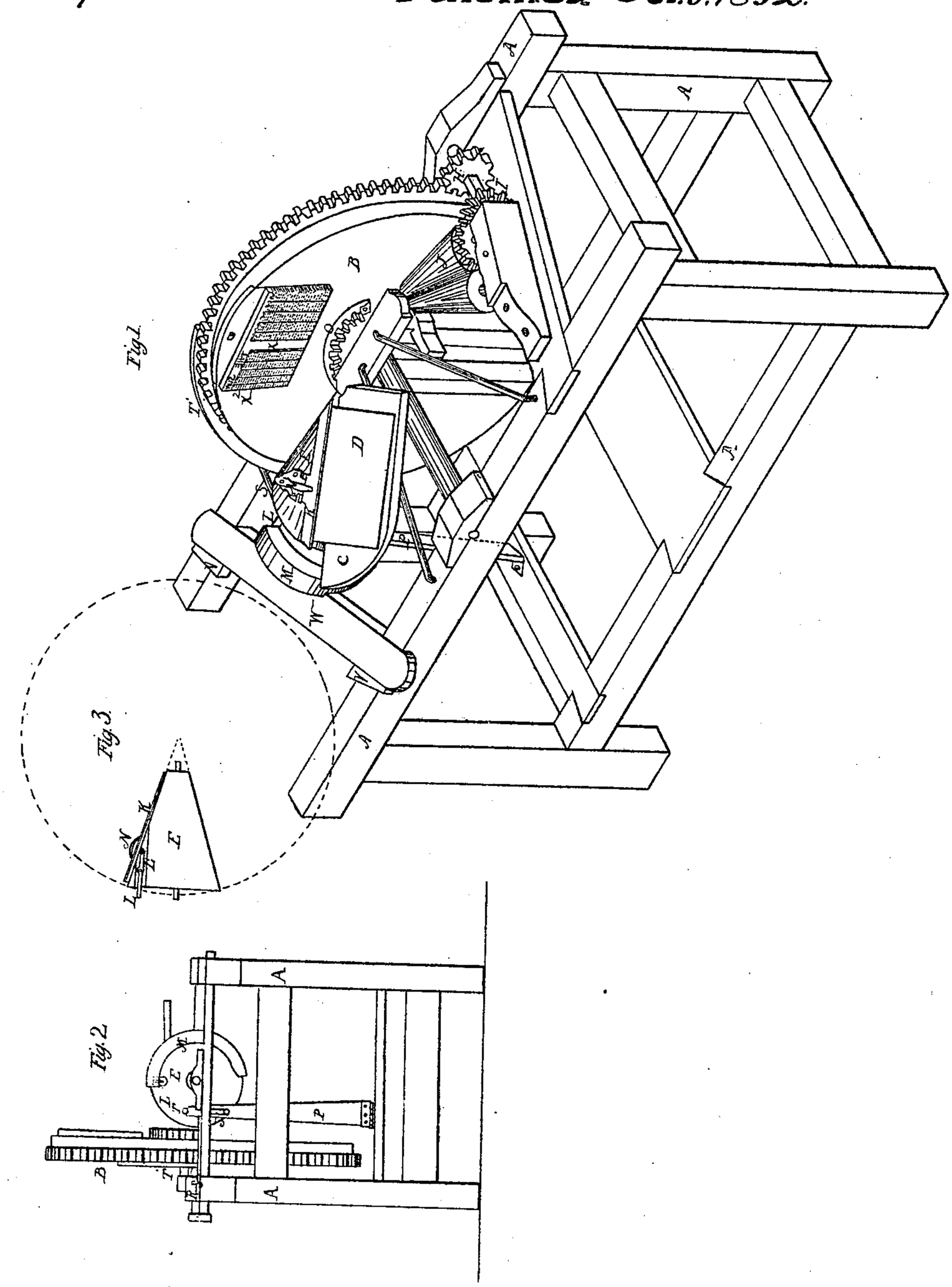
J. G. Nicolay.

Printing Press.

No. 9305.

Patented Oct. 5. 1852.



UNITED STATES PATENT OFFICE.

JOHN G. NICOLAY, OF PITTSFIELD, ILLINOIS.

PRINTING-PRESS.

Specification of Letters Patent No. 9,305, dated October 5, 1852.

To all whom it may concern:

Be it known that I, JOHN G. NICOLAY, of Pittsfield, in the county of Pike and State of Illinois, have invented a new and useful Construction of Printing-Press to be Operated by Hand or other Power, called Nicolay's Rotary Cone Printing-Press; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, and letters marked thereon, forming a part of this specification.

My invention relates to an improved and simple arrangement of printing press. It consists of the peculiar combination and adaptation of conical impressing cylinders and their respective distributing rollers to the face or bed of a wheel or disk arranged and operating as hereinafter more fully described by reference to the drawing, whereby a press is produced combining simplicity, cheapness, and efficiency of action, whether constructed to be operated by hand or other power.

In the accompanying drawing Figure 1, Fig. 2, and Fig. 3, represent an isometrical view, a side elevation and a section of impressing cylinder, the same letters of reference being used to designate like parts in each of these figures. Only one impressing cylinder and one set of distributing rollers is represented in the drawing, but I propose to use four or more cylinders with their respective distributing rollers to one wheel or disk, according to the rapidity with which it is desired to throw off impressions, and shall, when hereinafter referring to the cylinders and rollers use the plural number. This increase in the effective operation and power of the press requires no invention, there being a mere addition of parts and any intelligent machinist will understand how to construct and adapt the respective parts accordingly. In the drawing the main wheel or disk is attached to a horizontal shaft and the plane of its face rotates vertically, but I do not confine myself to this arrangement as the machine will work equally well if the wheel is attached to a vertical shaft so as to rotate with the plane of its face horizontally and where a number of impressing cylinders are used this arrangement is best. This variation is also a mere change in position or arrangement of parts and I have deemed it unnecessary to represent it by a drawing.

(A A) is the main frame which supports and sustains the whole machinery, and it may be made of any suitable form or size and material. The wheel (B) may be made of cast-iron and its diameter should be in proportion to the size of the largest form it is desired to use in the machine and no rule can be given to determine the exact size for it. This wheel has on its periphery cogs, which mesh into a pinion (H) attached to a shaft, which shaft has a beveled pinion (I) attached to it which beveled pinion meshes into one of equal size on the end of the inking roller (J), thus giving the desired motion to the distributing rollers, which are supplied with ink by any well-known arrangement. The impressing cylinders (E) are covered with cloth leather or other suitable material, and each of them are provided with a clamp for taking hold of and retaining the sheet of paper. This clamp consists of a plate K, hinged to said cylinder spring (N) and arm or lever L. The plate K must be hinged to said cylinders at the same angle as the outer line or edge X′, of the form or type; and it is operated upon so as to rise at the proper time to receive the sheet of paper by said arm (L) which is jointed to said cylinder and moves on its fulcrum I′, and it projects from the end of said cylinders so as to be acted upon by a stationary segment (M) on the main frame as said cylinders rotate. When said arm L has passed the influence of said segment the spring (N) causes said clamp to close and thus confines the paper (D) until the time arrives to discharge the same, which is done by the lower part of said segment impinging against said arm or lever in the manner before described for raising said clamp to receive the sheet.

The impressing cylinders (E) are made to rotate so as to draw the sheet of paper between it and the form by a segment rack O secured to said wheel (B). In order to prevent said cylinders from making more than one revolution at each impression, or to cause them to stop at the position represented so as to receive the sheet of paper from the table (C), each of them are provided with a hinged lever or arm (P), having an arm (S) secured to its upper end and jointed to the main frame at (R) and a spring (S′) attached to the main frame and operating against said lever (P) so as to keep it against the face of the base of the

cylinders; and secured in the base of said cylinders is a pin (T), which rests against the end of said lever (P), thus confining said cylinders in place until acted upon by the segment rack on wheel (B). But when said segment rack by meshing in the pinion on said cylinders commences to rotate them a projecting piece of metal (T′) secured to the periphery of wheel (B) acts at the same time upon the arm (S) of lever (P) removing it out from the end of said cylinders and from under the pins (T), which allows said cylinders to make one revolution when they are brought up again by the pins (T) coming in contact with the lever (P). Thus the impressing cylinders one or more in number are made to rotate by the action of the segment rack causing impressions to be taken on sheets of paper which they carry with them with great precision and rapidity. It does not matter what the angle of the conical impressing cylinders are or the distributing rollers provided they are governed and determined in their angles by radii drawn from the center of the wheel (B). But the impressing cylinders must of course be of sufficient diameter or their outer circumference must be of sufficient area to impress the sheets, or that is to say, more than equal in area to the type or form X.

The apparent and striking features of importance in my improved construction of press are: Requiring but little power to operate it by the peculiar adaptation of conical impressing cylinders and distributing rollers to the face or bed of a wheel in which the form is placed; distributing the ink thoroughly; remarkable simplicity and cheapness of construction, rendering it not at all liable to get out of order, thus supplying the editors and proprietors of newspapers of small country towns with a machine which can be worked by hand so as to perform the work of printing in an efficient and workmanlike manner, and one that will turn out with ease twelve or fifteen hundred copies per hour by hand.

The impressing cylinders are adjusted to the face of the bed of the wheel (B) to the proper degree of pressure by means of wedges (V, V) which secure permanently to the frame the beam (W) in which the bearings of the base of said cylinders work; and the bearings in the apex or frustums of said cylinders work in adjustable blocks in the same manner, or this may be done in any suitable or equivalent manner. This adjustment is also necessary to be provided for the distributing rollers.

The chase *x* containing the form or type is dovetailed on its sides which fit corresponding dovetailed edges of a recess formed in wheel B, so that it can be slid in and thus held there in place.

Having thus fully described my rotary cone printing press, what I claim as new and desire to secure by Letters Patent, is—

1. Not the use of conical impressing cylinders but the peculiar arrangement and combination of conical impressing cylinders one or more in number, each provided with a set of conical distributing inking rollers, adapted thereto and with a rotating wheel or disk substantially as described.

2. I also claim in combination with the conical impressing cylinders the position and arrangement of the clamp, consisting of the metal plate K, spring N, and arm or lever I, which retains the paper at the required angle to receive the impression and releases the same when the impression is taken, substantially as set forth.

In testimony whereof I have hereunto signed my name before two subscribing witnesses.

JOHN G. NICOLAY.

Witnesses:
I. S. SMITH,
H. H. YOUNG.