2 Sheets--Sheet 1.

# W. SCOTT.

## Machine for Cutting and Delivering Printed Paper.

No. 164,695. Patented June 22, 1875.

Fig. 1

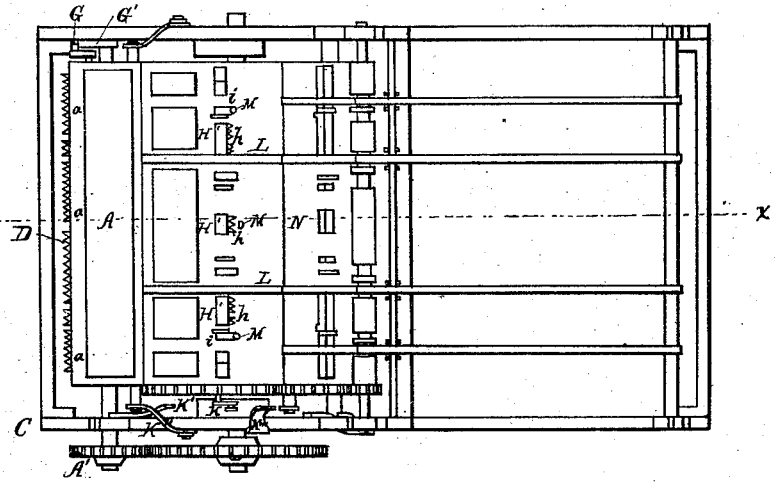
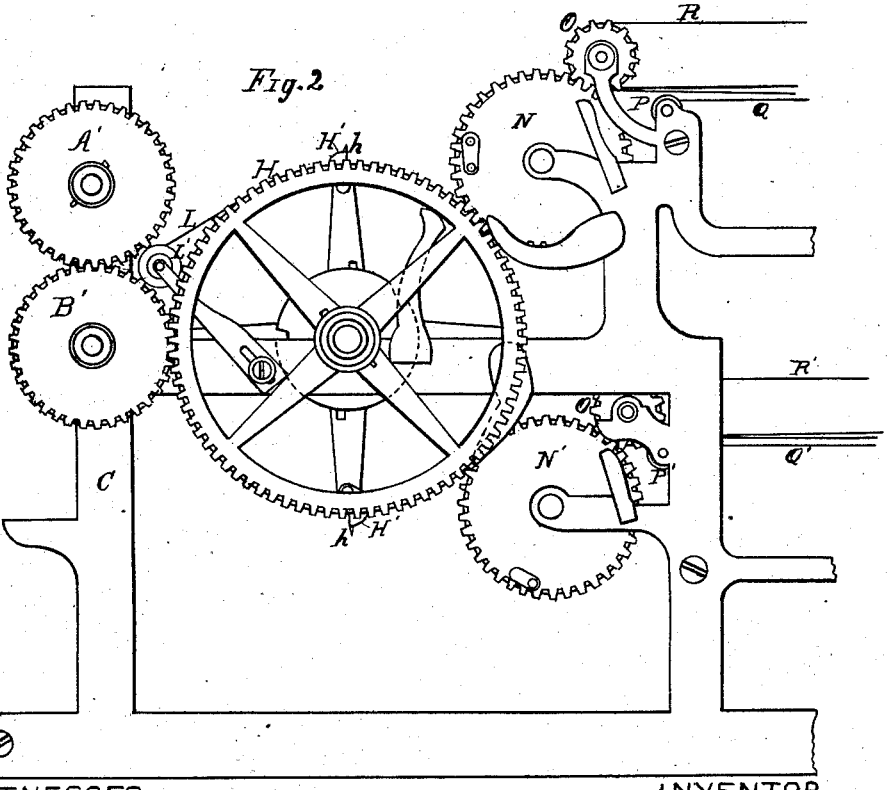



Fig. 2




WITNESSES

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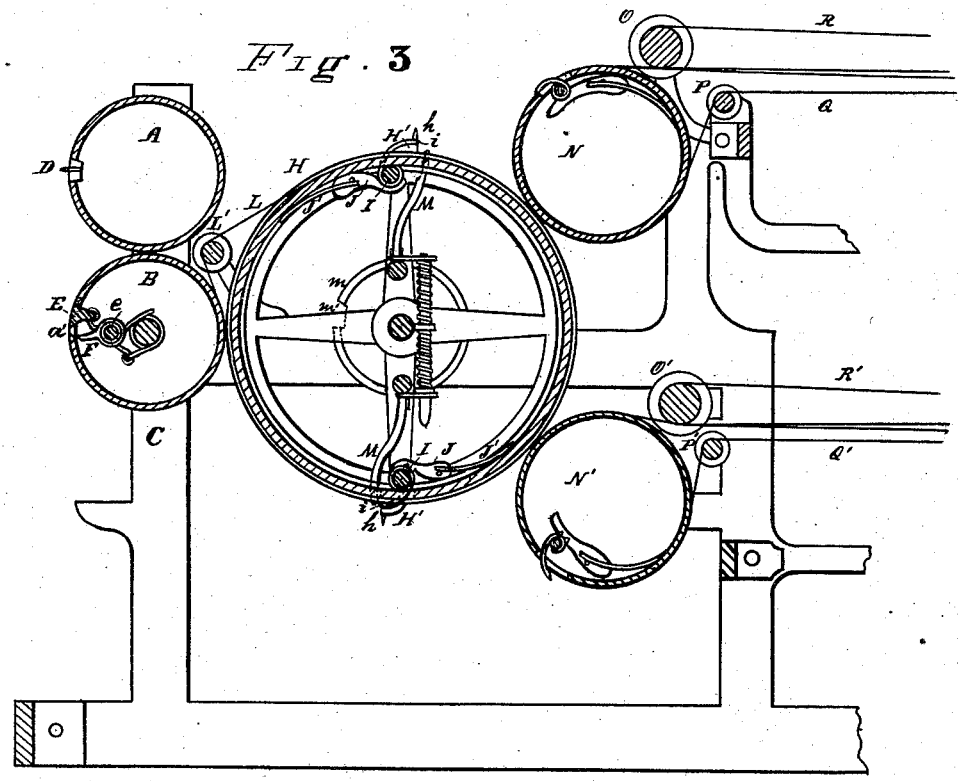
2 Sheets--Sheet 2.

# W. SCOTT.

## Machine for Cutting and Delivering Printed Paper.

No. 164,695. Patented June 22, 1875.

Fig. 3

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# UNITED STATES PATENT OFFICE.

WALTER SCOTT, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN MACHINES FOR CUTTING AND DELIVERING PRINTED PAPER.

Specification forming part of Letters Patent No. **164,695**, dated June 22, 1875; application filed December 4, 1874.

*To all whom it may concern:*

Be it known that I, WALTER SCOTT, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Cutting and Delivering Printed Paper from Printing-Presses, and for similar purposes, of which improvements the following is a full, clear, and exact description, which will enable others skilled in the art to which my invention appertains to make and use the said improvements, reference being had to the accompanying drawings forming a part hereof, and in which—

Figure 1, Sheet 1, is a top or plan view of mechanism embodying my improvements; Fig. 2, Sheet 1, a side elevation of the same; Fig. 3, Sheet 2, a vertical central section in the plane of the line *x x* of Fig. 1.

Like letters of reference indicate like parts.

In the drawing, A and B represent the cylinders between which the web is fed. The arbors of these cylinders are mounted freely in the frame C, and are each provided with spur-wheels A′ and B′, arranged to engage each other, and equal in size. The cylinder A is provided with a serrated blade, D, arranged longitudinally therein and projecting outwardly from the periphery of the cylinder. Considerable spaces are left between some of the serrations, as shown at *a a*, the same as if the blade were made in sections not in contact at the ends, so that the web will not be there cut. The cylinder B is slotted to receive the blade D, as shown at *a′*. E is a section of the periphery of the cylinder B. This section is yielding, and is hinged at one edge to the shell of the cylinder, on which hinge it turns, when pressed from without, so as to tilt into the cylinder. F F are yielding fingers or supports held against the under side of the part E by a spring and mounted rigidly on a rod, *e*, which freely enters the ends of the cylinder, and G is a crank rigidly attached to this rod. G′ is a cam attached to the frame and arranged for contact with the crank G. The form of this cam is such that the fingers F F will release the part E at the proper time during the rotation of the cylinder, as will be hereinafter more fully explained. H is a cylinder which receives the web from the cylinders A and B, and is geared to the latter. This cylinder is provided with projecting parts H′ H′, along the vertical edges of which are arranged the blades *h h*, arranged to strike the web at such points as it is not cut by the blade D. I I are rods passing freely through the ends of the cylinder H, and *i i* are gripers rigidly attached to the rods I I. J J are friction-blocks pivoted to the cylinder H and resting on the rods I I. J′ J′ are springs arranged to press the blocks J J against the rods I I. The blocks J J are notched, as shown, and the rods I I are provided with corresponding projections. The cylinder H is slotted to admit of the play of the gripers. K K are cranks on the rods I I, and K′, K″, and K‴ are cams on the frame, and arranged to be struck by the cranks K K. L L are tapes arranged over the cylinder H, and L′ L′ are pulleys to hold the same tapes against the cylinder B. M M are yielding fingers projecting radially through the cylinder H. The ends of the cross-bars to which these fingers are attached ride against the fixed annular rib *m* or cam, and the fingers are thus prevented from projecting beyond the periphery of the cylinder, except at the point *m′*, when they are forced out sufficiently to strike the cylinder B, but are returned by the said arm during the rotation of the cylinders. N N′ are cylinders geared to the cylinder H, and provided with gripers operating like the gripers *i i*. O O′ are rollers geared to the cylinders N N′, respectively, as shown. P P′ are tape-supports, and Q Q′ are tapes arranged over the cylinders N and N′ and over the supports P P′, respectively. R R′ are tapes arranged over the rollers O O′. These tapes are all endless, and the parts not shown are supported in the usual manner. The web, after being fed to the cylinders A and B, is caught between them, when they are rotated, and is thus carried to the tapes L L, by means of which it is held down upon the cylinder B until the blades *h h* are reached.

The edge of the web should be arranged so as to just escape the blade D during the first rotation of the cylinder B; hence this edge will not be operated upon either by the said blade or by the blades *h h*, but will be caught by the first set of gripers *i i*, and transferred to the cylinder H. These gripers are

thus actuated by reason of the contact with the cam K′ of the crank K, on the same rod on which these gripers are set.

The web is thus held to the cylinder H until after the blade D cuts that part of the web on the cylinder B. This blade, however, does not entirely sever the web, and the latter continues its movement toward the tapes L L.

Soon after the web is cut by the blade D it is struck by the blades *h h* and completely severed. The projections H′ H′ insure the severing of web by crowding it into the cylinder B a little way, the section E being by this time released, and yielding to admit of this result. The second set of gripers *i i* now grasp the edge of that part of the web on the cylinder B and transfer that part to the cylinder H. The section E, by being pushed away in the manner described, leaves the edge of the web so exposed that it may be readily seized by the gripers.

The pins or fingers M M are also pushed out against the web about the time it is struck by the blades *h h*, so as to hold it against the cylinder B until grasped by the gripers. These fingers operate for this purpose in conjunction with the tapes L L; but either the tapes or the fingers may be employed alone for this purpose.

By the time that part of the web which was first severed reaches the cylinder N′ the said part is released by the gripers *i i*, and seized by the gripers on the said cylinder, and is thus delivered to the latter and passes from thence to the tapes Q′ Q′, being released in time by the gripers which last seized it. The next severed section of the web passes the cylinder N′ and is carried to the cylinder N, to which it is delivered in the manner described, and from which it passes to the tapes Q Q. The severed parts of the web are thus delivered to the cylinders N and N′ alternately.

It may be here stated, however, that the part first severed will be delivered to the cylinder N, if the gripers on the cylinder N′ are not all ready to receive the said part when it reaches the latter cylinder. In that case the next severed part will be delivered upon the cylinder N, and so on, alternately.

It is my intention to feed the web between the cylinders A and B automatically during the operation of the press, so that the web printed upon will be severed at the proper places by means of the mechanism now described, and be delivered to the flies. The sheets thus cut may be operated upon by folding mechanism before reaching the flies.

It will be perceived, from the foregoing description, that the female cylinder B is not provided with gripers, and that web continues to move between the cylinders A and B after being operated upon by the knife D, for the reason that it is not wholly severed thereby, and reaches the gripers *i i* when it is separated into sheets. This result is accomplished by constructing the knives D and *h h* in the manner described, and arranging them so that they will operate alternately on different parts of the web, but in the same line thereon, until it is completely severed.

The action of the gripers, by operating in connection with the notched and yielding friction-blocks, is also rendered certain and positive.

If the web is not fed at first so that its edge will reach the cylinders A and B just before the blade D is reached, the web will not be cut at the proper place or margin, and the part so first cut may be removed, or may fall from the cylinders. The operation, therefore, should be substantially as described.

The blade D may be constructed so as to puncture the web, instead of cutting it.

The increased periphery at H′ H′ will break the bed at those places where it is not severed by the blade D, whether the said parts H′ H′ are provided or not with the blades *h h*.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The cylinder H, having therein the projecting parts or web-breakers H′ H′, either with or without the blades *h h*, in combination with the cylinder B, having therein the movable or receding part or section E, substantially as described, the cylinder H being also provided with means for seizing the previously-perforated web and delivering it to a subsequent cylinder, for the purposes set forth.

2. The combination, of the cylinder A provided with a cutting-blade, the cylinder B, having therein the receding section E, and of the cylinder H, having an increased periphery H′ and carrying the gripers *i i*, all substantially as and for the purposes specified.

3. The combination, substantially as specified, of the cylinder B, having therein the receding section E, the cylinder H carrying the web-breakers H′ H′ and the gripers *i i*, and of the tapes L L, arranged substantially as described, with relation to the cylinders H and B, for the purpose of thereby operating upon the previously-perforated web, in the manner set forth.

WALTER SCOTT.

Witnesses:
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