P. MARTIN.

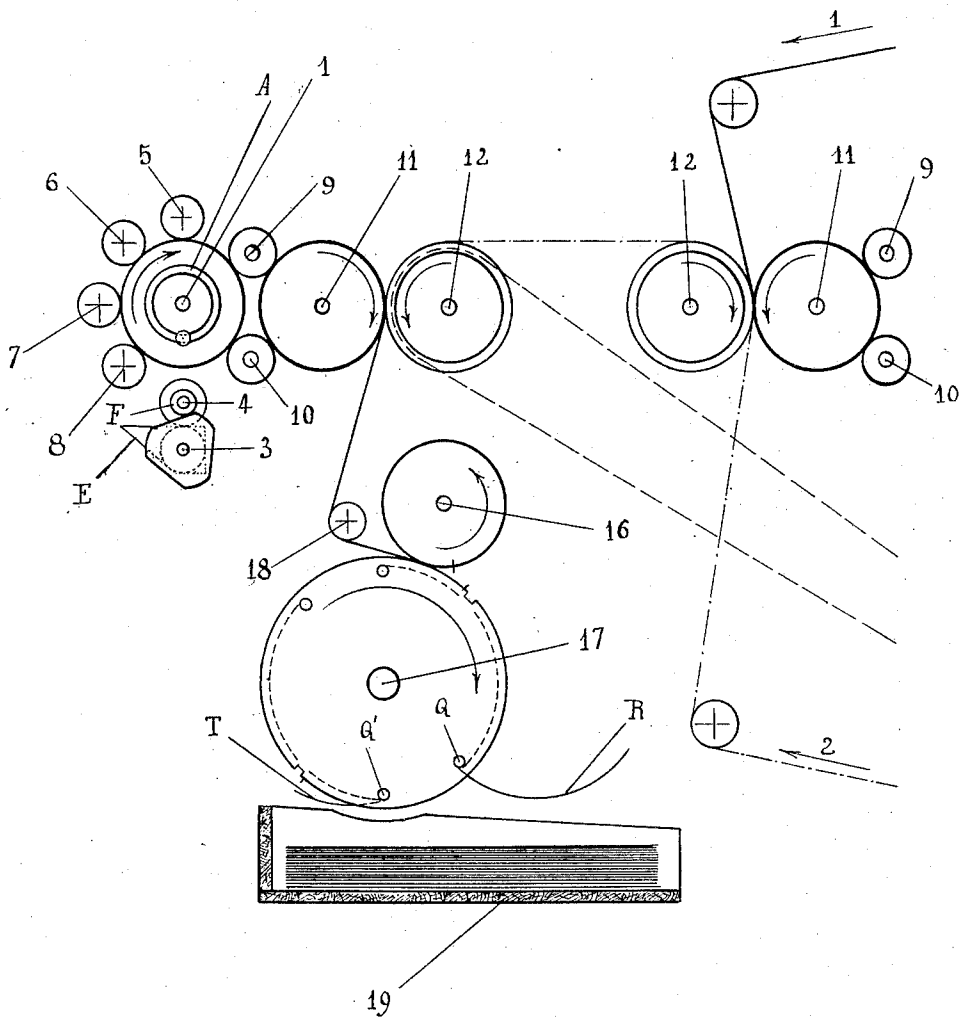
CUTTING MECHANISM FOR PRINTING PRESSES.

APPLICATION FILED AUG. 16, 1910.

1,042,938. **Patented Oct. 29, 1912.**

2 SHEETS—SHEET 1.

Fig. 1



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2 SHEETS—SHEET 2.

Fig. 2.

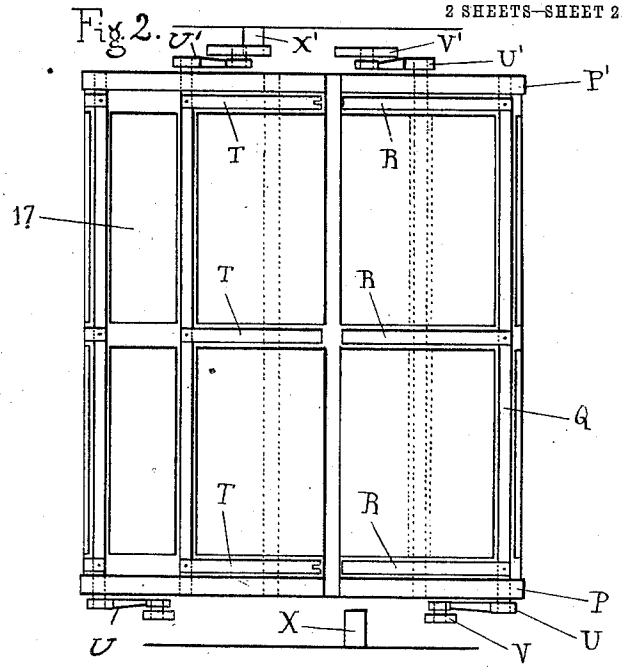
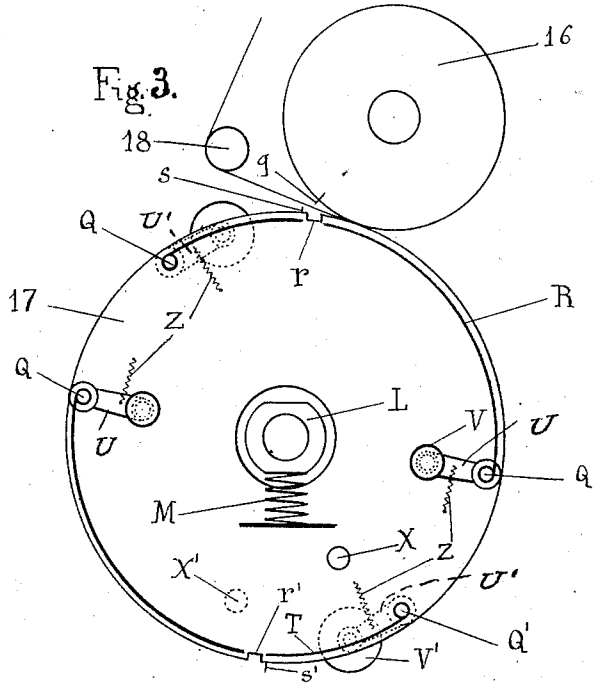


Fig. 3.



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CUTTING MECHANISM FOR PRINTING-PRESSES.

1,042,938. Specification of Letters Patent. Patented Oct. 29, 1912.

Application filed August 16, 1910. Serial No. 577,427.

To all whom it may concern:

Be it known that I, PAUL MARTIN, a citizen of the French Republic, and residing at Rue du Fontenoy, Roubaix, France, have invented certain new and useful Improvements in and Relating to Cutting Mechanism for Printing-Presses, of which the following is a specification.

This invention relates to cylindrical printing presses, and has for its object to provide improved means for cutting and delivering the printed sheets.

The invention consists in the devices hereinafter more fully described and claimed.

Reference will now be made to the accompanying drawings in which the invention is shown applied to a printing press having two printing couples one of which can be reversed.

Figure 1 shows a diagrammatic representation of the machine showing its method of working. Fig. 2 is a plan of the delivery cylinder. Fig. 3 is a diagrammatic end view of part of the cutting and delivery cylinders.

In Fig. 1 it is seen that the machine consists in essential elements suitably arranged; 1 being the inking table with the different parts depending thereon such as E and 3 the ink carrier and its cylinder respectively, 4 the transmitter, 5, 6, 7 and 8 the braying cylinders, 9 and 10 inking cylinders, 11 the stereotype cylinder, 12 the tympan cylinder, 17 special devices for cutting and delivering the work, and 19 a box for the finished work.

The press prints on one web only and printing on both sides of the web when the latter is led in the direction of the arrow 1, or on one side only and in two colors when led in the direction of the arrow 2, and the direction of the right hand printing couple (part of which is shown in the drawing) is reversed.

The devices for cutting and delivering the printed sheets are shown in Figs. 1, 2 and 3 and consist essentially in two cylinders or drums, the ratio of whose diameters is 1 to 2 and an adjustable stretcher roller 18, the whole being specially actuated to produce the desired effect in a regular manner. The first, or cutting cylinder 16 has a longitudinal groove in which is mounted a saw blade q. The other drum 17, adapted as a combined drawing off drum, length adjuster for the paper and delivery drum, is always in contact with the first drum so as to effect the tension of the paper and is mounted in bushes L arranged so as to be guided and to receive the pressure of springs M which cause and adjust the contact of the drums. It is to be observed that this contact takes place only on the two side cheeks P and P′. Two grooves r and r', arranged opposite each other, are provided to receive the saw blade q which is to effect the cutting, and the points s and s' placed in front of the grooves insure the carrying around of the paper cut.

In order to detach with sufficient celerity the successive sheets cut off and to effect a methodical delivery thereof, the roller is provided with pins Q and Q′ which oscillate in rings mounted in bearings in the lateral cheeks P and P′, which rings are rigidly connected to any number of blades, R, R, R and T, T, T. The above pins and blades lie in grooves made along generating lines and on the periphery of the drum, the movement of the blades, which ought to lower themselves whenever the paper is cut so as to detach the paper, being effected by small cranks or levers U fixed to the pin Q at one side, and U′ fixed to Q′ at the other side. These cranks each carry a roller V, V′ rolling at the desired instant on the abutments X and X′ arranged one on the right and the other on the left so as to produce a pressing down of the blades. The springs Z are necessary to restore at once the passage of the rollers to the abutments and the blades to their respective grooves. It will be understood that a sudden or instantaneous movement of the blades is thus effected, such movement being required for a good delivery.

The machine works in the way described as follows: After the paper has left the stereotype and tympan cylinders 11 and 12 it passes around a stretching roller 18 prior to entering the mechanism which regulates its travel and consequently the length of the sheets, which effects the cutting and delivery. The two cylinders composing this mechanism rotate in the directions denoted by the arrows. An important feature is the permanent contact of these two cylinders which without the need of other accessory elements, governs the travel of the paper with mathematical accuracy and also the regularity of registration which is desirable and necessary here. The paper being retained at one place between the cutting and

the delivery cylinders, and tensioned by the stretching roller 18 the saw blade by its entry into the corresponding groove will always effect a complete cut and the points or pins s, s' provided for the purpose will always insure the carrying around of the paper. Continuing its motion, the cylinder 17 will effect an exact superposition of the successively severed leaves by means of the small movement created by the system of blades which are pressed down suddenly on meeting, by means of the rollers V and V′ mounted on their respective levers, fixed abutments X and X′ arranged one in front and the other behind, on the frame of the machine. The device illustrated in Figs. 2 and 3 effects the delivery of two leaves for one rotation of the drum.

I claim—

In a cylindrical printing press, a cutting cylinder, a saw blade mounted thereon, a delivery cylinder having grooves for receiving said saw blade, projections in front of said grooves for carrying around the cut paper, and plates mounted coaxially with the delivery cylinder for making the contact with the cutting cylinder, rotatable spindles carried between the end plates and mounted in bearings therein and lying in grooves in said delivery cylinder, a plurality of arms connected to said spindles and lying in grooves in the delivery cylinder, a lever fixed on one end of each spindle, a roller mounted on the free end of each said lever, stops on the frame of the press adapted to engage said rollers, and springs fixed at one of their ends to said levers and at their other ends to the end plates.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PAUL MARTIN.

Witnesses:
H. Crombé, fils.
Louis Pue.