

Patented Nov. 30, 1886.

Fig. 2.

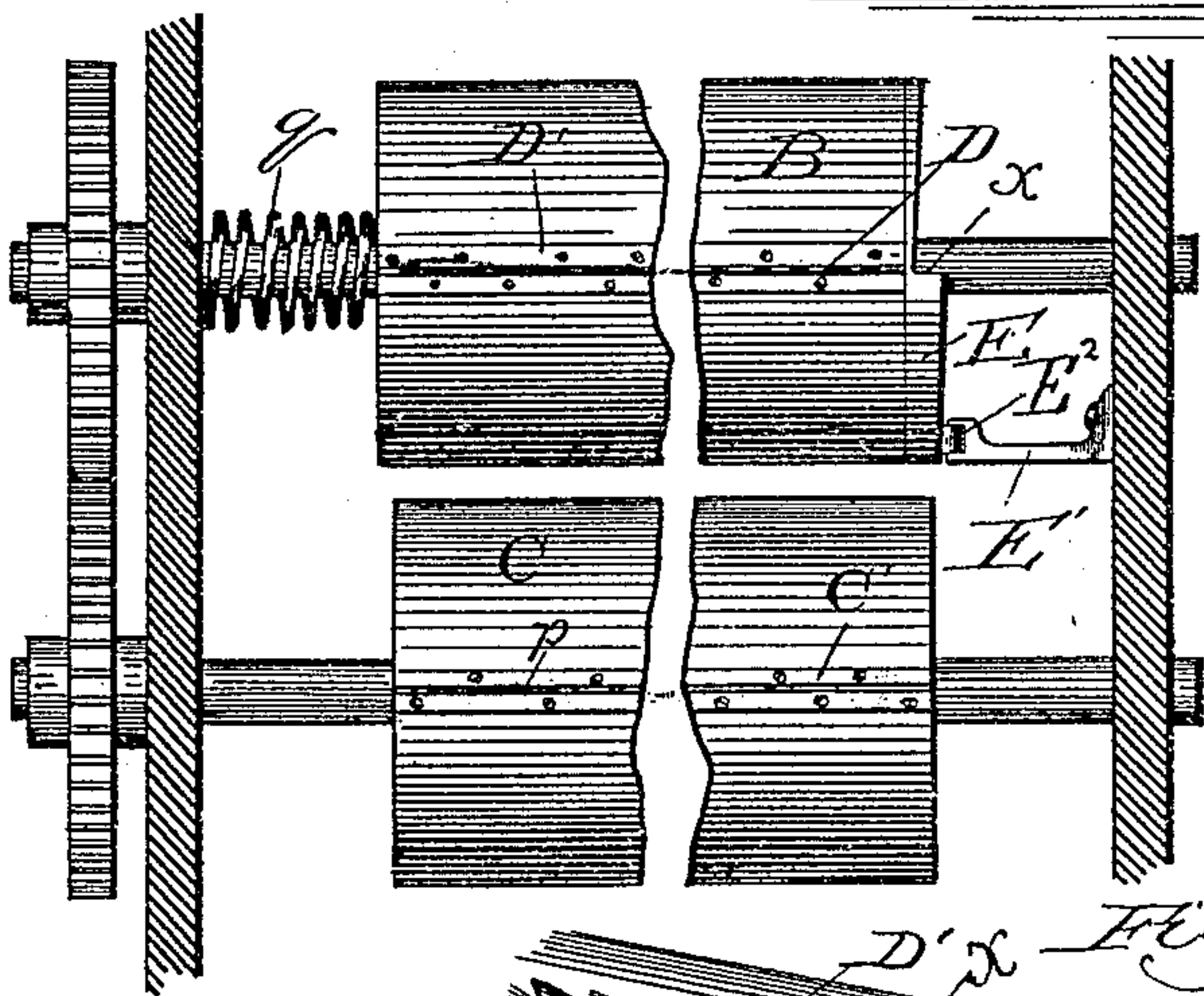


Fig: 3

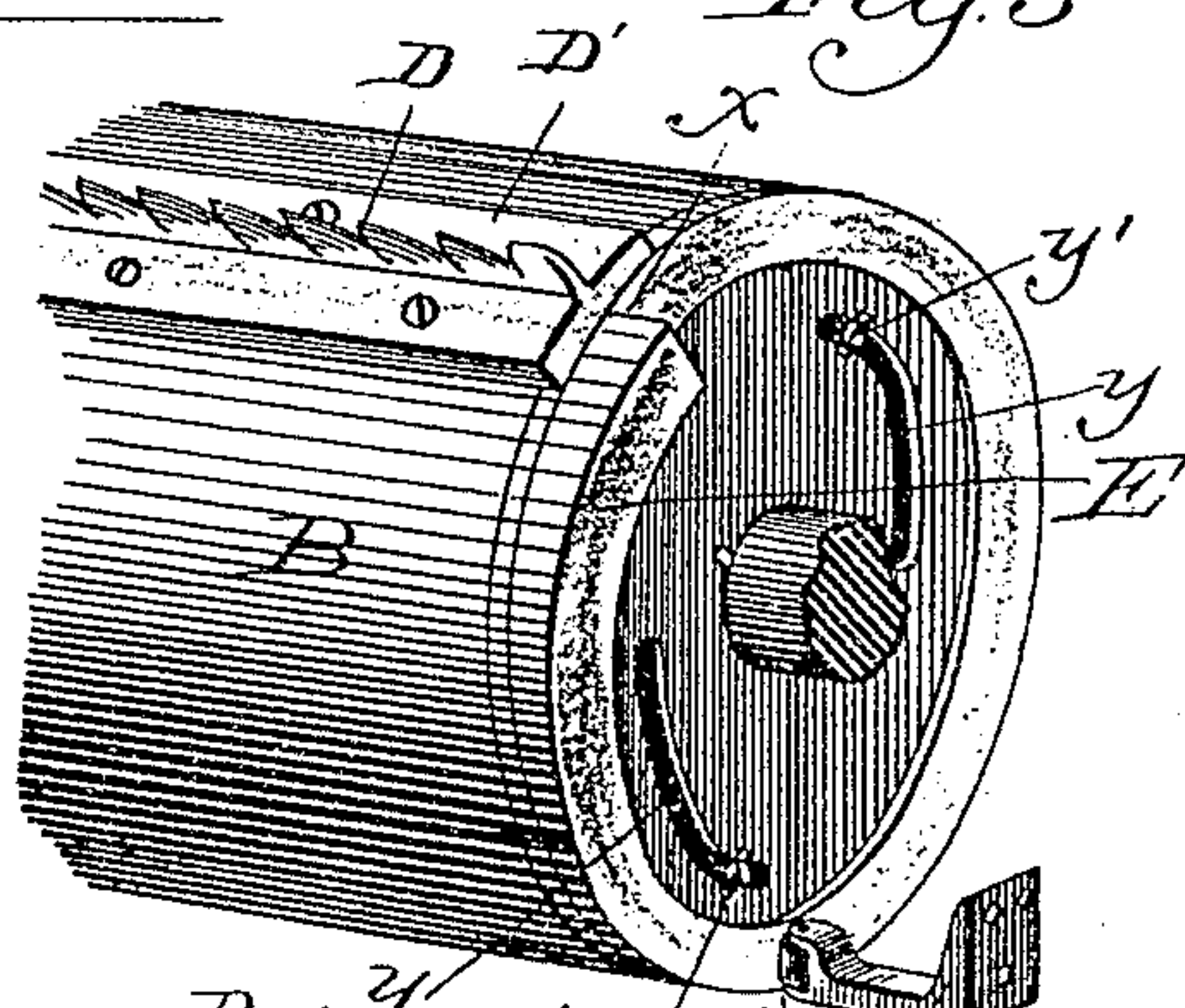


Fig. 4.

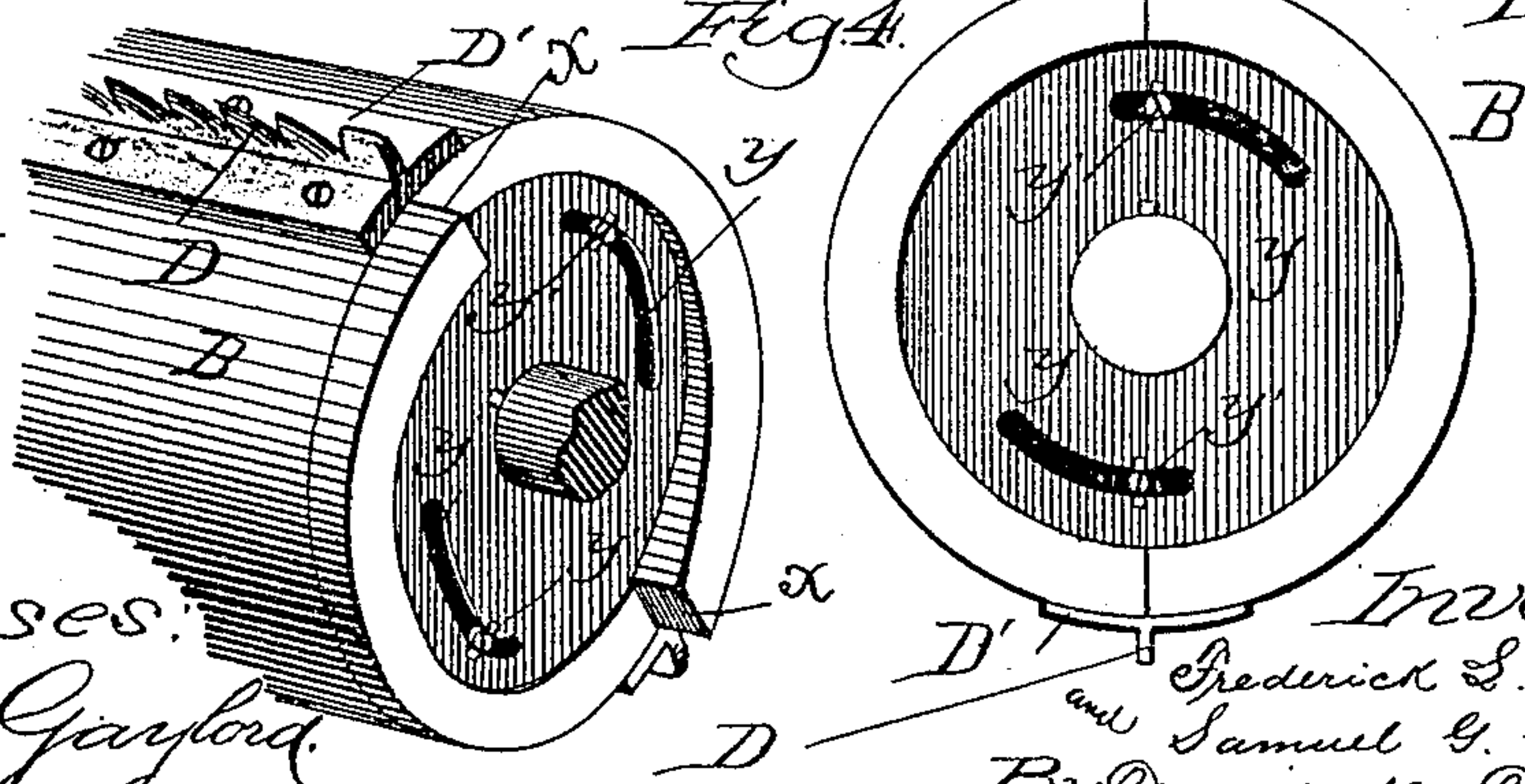


Fig. 5.

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FREDERICK L. GOSS AND SAMUEL G. GOSS, OF CHICAGO, ILLINOIS.

ROTARY CUTTER FOR WEB-PRINTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 353,555, dated November 30, 1886.

Application filed September 21, 1885. Serial No. 177,740. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK L. GOSS and SAMUEL G. GOSS, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rotary Cutters for Web-Printing Machines; and we hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates particularly to the paper-cutting attachment for a printing-press, and more particularly for presses like the one shown and described in Letters Patent No. 333,214, granted to us December 29, 1885, wherein the printing is performed upon a continuous web of paper to be severed as printed into sheets of predetermined lengths.

It is our object to provide a cutting attachment for the foregoing purpose which shall operate automatically and accurately in performing its function, and which may also be readily arranged to cut sheets of any desired length or lengths from a continuous web of paper, the printed impression upon which determines the length to be cut and the position of arrangement for the cutting mechanism.

Referring to the drawings, Figure 1 is a sectional side elevation of the end of a printing-press provided with our improved cutting mechanism; Fig. 2, a sectional end elevation of the same, taken on the line 2 2 of Fig. 1; Fig. 3, a perspective view of our improved knife adjusted upon a cylinder provided with a cam device for shifting it at the proper time; Fig. 4, an end elevation of the knife-cylinder provided with two knives and an adjustable cam for each knife, and Fig. 5 a perspective view of the modification illustrated by Fig. 4.

A is the frame of the machine, supporting all the operating mechanism, including the carrying-tapes *r* and *r'* toward the delivery end of the press, between which are journaled, one vertically above the other, the cylinders B and C, of equal diameters, geared to revolve above their axes toward the direction of movement between the tapes *r* of the web.

The cylinder C is immovably secured upon its axis, while the cylinder B, though constructed to revolve with its axis, has a longitudinal movement thereon, produced in one direction by the recoil of a spring, *q*, and in the opposite direction against the resistance of

the spring *q* by a cam device, hereinafter described.

The cylinder B, by preference, carries the knife D, which is a preferably serrated blade, having its teeth the distance apart of the length of shift of the cylinder B on its axis, and supported in a bar or bed, D', which is secured upon the cylinder lengthwise of the same. A frame, C', similar to the bar or bed D', but provided with a central longitudinal slot, *p*, is secured in like manner upon the cylinder C in a position to cause the knife to enter the slot at each complete revolution of the cylinders. A cam, E, is provided on the end of the knife-cylinder B opposite to that at which the spring *q* is arranged, and is secured in position by means of set-screws *y'*, passed through slots *y*, as shown, and a bearing, E', provided with a thimble, E², is secured to the frame of the press in a position to extend against the cam in opposition to the spring.

The operation of the bearing E' is to force the cylinder B against the spring *q*, compressing the latter until in the rotation of the cylinder the point *x* reaches the bearing, when the knife D' will have entered the groove *p* in the bar C', and the recoil of the spring will suddenly and forcibly shift the cylinder B in the opposite direction, the distance limited by the height of the cam at the point *x* corresponding with the distance apart of the teeth of the knife which perforate the web and sever it by the shift of each tooth from the perforation produced by it to that produced by a succeeding one in the direction of the shift. The power of the spring *q* is sufficient to perform the shifting operation quickly and forcibly, which renders it unnecessary to have or maintain the cutting-edges of the teeth in a sharpened condition.

It is by no means necessary that the upper cylinder, B, shall constitute the knife-cylinder, as the functions of the cylinders B and C could be interchanged without materially affecting the operation.

Where sheets are to be cut from the web to comprise a length equal to one-half the circumference of the cylinders, knives D are provided on opposite sides of the knife-cylinders, as clearly shown in Fig. 5 of the drawings, and of course two similarly-arranged grooved plates, C', on the companion cylinder, and a

cam, E, is provided for each knife, each cam extending half-way around the end of the cylinder. It is also quite obvious that any length or lengths of sheets may be cut from a continuous web carried between the cylinders B C by providing the necessary number of knives and corresponding number of slotted plates C' and cams E, all arranged the required distance apart on the cylinders.

10 What we claim as new, and desire to secure by Letters Patent, is—

1. In a printing-press for printing upon a continuous web, mechanism for cutting the printed web into sheets, comprising, in combination, a rotary shifting cylinder carrying a knife and a rotary cylinder provided with a longitudinal slot for the knife, substantially as described.

2. In a printing-press for printing upon a continuous web, mechanism for cutting the printed web into sheets, comprising, in combination,

a rotary shifting cylinder carrying a serrated knife and a rotary cylinder provided with a longitudinally-slotted bar for the knife, substantially as described.

3. In a printing-press for printing on a continuous web, a cylinder, B, carrying a knife, D, and provided at one extremity with a cam, E, for the knife, a spring, q, operating when released from compression to shift the cylinder B, a bearing, E' E², to move the cylinder in the opposite direction and compress the spring, and a cylinder, C, provided with a longitudinally-slotted bar, C', for the knife on the cylinder B, the whole being constructed and arranged to operate substantially as and for the purpose set forth.

FREDERICK L. GOSS.
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In presence of—

MASON BROSS,
WM. SADLER.