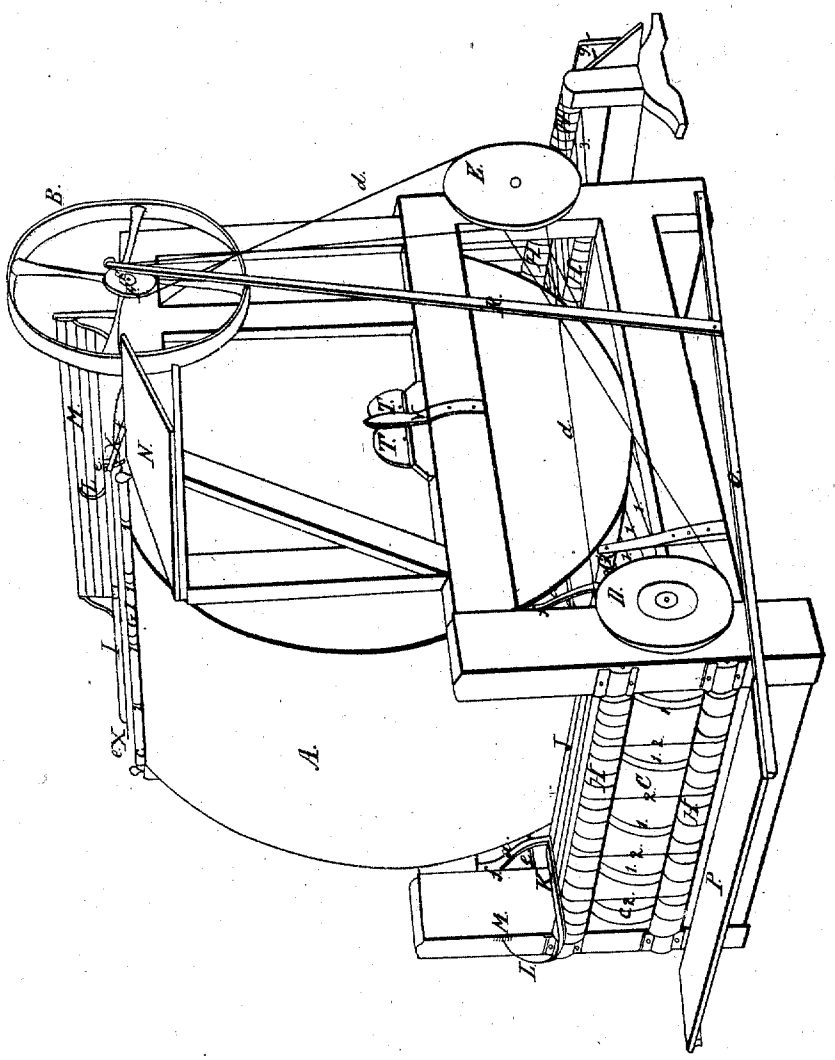
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A. Hathaway.
Ruling Mach.

No

Patented Dec. 31, 1832.



1359X — Dec. 31. 1832 — 4[illegible]

Alfred Hathaway. of Troy Massachusetts

Letters Patent.

The Schedule referred to in these Letters Patent and making part of the same, containing a description in the words of the said Alfred Hathaway himself of his improvement in the Machine for Ruling paper.

To all whom it may concern.

Be it known that I Alfred Hathaway, of Troy in the State of Massachusetts have invented, constructed, & applied to use a new & useful improvement in the Machinery for ruling paper which I have named, "Hathaways improved ruling Machine" by which both sides of the paper are ruled at one operation. said machine is specified and described as follows, viz. (reference being had to the annexed drawing as part of this specification) Fig 1. is a cylinder 4 ft 30 inches in diameter with a flange or guide, half an inch high on either end as may suit the operator. this flange or guide serves as a guide to lay the paper on. the wheels made of cast iron & turned true; the cylinder is covered with a woolen cloth & serves as friction roller "I". a cylinder of larger size would, probably be more convenient. B is a balance wheel, of 2 cwt weight sufficient to keep up the motion of cylinder A. it is attached to a shaft which runs near the top of the frame, with a crank on both ends (two balance wheels ie, one on each end of the shaft would probably be a further improvement) C. (in Fig 2) is another cylinder (which should also be used in if the machine is to be used for ruling on both sides at once, if on one side only wood will answer) turned sufficiently deep to receive the cords which bind the paper to cylinder A. I carry the same from cylinder A. to cylinder C. to be covered also with a woolen cloth, recently filled in the manner, as mentioned in the

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the cards surface of the cylinder or barrel — there should be 6 or 8 rows on this cylinder, & so arranged as to bind & carry the different sizes of paper, with as many cards as serves, which cards should match with those on rollers H.I. & G.I. (on fig 1) if the size of the cylinder, if from 5 to 8 inches, will be sufficient by large for the paper to turn on; & as the points of the pins stick on the top of the cylinder, the size does not materially affect the ruling. — D (see fig 1) are pulleys on the end of the shaft of cylinder C. which run loose on the shaft with a dog in the pulley & ratchet wheel on the shaft to prevent the machine from starting the wrong way. — E (fig 1) pulleys to increase the motion of the balance wheel by which the motion of the cylinder is regulated, the outside pulley to turn with pulley F. the inner pulley are smaller to turn with pulley D. pulleys E are all connected from one stud affixed on to the frame. F (fig 1) is a pulley on the end of the balance wheel shaft & turns with the large pulley E. — G.I. (fig 1) is a small iron roller on which the card stem and is about 1½ inch in diameter & serred as near together as possible, for the purpose of accommodating the cards when moved to clear the pens, this roller hangs about ½ of an inch from cylinder C. — G (fig 1) is a small iron roller about the size of roller G.I. & serred like that, to bring the cards over cylinder C. on the surface, between the serres in cylinder C. — H (fig 1) wooden rollers to keep the cards from the cylinder on their return motion and to carry the paper to the hopper K. I (fig 1) is a frame in which the pens are set for ruling; it consists of two bars of brass from half to three quarters of an inch square with a groove in the front of each bar, with cards to keep the pens permanent; the groove in the back bar receives a tip on the back of the pen or cistern for the ink; the groove in the front bar receives a bar and a clasp the other end of which hooks into the front of the cistern for ink; the screw of a thumb screw (the clasp) bearing against the bar of iron which hooks into the front of the front bar, the cistern is held fast; if more than one pen or cistern is used at the same time, the clasp and

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the writhout (ie. outside of) the hooks which hook in the groove in the front bar, the holes to have a drop to the fronts of the cistern in order to bring the points of the pens in the different cistern to an equal pressure on the paper when using. The pen cistern to contain the ink, are made of brass, about half an inch deep, one and one half inch wide, (the length in proportion to the number of pens, & the manner of their arrangement) with a lip on the top of the back of the cistern to fit in the groove in the head bar of the pen frame & a groove in the front of the cistern to receive the hook on the clasp with holes to the point of the cistern, standing out from the cistern about half an inch on a straight line with the bottom of cistern; the tubes are flat & stand edgewise about three sixteenths of an inch deep, & open at the top for the purpose of cleansing them. They are made of brass. The pens are flat tubes open at the top, standing edgewise, and are sufficiently wide to fill the ends of the tubes & are round and soldered into them inclining downwards so as to bring the points to bear on the top of the cylinder, while the cisterns have a sufficient distance above the cylinder to give the ends a free operation under them. J the same as I. K (fig 4. is a lever attached to the frame L to give the pressure on the points of the pens & is made fast at one end, having a spring at the other. L is a spring attached to the end of lever K. also a rack to catch the spring L in, in order to get the pressure on the points of the pens. M (fig 1 & 2) is a table for the paper. O (fig 1 & 2) two rollers which hang at the back parts of the frame. P (fig 3 & 4) the foot board which is made fast to the ends of the treadles, by means of which the machine is worked. R. (fig 1 & 2) the pillars or uprights which come from about the middle of the treadle to the crank. S. the crank made to range to accommodate the motion of the foot. T. T. friction rollers. V. iron straps which are made fast to the sides of the frame and bearing lightly against the ends of the shaft of the cylinder in its place. W. a small iron collar about half an inch long of the iron rod C. D. screwed & welded with it to keep the cylinder from moving endways & fastened in its proper

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to give the proper aforesaid operation. X. is a perforance deffer thereinto is hung at E. and carried by pressure to alter the position of the cisters as necessity may require. a fig 11 is for the same purpose with X. but of a different form. f is the bearings to a X. his made fast to the frame by a set screw with a slot in the box to ad mit of moving to accommodate the position of the paper. b (fig 9) is a guide on the side of the frame in which one of the treadles operates to keep the foot motion steady. C (fig 3) is a round belt or band (running in order with the cords round cylinder A and round cylinder C. on the surface) sufficiently strained to give cylinder A. the same motion with cylinder C.. d round belts or bands by means of which the foot motion is connected with & communicated to the Machine.... e fig 11 is a screw by which the position of the paper is regulated. E. fig 11 is the hopper which receives the paper after it is ruled. Figures 1. are cat gut cords running from the small iron roller G.I. to cylinder C. to bind the paper to cylinder A. I carry it to cylinder C.. Figures 2 are a set of cords to bind the paper to cylinder C. I carry to rollers H on the back of the frame. — Figures 3 are a set of cords which carry the paper from rollers H to the hopper E. The specific improvement which I claim as my invention in the aforegoing specification, are. 1st Ruling both sides of paper at one operation, or one side only.... 2nd The application of the motion to the Machine, & the general arrangement of the machine, & the operating of it by one person.. 3rd The position construction of the pins. 4th The application of the pens to the top of the cylinder.

In testimony of which I the said Alfred Hathaway have hereunto set my name at providence in the State of Rhode Island this twelfth day of sept A.D. 1838.

Alfred Hathaway

Witnesses
Wm. J. Patten
Allen & Read

1736 Words