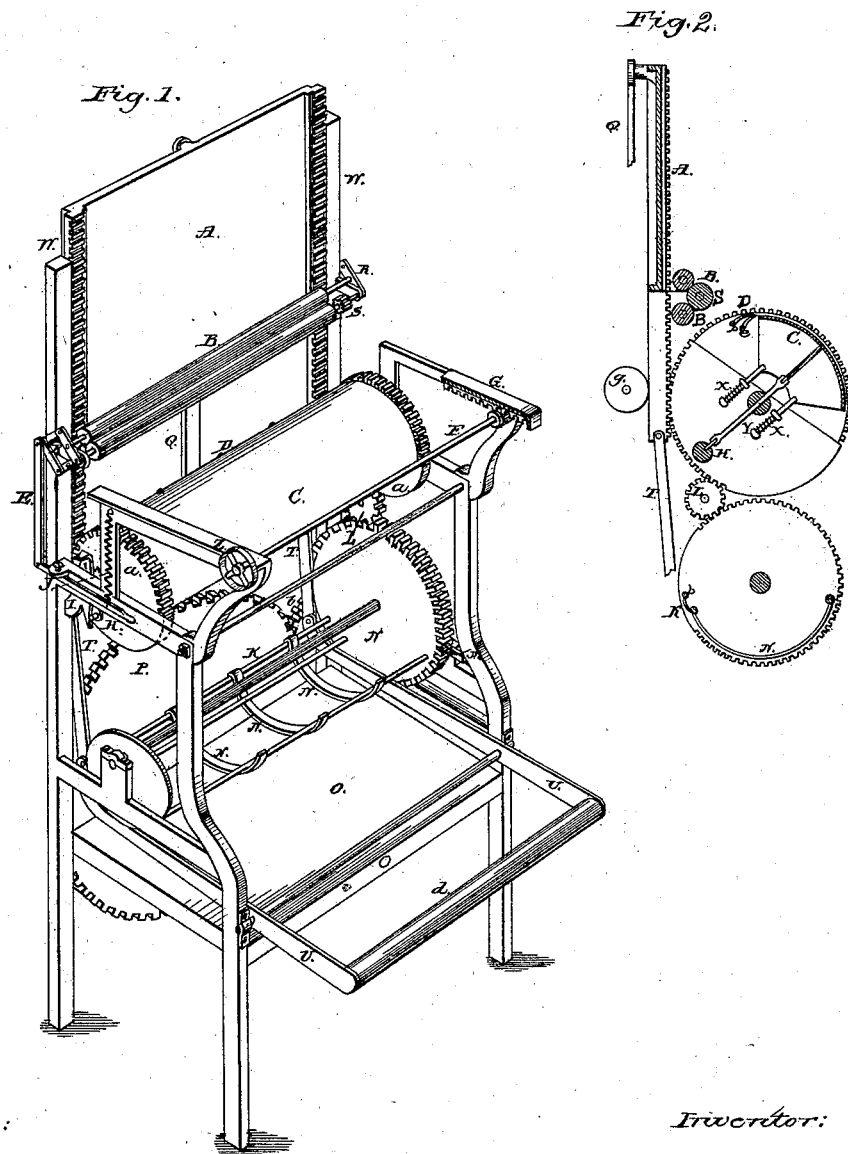


H. G. CANFIELD.  
Printing-Machines.

No. 219,068.

Patented Sept. 2, 1879.



Attest:

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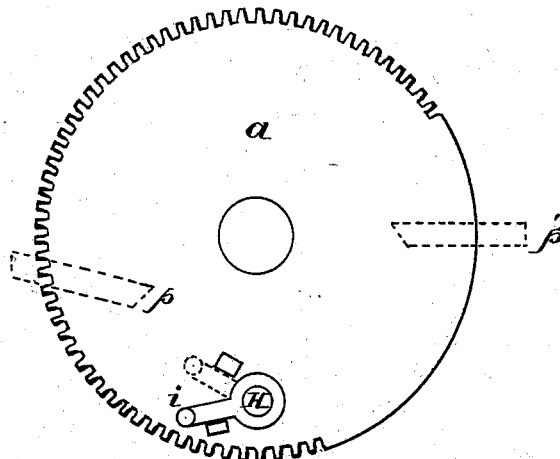


Fig. 3.

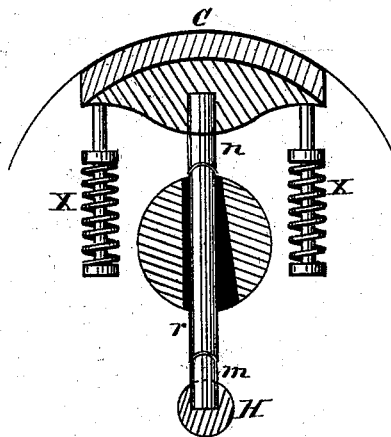


Fig. 4.

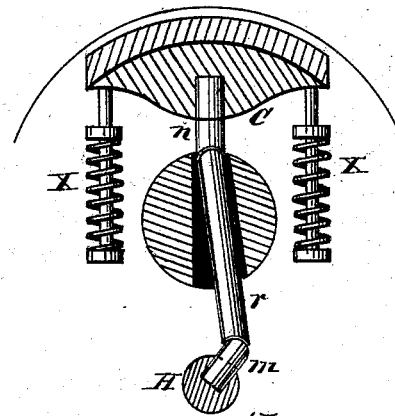


Fig. 5.

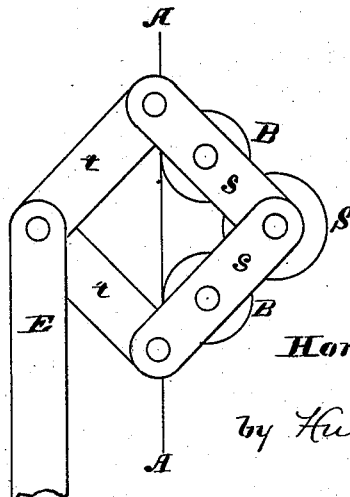


Fig. 6.

Witnesses:

*Samuel Wagner*

*John M. Munn*

Inventor:

*Horace G. Canfield*

*by Humphrey & Stuart*

*Attys.*

# UNITED STATES PATENT OFFICE.

HORACE G. CANFIELD, OF AKRON, OHIO.

## IMPROVEMENT IN PRINTING-MACHINES.

Specification forming part of Letters Patent No. **219,068**, dated September 2, 1879; application filed May 17, 1876.

*To all whom it may concern:*

Be it known that I, HORACE G. CANFIELD, of the city of Akron, county of Summit, and State of Ohio, have invented a new and useful Improvement in Printing-Machines, of which the following is a specification.

The invention relates to that class of presses wherein the bed has a vertical reciprocating motion and the impression is taken upon a cylindrical rocking and reciprocating pad.

The object of the invention is to prevent contact between the type and impression-cylinder in returning after the impression is taken, to prevent contact between the form and inking-rollers without changing their position relative to the distributing-roll, and to provide a simple device for delivering and piling the printed sheets.

The invention consists in the arrangement of the impression-segment within a cylindrical rocking frame, in combination with devices whereby the segment is forced radially outward to receive the impression and drawn inward in returning.

It also consists, in combination with said impression-segment, of nippers for holding the sheet of paper, composed of a movable upper finger and a lower rigid finger, situated flush with the face of said segment when forced outward.

It further consists in journaling the inking-rollers in links, pivoted at one end upon the journal of the distributing-roller, and connected at the other end with a lever by means of similar links, by which they are moved to and from the form; and, finally, it consists, in combination with the rocking frame bearing the impression-segment, of a rocking delivery-frame moving in unison with the impression-segment by means of an intermediate pinion.

In the accompanying drawings, Figure 1 is a perspective view of my improved press; Fig. 2, a partial section of same at right angles to the axis of the rocking frame; Fig. 3, the outside of one of the rocking-frame heads. Figs. 4 and 5 show in section, respectively, the impression-segment thrown out and drawn inward; and Fig. 6, an enlarged view of the arrangement of the inking and distributing rolls.

The machine is mounted within a suitable

frame, which rises at the back in two upright parallel guides, W W, within which the bed A slides with a vertical reciprocating motion.

The bed A is counterbalanced by the weight *d* through the arms U U T T, and is moved by the wheel P and pitman Q.

At each side of the bed A are toothed racks, which mesh into segmental racks on the ends of the rocking frame *a a*. This frame consists of heads connected by suitable intermediate supports, and mounted upon a shaft journaled in the supporting-frame.

An impression-pad, C, consisting of a segment of a cylinder of such radius that its periphery shall, when moved by the rocking frame *a a*, travel in unison with the face of the form locked in the bed A, is mounted in the rocking frame, with its ends fitting in suitable grooves or ways in the heads of said frame, so that it may have a radial motion therein, and is constantly drawn inward by the coiled springs X X.

A shaft, H, extends between and is journaled in the heads of the rocking frame, and projects through one of them, terminating in a crank or arm, *i*.

Between the heads of the frame *a a* two or more short rods, *m m*, project radially from this shaft, and corresponding rods *n n* project inwardly from the segment C. Between the ends of the rods *n n m m* are rods *r r*, which are held in place by ball-and-socket joints.

In operation, as the segment revolves toward the bed A, the rods *m r n* stand in line and hold the segment outward to receive the impression until, the impression being taken, the crank *i* encounters a lug, *p*, on the inside of the supporting-frame, rocking the shaft H and permitting the segment to be drawn inward, Fig. 5, until it passes the form, when the crank *i* encounters another lug, *p'*, placing the rods *m n r* again in line, the location and shape of these lugs being indicated by dotted lines in Fig. 3.

The distributing-roll S is journaled in fixed standards attached to the supporting-frame, and upon the journals, at each end thereof, are pivoted two links, *s s*, which, at their opposite ends, are, respectively, hinged to corresponding links *t t*, and these latter are, in turn, piv-

oted on a wrist in the end of the bent lever E, and the inking-rolls are journaled in the center of the links *s s*.

The bent lever E turns at its elbow on a wrist projecting from the supporting-frame, and a spring, J, holds the inking-rolls against the form until, when desired, they are thrown back by depressing the end of the horizontal arm of the lever E.

Journaled in the supporting-frame, beneath the rocking frame *aa*, is a delivery-frame, N N, provided with nippers at K, and moving in unison with the rocking frame by means of the loose intermediate pinion L.

The nippers of the rocking frame consist of the movable fingers D and rigid fingers *e*, Fig. 2, the latter placed flush with the face of the segment C when the latter is forced outward.

In operation, the nippers D *e* grasp the sheet, hold it until the impression is taken, and the segment C is drawn inward, leaving a space between the segment and sheet for one finger of the nippers K to enter.

By the revolution of the delivery-frame the nippers K are brought into position to grasp the edge of the sheet as the nippers D *e* are opened, and deliver it by the return movement upon the pile-table.

What I claim is—

1. In a printing-press, in combination with a rocking frame moving in unison with the bed, an impression-segment adapted by mechanism such substantially as described to move radially outward to receive the impression and to recede in returning, substantially as described.

2. In combination with the nippers D *e*, attached to the rocking frame, the movable segment C, adapted by mechanism such substantially as shown to be drawn radially inward after the impression is taken, substantially as and for the purpose hereinbefore set forth.

3. In combination with the distributing-roller S, the ink-rollers B B, links *s s t t*, and lever E, all arranged and operating in the manner and for the purpose specified.

4. In combination with the rocking frame bearing the impression-segment, a rocking delivery-frame moving in unison with the impression-segment by means of an intermediate pinion to receive the printed sheets from said segment, substantially as shown.

HORACE G. CANFIELD.

Witnesses:

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