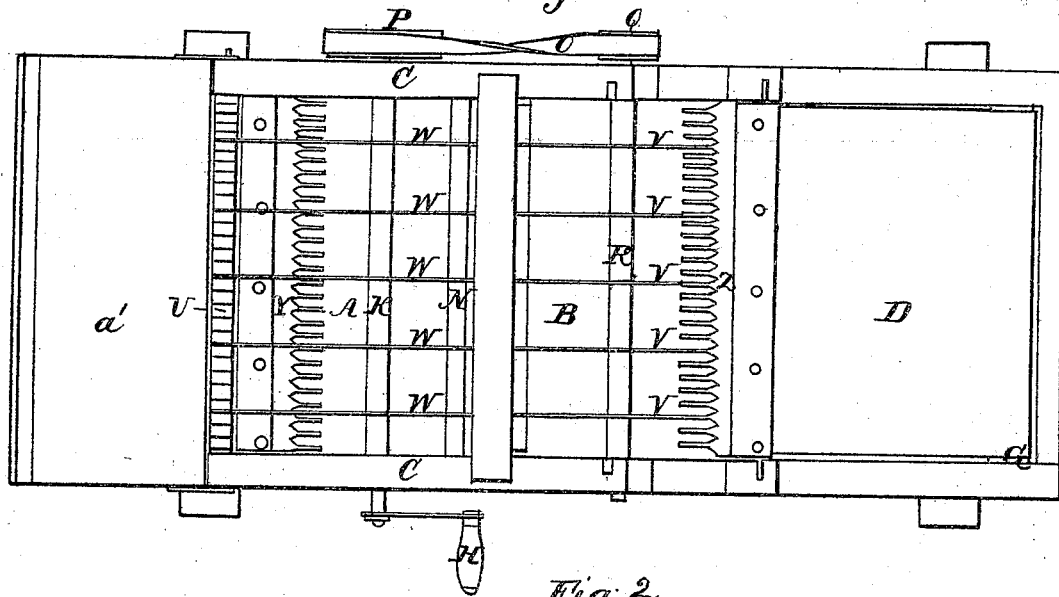


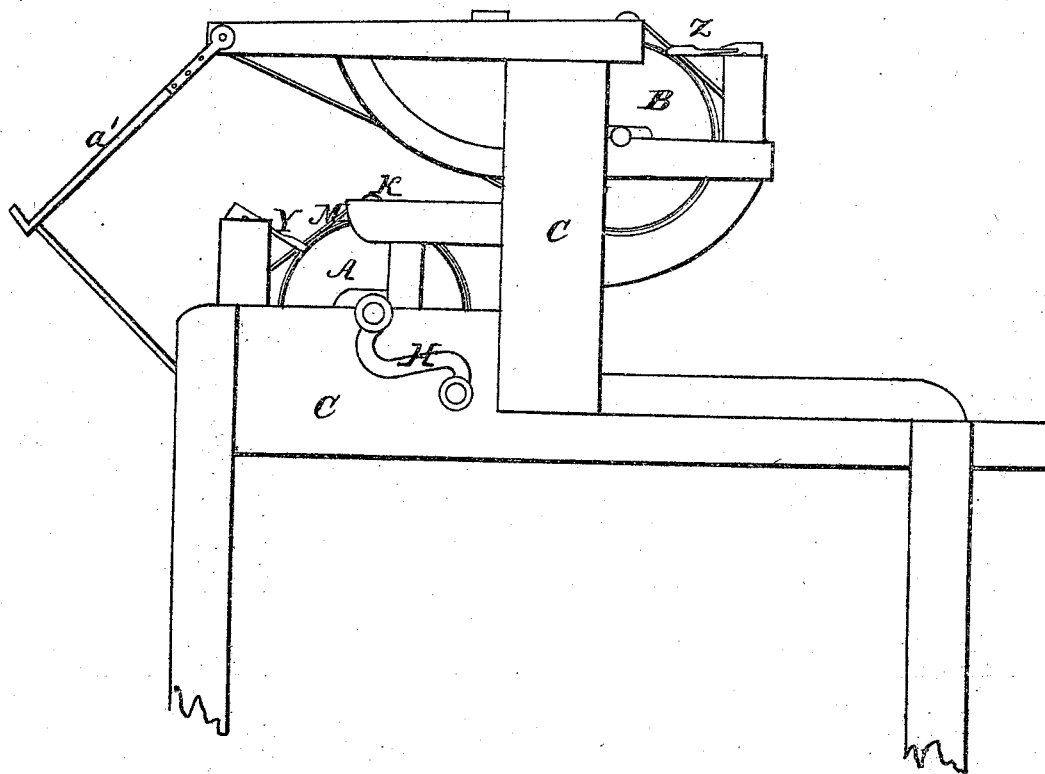
*G. L. Wright. Sheet 1 of 5.  
Ruling Mach.*

*N<sup>o</sup> 2,648. Patented May 28, 1842.*

*Fig. 1.*



*Fig. 2.*

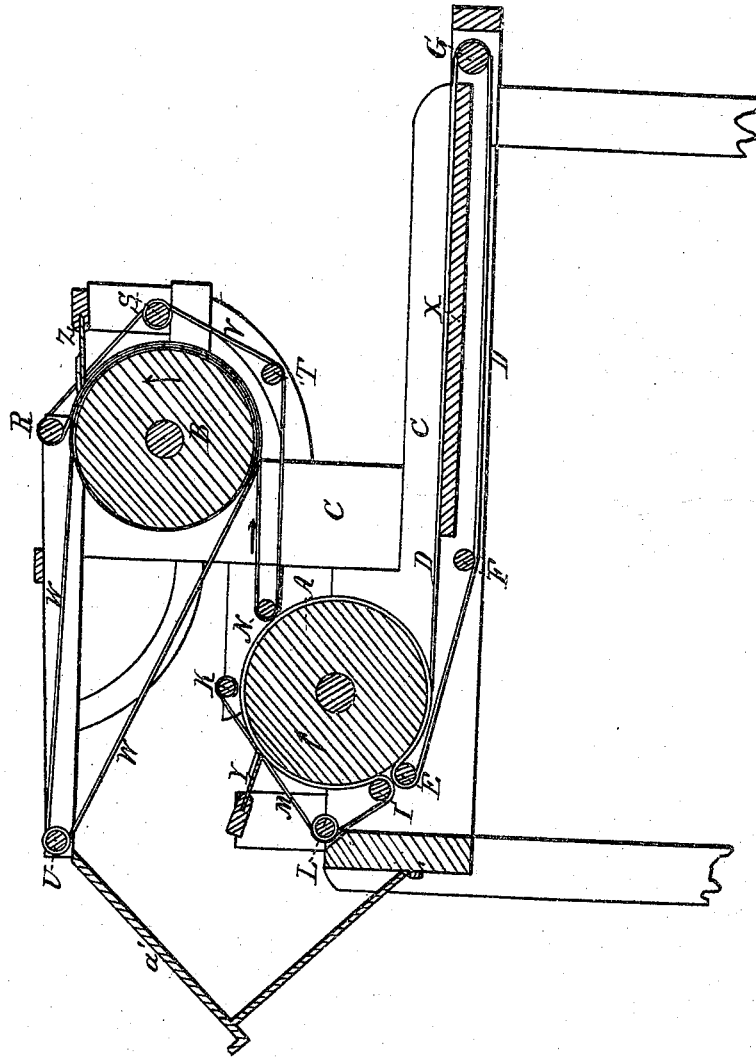


*G. L. Wright. Sheet 2. 2 Sheets.*  
*Ruling Mach.*

*N<sup>o</sup> 2,648.*

*Patented May 28, 1842.*

*Fig. 3*



# UNITED STATES PATENT OFFICE.

GEO. L. WRIGHT, OF SPRINGFIELD, MASSACHUSETTS.

## MACHINE FOR RULING PAPER.

Specification of Letters Patent No. 2,648, dated May 28, 1842.

*To all whom it may concern:*

Be it known that I, GEORGE L. WRIGHT, of Springfield, in the county of Hampden, in the State of Massachusetts, have invented  
5 new and useful Improvements in Machinery for Ruling Letter-Paper Upon Three Successive Pages of Each Sheet, of which the following description, taken in connection with the accompanying drawings, forms a  
10 full and exact specification.

In said specification I have set forth the nature and principles of my invention, by which it may be distinguished from others of like character, together with such parts  
15 or combinations of the same as I claim, and for which I solicit Letters Patent.

Figure 1, of the drawings above mentioned represents a top view of my improved ruling machine. Fig. 2, is a side  
20 elevation and Fig. 3, is a central vertical and longitudinal section.

Two cylinders A, B, Figs. 1, 2, 3, each of about one foot in diameter and covered on their exterior circular surfaces with felting  
25 or smooth cloth or other suitable material, are so arranged and supported on a proper framework C, that one half of one side of a sheet of paper is ruled in passing around the one and the whole of the other side  
30 of it in passing around the other of said cylinders.

For convenience in description I shall consider that end of the machine at which the roller G is situated the front end and  
35 the opposite end the rear end,—and, as occasion may require, shall designate the several parts by the terms front and rear, according as they may be situated with respect to said ends.

40 The second cylinder B is elevated the length, or about the length of its diameter higher than the first, and is placed somewhat at, or a proper distance therefrom, so as to be nearly over the feeding apron, or  
45 so that a sheet of paper may reach and be brought into contact with the second cylinder immediately after it is liberated from the first cylinder. The feeding apron D is an endless band or cloth passing, and  
50 stretched tightly, and running over three rollers or cylinders E, F, G, the former of which rollers or cylinders is placed so as to bring the contiguous surfaces of the feeding apron and exterior cloth of the cylinder  
55 A into such close contact, that when the cylinder A is revolved, by the hand ap-

plied to a crank H, upon the shaft of said cylinder, or by any other suitable power, the apron will be moved by and with it. Another small cylinder or roller I, Fig. 3, 60 is placed in contact with the outer surface of the cylinder A and just above the roller E as seen in the drawing. A second and similar roller K is arranged on the top of the main cylinder A and a third roller L is 65 also disposed in rear or on one side of the cylinder at a distance of a few inches therefrom as seen in Fig. 3. Any suitable number of endless cords M &c. are passed around and drawn into close contact with the cylinder I, K, L and also with the exterior surface of the main cylinder A as seen in Fig. 3.

A roller N is placed somewhat in front of the upper part of the cylinder A in such manner that the upper edges of said roller 75 and cylinder may be about in the same horizontal plane. The cylinder B is driven or caused to revolve in an opposite direction to that of the cylinder A, by a crossed belt O passing over a pulley P on the shaft 80 of the cylinder A, and also over a pulley Q on the shaft of the cylinder B, the diameter of the pulley P being double or a little more than double that of the pulley Q—see Fig. 1.

A roller R is arranged over the cylinder 85 B so that their surfaces may be nearly in contact and two other rollers S, T, are also disposed in front of said cylinder at a few inches distant therefrom, the diameters of the cylinder and rollers S being in the same 90 or nearly the same horizontal plane, while the lower edge of the surface of the roller T is in a horizontal plane with the lower edge of the roller N. Lastly a roller U is placed at the rear part of the frame so that 95 its upper edge shall be in or nearly in a horizontal plane with the upper edge of the cylinder B. Each of a series of endless cords V, V, V, &c., passes around the cylinder B and the several rollers N, T, S, R, 100 as follows. Commencing at the top of roller N each of the said cords extends to the lowest part of the cylinder B thence upward about the front half of the cylinder B, thence between the cylinder B and the roller 105 R, thence upward and partly around the roller R and from thence to and around the front side of the roller S and thence downward around the front and lower parts of roller T thence to the lower part and around 110 the rear side of roller N to the point of beginning, as seen in Fig. 3. Another series

of endless cords W, W, W, &c. extend around the cylinder B and the roller U, as seen in the drawings. The feeding apron passes over a board or table X Figs. 3, arranged at the front part of the framework, so that the sheets to be ruled are placed upon the apron directly over the board X.

Two series of ruling pens, such as are generally used are arranged as seen at Y, Z, the former resting upon the cylinder A and the latter upon the cylinder B as seen in the drawings.

The operation of ruling paper may be thus explained. The second sheet of paper, laid upon the feeding apron, (and each succeeding one), is lapped half its width upon the one in advance of it. In this state the sheets pass around the rear side and over the top of the first cylinder A and are received from thence upon the cords V as they pass over the roller N, toward the cylinder B. During this process, the whole of the under surface of the first sheet is ruled and only half the under surface of each succeeding one. The paper is next carried horizontally upon the cords V &c. from the top of the first to the bottom of the second cylinder B, and is received between the cords V and the cylinder, which latter, (taking the sheet of paper as soon as it is liberated from the first cylinder), by its double velocity draws the sheet forward twice as fast as the one in rear, thus taking out its lap and that of each successive sheet before they reach the pins Z of the cylinder B, by which pens the whole of the opposite side of each sheet is wholly ruled. Thus the half of one and the whole of the other side of each sheet (excepting the first) will be ruled, so that when the sheets are folded

into the quire form, three sides of each will be ruled. As the sheets leave the top of the upper cylinder B, they pass over the cords W and roller U and drop successively upon an inclined board *a'*, placed in rear of the roller U, from which board they may be removed as occasion may require.

Having thus explained my invention I shall claim—

The two cylinders A and B (arranged, so that the lowest edge or part of the upper, shall be situated at a distance from the upper edge of the lower cylinder equal or a little greater than the length of the sheets to be ruled, said length being taken in the direction in which the sheets move, and said edges of said cylinders being in, or about in a horizontal plane; and so that the cylinder B shall have a velocity double that of the cylinder A,) in combination with the systems of rollers and cords, whereby the sheets are received from an endless feeding apron upon which they are placed so as to lap over each other, and from thence are caused to pass around the first cylinder and be ruled thereon, upon one half of one of their sides, and from thence to pass around the second cylinder and be ruled over the whole of their opposite sides as before set forth, the whole being arranged and operating substantially in the manner described.

In testimony that the foregoing is a true description of my said invention and improvements I have hereto set my signature this fourteenth day of March in the year eighteen hundred and forty two.

GEORGE L. WRIGHT.

Witnesses:

L. W. CHILSON,  
JAMES W. CROOK.