

(No Model.)

3 Sheets—Sheet 1.

A. E. CONVERS.

MACHINE FOR GRINDING THE SCORES IN TACK DIES.

No. 359,533.

Patented Mar. 15, 1887.

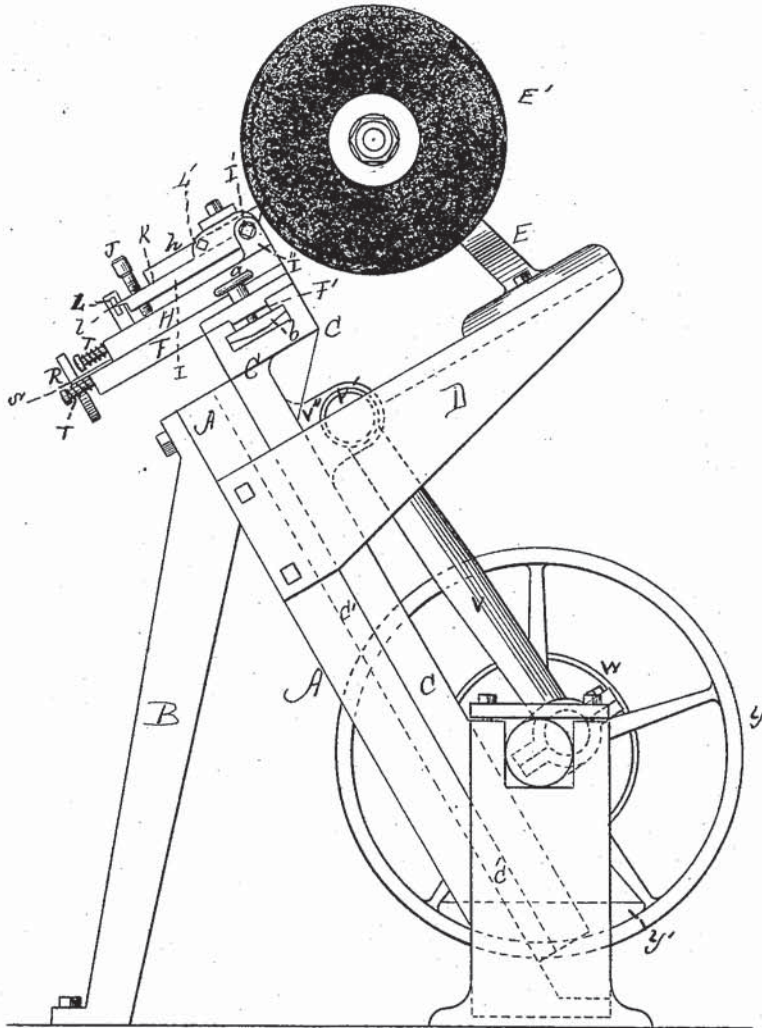


Fig. 1.

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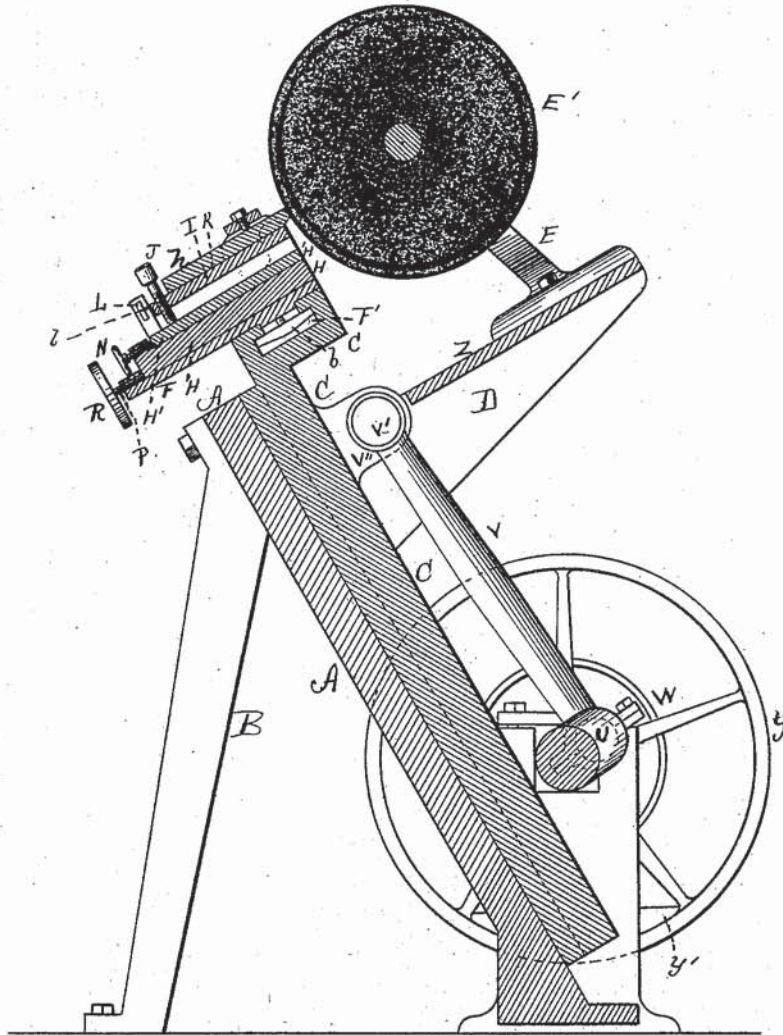


Fig. 2.

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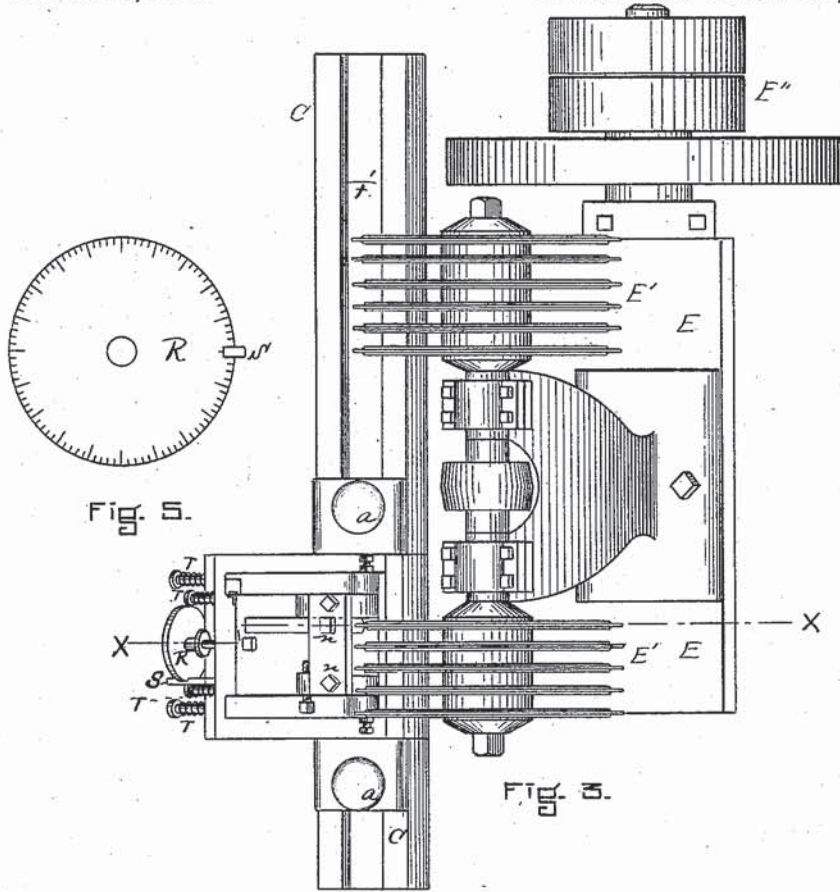


Fig. 5.

Fig. 3.

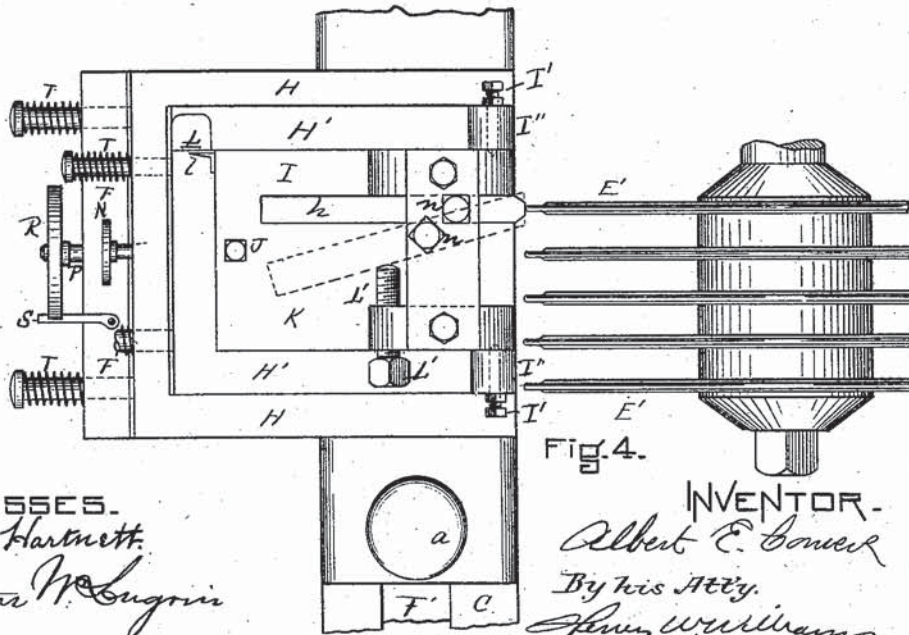


Fig. 4.

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UNITED STATES PATENT OFFICE.

ALBERT E. CONVERS, OF TAUNTON, MASSACHUSETTS.

MACHINE FOR GRINDING THE SCORES IN TACK-DIES.

SPECIFICATION forming part of Letters Patent No. 359,533, dated March 15, 1887.

Application filed May 10, 1886. Serial No. 201,765. (No model.)

To all whom it may concern:

Be it known that I, ALBERT E. CONVERS, of Taunton, in the county of Bristol and State of Massachusetts, have invented a new and Improved Machine for Grinding the Scores in Dies used in the Manufacture of Tacks, of which the following is a specification.

In the art of tack-making the portion of the tack next below the head is rounded by being pressed between opposite dies, each of which is provided with a substantially semicircular groove or score.

It is the object of this invention to provide a machine which will form, by grinding, these scores with exactness to any required depth, such as .047-inch, .124-inch, .917-inch, &c.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is a vertical section on line *x*, Fig. 3. Fig. 3 is a plan of the machine. Fig. 4 is an enlarged plan showing the carrying mechanism in detail. Fig. 5 is a detail view of the index-wheel.

A is an inclined bed supported by legs B. C is a platen which slides in a V-shaped groove, C', on the bed A. The position of this groove (which is not an essential part of the invention) is indicated by broken lines in Fig. 1. Brackets D, extending from the bed A, substantially at right angles thereto, support a suitable emery grinding-machine, E. This machine may be constructed in any desired manner, and includes one or more sets of emery-wheels E', of different sizes, so as to produce scores of correspondingly different sizes, driving mechanism E'', &c. The platen carries on its upper end a sliding adjustable measuring and carrying mechanism, which consists of a base, F, sliding in a slot, F', formed in the head of the platen, and of the second slide, H, carrying a third slide, H', which carries the clamp I. This slide H' is set into the slide, H, so as to be flush with its surface.

The clamp I, which is pivoted at I' in the ears I'', extending from the slide H, is provided with an adjusting-screw, J, by means of which the surface K of such a clamp may be adjusted so as to be on a radial line with the emery-wheel, in which case it would be at an exact right angle with a line tangential to the wheel at the point of contact of the two, or be at any

angle desired to said line within a limit of several degrees on each side. The slide H is provided with the scale L, on which the pointer *l* of the clamp I indicates the position of the surface of said clamp relative to said radial line. The mechanism is further provided with two binding-screws, *a*, and clamps *b*, for securely holding the same in any desired position on the platen, and, furthermore, with a screw, N, and also with a screw, P, the end of which latter carries an index-wheel, R. This wheel R has a groove cut in its periphery, said groove being parallel with the axis of the wheel, at the zero-point of the index, and is held in that position by a hinged finger, S, (see Figs. 1 and 5,) which engages in said groove. Each slide is held in contact with its propelling-screw by the springs T.

Reciprocating longitudinal motion is imparted to the platen C by means of the cranked shaft U and connecting-rod V, pivoted at V' to the bracket V'', rigidly secured to said platen, said shaft being driven by a belt on the pulley W. Y is a balance-wheel counterbalanced at Y', so that when it rests the platen is at the center of its travel.

The table Z, between the brackets D, is slotted, so that the grinding mechanism E may be moved up to the measuring and carrying mechanism as the emery-wheels E' wear away.

The operation is as follows: The die in which a score is desired to be formed by grinding, and which is illustrated by the letter *h* in the drawings, is placed in position in the clamp I, and is firmly secured in such position by one of the screws N. The measuring and carrying mechanism is adjusted longitudinally on the platen C, so as to cause the die at the point at which it is desired to grind the score to come exactly opposite the wheel with which it is desired that the score should be ground, and said mechanism is firmly secured in such position by the screws *a* and their respective clamps. The screw L' is intended to so adjust the die that its face will be parallel with the axis of the emery-wheel. Motion having been imparted to the platen by the driving mechanism, the clamp carrying the die is fed toward the emery-wheel by the screw N until contact is reached, and no farther. Then, with the point of contact as the starting-point, the die is further fed against the wheel to the exact

depth required by the index-screw P, which moves the slide H, its slide H', the clamp I, and consequently the die secured thereto and being operated upon. Thus it will be seen that a score of the exact depth required can be produced, and by means of the reciprocating motion imparted to the platen such score is made of even depth throughout its entire length, or deeper at either end than the other to a degree indicated by the pointer and scale.

A die placed at a different angle from the die *h* is shown in broken lines in Fig. 4, and in practice a die of the shape shown in broken lines and one of the shape shown in full lines usually constitute the pair which, when placed so that their scores are coincident, round the tack.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a machine for grinding scores in dies used in tack-making, the herein-described ad-

justable carrying and measuring mechanism, consisting, essentially, of the base F, the slides H and H' and their adjusting-screws, index-wheel R, and a clamp for holding the die, substantially as and for the purpose described.

2. The combination, with the slides in the carrying mechanism provided with the scale L, of the hinged or pivoted die-holding clamp I, provided with the index finger *l*, and adjusting-screw J, substantially as and for the purpose described.

3. The carrying and measuring mechanism above described, consisting, essentially, of the base F, slides H H', pivoted clamp I, screws J, N, and P, index-finger *l*, scale L, index-wheel R, and hinged finger S, substantially as and for the purpose set forth.

ALBERT E. CONVERS.

Witnesses:

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