

(No Model.)

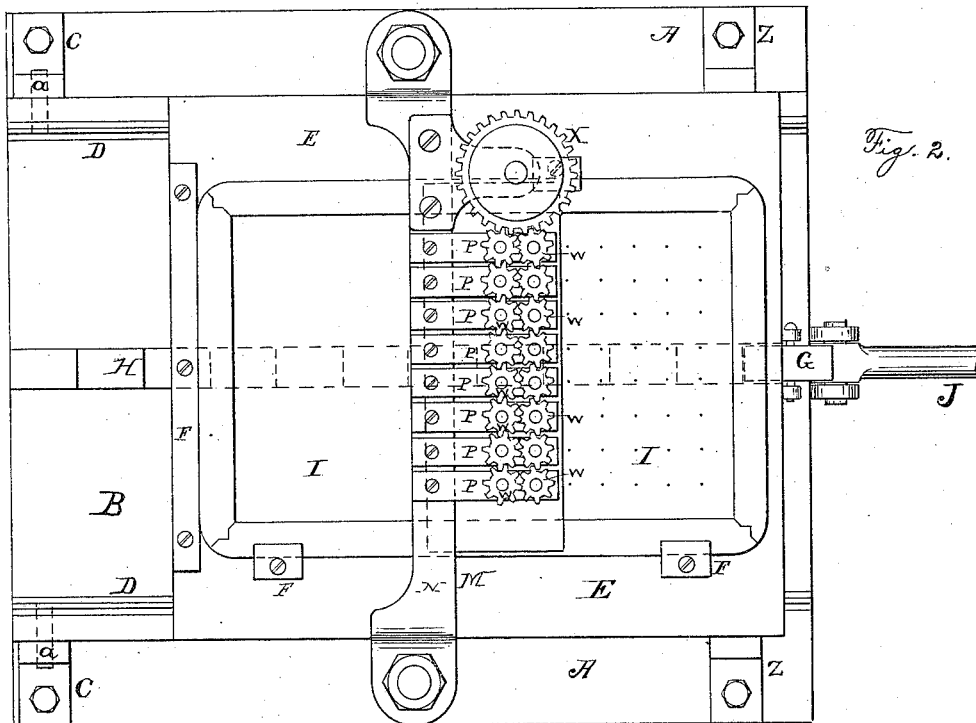
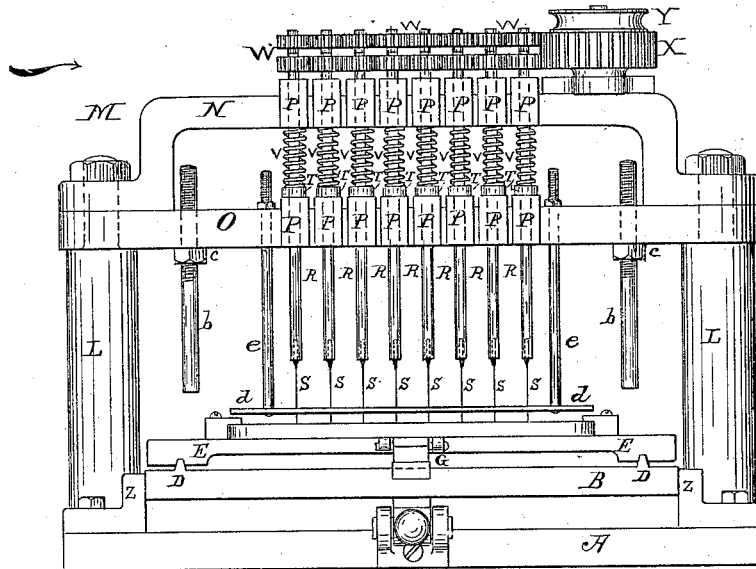
2 Sheets—Sheet 1.

C. M. HYATT.

MACHINE FOR DOTTING SLATES.

No. 307,549.

Patented Nov. 4, 1884.



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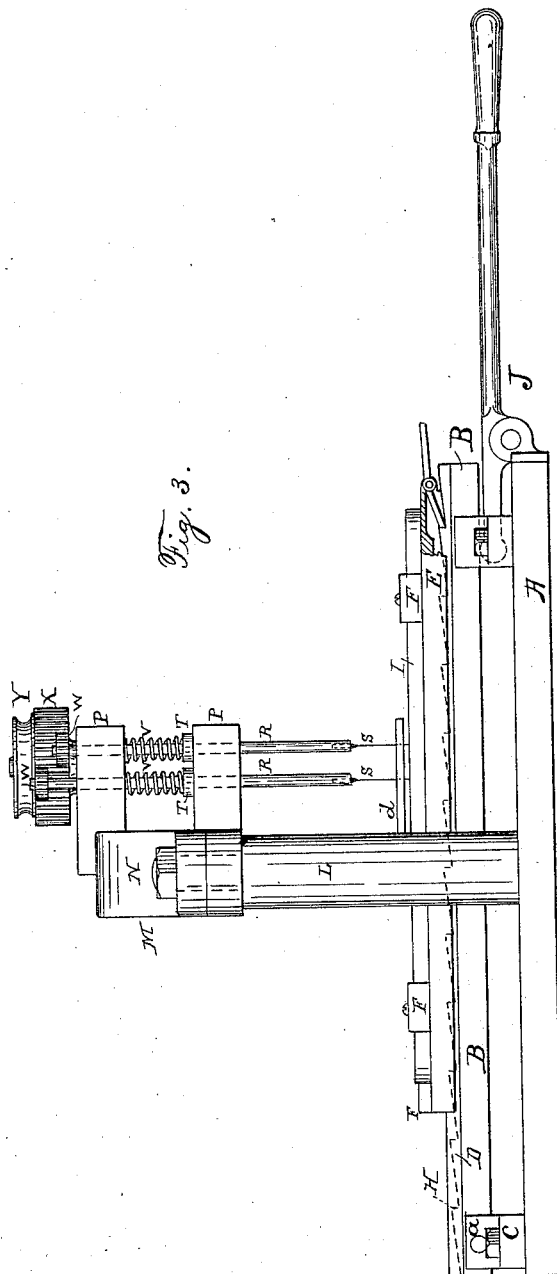
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WITNESSES:

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MACHINE FOR DOTTING SLATES.

SPECIFICATION forming part of Letters Patent No. 307,549, dated November 4, 1884.

Application filed April 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. HYATT, a citizen of the United States, and a resident of Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Machines for Dotting Slates, of which the following is a specification.

Heretofore it has been found desirable to provide the surface of school-slates with permanent dots or points arranged equidistantly from each other for the use of children. The dots or points have been arranged in horizontal and vertical lines representing squares over the surface of the slate.

The purpose of the present invention is to provide a new and effectual means of making the dots or points above referred to upon the surface of the school-slates; and to this end the invention consists in the mechanism hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 is a front view of an apparatus embodying the invention. Fig. 2 is a top view of same, a slate being shown in position thereon and provided in part with the dots or points; and Fig. 3 is a side elevation of the machine, looking in the direction of the arrow in Fig. 1.

In the drawings, A denotes the base of the machine; B, a table secured upon the pivots *a*, between lugs C, at one end of the base A. Upon the table B are provided the ways D, upon which is placed so as to slide thereon the plate E, which will carry the slate to be treated, and upon which are secured stops F, for the purpose of holding the slate in position during the operation of the machine.

Upon the front end of the plate E is pivotally secured a dog, G, which is arranged to engage the rack H, formed or secured upon the longitudinal center of the table B. The purpose of the dog G and rack H is to regulate the longitudinal movement of the plate E, carrying the school-slate, (lettered I,) during the operation of forming the dots thereon, as will be hereinafter more fully explained.

Upon the front end of the base A is pivoted a lever, J, the point of which projects beneath the free end of the table B, and the purpose of

the lever is, by depressing or elevating the handle end thereof, to cause the elevation or depression of the table B upon its pivotal bearings, and thereby to bring the slate I against the drill-points, hereinafter described, or to remove it from contact therewith.

Upon opposite sides of the base A are the standards L, supporting the transverse frame M, consisting of the bars N O, the bar N being located directly above and separated a suitable distance from the bar O. The ends of the bars N O are retained upon the upper end of the standards L by a suitable nut, or otherwise.

Upon the bars N O are secured bearing-blocks P, for the series of spindles R, two rows of spindles being in the present instance employed. In the lower ends of the spindles R are secured the drill-points S, and immediately over the bearings P, secured on the bar O, the spindles are provided with collars T and springs V, which encircle the spindle and exert a downward tension upon the collars T, whereby the spindles are retained in a depressed position. The upper ends of the spindles R are provided with pinions W, which engage each other in their respective series, and those upon the upper ends of the two right-hand spindles mesh with the teeth of the gear-wheel X. The pinions on the front series of spindles R are on a lower plane than the pinions on the rear series of spindles R, and the gear-wheel X is of sufficient width to engage the right-hand pinions on both the upper and lower planes, as indicated in Fig. 1. The purpose of arranging the pinions in this manner is that they may all be actuated by the one gear-wheel X, and may be rotated in the proper direction.

Upon the gear-wheel X will be provided a pulley-wheel, Y, or analogous device, whereby power may be applied, by a cord or otherwise, to the gear-wheel, and be thus communicated through the pinions W, to the spindles R and the drill-points S.

Upon opposite sides of the front end of the base A are provided the guides Z, which prevent any lateral movement of the table B when actuated by the lever J, and directly over the two opposite sides of the table B and plate E

are supplied the adjustable rods *b*, the upper ends of which are secured in the cross-bar O, and the purpose of which is to prevent any undue upward movement of the table B during its elevation by the lever J. The upper ends of the rods *b* are threaded and enter appropriate apertures in the cross-bar O, a nut, *c*, being provided for securing the rods *b* in any set position. The adjustment of the rods *b* will be regulated according to the circumstances attending the use of the machine—such, for instance, as the length of the drill-points S, the thickness of the slate, and other conditions. The drill-points S pass through apertures in the horizontal plate *d*, which is suspended upon the rods *c*, and is in near relation to the upper surface of the stops F, which retain the slate. The purpose of the plate *d* is to prevent any side spring to the drill-points S during the operation of drilling.

Operation: The slate I is placed upon the plate E, its end being in contact with the stop or gage F and its side being against and below the inwardly-projecting ends of the side stops, F, these latter stops having their said inwardly-projecting ends firmly pressed against the slate-frame by the operation of the screws, which retain them upon the plate E. The dog G is freed from the rack H, and the plate E is moved to the rear until the drill-points S are in proper position over the front end of the slate, when power will be applied, the drills set in motion thereby, and by the operation of the lever J upon the table B the slate will be elevated against the drill-points S, whereby two rows of dots, as indicated in Fig. 2, will be formed thereon. The table B is then lowered by raising the lever J, and the plate E is moved toward the front a space equal to the length of one notch of the rack H, when the lever J will be again depressed, carrying the plate B upward until the plate E strikes the stops *bb*, at which time two additional rows of dots will be formed upon the slate I, after which the table is again lowered, the plate E moved forward another notch on the rack K, and then again elevated, when two more rows of dots will be formed upon the slate. This operation is continued until the whole slate, or such portion thereof as may be desired, is covered with the dots. The lower ends of the stops *b* are above the lower ends of the drill-points, and the purpose of this arrangement is that when the table B is elevated until the plate E strikes said stops the slate I will be brought firmly against

the drill-points and give them a proper movement upward in their bearings, so that the drills may adjust themselves to whatever unevenness there may be in the surface of the slate, the springs V insuring the proper contact of the drill-points with the plate and serving to return them to their former position when the table B has been depressed. During the elevation and depression of the table B the guide-plate *d* rises and lowers upon the drill-points, the rods *c* being allowed to play easily through apertures in the cross-bar O. Care must be exercised in laying out the little apertures in the plate *d*, through which the drill-points S pass, for upon this depends the perfection of the work.

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

1. In a machine for dotting the surface of slates, the table B, having ways D, and capable of vertical adjustment, in combination with the supporting-plate E, adapted to move on said ways, the plate *d*, stops *b*, and the series of drills S, which are independently yielding to the surface of the slate brought against them and have a simultaneous action, substantially as and for the purpose described.

2. In a machine for dotting the surface of slates, a longitudinally and vertically adjustable support for the slate, in combination with a series of drills which have a simultaneous action and are independently yielding to the surface of the slate brought against them, substantially in the manner and for the purposes described.

3. The combination of the table A, pivoted at its rear end, the lever J, supplied at the front end of the table, the rack H, and ways D, extending the length of the table, the plate E, carrying on its front end the pawl G, and a series of drills, S, having a simultaneous action, substantially as set forth.

4. In a machine for dotting slates, the longitudinally and vertically adjustable support for the slate, in combination with the series of drills S, spindles R, provided with the gear-wheels W, collars T, and springs V, the springs being between the collars and upper boxes, P, substantially as set forth.

Signed at Albany, in the county of Albany and State of New York, this 11th day of April, A. D. 1884.

CHAS. M. HYATT.

Witnesses:

CHAS. L. HENDEE,
EDWD. J. HUSSEY.