G. ROSQUIST.

Rotary Printing Machine.

No. 201,558. Patented March 19, 1878.

Fig. 1

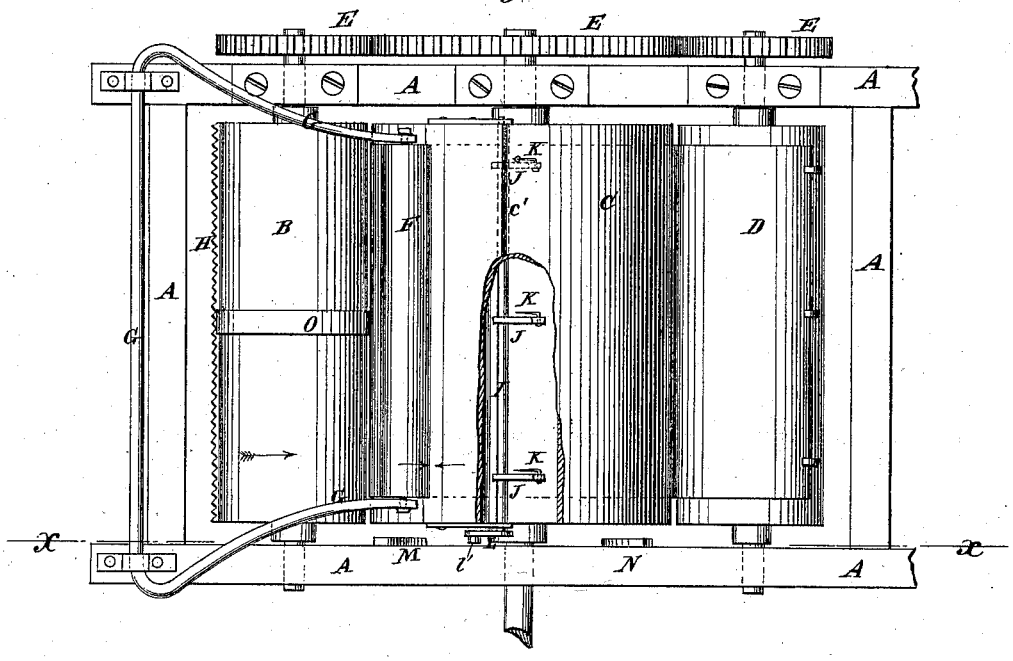
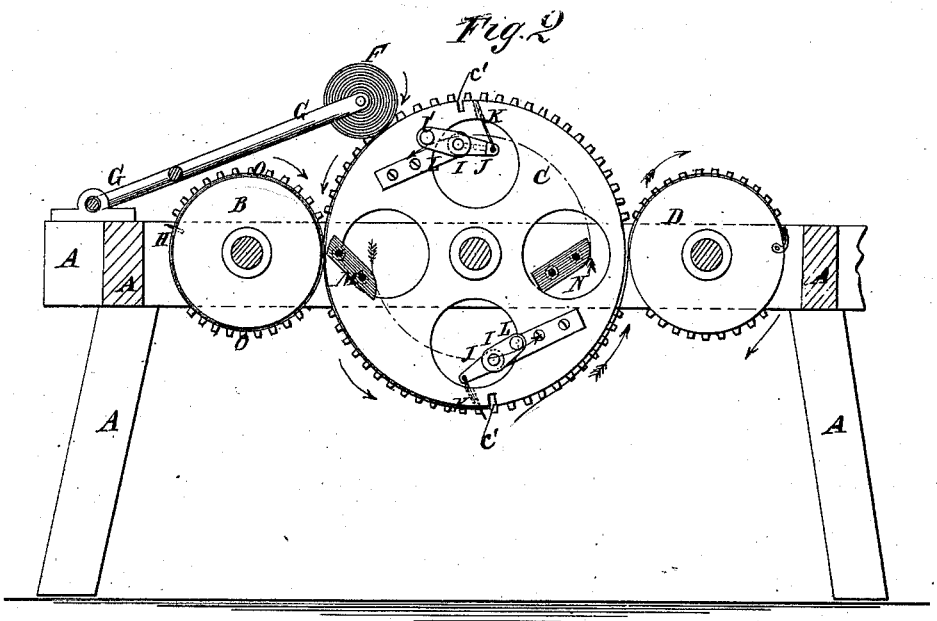


Fig. 2



Witnesses:

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GEORGE ROSQUIST, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN ROTARY PRINTING-MACHINES.

Specification forming part of Letters Patent No. **201,558**, dated March 19, 1878; application filed October 23, 1876.

To all whom it may concern:

Be it known that I, GEORGE ROSQUIST, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Rotary Printing-Machines, of which the following is a specification:

In the drawings, in which similar letters indicate like parts, Figure 1 is a top view of a part of a rotary printing-press to which my improvement has been applied, part being broken away to show the construction. Fig. 2 is a vertical longitudinal section of the same, taken through the line *x x*, Fig. 1.

The object of this invention is to enable a rotary printing-press to be run with safety at a much greater speed than has heretofore been practical by dispensing with the fingers and gripers now in use.

In rotary presses, as now constructed, the paper, when introduced between the male or cutting cylinder and the female cylinder, is pressed against the surface of the latter by a series of fingers issuing from the former immediately after the paper has been cut, and is thus held while being grasped by gripers in the female cylinder. In order to follow the surface of the female cylinder until the forward edge of the paper is thus grasped, the fingers require a large and very sudden movement. This is still more the case with the gripers used on several of the cylinders, which, in clasping the paper, must be thrown or rocked back in a direction opposite to that of the swiftly-moving cylinder to which they are attached. Both fingers and gripers are therefore worn out in a very short time, requiring constant and expensive renewal, to avoid which the presses can only be run at a very moderate speed. In order to attain a far greater speed without incurring the said difficulty, the invention consists in the combination of a cylinder (perforated as hereinafter described) with a rock-shaft having arms and needles pivoted to the said arms, as will be hereinafter described.

A is the frame of the press. B is the male or cutter cylinder. C is the female cylinder. D is the first impression-cylinder, and E are the gear-wheels, by which said cylinders are connected together and made to run at the proper relative speed and in the proper direction, the direction being indicated by the arrows. F is the roll of paper, which is carried by the frame G, and from which the paper passes to and between the cylinders B C. To the cylinder B is attached the knife or cutter H, by which the paper is cut into sheets, and which, in cutting the paper, enters a groove, *c'*, in the female cylinder C. Within the shell of the cylinder C, and upon the opposite sides of its center, are journaled two rock-shafts, I, to which, within said cylinder C, are attached several crank-arms, J, projecting preferably in the opposite direction from that in which the said cylinder is moving, and to the outer ends of which are pivoted pins K, which pass through holes in the shell of the cylinder C, inclined in the direction in which said cylinder moves, and just in the rear of the groove *c'*. By this construction, as the shafts I are rocked in one direction the pins K will be thrust outward, so that their points may project upon the surface of the cylinder C, and as the said shafts I are rocked in the other direction the said pins K will be drawn back within the shell of the said cylinder C. To the ends of the rock-shafts I are attached crank-arms L, provided with rollers or pins *l'*, which, as the cylinder revolves, engage with cams, guides, or inclines attached to the frame of the press, and thus effect the rocking motion of the crank necessary to operate the needles for piercing, holding, and releasing the forward edge of the sheet.

M is one of the said cams or blocks, attached to the frame A in such an inclined position that as the paper is cut by the knife H the pin of the crank L will strike the said cam and rock the shaft J, to cause the pins K to be thrust out through the paper near its front edge, the inclination of said pins K preventing the paper from slipping off. The points in piercing the paper enter holes or cavities in the male cylinder. As the edge of the paper approaches the cylinder D the crank-arm L strikes an inclined block or cam, N, attached to the frame A in such a position as to rock the shaft I in the opposite direction and draw in the pins K as the edge of the paper is grasped on the cylinder D.

This device may be used on any cylinder or

rotary printing-press upon which gripers are now used. With this improvement the press will be comparatively noiseless, and as the pins K require only a very slight motion, and move in the same direction as the cylinder and paper, it may be run at a very great speed.

O is a band or packing, preferably of felt, surrounding the cylinder B, and of sufficient thickness to clamp the paper against the cylinder C, so as to secure the same speed as that of the said cylinder C, and thus prevent the paper from being torn off the needles, which otherwise might occur when raising the paper roll more or less from contact with the female cylinder, or by slip in speed caused by insufficient friction.

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

The combination of the cylinder C, perforated as described, with the rock-shaft I, having arm J, and needles K, pivoted to the said arms, and operating as and for the purpose specified.

GEORGE ROSQUIST.

Witnesses:
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