(No Model.) 4 Sheets—Sheet 1.

E. E. PRATT, C. S. PARTRIDGE & G. E. LLOYD.

MACHINE FOR GROOVING STEREOTYPES.

No. 309,093. Patented Dec. 9, 1884.

Fig. 1.

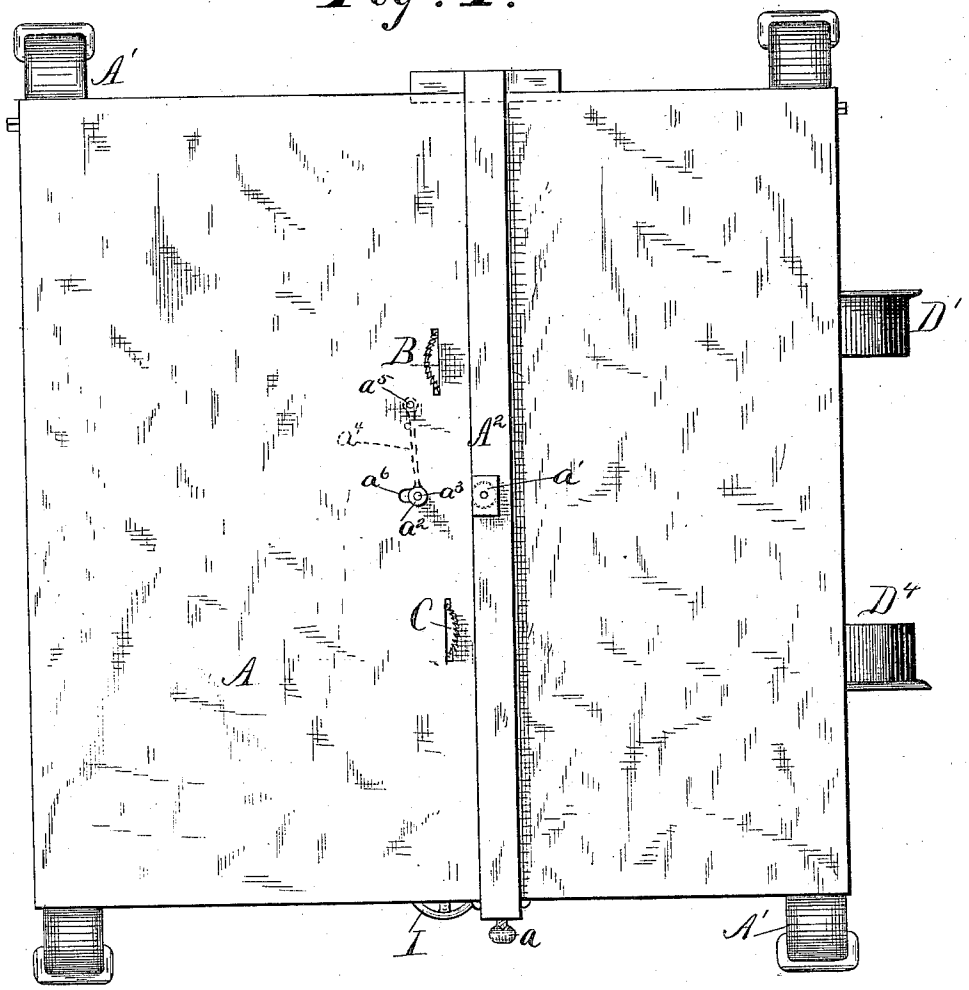
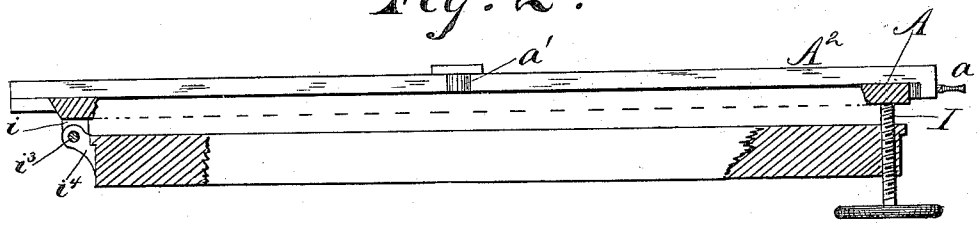


Fig. 2.



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MACHINE FOR GROOVING STEREOTYPES.

No. 309,093. Patented Dec. 9, 1884.

Fig. 3.

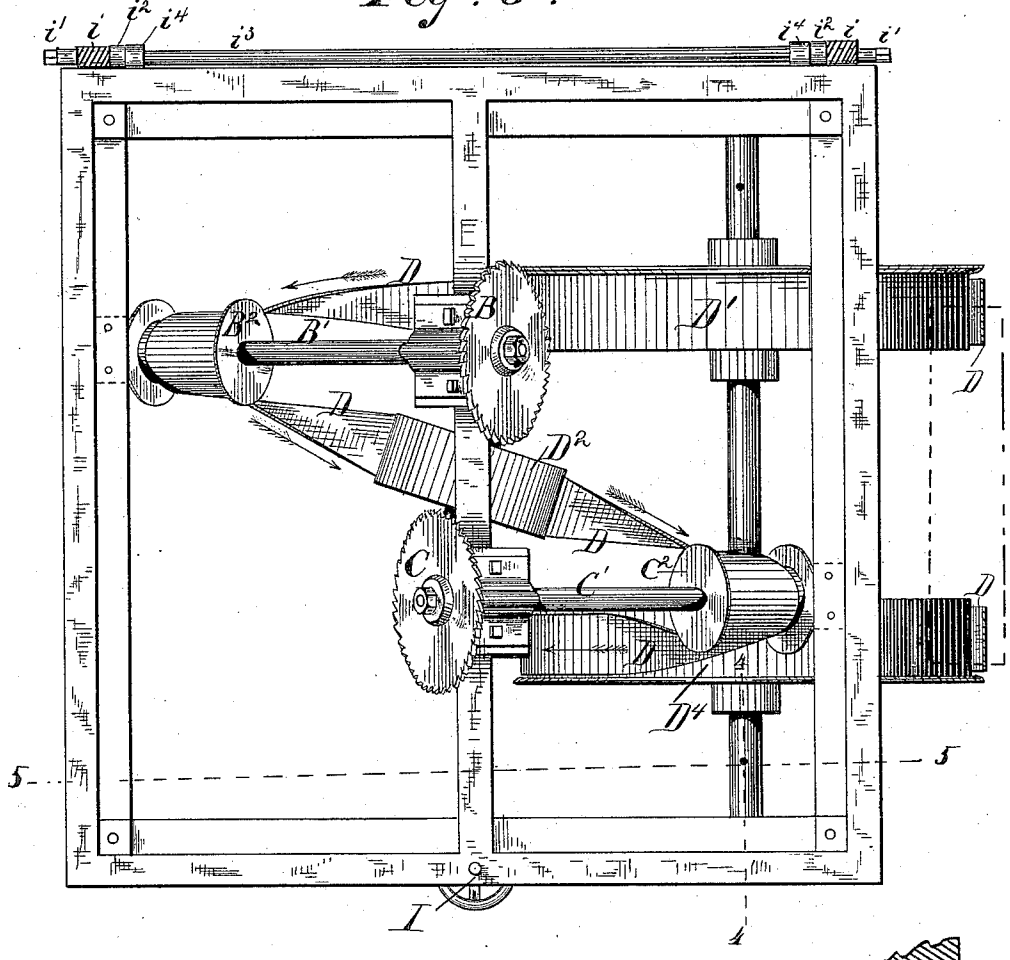
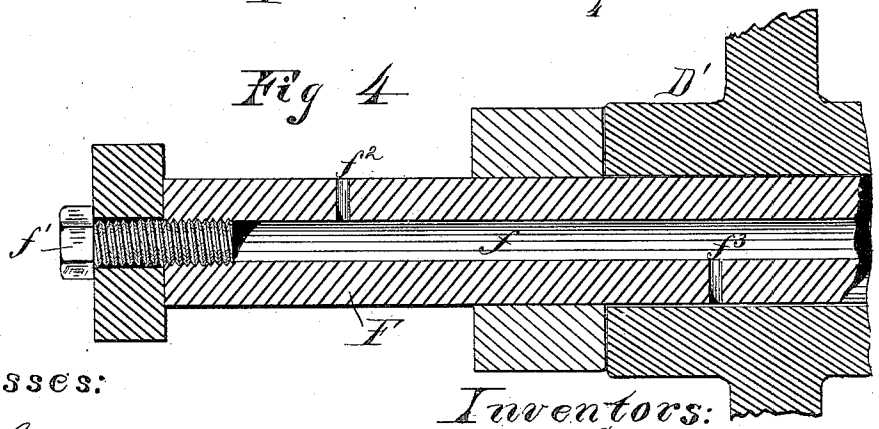


Fig 4



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Fig. 5.

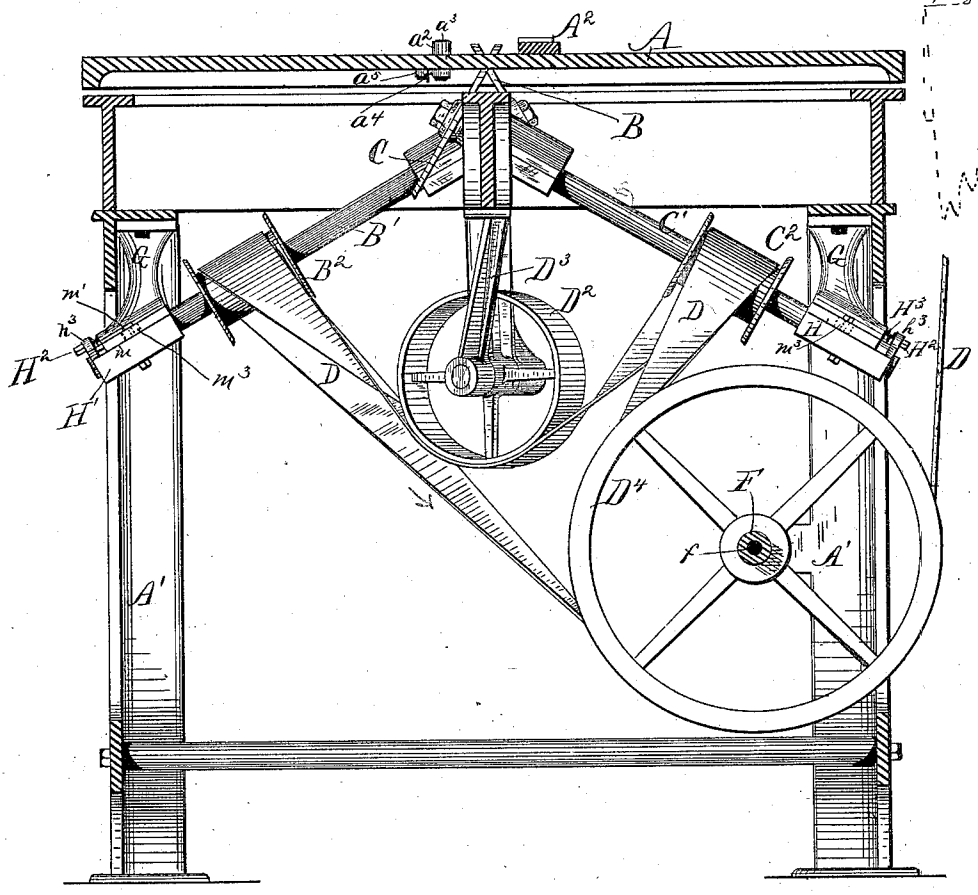
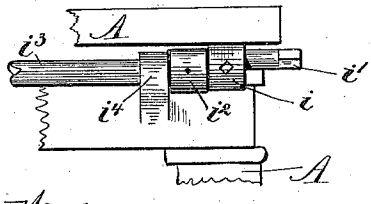


Fig. 8.



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Fig. 6.

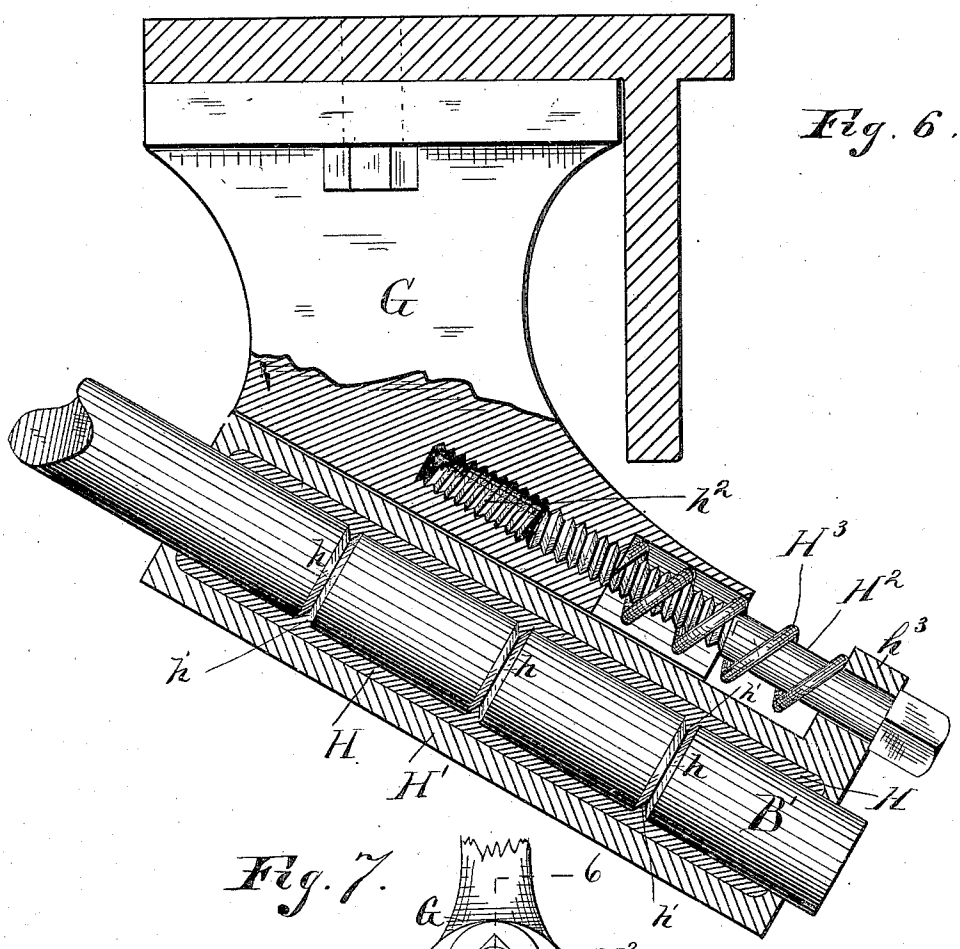
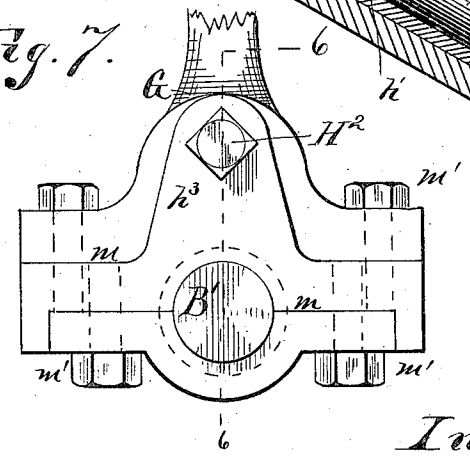


Fig. 7.



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UNITED STATES PATENT OFFICE.

EDWIN E. PRATT, CHARLES S. PARTRIDGE, AND GEORGE E. LLOYD, OF CHICAGO, ILLINOIS.

MACHINE FOR GROOVING STEREOTYPES.

SPECIFICATION forming part of Letters Patent No. 309,093, dated December 9, 1884.

Application filed January 21, 1884. (No model.)

To all whom it may concern:

Be it known that we, EDWIN E. PRATT, CHARLES S. PARTRIDGE, and GEORGE E. LLOYD, citizens of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Machines for Grooving Stereotypes, of which the following is a specification.

In newspaper-printing it has become quite customary to secure in the form stereotype-plates of portions of the matter by means of base-blocks locked fast in the form, and removable fastenings or keys inserted in corresponding grooves in the base-block and stereotype. One form of the groove thus employed is a dovetail, which, however, cannot well be formed when the plate is cast. A vertically-sided groove is, however, easy of formation, and to convert such a groove into a dovetail groove is the object of the machine which we have devised, and which constitutes the subject of this application.

In the accompanying drawings, which form a part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a plan of our improved machine. Fig. 2 is a central section of the table. Fig. 3 is a plan view of the machine with the table removed. Fig. 4 is a detail section, enlarged, upon the line 4 4 of Fig. 3. Fig. 5 is a section of the machine on the line 5 5 of Fig. 3. Fig. 6 is an enlarged detail section of the adjustable bearing of the saw-arbors. Fig. 7 is an enlarged end view of said bearing, and Fig. 8 is a detail of the table-hinge.

In said drawings, A represents the table of our improved machine, supported upon suitable standards, A′. A^2 is an adjustable guide extending from end to end of the table, and secured by a set-screw, *a*. Said guide carries at its center an anti-friction roller, *a′*, the periphery of which is so located as to relieve the friction between the stereotype plate or block and the guide. An opposing roller, a^2, acts to keep the plate against the guide, and is mounted upon a pivot, a^3, attached to the end of a spring-arm, a^4, secured to the under side of the table at a^5; and in order that this latter roller may yield to the object being operated upon, the slot a^6 is extended in a direction away from the guide, as clearly shown in Fig. 1.

The means whereby the groove in the plate is finished are two oppositely-inclined circular saws, B C, mounted upon arbors B′ C′, each of which is provided with a pulley, B^2 C^2, over which passes the operating-belt D. This belt receives power from a shaft and pulley, (shown at E in Fig. 5,) and it passes first over a large pulley, D′, thence over the pulley of saw B, thence down and under an idle-pulley, D^2, supported in the depending bracket D^3, thence over the pulley of the saw C, thence under the large pulley D^4, and back to the source of power. In this manner we are able to drive both saws in the same direction by means of a single belt, the idle-pulley being employed to enable the saws to be placed relatively near to each other, as shown. The large pulleys D′ and D^4 are loose upon their supporting-shaft F, and in order to supply them with lubricating material the ends of said shaft are made hollow, as at *f*, and the cavity is closed at the extremity of the shaft by the bolt *f′*. The oil is supplied to this cavity through an upward opening, f^2, and it flows out to the interior of the wheel through the downward opening f^3. The lower ends of the saw-arbors have their bearing-boxes supported upon brackets G, and these bearings we make adjustable in the line of the saw-arbor. The construction which we have adopted to secure this adjustability is clearly shown in Figs. 6 and 7. The saw-arbor is provided with a number of annular grooves, *h*, and revolves in a box, H, having corresponding annular projections, *h′*, and this box is secured in the casing H′, which is held in the bracket G in such manner that it may be moved longitudinally therein. The screw H^2, entering the threaded recess h^2 in the bracket and passing through the head h^3 of the casing, secures this longitudinal movement. At the upper end the arbor of course is fitted in its bearing, without shoulders to obstruct its being raised by this screw H^2. A spring, H^3, is placed around the adjusting-screw between the head upon the casing and the bracket, as clearly illustrated, to assist in adjusting the bearing when the adjusting-screw is retracted and the holding-bolts, mentioned below, are loosened. Both the box and its cas-

ing are divided upon horizontal lines *m m*, and held together by bolts *m'*, and both are held to the supporting-bracket by bolts passing through elongated slots m^2. (Indicated by the dotted lines in Fig. 5.)

The table is made adjustable vertically, and the method by which this is done is as follows: The rear edge of the table is provided with brackets *i*, through which pass square-headed pins *i'*. Said pins are fast in the eccentrics i^2, and said eccentrics are fast upon a pivotal rod, i^3, supported in brackets i^4 projecting from the frame of the machine. If, now, a wrench be applied to the pins *i'*, the pivotal rod and eccentric may be turned, and the table be raised or lowered the limited extent desired. Under the front end of the table is an adjusting-screw, I, whereby such end may be raised correspondingly with the rear end, or to a greater or less extent, as desired. The longitudinal adjustability of the arbors enables the varying of the distance between the cutting-lines of the two saws, and also the keeping of them at the same distance from each other when the table is adjusted, while by the vertical adjustability of the table the depth of the cut may be changed at will, or kept uniform, notwithstanding the wearing down of the saws, compensation being afforded thereby not only for the wearing down, but also for the changes in position caused by the adjustment of the saws.

We are aware that reversely-inclined saws have been used in combination with non-adjustable tables, and that such saws have also been mounted upon longitudinally-adjustable arbors; but these forms are not capable of the various adjustments permitted by our machine, nor do they admit of uniformity in the depth and width of the grooves cut by the saws.

We claim—

1. In a machine for cutting dovetail grooves in stereotypes, the combination of two oppositely-inclined saws, a table, a guide upon the table, and a spring-roller for keeping the stereotype against the guide, substantially as specified.

2. The machine for dovetailing the grooves of stereotype-plates, consisting of a horizontal table, the inclined saws projecting through said table, the arbors of said saws located relative to each other, as shown, the idle-pulley supported by bracket D^3, and the pulleys D' and D^4, all arranged and operating substantially as specified.

3. The combination, in a machine for dovetailing the grooves of stereotypes, of a vertically-adjustable table over which the stereotypes are moved, and two reversely-inclined saws projecting through said table, substantially as specified.

4. The combination, in a machine for dovetailing the grooves of stereotypes, of a vertically-adjustable table and two reversely-inclined saws adjustable in the line of their arbors, substantially as specified.

5. In a machine for dovetailing the grooves of stereotypes, an inclined saw-arbor capable of longitudinal adjustment, and having annular grooves *h*, a longitudinally-movable bearing for said arbor, having annular projections *h'*, a support for the bearing, and a screw for adjusting the bearing, all combined and operating substantially as specified.

6. The combination of the horizontally-divided box and casing held together by bolts, substantially as specified, with the supporting-bracket, the bolts passing through elongated slots in the casing, the adjusting-screw, and the head h^3, substantially as specified.

7. The combination, with the arbor and its adjustable bearing, of the adjusting-screw, the supporting-bracket, and the spring H^3, substantially as specified.

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