

(No Model.)

E. S. JONES.

SECURING DEVICE FOR ZINC PRINTING PLATES.

No. 455,428.

Patented July 7, 1891.

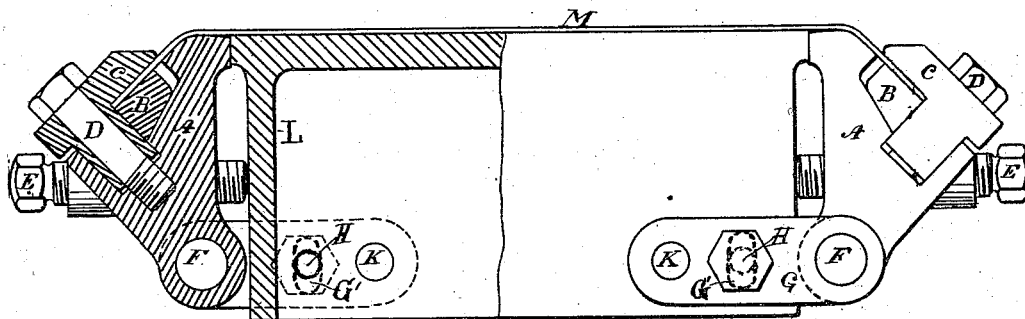


Fig. 1

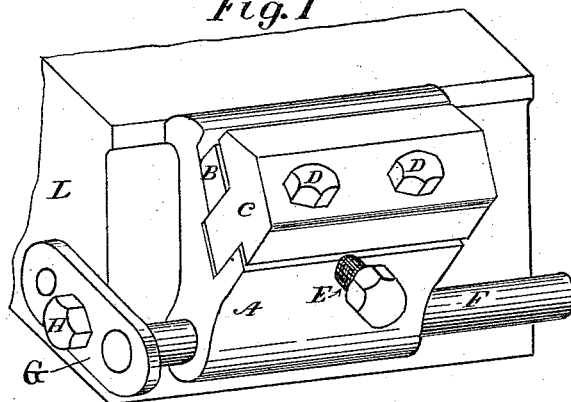


Fig. 2

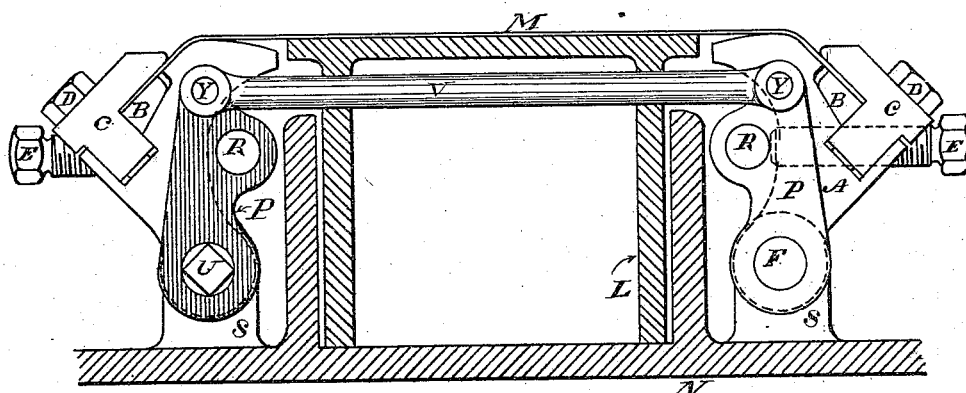


Fig. 3

Witnesses

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# UNITED STATES PATENT OFFICE.

EDWARD S. JONES, OF PROVIDENCE, RHODE ISLAND.

## SECURING DEVICE FOR ZINC PRINTING-PLATES.

SPECIFICATION forming part of Letters Patent No. 455,428, dated July 7, 1891.

Application filed May 27, 1890. Serial No. 353,321. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD S. JONES, of Providence, in the State of Rhode Island, have made certain new and useful Improvements in Securing Devices for Zinc Printing-Plates; and I do hereby declare that the following specification, taken in connection with the drawings making a part of the same, is a full, clear, and exact description thereof.

Figure 1 is an end view, partially in section, of the bed and devices for securing and straining the plate upon the same. Fig. 2 is a partial side view showing back of straining device. Fig. 3 is a side view showing devices for changing the position of the plate upon the bed while the same is under tension.

The object of my invention is to provide a suitable means for securing the edges of the plate and straining it smoothly upon the bed, and also means for changing the position of the plate while the same is under tension; and it consists in the construction, arrangement, and operation of the devices, as hereinafter described.

In placing zinc plates upon their bed for lithographing purposes there is a tendency in the metal to wrinkle or cockle and to spring up in places from the bed-surface. This tendency of the zinc plate seriously interferes with the operation of printing therefrom, as it is necessary in order to obtain good results that the plate should have its entire surface resting upon the bed. In order to overcome these difficulties, the plate must be submitted to a lateral tension and at the same time a downward pull, which shall bring the plate to a smooth surface and at the same time in solid contact with the bed-plate.

In the drawings, L, Figs. 1 and 2, is the supporting bed-piece, and M a zinc plate upon the same.

F F are rods upon either side, to which are attached and upon which swing a series of tightening-levers A, having a vertical adjustment through the link G, the link being provided with a pin K and a slot G', (shown only in dotted lines in Fig. 1,) through which passes the headed bolt H.

In the top of the levers A is a tightening-wedge B, a clamping-piece C, having a screw

D, and a screw E, passing through the lever A and engaging or coming in contact with the side of the supporting bed-piece L. The sides of the plate M project beyond the bed-piece L and are received within and between the wedge B and the clamping-piece C of the several levers A and are secured by forcing up the screws D.

In operating the tightening device the clamping-screw D is first backed out, allowing the clamping-piece C to be raised, thus giving a sufficient space for the admission of the edge of the plate M between the clamping-piece C and the wedge B, after which the clamping-piece C is brought down firmly upon the plate M by the screw D. Both sides of the supporting-bed may have the same arrangement of devices, or one side may be provided with a permanent or stationary clamp, as may be desired. After the edge of the plate is securely fastened, as described, the tightening-screw E is turned up, which forces off the lever A and strains the plate M, bringing it closely in contact with the surface of the bed L. The levers A being placed at intervals along the side and capable of lateral movement upon the rod F permits different portions of the plate to be subjected to different degrees of strain and also to distribute the strain, as may be necessary to overcome any buckles or waves and bring the whole plate to a smooth condition and insure its uniform contact with the bed. The top of the lever A presents a slightly-curved or convex surface to the plate, which has the effect as the lever is forced outward of maintaining the strain in a line coincident with the surface of the bed L and preventing any unnecessary friction which would arise from drawing the plate across the edge of the bed, and at the same time of avoiding any sharp bend or turn in the plate, which would increase its tendency to break. The strain upon the plate M has a tendency to move upward the wedge B, which works upon an inclined plane, and cause it to hug the plate more tightly and prevent it from slipping.

When it is desired to remove the plate M from the supporting-bed L, the screws E and D are backed out, when the plate may be easily disengaged, as will be readily seen.

In arranging and constructing the parts so

as to admit of a change in the position of the plate while under tension a slight variation from the foregoing is necessary.

In Fig. 3, N is the bed of the press, having ears SS at each end, which support the shafts, F and U. The tightening-levers A are placed upon these shafts and have, as before, a lateral and also a swinging movement upon them. P P are levers fastened firmly to the ends of the shafts F and U at each end, which support the rods R R, which levers work in unison through a connecting-rod V.

The operation for adjusting the plate upon the bed is as follows: The plate is laid upon its bed and firmly clamped by the levers A, as before described. The tightening-screws are then forced against the rods R R until the plate is properly strained. As soon as this is accomplished the levers A are made stationary by means of set-screws. (Not seen in the drawings.) A wrench may now be applied to the square projecting end of the shaft U and the shaft rotated in one direction or the other as the proper adjustment of the plate may require, which will change the position of the plate upon the bed without destroying the tension, as will readily be seen,

through the united movement of the holding parts upon either side. The arrangement of the devices as last described being entirely without the bed extends the actual printing-surface of the plate the entire width of the bed and permits the use of a larger impression-cylinder than heretofore used.

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

1. In combination with the bed of a lithographic press, a vertically-adjustable series of side levers A for clamping and straining the zinc in a line coincident with the line of the surface of the bed, the whole constructed and operating in the manner substantially as described.

2. The combination of the levers A with the shafts F and U, the rods R R, and the connecting-rod V, the whole constructed, arranged, and operating to change the position of the plate upon the bed, in the manner and for the purposes described.

EDWARD S. JONES.

Witnesses:

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