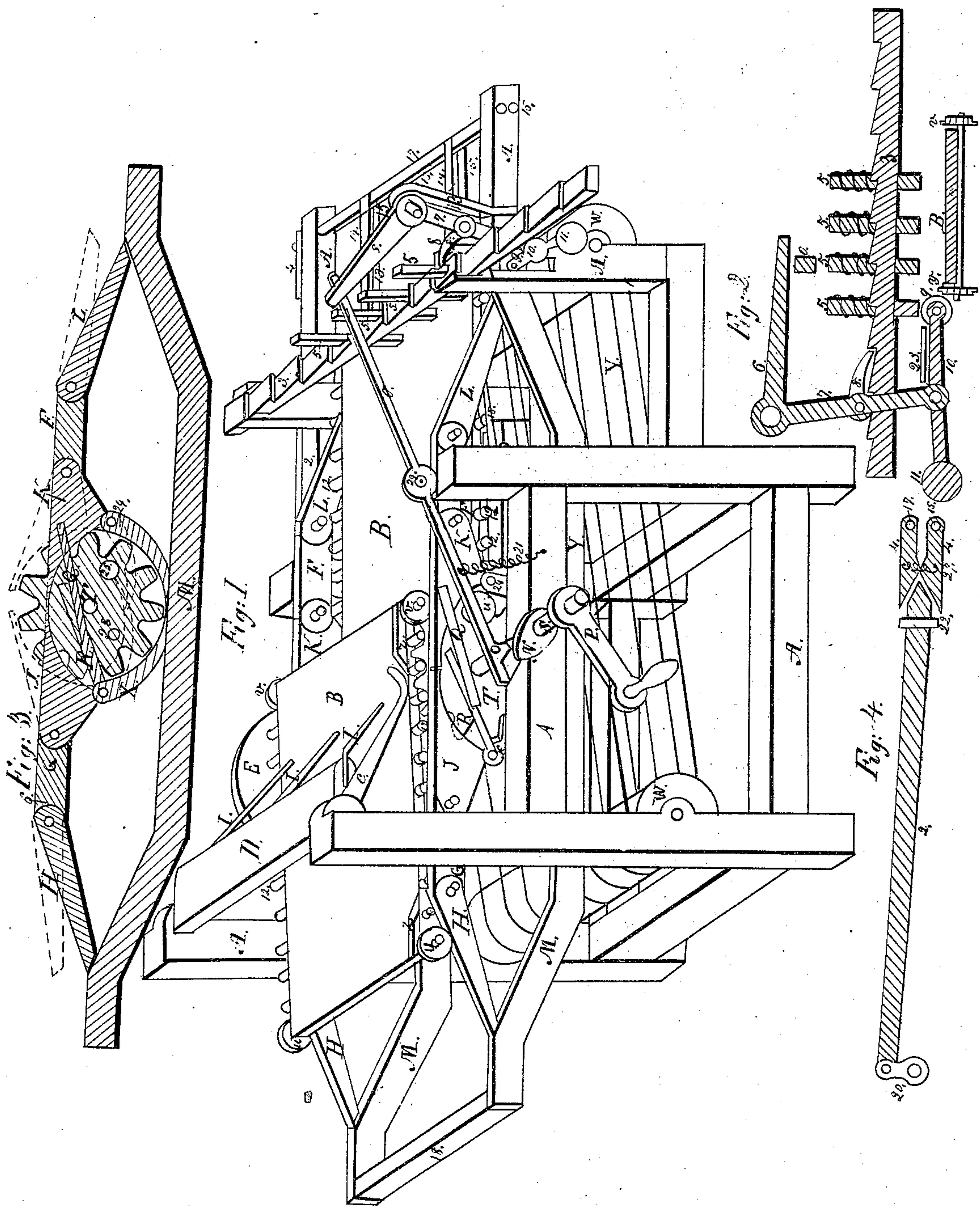


Elder & Richardson.
Ruling & Paging Mach.
N^o 13349. Patented Jul 31. 1855.



UNITED STATES PATENT OFFICE.

JNO. A. ELDER, OF WESTBROOK, AND JNO. RICHARDSON, OF PORTLAND, MAINE.

MACHINE FOR RULING AND PAGING PAPER.

Specification of Letters Patent No. 13,349, dated July 31, 1855.

To all whom it may concern:

Be it known that we, JOHN A. ELDER and JOHN RICHARDSON, the former of Westbrook and the latter of Portland, both in the
5 county of Cumberland, State of Maine, have invented a machine for ruling paper and printing and paging the heading before the paper is removed from the car or table on which it is ruled; and we hereby declare
10 that the following is a full description thereof, reference being had to the annexed drawings, making a part of the said description, as follows, viz:

Figure I is a parallel perspective view of
15 the machine, Fig. II is a sectional elevation of the apparatus for printing, Fig. III is a sectional elevation of the railways and gears, Fig. IV is a sectional elevation of the apparatus that works the rocker shafts and
20 nippers.

The same letters and figures refer to the same parts in all the sections.

The main features of our invention consist first in the controlling the car or table
25 by the railway, and secondly by ruling and printing or paging paper for blank books.

A A is the frame; M M, the railways, made fast to the frame A. The rails G and G and F F are fastened to the frame A
30 a short distance above the rails M. The parts of the railway H and H are jointed to one end of the rails G and at the other end of those rails G are jointed the rails J. The parts of the railway L and L are jointed to
35 one end of the rails F and at the other ends of those rails F are jointed the rails K. To the rails there is fastened a lever or arm Q. The circular rails X and 24 are jointed to the frame A by suitable studs or stands;
40 when the top of the rails J and K are on a straight line one with the other, they rest on the circular rails X and 24 or on suitable stands fastened to frame A and on the circular rail X is fastened a lever or arms R.

45 The cars or tables B are supported by the axles of wheels or rollers *u* and V. These wheels or rollers are grooved to fit the railways. The cars or tables B have pins 12 on each side. These pins 12 and the axles of
50 the wheels *u* and V act as gears or rack to drive the tables B. The gears T and cam N are made fast to the shaft S. The shaft S is supported by frame A. The gear T takes hold of the pins 12 and carries the car B.
55 The pen clamp D is supported on its axis in the frame A. On one end of the pen clamp

is fastened an arm *c*. The pen clamp is made in the usual way and pens I are fastened in the pen clamp D in the usual way. The cars or table B have a piece of iron or
60 dog *z* fastened to each end of them; when the car is moved the arm C of the clamp is raised by means of dog *z*, so as to raise the pens from the table B.

The rolls W, are supported on their axles
65 in the frame A and the cords or lines Y are put on in the usual way. There is a pulley fastened to the axle of the roll W. The pulley E is fastened to the shaft S. There is a band or belt passing nearly around the
70 pulley E, thence down and around the pulley that is fastened to the roll W. The crank or arm 20 is made fast to the shaft S. The rod 2 is jointed to the arm 20 and extends through the guide, 22. This guide is
75 made fast to the frame A.

The rocker shafts 16 and 17 are supported in the frame A. Strips of sheet iron 14 and 15 are fastened to the rocker shafts 16 and 17. These strips of iron act as pliers
80 or nippers to take hold of the paper for the purpose of removing it from the table, B. On one end of each rocked shaft 16 and 17 is fastened the arm 4 having a spiral spring 27 fastened to it. This spring 27
85 holds the jaws of the pliers or nippers together. The lever O is jointed to the frame by a stand or stud and works on its fulcrum 29. The cam N is fastened to the shaft S and works the lever O; the spring 21 keeps
90 the lever O on the cam N. The stand 13 is fastened to the frame A. The lever 6 is jointed to the stand 13, and extends out over the end of the lever O. The lever 6 has an
95 arm 7 extending down below the ratchet bar 3. The pawl δ is jointed to the arm 7 of the lever 6. At the lower end of the arm is jointed the lever 10. The weight 11 is fastened to one end of the lever 10, and at the
100 other end is jointed the roll 9. This roll 9 is to deposit the ink on the type. The type is inked by the roll being passed along under the plate 23 by its levers; the roll 9 carries the ink from the plate 23 to the type; the ink is placed on the plate by hand or on
105 a roll to be placed under the plate in a position where the roll 9 will take ink from it when the roll 9 is moved back on the plate 23 by the weight of the lever 6; the lever 6 has weight enough to move the arm 7 back
110 until the pawl δ will catch in the tooth of the ratchet bar 3, or a spring may be used

for moving the arm 7 back. The series of type rods 5, 5, 5, work up and down in suitable slots made in the ratchet bar 3. The rods 5, have springs wound around their upper ends for the purpose of keeping the type off of the paper unless the lever O drives the shafts down. The type is to be fastened to the lower end of the rod 5. The plate 23 is fastened to the frame A and is used for the purpose of spreading the ink on the ink roll 9. The ink is spread by the roll 9 by the roll passing back and forth on the plate 23 by its levers. The lever springs 19 are fastened to the frame A and extend to the rails L. The spring 19 should only be of suitable strength to lift the rails L.

When the car wheels U stand on the rails H, and the wheel V on the rail K, then by moving the arm or crank P forward it will turn the cog-wheel T carrying with it the car B. As the end of the car B moves forward over the rails L it will depress the rails L from the dotted lines shown in the Fig. III down till the ends of the rails L rest on rails M, and when the car wheels U are passing over the rails J, the pin 26 of the cog wheel T will lift the arm or lever Q, thus raising the rails K upward to the dotted lines as shown in Fig. III. Then the carwheel U will pass under the end of the rail K and down on the circular rail 24. The pin 25 lifts the arm or lever R and at the same time lifting the circular rail X in such a way that the car wheel U will pass under it and along on the rail M. When the car wheels U pass along over the rail M the car wheels U will lift the rail H as shown by the dotted lines in Fig. III, and as the wheels pass out on the end of the rails M the rails H sink down and rest on the rails M and then the car wheels U will pass up over the rails H. The weight of the car or table depresses the rails L from the dotted lines shown in Fig. III down and one end of them rests on the rails M. The spring 19 raises the rails L from the rails M for the wheels V to pass under the rails L and along on the rails M. The car wheels V lift the circular rails 24 and rails J. The cog wheels T drive the wheels V up the circular rail X.

The cam N is so shaped as to work the lever O and depress the type rods 5 down on the paper while the car B stands at rest as to its movement endwise. The rails 24 are so shaped at their ends that the car B will not move endwise at the time the type rods 5 are driven down carrying with them the type to the paper on the car B. On each of these cars B there are to be small sharp points standing a short distance above the face of the car for the purpose of keep-

ing the paper in its place on the car for ruling clamps, or spring may be used for holding the paper for ruling. By removing the levers O or the bar 3, ruling can be done without the printing or paging.

To operate the within described machine the paper is placed on the car or table B, which is moved forward by its cog wheel T under the pens I and over the railways and under the type and at the same time the bar 2 moves forward and opens the arms 4 and nippers 14 and 15 to receive one edge of the paper; thence the lever O drives the type down to the paper and thence the car B moves back on the railway M and the nippers are opened by the arm 20 and its rod 2 letting the paper down on the lines Y from thence the paper is moved to any convenient place by the lines or cords Y.

By using the within described machine for ruling, printing and paging paper for blank books and other like purposes it will do away with handling the paper more than once where it was necessary in the usual way to handle it twice—thus saving time and labor.

The above described jointed railways can be applied to many purposes to an advantage over other methods of construction.

Having thus fully described the mode in which we rule, print and page paper for blank books and other purposes we do not wish to limit ourselves to the particular form or mode of construction herein described. We are aware that other modes of construction may be employed, as, for instance, instead of having the ratchet rod and type bar chains or an endless type chain might be employed.

What we claim as our invention and desire to secure by Letters Patent is—

1. The arrangement of machinery for the ruling, printing and paging paper for the manufacture of blank books or other like purposes, when the ruling, printing and paging is done before the paper is removed from the car or table where it is ruled, as herein specified.

2. We also claim the combination of a car or table B and ratchet bar with its type rods 5 or their equivalents for the purpose herein described.

3. We also claim the pliers or nippers for the purpose of removing the paper from the car or table when operated as herein described.

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Witnesses:

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HENRY F. SANDS.