine for manufacturing paper of that description, which ruling-machine I also combine with the cutting-machine for dividing the paper into sheets as it is delivered from the ruling-machine; and I do hereby declare that the following is a full and exact description thereof.

In the accompanying drawing, A, is one of the standards of the pressing rollers A', A', between which the paper passes on its way from the paper machine to the drying cylinder B', which is supported by the standards B, B. The rollers G, G, serve to keep the paper in contact with the greater portion of the periphery of the drying cylinder, by the sheet being led back over and under them, after passing over the drying cylinder from the pressing rollers.

F', F'', F''', are supporting rollers over which the paper may be made to pass in its course from the drying cylinder; all the parts above referred to being similar to those common to paper machines.

C, is the first ruling cylinder, under which the paper is to pass, and then over it, so as to be subjected to the action of the pens affixed to the bar D, and operating as in other ruling machines. After passing over the cylinder C, it is led back under, around, and over, the supporting cylinder F'', whence it passes forward over the second ruling cylinder C', and, consequently, under the pens on the bar D'; and by the pens on this bar the paper is ruled on the side opposite to that on which the bar D, operated.

Immediately below the roller C', is the cutting apparatus constructed in the usual manner, H, H, being the steel knife attached to the frame of the machine, and I, I, that attached to the revolving disks J, J; which knives operate at such a distance below the cylinder C', as is required for the width of the sheet; a distance which may be regulated at pleasure by making the cylinder C', adjustable.

When ruling for letter-paper, it is necessary to rule on three sides only, and this I

effect by raising the pens on the bar D', by means of a cam, during the proper period for leaving a portion of the sheet unruled. This cam consists of a semicircular piece of metal on the shaft of the revolving knife, outside of one of the disks J, and close to one of the standards K, K. The action of this cam is shown distinctly in Fig. 2, which represents the inner side of one of the standards K. The revolving, semicircular cam is seen at E, and this, when it comes into contact with the tail of the lifting rod, or lever, L, causes it to raise the bar D'; and when the lever L, is relieved from the action of the cam, the spring M, acts upon the lever, and moves it so as to allow the bar D', to fall, and bring the pens upon the paper on the cylinder C'. The ruling cylinders are, as usual, covered with cloth, or other elastic material.

The respective cylinders, may be turned by means of belts and whirls; and they may be varied in their arrangement; as, for example, both the ruling cylinders may be placed upon the same standards, one above the other, but I have shown that arrangement which I have deemed the most convenient, without intending to limit myself thereto, the general principle of action being independent of particulars of this kind.

By taking the paper from the drying cylinder in an endless sheet, to the ruling apparatus, the latter is much simplified, as I dispense entirely with the twine for conducting the paper, the feeders for carrying it to the cylinders, and the board by which the edges of the sheets are laid straight, as employed in the ordinary ruling machine.

Having thus, fully described the manner in which I construct and use my apparatus for ruling paper as it is delivered in an endless sheet from the drying cylinder, and also the manner of combining the ruling with the cutting apparatus, what I claim therein as constituting my invention, and desire to secure by Letters Patent, is—

1. The combining of the ruling and cutting machines, with the drying cylinder, from which drying cylinder the paper is delivered in an endless sheet; said combination being made substantially in the manner herein set forth; the paper, when required, being successively ruled on both sides, by means of two ruling cylinders, and their ap-

pendages, in the manner described, and being conducted from the last cylinder to the cutting machine, also as described.

2. I likewise claim, in combination with
5 the ruling and cutting apparatus, the manner of raising the pens on the second ruling cylinder, by means of the cam and its appurtenances, so as to leave the required portion of the paper unrulled.

10 3. I do not claim either of the parts of these machines in their individual capaci-

ties, but only as connected and combined with each other, so as to produce a new and useful result, as herein fully made known.

In testimony whereof I hereunto set my
15 hand, this sixteenth day of July, in the year 1840.

JOHN AMES.

Witnesses:

THOS. P. JONES,
GEO. WEST.