(No Model.)

A. O. RUSSELL.

ELECTROTYPE REGISTERING MACHINE.

No. 347,256. Patented Aug. 10, 1886.

Fig. 1.

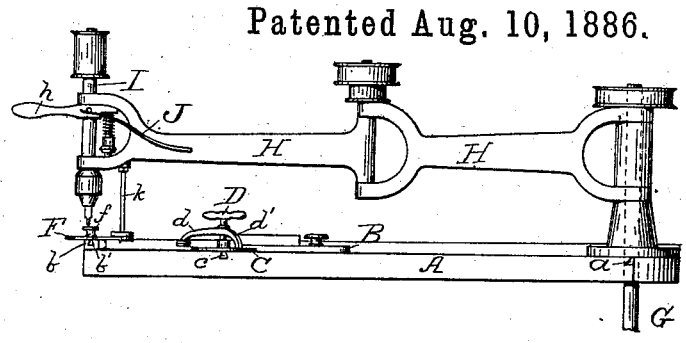


Fig. 2.

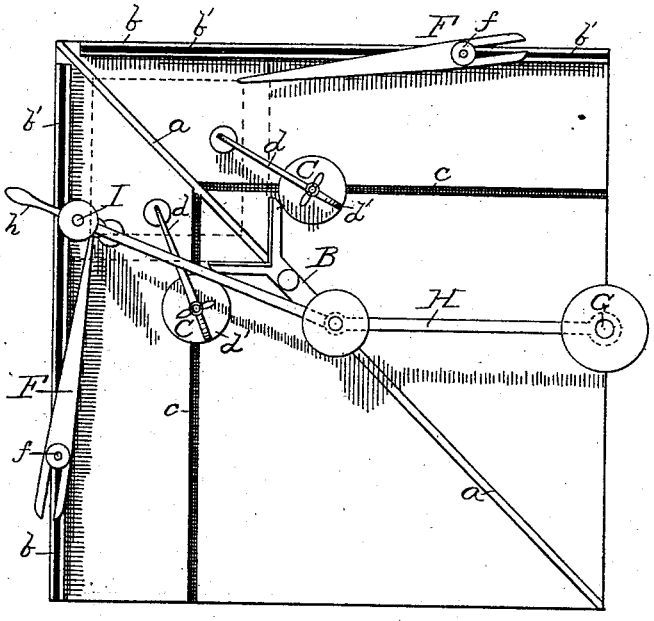
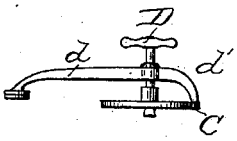


Fig. 3.



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ELECTROTYPE-REGISTERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 347,256, dated August 10, 1886.

Application filed July 7, 1884. Serial No. 136,992. (No model.)

To all whom it may concern:

Be it known that I, ANTHONY O. RUSSELL, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Electrotype-Registering Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

One of the inconveniences that has heretofore existed to mounting companion electrotype-plates for printing variously-colored designs or impressions has been the difficulty of registering them on their base-blocks, so that when locked in a form and printed from they correspond in position and secure a complete picture, having a proper distribution of color and harmony of design. This I accomplish by means of a bed-plate having devices for securing the base-block in a given position, devices for indicating given points on the upper surface of the said base-blocks, which designate some feature of the electroplates possessed in common by them all, so that when mounted the relative position of the said plates to their bases is the same in every instance, and devices for holding the said plates on their bases when properly registered, while they are being permanently secured thereto, as hereinafter more fully explained.

In the drawings, Figure 1 is a side elevation of my invention. Fig. 2 is a plan view of the same, and Fig. 3 is a detail view.

In the drawings, A represents a bed-plate, which is supported by a suitable frame. It is provided with a groove, *a*, running diagonally from corner to corner thereof, and is provided with ledges *b b*, bounding two sides at right angles to each other, and converging toward one of the corners intersected by the groove *a*. In the upper surfaces of these ledges, running longitudinally and centrally across the same, are the grooves *b' b'*.

Arranged parallel to and at a suitable distance from the side ledges, *b*, and terminating at a common point in the groove *a* are the grooves *c c*. All of these grooves above mentioned are dovetailed in cross-section, and the whole system is for the accommodation and adjustment of the devices for clamping the base-block and holding and registering the electroplates on the base-blocks.

Moving longitudinally and adjustable in the groove *a* is the clamp B, having a dovetail tenon entering said groove, and a set or thumb screw passing vertically through it, by manipulating which it can be secured in any position within the limits of the said groove. This clamp is also provided with two arms projecting at right angles to each other horizontally and at about twenty-two and one-half degrees from the alignment of the groove *a*. These arms fit the corner of the base-block, and when it is desired to hold the same securely the clamp is pushed forward until the opposite sides of the said block bear against the ledges. Then the screw in the body of said clamp is manipulated to hold the same securely in position.

Moving and adjustable in the grooves *c c* are the presser-foot devices for holding the electroplate on the base-block in the position in which it is registered and while it is being secured thereto. These devices consist of a circular plate, C, having a dovetail tenon extending into the groove *c*, (in which it is adjusted longitudinally,) and having a central boss, which is tapped vertically to receive a screw, D, as shown. The barrel of this screw passes through a longitudinally-elongated hole in the boss of the lever *d*. Lever *d* is of such shape that one end is curved downward to rest on the plate C, and the other end extends out beyond the circumference of said plate some distance, and is provided with a presser-foot. The under surface of this presser-foot is provided with a pad of leather or other soft material, so that when it bears down upon the work to hold it steady it will not injure or deface the same. This lever *d* is pushed or forced down upon the work by manipulating screw D, as is apparent. In order that the presser-foot of the lever may be raised from the work when the pressure of the screw D is removed, I surround the said screw, between the boss of the circular plate and lever *d*, with an expansion-spring, the expansion of which lifts the said lever. There are two of these presser-foot devices—viz., one in each groove *c*. They are better adapted to hold the electroplate se-

cure, therefore, as they secure it at two different points.

Secured anywhere within the limits of the grooves *b' b'* in the ledges *b* by thumb-screws *f* are the indicator-hands F. The screws *f* pass through the slotted and wider end of the said indicator-hand, and the other end of these hands narrow to a point, which is turned downward and moved until it designates some particular feature possessed in common by all the electrotype-shells, and indicating some point on all the base-blocks where the said feature is to be placed. There being two of these hands F, and as each will indicate different features on the plates and different points on the bases, it is evident there will be no difficulty in properly registering the several electrotype-shells of a set the same on each base-block, so that when they are printed from to produce a variously-colored design or picture there will be correctness of design and the proper distribution and harmony of color.

After the several electrotype-shells have been properly registered it is necessary to secure them permanently to the bases, and to do this it is necessary to drill holes through the electrotype-shell. As a hole drilled by hand would be awkward, and would consume valuable time, I have devised a drill for that purpose which is operated by steam-power, and yet which can be moved so as to work any where on the bed-plate, to wit: Journaled in one side of the bed-plate not bound by a ledge *b* is a vertical drive-shaft, G, having a pulley secured to its top end. Loosely pivoted on this shaft between the bed-plate and the said pulley on the top end thereof is the jointed arm H, the pintle pivoting the two arms of which is provided with a speed-pulley having two faces of different diameters, one of which is connected by a suitable belt with the pulley on the top of the drive-shaft G, and the other of which is connected with a pulley on the top end of the drill-shaft I, which is suitably journaled in the bifurcated end of the outer arm of the jointed arms. This drill-shaft has a vertical reciprocal movement, which is controlled by a handle, *h*, the boss of which surrounds the drill-shaft, and has extending from it in the opposite direction to the handle a finger, which latter bears down upon an expansion coil-spring surrounding a vertical pin set between the arms of the bifurcated end of the outer arm of the jointed arms. This vertical pin passes through a corresponding aperture in the end of the finger of the handle, and the upward pressure of the expansion-spring against said finger is regulated by a nut on the screw-threaded lower portion of said pin. This nut *h'* also gages the depth of hole made by the drill.

In order to return the drill and drill-shaft to its normal position when they have been depressed, I secure to the vertical sides of the outer arm of the jointed arms the flat springs J, the outer ends of which bear upward against the boss of the handle or against the pins extending laterally from the same, the inner ends of which enter a circumferential groove in the drill-shaft contiguous to and opposite the annular surface of the bore of the said handle.

The construction of the drilling devices, as I have explained them, permits the operator to locate and operate the drill anywhere on the bed-plate. Thus, when an electrotype plate or shell is properly registered to correspond to the register of its companion plates on their respective bases, the drill is manipulated to make a neat clean-cut hole in the plate and block, if need be, for the insertion of a screw or nail. As, when the drill is being operated, the pressure on the outer end of the jointed arms is apt to bear it down slightly, I have extending down from the under surface of the outer arm of the jointed arms, near its bifurcated end, a vertical leg, *k*, having on its lower end a presser-foot, the under bearing-surface of which is of leather or other soft material, so that it will not injure the plate when it bears upon it while a hole is being drilled.

Various modifications of the small mechanical details of my invention as above described may be made; but these I do not wish to have considered as a departure from the principle of my invention as set forth.

What I claim as new is—

1. The combination of the bed-plate having groove *a*, clamp B, adjustable longitudinally therein, with ledges *b*, bounding two converging sides of said bed-plate, having grooves *b'*, running longitudinally and centrally therein, and the indicator-hands F, adjustable longitudinally in said grooves *b'*, substantially as and for the purpose set forth.

2. The combination, with the bed-plate having grooves *a* and *c c*, and having ledges *b b*, bounding two converging sides thereof, which are provided with grooves *b'*, running longitudinally and centrally therein, the clamp B, the indicator-hands F, and the presser foot devices adjustable longitudinally in said grooves *c c*, substantially as and for the purpose set forth.

3. The combination, with the bed-plate having grooves *a* and *c c*, and having ledges *b b*, bounding two converging sides thereof, which are provided with grooves *b'*, running longitudinally and centrally therein, the clamp B, the indicator-hands F, and the presser-foot devices adjustable longitudinally in said grooves *c c*, of the drill and jointed arms, in the end of the outer arm of which the drill-shaft or bit-stock is journaled, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

ANTHONY O. RUSSELL.

Witnesses:

FREDERICK HORMAN,

F. D. THOMASON.