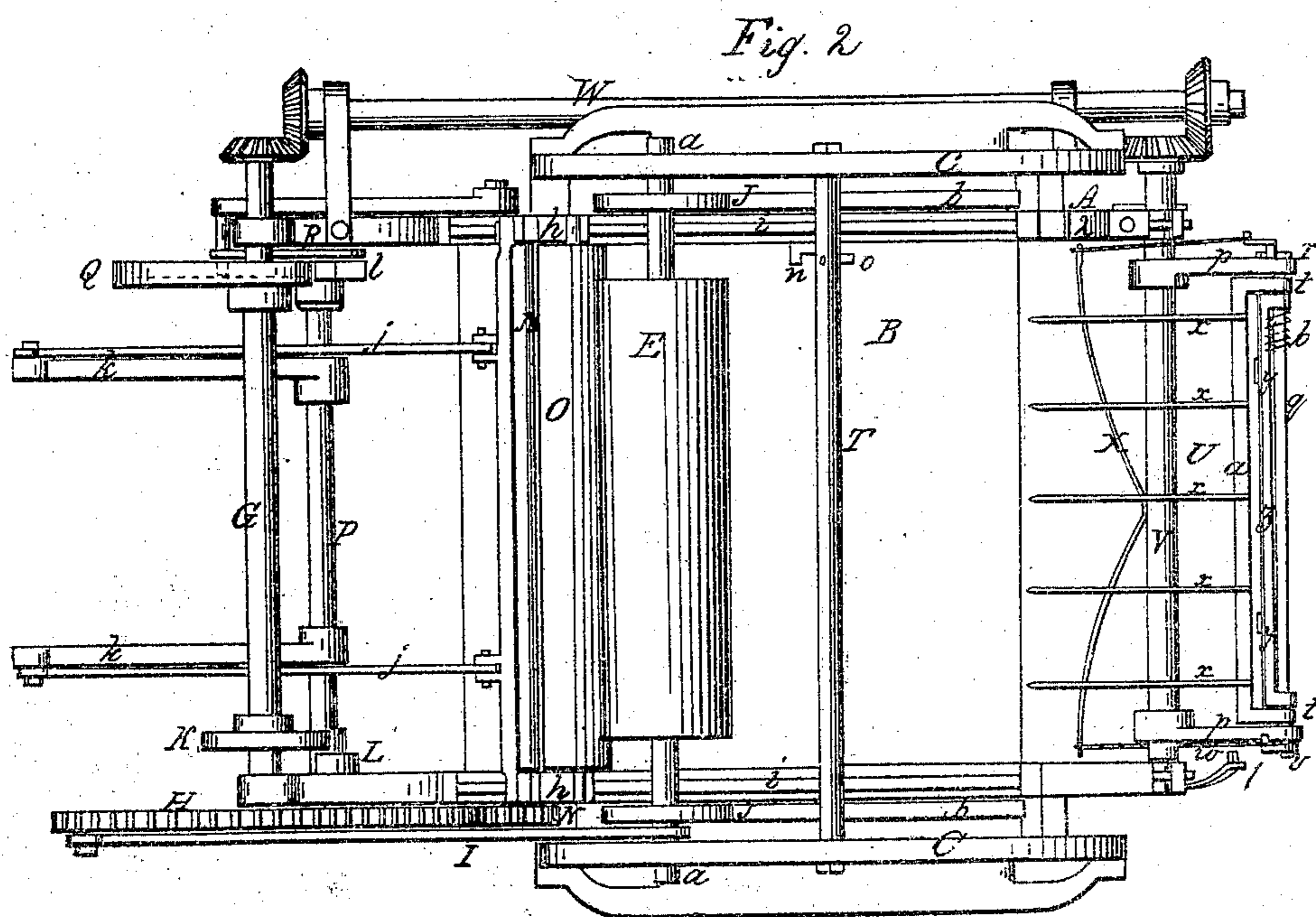
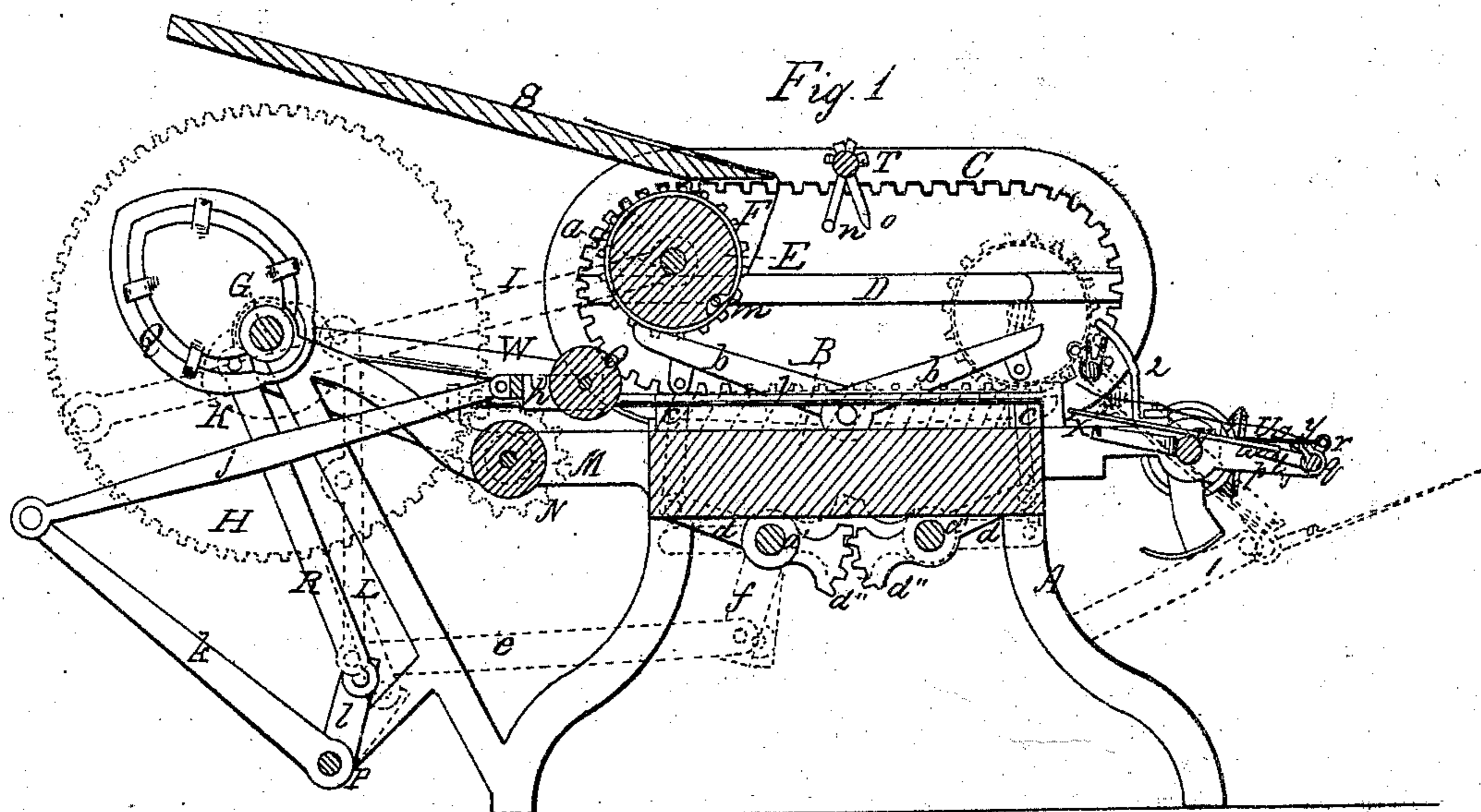


A. & B. Newbury.

Printing Press.

N^o 15740.

Patented Sept. 16. 1856.



UNITED STATES PATENT OFFICE.

A. NEWBURY AND B. NEWBURY, OF WINDHAM CENTER, NEW YORK.

PRINTING-PRESS.

Specification of Letters Patent No. 15,740, dated September 16, 1856.

To all whom it may concern:

Be it known that we, A. NEWBURY and B. NEWBURY, of Windham Center, in the county of Greene and State of New York, have invented a new and Improved Printing-Press; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a longitudinal vertical section of our improvement, the plane of section being through the center. Fig. 2 is a plan or top view of ditto.

Similar letters of reference indicate corresponding parts in the two figures.

Our invention consists in the employment or use of a rotating and reciprocating printing cylinder and also in a peculiar fly, the above parts being arranged and operating as will be hereinafter fully shown and described.

To enable those skilled in the art to fully understand and construct our invention, we will proceed to describe it.

A, represents a framing, on the upper part of which, a flat bed B, is placed, to receive the "form." At each side of the framing and bed, an endless rack C, is placed. These racks may be described as being formed of two parallel bars, one being above the other with their ends connected by semi-cylindrical strips, the bars and strips being toothed on their inner edges, see Fig. 1. Across each rack, there is placed longitudinally, a bar D. These bars are placed at the center of the racks.

E, represents the printing cylinder which has a pinion F on each end. These pinions work and gear into the endless racks C, the axis *a*, of the cylinder projecting a short distance beyond the outer sides of the pinions F.

G, represents the driving shaft, at one end of the framing A. This shaft has a toothed wheel H, upon it at one end and a pitman I, is attached to the axis *a*, of the cylinder and to the edge of the toothed wheel H.

By turning the shaft G, a reciprocating motion is given the cylinder E, said cylinder being rotated in one direction as it moves back and forth in consequence of the pinions F, passing around on the inner or toothed sides of the racks, the pinions gear-

ing into the lower portions of the racks while moving forward and into the upper portions while moving backward. The axis *a*, of the printing cylinder has a wheel J, on each end and these wheels, when the printing cylinder is moving forward, are directly over the bars *b*, the inner ends of which are jointed or pivoted to the lower parts of the racks C, two bars to each rack. The outer ends of the bars *b*, are connected by rods *c*, to the outer ends of levers *d*, which are attached to transverse shafts *a'*, in the framing A; the levers at each side of the framing and the inner ends of each pair of levers *d*, have segment racks *d''* upon them which gear into each other, see Fig. 1.

On the shaft G, there is placed a cam, K, which acts against the upper end of a lever L, the lower end of said lever being connected by a rod *e* to an arm *f*, on one of the shafts *a'*, in the framing. The cam K, acts upon the lever L, so that the bars *b*, will throw up the printing cylinder at each end of its forward stroke, and cause the pinions F, F, to gear into the upper parts of the racks C, the axis *a*, of the cylinder resting upon the bars D, as the cylinder moves backward. These bars *b*, it will be seen give a positive movement to the cylinder E, and assist the pitman I, in passing its forward center. As the cylinder moves forward, its axis *a*, is underneath the bars D, which cause the cylinder to press or bind upon the form as it passes over it, the bars D, being sufficiently low to allow this, it being understood that the bars *b* are in contact with the wheels only when they are raised to throw the cylinder E upward.

M, is an ink roller, the axis of which works in permanent bearings in the framing A. This roller is placed just back of the bed B, and has a pinion N at one end of it, said pinion gearing into the wheel H.

O, represents a reciprocating roller which has its axis in sliding bearings *h*, which work on guide rods, *i*, *i*, placed longitudinally on each side of the bed B. The roller O, is operated by rods *j*, which are attached to the upper ends of arms *k*, on a shaft P, at the lower part of the framing A. The shaft P has a rocking motion given it by an eccentric Q, on the shaft G, the eccentric having a pitman R, connected with it, the lower end of the pitman being attached to an arm *l*, on the shaft.

S, represents the feed board which is placed in an inclined position on the top part of the framing A.

The cylinder E, is provided with fingers *m* which are opened and closed at the proper time by rods *n*, *o*, attached to a bar T placed transversely between the two racks C, C.

U, represents the fly which is constructed as follows: V, is a shaft which is rotated from the shaft G, by a shaft W. The shaft V, has an arm *p* attached to it at each end, and a shaft *q*, is fitted between the outer ends of the arms *p*, said shaft having a small arm *r*, at one end, which arm is connected by a rod or wire *s*, with one end of a spring X, which is attached to the shaft V. On the shaft *q*, two arms *t*, *t*, are placed loosely and a bar *u*, is attached to the outer ends of these arms. One of the arms *t*, has a crank *v*, attached, said crank being connected by a wire or rod *w*, with the spring X. To the bar *u*, fingers *x*, are attached. To the shaft *q*, two fingers *y*, *y*, are attached, and a bar *z*, on the shaft *q*, is made to press against these fingers by a spring *b'*.

The operation will be readily understood. Power is applied to the shaft G, in any proper manner, and a rotating and reciprocating motion is given the printing cylinder E, as previously described; as the cylinder E, passes underneath the lower edge of the feed board, the top sheet of paper is caught by the fingers *m*, which are opened by the rod *o*, and closed by the rod *n*. The cylinder E, with the sheet around it, then passes down upon the form upon the bed B, and the sheet receives the impression as the cylinder moves forward over the form, and when the cylinder reaches the end of its forward stroke, the fingers *y*, *y*, on the shaft *q*, catch under the edge of the sheet and, with the assistance of the bar *z*, detach

the sheet from the cylinder, the sheet resting upon the fingers *x*, and rotating around upon and with the fingers, till the crank *v*, strikes against an arm 1, and causes the fingers *x* to be thrown outward from the shaft V, the fingers depositing the sheet upon a proper fly board.

The bar *z*, is operated at the proper time to grasp the sheet, by means of the arm *r* striking against a projection 2. The taking of the sheet off from the cylinder and the delivery of it upon the fly board, are shown in red in Fig. 1.

The form is inked by the reciprocating roller O, which is supplied with ink from the roller M.

The above press is extremely simple and will work rapidly and well. It may be constructed at a small cost and is not liable to get out of repair.

It is understood that the bars, *b*, are in contact with the wheels while the cylinder is passing over the type; these bars are adjustable and are to be set so that they will sustain the cylinder in passing on and off the form, and so that they do not strike too hard against the edges.

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

1. The rotating and reciprocating printing cylinder E, operated by means of the endless racks C, pitman I, and bars *b*, arranged as shown and described.

2. We claim the revolving fly U, constructed, arranged and operating as set forth.

A. NEWBURY.
B. NEWBURY.

Witnesses:

ISAAC BRANDWIN,
CHRISTOPHER V. BARNETT.