

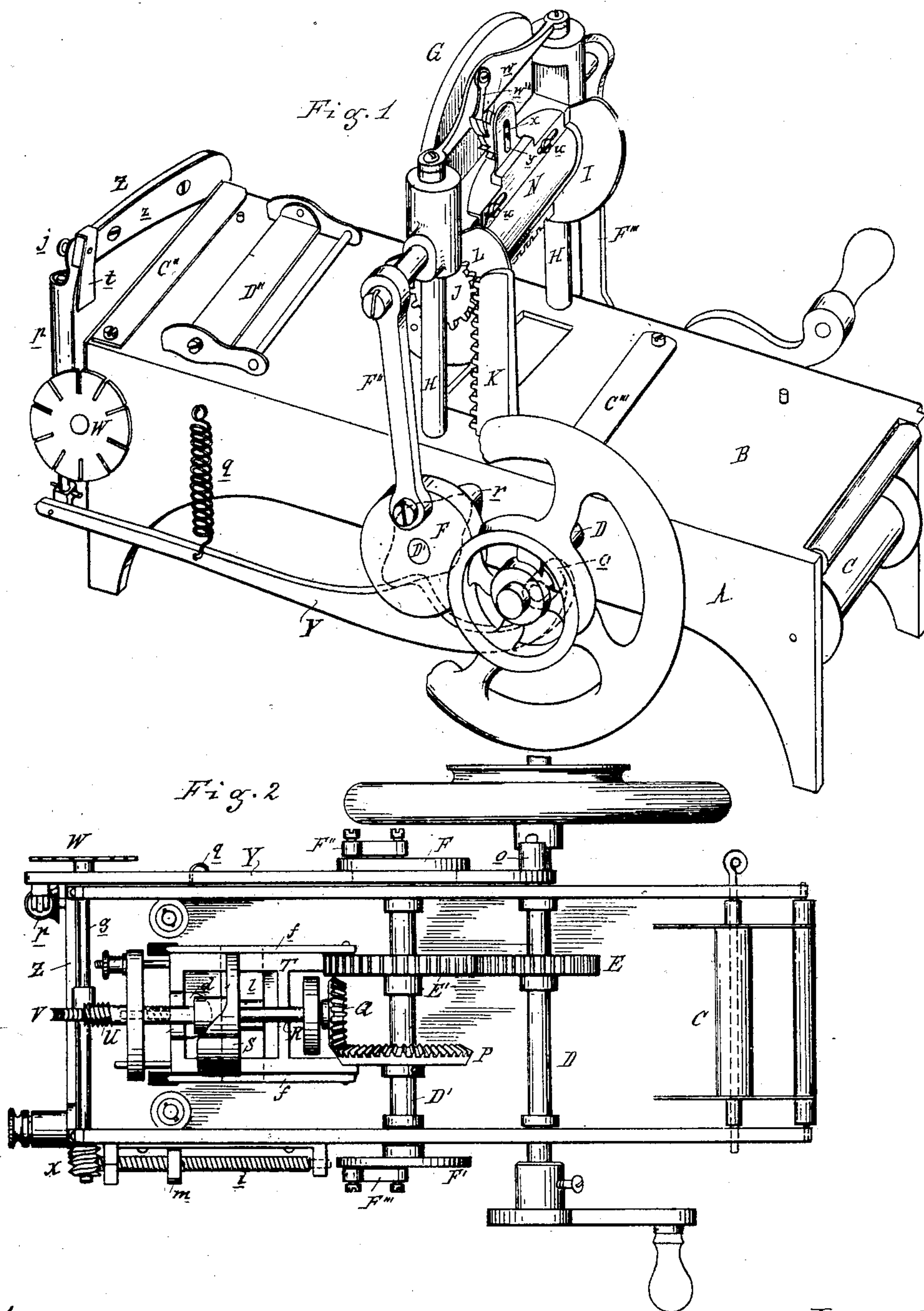
(No Model.)

2 Sheets—Sheet 1.

C. MACHRIS.
Printing Machine.

No. 239,813.

Patented April 5, 1881.



Attest:
A. Barthel
Thos. S. Day

Inventor:
C. Machris
By Atty
Thos. S. Sprague

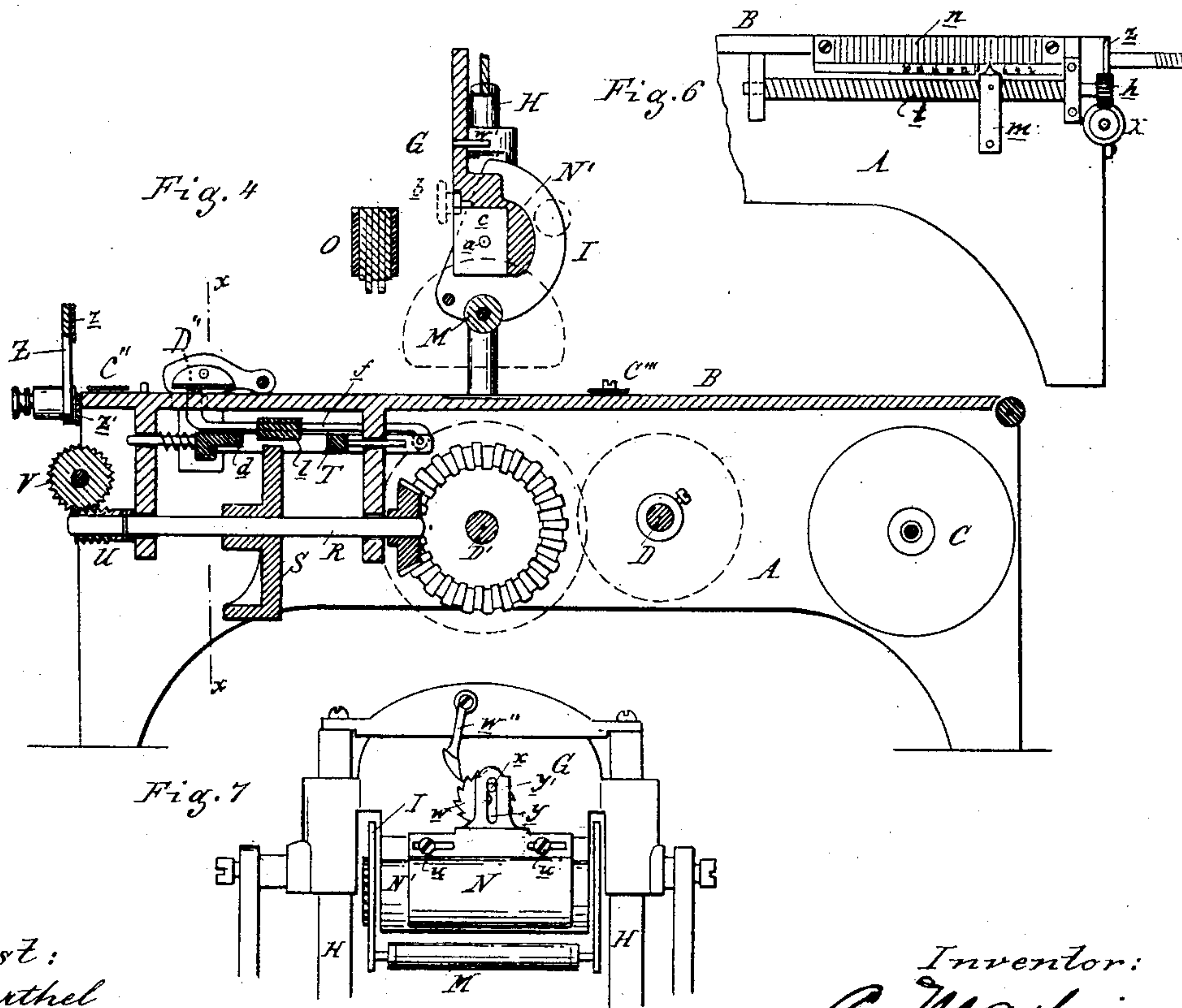
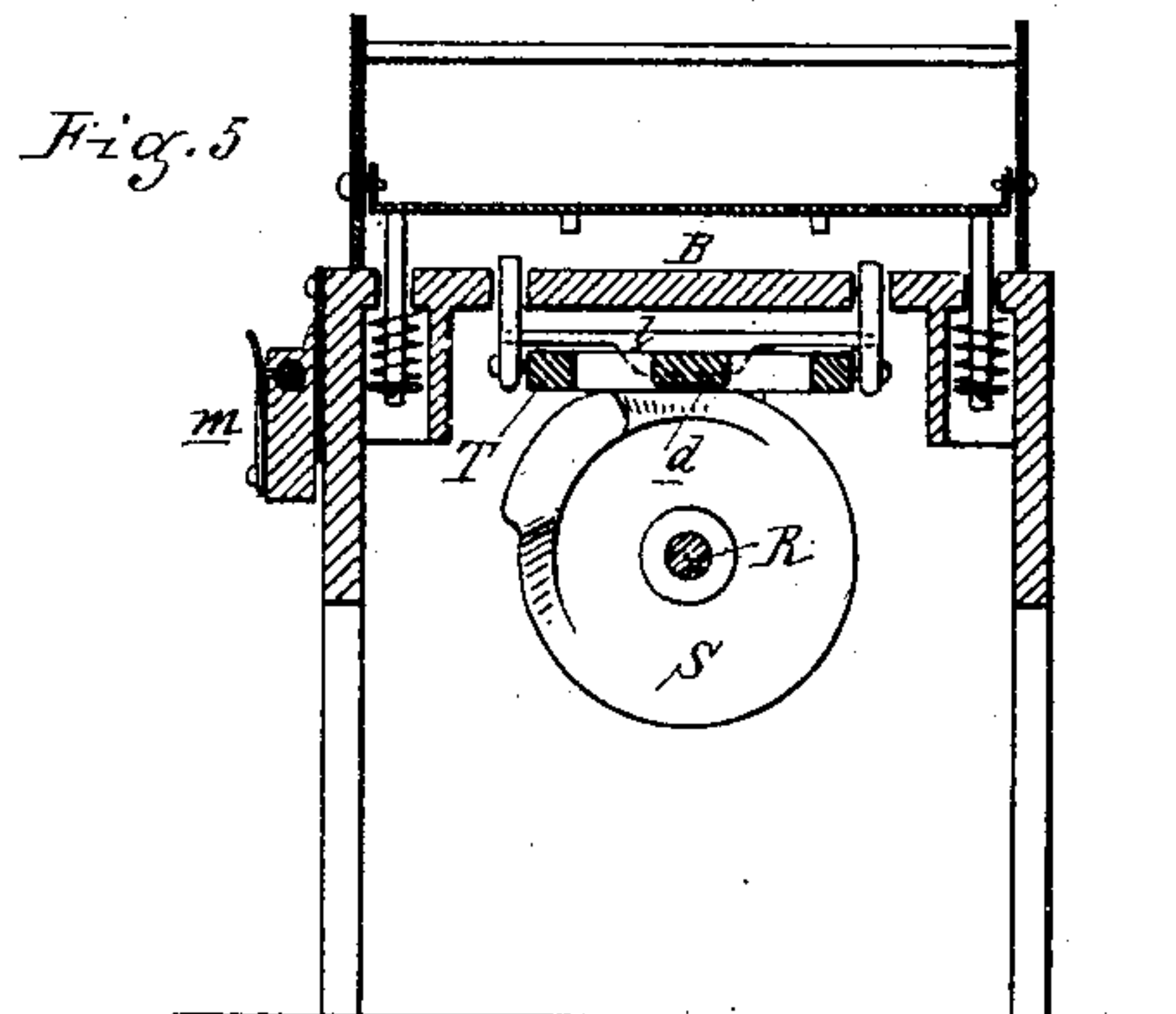
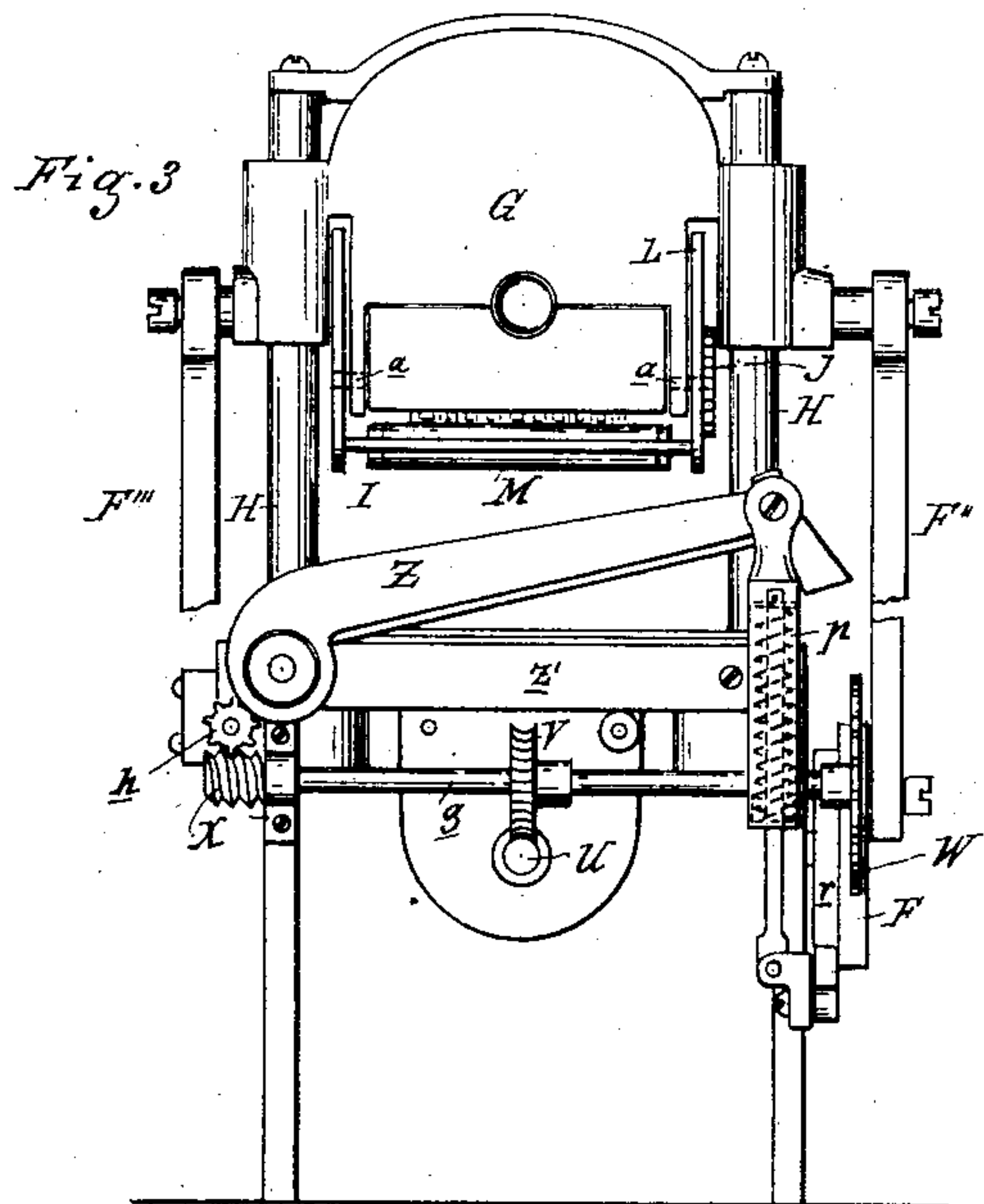
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

CHARLES MACHRIS, OF DETROIT, MICHIGAN, ASSIGNOR TO HIMSELF AND
GEORGE M. SAVAGE, OF SAME PLACE.

PRINTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 239,813, dated April 5, 1881.

Application filed August 17, 1880. (No model.)

To all whom it may concern:

Be it known that I, CHARLES MACHRIS, of Detroit, Wayne county, Michigan, have invented an Improvement in Printing-Machines, of which the following is a specification.

The nature of this invention relates to certain new and useful improvements in printing-machines of that class which are especially designed for printing election-slips, which are printed on strips of paper of the required width.

In printing such slips it has heretofore been the practice to set up in type and in column form a large number of duplicates of the name desired, and after printing these in the usual manner the strip of paper has been subdivided into blocks, each one of which was imprinted with five or ten copies of the name; then, with proper shears, a cut was made between each ten lines nearly across the slip, so that as each particular slip was desired for use it could readily be detached from the block.

The object of this invention is to print such slips from a continuous strip of paper, and to cut such strips into blocks containing any desired number of lines, and to partially subdivide the blocks between the lines or names.

The invention consists in the peculiar construction and arrangement of parts, as herein-after more fully described, and then pointed out in the claims.

Figure 1 is a perspective view of my improved machine. Fig. 2 is a plan view, looking from the bottom. Fig. 3 is a rear elevation. Fig. 4 is a vertical longitudinal central section with the type-holder and the inking-table with its operating devices removed. Fig. 5 is a vertical cross-section on the line *x x*, Fig. 4. Fig. 6 is an elevation of the registering device. Fig. 7 is a front elevation, showing the shifting ink-table.

In the accompanying drawings, which form a part of this specification, A is a suitable frame supporting the printing table or bed B, over which the endless paper from the drum C is passed.

D is the main driving-shaft, journaled transversely across the frame, and driven in any convenient way. Keyed upon this shaft is the spur-wheel E, which gives motion to an-

other spur-wheel, E', which is keyed upon the shaft D'.

F F' are crank-wheels, to which are pivotally secured the pitmen F'' F''', imparting a vertical reciprocating motion to the plunger G.

H H are standards secured to the bed of the machine, and serving as guides for the vertically-reciprocating plunger.

Pivoted at *a*, at each side of the plunger, is the swinging frame I, which, besides partaking of the reciprocating motion of the plunger, has a swinging motion imparted to it by the toothed standard K and the spur-wheel J, which is secured to the one side, L, of the swinging frame I. Journaled in this swinging frame is the inking-roller M, so situated that the motion of the frame I, caused by the standard K and wheel J, will make it travel over the cylindrical face of the ink-table N, taking up the necessary ink and depositing the same in its backward travel on the type contained in the tablet or type-holder, which is locked by the set-screw *b* in a recess, *c*, in the chase.

P is a bevel-gear wheel, keyed on the shaft D', which engages with a similar wheel, Q, on the shaft R.

S is a feed-cam, which, by striking against the lug *d* of the movable frame T and the bar *l* connecting the feed *f f*, produces the well-known four-motion feed, and by which the paper is fed from the drum or roll.

The shaft R terminates in a worm-wheel, U, engaging with a spur-wheel, V, keyed on a shaft, *g*, which carries at one end the radially-slotted stop-wheel W, and at the opposite end a worm-wheel, X, engaging with a small pinion, *h*, journaled upon the shaft *i*. This latter shaft is threaded, as shown, and as it moves it carries along the index-hand *m*, which points to a scale, *n*, duly numbered, to indicate the impressions, as shown in Fig. 6, and fastened alongside the shaft.

Y is a lever, pivoted at *o* to the side of the frame, and held by a spring, *q*, against the cam *r* on the inner face of the crank-wheel F. The free end of this lever is pivotally connected to the elastic extension-link *p*, which latter is attached at *j* to the shear Z. This shear has

fastened to its free end the stop-plate *t*, while its shearing-edge is formed of a steel plate, *z*, which, with the stationary steel plate *z'*, attached to the end of the frame, shears the paper passing between the plates *Z Z'*. The stop *t* at the end of the shear is so arranged as to prevent the shear from completely severing the paper when said stop strikes against the edge of the wheel *W*, while it produces a complete cut when the stop enters one of the slots in the wheel, the elastic extension-link *p* allowing of the partial shearing motion.

The ink-table *N* conforms to the cylindrical face *N'* of the plunger, and is held against it by the set-screws *u u*, passing through slots in the ink-table, which allow the ink-table to be shifted laterally on the curved face of the chase.

Mounted on the stud *w'*, carried by the upper portion of the plunger, is a ratchet-wheel, *w*, which is provided with a pin, *x*, that works in a slot, *y*, of an extension or yoke, *y'*, attached to the ink-table. A gravity-dog, *w''*, is suspended above the toothed wheel *w*, in such a position that during the extreme upper reciprocation of the chase said dog will advance the wheel and cause a slight lateral shifting of the table *N* between the successive inkings, and as the wheel *w* continues to be revolved by the dog *w''*, the pin *x*, moving in the slot *y*, causes the ink-table to move in opposite directions at each turn of the wheel.

C'' and *C'''* are presser-bars for guiding the paper and holding it smooth as it passes through the machine; and *D''* is a presser-foot, provided with a lifting-cam, and has on its under side two leaf-springs, which hold the paper against the feed.

The operation of the machine is as follows: The machine being supplied with paper wound upon the roller *C*, passed over the table, and under the presser-bars *C'' C'''* and presser-foot *D''*, the mechanism is then set in motion by turning the crank attached to the main shaft *D*, which gives motion, through the spur-wheel *E E'*, to the shaft *D'*, carrying the crank-wheels *F F'*, thereby causing the plunger *G* to descend. As the plunger descends the rack on the standard *K*, acting on the pinion *J*, causes the frame *I* to turn and carry the roller *M* over the face of the type to the inking-table to take

ink, and as the plunger finishes its downward motion the impression on the strip of paper is produced. As the plunger rises the motion of the frame *I* is reversed, and the roller again passes over the type to ink it. As the plunger rises the cam-wheel *S* acts on the feed device, and causes the strip of paper to be fed along sufficient to form a ticket, thus moving the printed part of the paper from under the type, and drawing forward from the roll more paper to receive the next impression. As the paper is printed and fed along it passes between the blades of the shears, and as the latter are operated by the cam *r* and lever *Y* the strip of paper is cut transversely, the amount of cut being governed by the wheel *W*, which, if in such a position as to cause the stop *t* to rest on the periphery of the wheel, causes the shears to only partially sever the paper; but if the stop descends into the radial slots in the wheel, then the paper is wholly severed. As the machine is operated the shaft *i* is caused to turn by its connection with the gearing, thus moving the pointer *m* along the scale *n* and pointing out the number of "blocks" or tickets printed.

What I claim as my invention is—

1. In a machine for printing slips from a roll of paper, the combination of a vertically-reciprocating plunger containing the type-holder, a feed for advancing the paper, and a shear automatically producing a complete and a partial cutting of the printed paper, substantially as described.

2. The combination, in a printing-machine, of a reciprocating plunger, *G*, a curved inking-table, *N*, provided with an extension having a slot, *y*, with the ratchet-wheel *w*, carrying a pin, *x*, working in said slot, and the dog *w''*, all constructed, arranged, and operated substantially as described.

3. In a machine for printing slips, the combination of the shear *Z*, stop *t*, slotted stop-wheel *W*, and elastic extension *p*, substantially as specified.

CHAS. MACHRIS.

Witnesses:

H. S. SPRAGUE,
THEO. S. DAY.