

L. S. HOYT.

MACHINE FOR CUTTING LOCKS IN HOOPS.

No. 174,531.

Patented March 7, 1876.

Fig. 1.

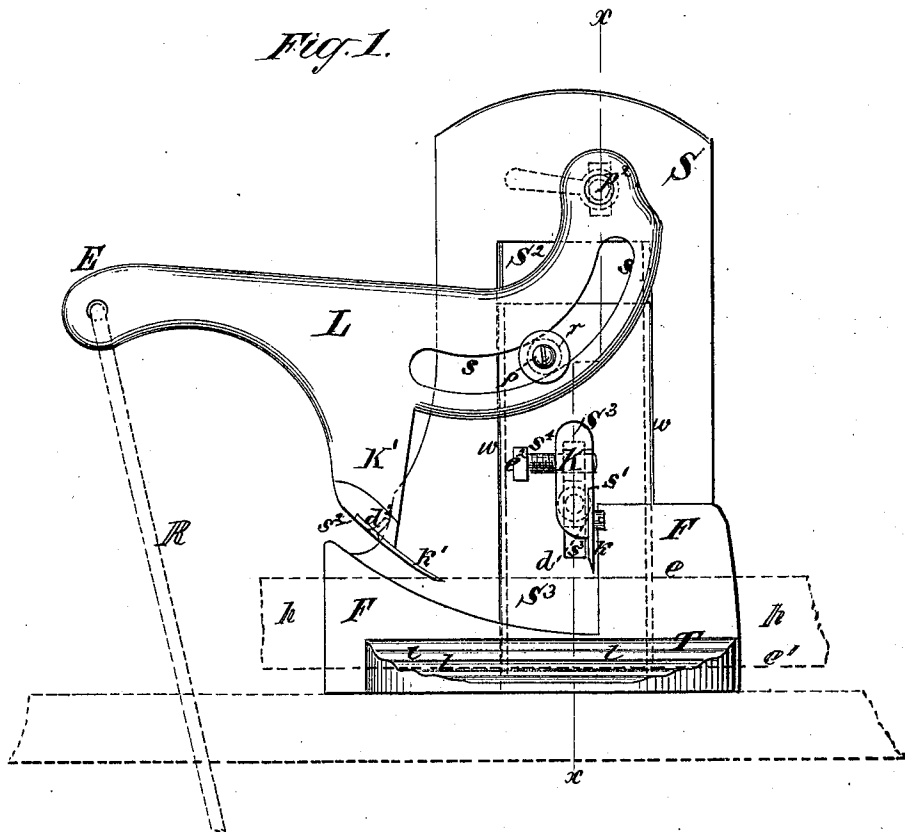
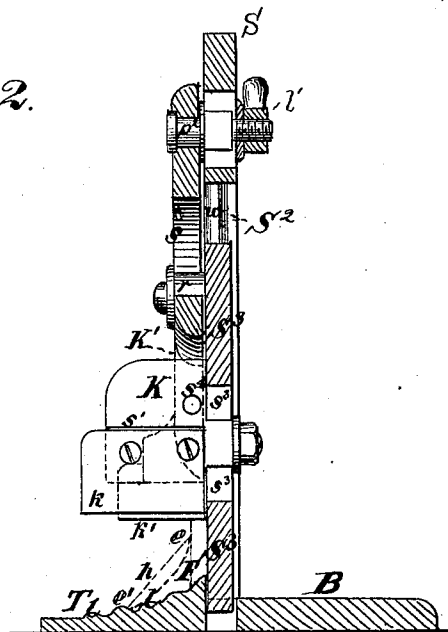


Fig. 2.



Witnesses.

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LEWIS S. HOYT, OF WEST LIBERTY, IOWA.

IMPROVEMENT IN MACHINES FOR CUTTING LOCKS IN HOOPS.

Specification forming part of Letters Patent No. **174,531**, dated March 7, 1876; application filed January 11, 1876.

To all whom it may concern:

Be it known that I, LEWIS S. HOYT, of West Liberty, in the county of Muscatine and State of Iowa, have invented a new and useful Improvement in Machines for Cutting Locks in Hoops; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

My invention consists generally in a novel combination of devices, whereby the two cuts necessary to form hoop-locks in hoops of different breadths are simultaneously made by a single oscillation of a slotted lever, which actuates the other working parts, and also in a novel means of preventing the two knives which co-operate to cut the notch which forms the hoop-lock from suffering damage by coming together at the end of their respective cuts.

The construction and operation of my invention will be fully hereinafter described, and specifically pointed out in the claims, a preliminary description being, therefore, deemed unnecessary.

Figure 1 in the accompanying drawing represents a front view of my hoop-lock-cutting machine; and Fig. 2 represents a vertical section of the same on the line $x x$.

Similar letters of reference refer to like parts in both figures.

S, Figs. 1 and 2, represents the standard which carries the movable parts and guides the said movable parts, as hereinafter described. The standard S is preferably made of cast-iron, and it has cast on its bottom a flange or base, B, Fig. 2, by which it may be firmly placed upon and held to a work-bench or other suitable support by any ordinary means employed in attaching machines to such supports. In this standard S is formed a rectangular space, S^1 , its vertical sides being preferably parallel, or nearly so, with the principal vertical axis of the said standard. The inner vertical sides of the standard S are made of V-shaped horizontal section, the edges thus formed being directed toward each other, and being placed parallel to each other so as to act as guideways w for the direction of the motion of the reciprocating knife-slide S^3 . The reciprocating knife-slide S^3 has its right and

left vertical sides parallel to each other, and these sides are formed with grooves therein of V-shaped horizontal cross-section to fit upon the ways w . To the upper part of the standard S is pivoted the lever L, preferably bent as shown in Fig. 1, and having formed in it the curved slot s , in which curved slot plays a friction-roller, r , pivoted to the knife-slide S^3 . The curved slot s is so formed that the ascent or descent of the knife-slide S^3 , caused by the oscillation of the lever L acting upon the friction-roller r and the pivot p by the upper and lower walls of said slot s , is most rapid toward the last portion of the ascent of said knife-slide, and also of the first portion of its descent, but slower and with greater static pressure toward the latter part of the descent of the said knife-slide, at which time the knife k carried by the said knife-slide, and hereinafter described, performs its part of the cutting. The knife-slide S^3 has formed upon its front side a projecting knife-stock, K, carrying the knife k , attached to the knife-stock by screws, bolts, or any other suitable means. The knife-stock K is preferably made with its lateral face perpendicular to the front face of the knife-slide S^3 , and on its right side is formed a depression, d , into which the knife k fits parallel to the side of the knife-slide, in which the said depression d is formed, the upper edge of the knife k abutting against the shoulder s^1 , which is left in making the said depression, so as to relieve the attachments of the said knife from strain. On the under side of the curved lever L is formed a projecting knife-stock, K'. This knife-stock K' is made with its lower part expanded into a flange to form a plane to which the knife k' is attached by screws, bolts, or in any other suitable way. On the under side is formed a depression, d^2 , leaving a shoulder, s^2 , against which the back edge of the knife k' abuts to relieve its attachments from strain. In that side of the knife-stock K which faces the knife-stock K' is placed an adjustable stop, s^4 , formed of a screw, which may be so adjusted that its outer end abuts against the inner side of the knife-stock K' just before the knife k' would otherwise meet the knife k , thus allowing the knives to approach sufficiently near to cut out the piece necessary to be removed

from the hoop to form the lock, but preventing the said knives from receiving injury by actual contact with each other. The knife-stock K is made adjustable up and down in a slot, s^3 , in the knife-slide by means of a clamping-screw or other equivalent device, by which means the knife k may be adjusted to complete its vertical cut at the same time the knife k' completes its curvilinear cut. The fulcrum of the lever L is a stud-pin, p , which is firmly fastened to the standard S by a lever-nut, v , the stud-pin being placed in a vertical slot to render it vertically adjustable. T is the table which supports the hoop h (shown in dotted outline) while the hoop-lock is being cut. This table is formed with steps or successive parallel ledges l , preferably arranged so that each step or ledge shall be slightly higher than the next exterior step or ledge. Upon the back part of the table is formed an upright flange, F, which is bolted or otherwise fastened to the standard S, and which has a notch formed in it to permit the passage of the knives k and k' . The hoop h , during the act of cutting the lock, is rested upon the table T, the interior side of the said hoop being faced outward, as shown in the dotted outline in Fig. 2, the upper edge e of the hoop resting against the flange F, and the lower edge against one of the steps or ledges l . To the end E of the lever L is, preferably, attached a connecting-rod, R, which connects the lever with a foot-treadle, it being preferred to operate the machine by foot-power, but the lever may be operated by hand or other power.

The operation of the machine is, then, as follows: The hoop h , shown in dotted outline, being placed upon the table, as hereinbefore described, and as shown in dotted outline in

Figs. 1 and 2, the end E of the lever L is depressed until the inner side of the knife-stock K' abuts against the end e^2 of the adjustable stop s^3 . During this movement the knives k and k' make their respective cuts, terminating their cuts simultaneously.

The different steps or ledges l on the table T serve to accommodate many different breadths of hoops without any special adjustment of the parts of the machine to enable it to receive the hoops after the first adjustment. The steps or ledges l , while they admit different breadths of hoops, hold each particular width of hoop, when its lower edge e^1 is placed against the proper step or ledge adapted to that width, at the proper angle to give the requisite inclination to the sides of the notch cut in the hoop, which notch forms the hoop-lock.

I am aware of the patent to W. and H. A. TRIPP, dated October 1, 1872, and numbered 131,835, and I hereby disclaim the construction of hoop-lock cutter therein shown and described.

I claim—

The standards S, formed with the rectangular space S^2 , and the knife-slide S^3 , arranged to move vertically in said rectangular space of the standards, carrying the adjustable knife-stock K, knife k , adjustable stop s^4 , and pivot p , in combination with the table T, having a series of steps, l , and the lever L, pivoted at its extreme upper end to the standard S, and provided with the curved slot s , lateral handle, knife-stock K and knife, all substantially as described.

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Witnesses:

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