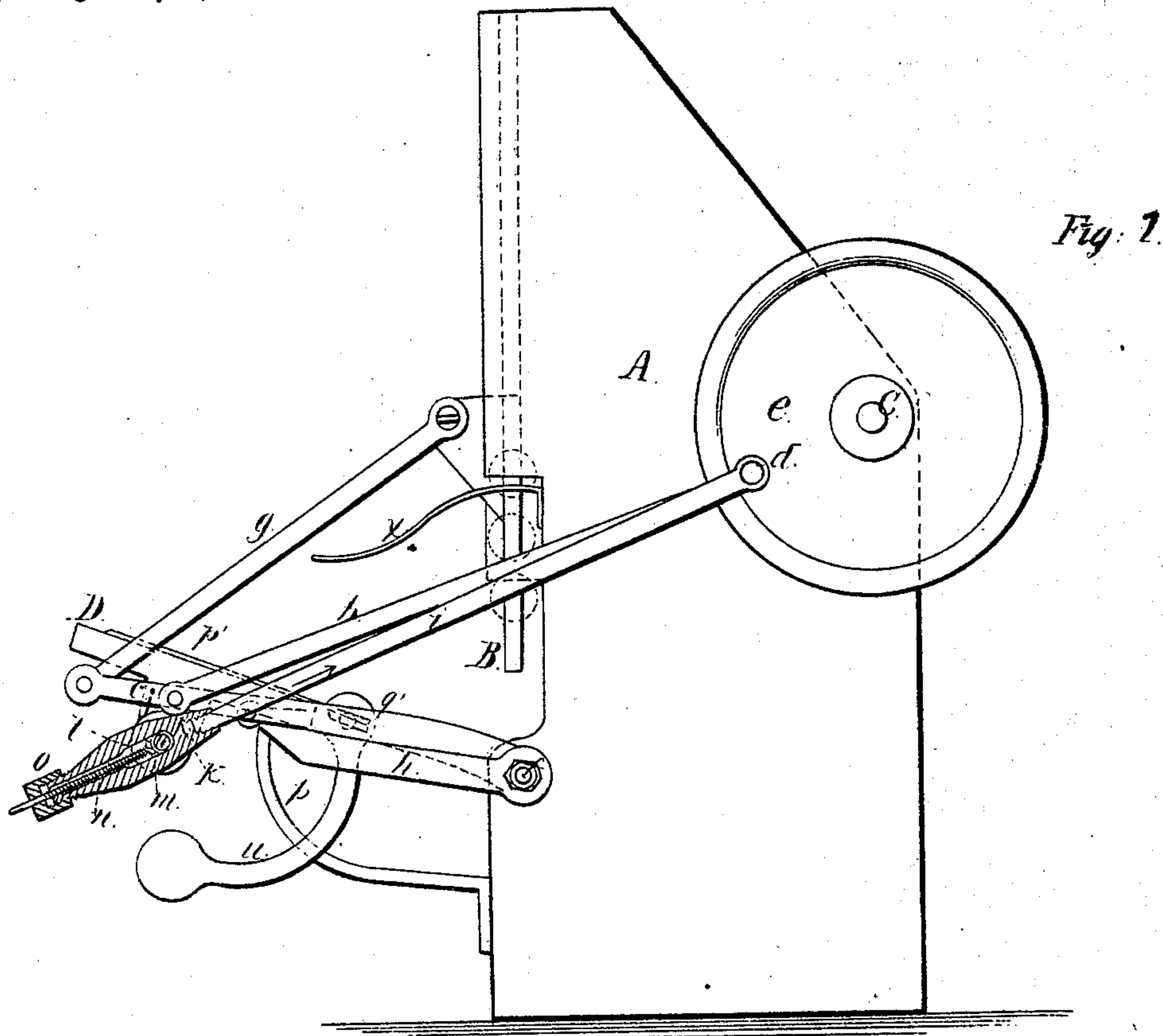


Sheet 1 of 5 Sheets.

W. Braidwood.
Printing Press.
No 80444. Patented Jul. 28. 1868.



Witnesses.

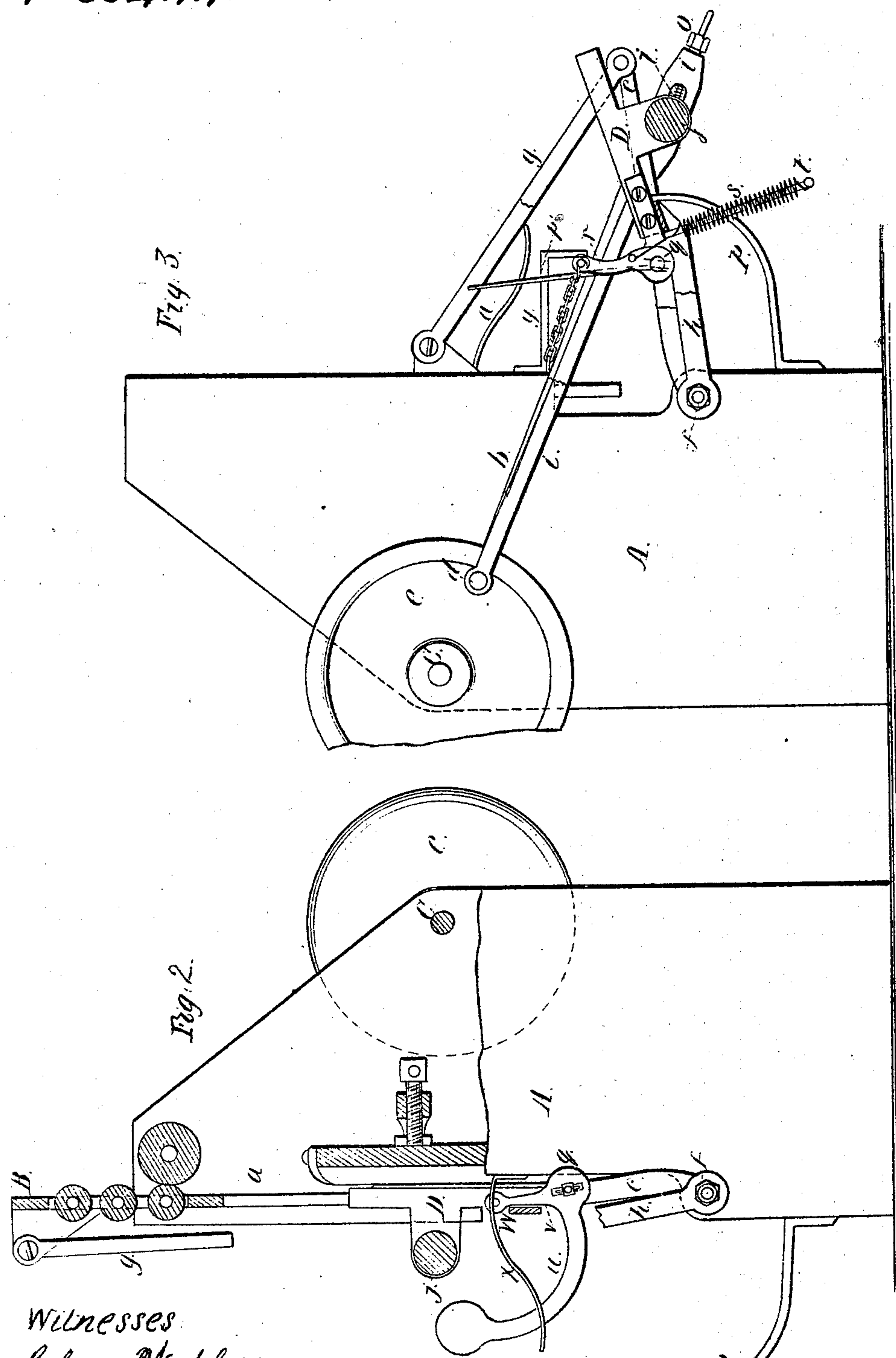
Chas. Wahlers
E. F. Kastenhuber

Inventor.

Wm Braidwood

W. Braidwood. *Sheet 2. of 2 Sheets.*
 Printing Press.

N^o 80444. *Patented Jul. 28. 1868.*



Witnesses
 Chas. Wahlers
 & L. Kastenhuber

Inventor
 Wm. Braidwood

United States Patent Office.

WILLIAM BRAIDWOOD, OF NEW YORK, N. Y.

Letters Patent No. 80,441, dated July 28, 1868.

IMPROVEMENT IN PRINTING-PRESSES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM BRAIDWOOD, of New York, in the county and State of New York, have invented a new and useful Improvement in Printing-Presses; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which drawing—

Figure 1 represents a sectional side elevation of this invention.

Figure 2 is a transverse section thereof.

Figure 3 is an elevation of the press, showing the opposite side from that shown in fig. 1.

Similar letters indicate corresponding parts.

This invention consists in the arrangement of slots in the connection-rods, which impart motion to the platen, in such a manner, that, by the slots in the slotted connection-rods, the platen is permitted to dwell, and thereby sufficient time is gained to adjust the sheets of paper on the platen, if the press is worked rapidly.

The invention consists, further, in the arrangement of distinct levers, independent of the platen, in combination with rods connecting with crank-pins, and with other rods connecting with the roller-carriage, in such a manner that the motion of the roller-carriage is entirely independent of that of the platen, and the two motions can be regulated, each for itself, to suit circumstances.

The invention consists, also, in the arrangement of yielding bearings in the slots of the slotted connection-rods which impart motion to the platen, in such a manner that sudden shocks or blows are avoided if the press is worked rapidly.

The invention further consists in the arrangement of a spring-stop, to catch and support the platen as the same approaches the lowest end of its stroke, thereby preventing sudden shocks or blows.

The invention consists, further, in the arrangement of a spring-arm, in combination with a bell-crank lever, and with the rock-shaft which carries the card-drop, in such a manner that when the platen moves forward, the card-drop is held in close contact therewith by the action of the spring-arm, and as the platen recedes, after the impression has been taken, the card-drop is raised, and the printed card permitted to slide off, and then the card-drop is returned to the surface of the platen, ready to receive a new card.

It consists, further, in the arrangement of a chain, extending from the frame to a lever mounted on the end of the rock-shaft, which carries the fingers, in such a manner that when the platen recedes, the fingers are raised by the action of said chain, and the printed sheet can be conveniently removed, and a fresh sheet can be adjusted on the platen, and as the platen advances, the chain becomes slack, and the sheet of paper is held by the fingers while the impression is taken.

A represents a frame, which is made of cast iron or any other suitable material, and provided with guide-ways, *a*, to receive the roller-carriage B. This carriage receives a reciprocating motion by rods *b*, which extend from levers *c* to eccentric wrist-pins *d*, secured to disks *e* on the ends of driving-shaft C.

The levers *c* rock on studs *f*, which project from the sides of the frame A, and their outer ends connect, by rods *g*, with the roller-carriage, as clearly shown in the drawing. The connection between the rods *b* and levers *c* will, in practice, be made adjustable, so that the throw of the roller-carriage can be adjusted.

The platen D is firmly secured to arms *h*, which rock on the studs *f*, or any other studs fastened in the side pieces of the frame A, and the oscillating motion of the platen is produced by rods *i*, which extend from the wrist-pins *d* to arms *j*, which project from the ends of the platen, as shown, said rods being attached to the arms by studs *k*, which are secured in the ends of said arms. The studs pass through slots *l* in the rods *i*, so that the platen will remain stationary, or have a dwell, during a portion of the revolution of the driving-shaft C. This dwell takes place when the platen has arrived in its lowest position, so that the operator has time to adjust on the platen a fresh sheet or piece of paper, or other material to be printed, while at the same time the roller-carriage continues in its motion, and supplies the types on the bed with the requisite quantity of ink.

If the press is worked rapidly, the dwell of the platen is absolutely necessary to give the operator time to

adjust his paper or sheet; and in order to prevent shocks or blows in the slots of the rods *i*, I have provided yielding bearings, *m*, which are fitted into said slots, being acted upon by springs, *n*, as clearly shown in fig. 1 of the drawing. These springs are enclosed in a chamber in the ends of their rods, and their tension or force is adjusted by caps, *o*, which screw on the ends of the rods *i*. As said rods begin to move in the direction of the arrow marked thereon in fig. 1, the springs *n* are gradually compressed, and by the time the bearings *m* have reached the outer ends of their slots, the force of the springs is such that very little additional power is required to start the platen from its state of rest.

When the platen approaches its lowest position, it strikes the spring-stop or cushion *p*, so that all undue strain on the rods *i* and wrist-pins *d* is avoided. In printing cards, I use a card-drop, which consists of a finger, *p'*, provided with a projecting lip, and attached to the finger-shaft *q*. On one end of this shaft is mounted an arm, *r*, (see fig. 3,) from which extends a spring, *s*, to the end of a bracket, *t*, that is firmly secured to the rear surface of the platen in such a manner, that, by said spring, the finger or card-drop *p'* is forced down towards the face of the platen. On the opposite end of the finger-shaft is mounted a bell-crank lever, *u v*, one arm, *u*, of which is curved, and forms a stop, as will be presently explained, while from its other arm, *v*, extends a stud, *w*, which acts against the curved spring-arm *x*. This arm extends from the frame *A*, and as the platen moves in towards the bed, the stud *w* catches under the outer end of the spring-arm *x*, and the card-drop is held in firm contact with the face of the platen during the time the impression is taken. After the impression has been taken, the platen recedes, and, by the action of the spring-arm *x* on the stud *w*, the finger-shaft *q* is turned, and the card-drop is raised, so that the card previously bearing against it slides off from the platen. This backward motion of the card-drop is limited by the stop *u*, which strikes one of the arms *j*, extending from the platen, or any other portion of said platen, and retains the finger-shaft, while the stud *w* glides out from under the spring-arm *x*. After the stud clears the spring-arm, the card-drop is carried back to the face of the platen by the spring *s*, or by the weight of the arm *u*, or by both combined, ready to receive a new card.

In printing large sheets of paper, the card-drop is replaced by two fingers, which are adjustable on the finger-shaft, to suit the width of the paper. In this case, I remove the elbow-lever *u v* from the end of the finger-shaft, and connect a chain, *y*, to the end of the arm *r*, (see fig. 3,) the length of the chain being adjusted to suit the convenience of the operator. As the platen recedes, the chain, which is secured to the frame *A*, is stretched, and, finally, the finger-shaft is turned back against the action of its spring, *s*, so that the operator has time to remove the printed sheet, and introduce a fresh one, before the platen begins its return stroke. As the platen approaches the bed, the chain *y* becomes slack, and the fingers bear firmly on the sheet of paper, and retain the same in the proper position while the impression is taken.

Instead of chains *y*, I propose, also, to use a hook, secured to the frame, as shown in red lines in fig. 3, in such a position that a stud projecting from the arm *r* will strike it as the platen turns down, and thereby the finger-shaft will be turned, and the fingers will be lifted from the platen, but when the platen moves in towards the bed, the arm *r* will gradually draw away from the end of the hook, and the fingers will close down upon the sheet of paper on the platen. This device I consider as a mechanical equivalent of the chain *y*, previously described.

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

1. The levers *e*, hung independent of the platen, operated as described, in combination with the rods *f g*, crank-pins *d*, and roller-carriage *B*, substantially as and for the purpose set forth.
2. The slots *l*, in the connection-rods *i*, provided with bearings *m*, springs *n*, and adjusting-screws *o*, to operate in combination with the platen *D* of a printing-press, in the manner and for the purpose described.
3. The spring-arm *x*, in combination with the bell-crank lever *u v*, and card-drop *p'*, substantially as and for the purpose set forth.

Witnesses:

SAM'L W. TUTTLE,
CHAS. WAHLERS.

WM. BRAIDWOOD