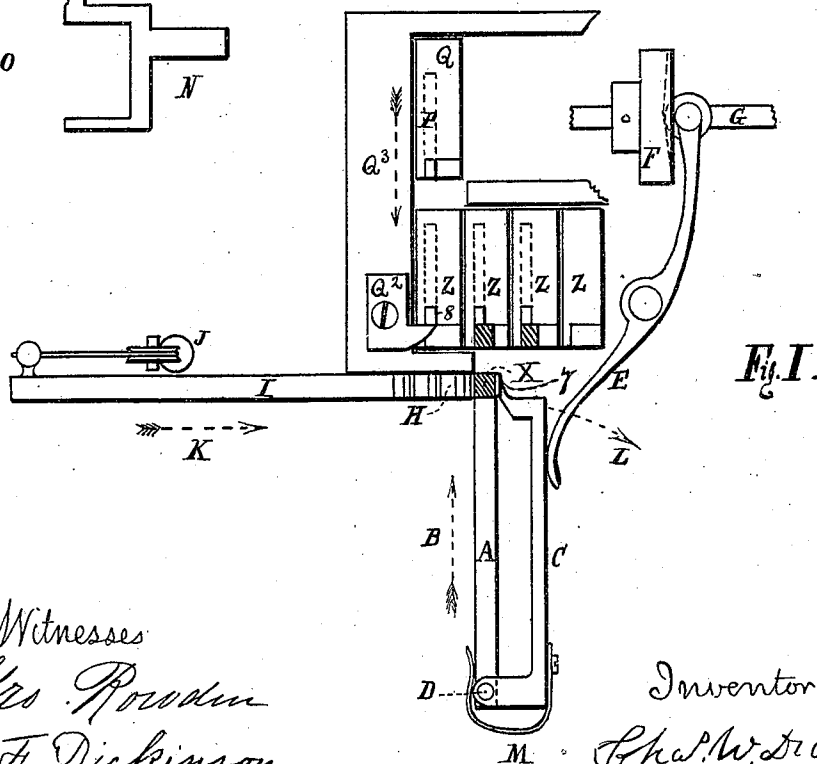
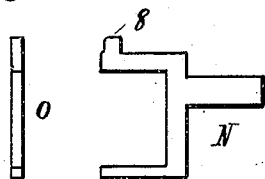


No. 174,899.

Patented March 21, 1876.



Witnesses:
Grs. Rowden
W. F. Dickinson.

Inventor
Chas. W. Dickinson

UNITED STATES PATENT OFFICE.

CHARLES W. DICKINSON, OF NEWARK, NEW JERSEY, ASSIGNOR TO SAMUEL W. GREEN, OF BROOKLYN, AND SAID GREEN ASSIGNOR TO EDWARD N. DICKERSON, OF NEW YORK, N. Y., TRUSTEE FOR HENRY A. BURR.

IMPROVEMENT IN TYPE-DISTRIBUTING MACHINES.

Specification forming part of Letters Patent No. **174,899**, dated March 21, 1876; application filed July 22, 1875.

To all whom it may concern:

Be it known that I, CHARLES W. DICKINSON, of Newark, New Jersey, have invented certain Improvements in the details of the Type-Distributing Machine heretofore invented by me, and for which an application for Letters Patent was filed August 8, 1872, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

Figure 1 represents a top view of that part of the feed-motion of a distributor which controls the movement of the types as they are cut off from the line of type H in the galley and are conveyed into the carriers. Fig. 2 represents two views of the sliding ejector, which pushes the type out of the carrier; and Fig. 3 represents a side view of the apparatus employed for "feeling" the type in the carriers and for withdrawing them.

In my original machine the line of types, as it is pushed forward by the line-follower, is supported at its inner end by a rest, which gradually recedes as the machine operates, till the line has been pushed forward out to the extent of the thickness of the end type of the line.

In this improvement (shown at Fig. 1) I use a finger, C, pivoted upon the horizontally-reciprocating type-driver A, and traveling with it, which holds the type and transfers it to the carrier. C, Fig. 1, represents this finger, which is centered on the type-driver A upon a pivot, D, and which is pressed gently against the end type X by a spring, M.

As the types are pushed forward by the weight J, which impels the line-follower I against the line, they are pressed against the end of this finger, and would overcome the resistance of the spring M if it were not for the lever E, which rests against the finger and holds it firmly. This lever E operates in a manner similar to a corresponding lever in my original machine—that is to say, one end of it is controlled by the cam F on the revolving shaft G of the machine, which permits the pressure of the type against the finger C, to gradually move out the finger C until the end type is passed by the corner of the type-chan-

nel, as in my original machine. At this moment the spring which presses forward the type-driver A, and with it the finger C, shifts the end type X a little distance at right angles to the line of types, and the type-driver A then closes the end of the type-channel, so that another type can not be pushed forward by the line-follower I. The type-driver A and finger C are then carried forward toward the carriers Z, in the manner described in my original application, the finger C holding the type first against the end of the frame Q³, and then against one side of the carrier, until the type is lodged in the carrier.

By means of this contrivance the type is securely held from the moment it comes into contact with the end of the finger C until it is lodged in the carrier, and there is no possibility of its turning or becoming displaced.

When the type has been lodged in the carrier the type-driver A and finger C are withdrawn, and the finger C, being pressed inwardly by the lever E, as well as by its own spring M, comes in contact with the next end type of the line in the type-channel, and permits that type in its turn to be gradually driven out by the line-follower I, repeating the operations already described.

My next improvement is in the construction of the ejector, for pushing the type from the carrier. It is shown in Fig. 2 in detail, and in Fig. 3 in position. This ejector has two prongs forward and one backward, as at P in Fig. 3, and as shown at N in Fig. 2. The forward prongs support the top and bottom of the type as it is held within the carrier, and the movement of the ejector pushes out the type by pressing at its top and bottom, while the rear prong, fitted into a groove in the carrier, makes the motion perfectly parallel. This ejector is not acted upon by a spring, as the ejector in my original machine was; but it will remain at any position in which it is placed or left until some external force is applied to it. When it has been withdrawn, in the operation of the machine, it remains forward in the position shown in Fig. 3 until the carrier has been moved through all its positions and has been returned to the initial point in the front

line, as shown in Fig. 1. There a stop, Q^2 , is placed, with which the head 8 of the ejector coming in contact, while the carrier is moving forward, the ejector is driven back again into its retired position, leaving the type-space vacant for the introduction of a new type, as described.

In my original machine the hooks S, Fig. 3, after they had fallen and had withdrawn the ejector, were restored to their elevated position during their backward movement by means of an inclined cam sliding over a fixed obstruction. The difficulty with this arrangement was that it required a very nice adjustment in position and time, so that the hook would withdraw the ejector to its full throw at the exact instant when the inclined cam lifted its point away from the head of the ejector; and the hook was liable to let go too soon, or to hold on too long and pull upon the ejector too hard, and fly off with violence, leading to injurious consequences. This difficulty I have overcome by lifting the hooks at the proper time by means of toes U' on a rock-shaft, U, which is mounted underneath the hooks, and which is caused to vibrate at each revolution of the machine at the proper time, so as to elevate and detach from the ejectors such hooks as have fallen and become attached. When elevated they are supported upon the rest-block S^3 , in the manner described in my original application. This rock-shaft U is worked by means of a rocker-arm, Y, a connecting-hook, W, a connecting-rod, V, and a lever, V^1 , which is operated by a revolving cam, V^2 , on the shaft W^1 . This cam is shaped and timed so as to vibrate the rock-shaft U at the moment when the hooks have been drawn backward by the spring T^3 , which draws the slide T^1 and keeps it in contact with the cam T^2 , in the manner described in my original application. The rocker-arm Y has a latch, Y^1 , centered upon it at its long end, in the manner shown in the drawing, which latch is for the purpose of escaping from the hook W when

the rocker-arm has been vibrated to near its full throw in the direction of the arrow at V, when the point of the hook passes by the point of the latch. When, however, the hook W returns to the position shown in the drawing, the point of the latch gives way and allows the hook to pass under it, and is replaced by a spring. (Shown in the drawing at Y^2 .) When the hook W passes by the latch, the toes of the rock-shaft fall by their weight and by the force of a coiled spring, 9, which withdraws the rocker-arm into the position shown in the drawing.

By these means the hooks are lifted and allowed to return by a motion independent of their own movement, and therefore under better control, and a great improvement is effected in their action.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a movable finger, C, with the cut-off plunger A and the controlling-lever E, operating substantially in the manner described.
2. In combination with the type-carrier, the improved ejector, for throwing the type out of the carrier, operating without a spring, substantially as described.
3. In combination with the type-carrier, a stop, Q^2 , so arranged that the ejector is held back as the carrier is driven forward to the initial point of the carrier movement, substantially as described.
4. The combination of the ejector-hooks with vibrating toes or cams, for the purpose of elevating the hooks independent of their own movement, substantially as described.
5. The combination of the rocker-arm Y with the hook W, operated by the cam V^2 , substantially in the manner described.

C. W. DICKINSON.

Witnesses:

GEO. ROWDEN,
W. F. DICKINSON.