

(Model.)

M. R. HUBBELL.  
LATCH.

No. 482,794.

Patented Sept. 20, 1892.

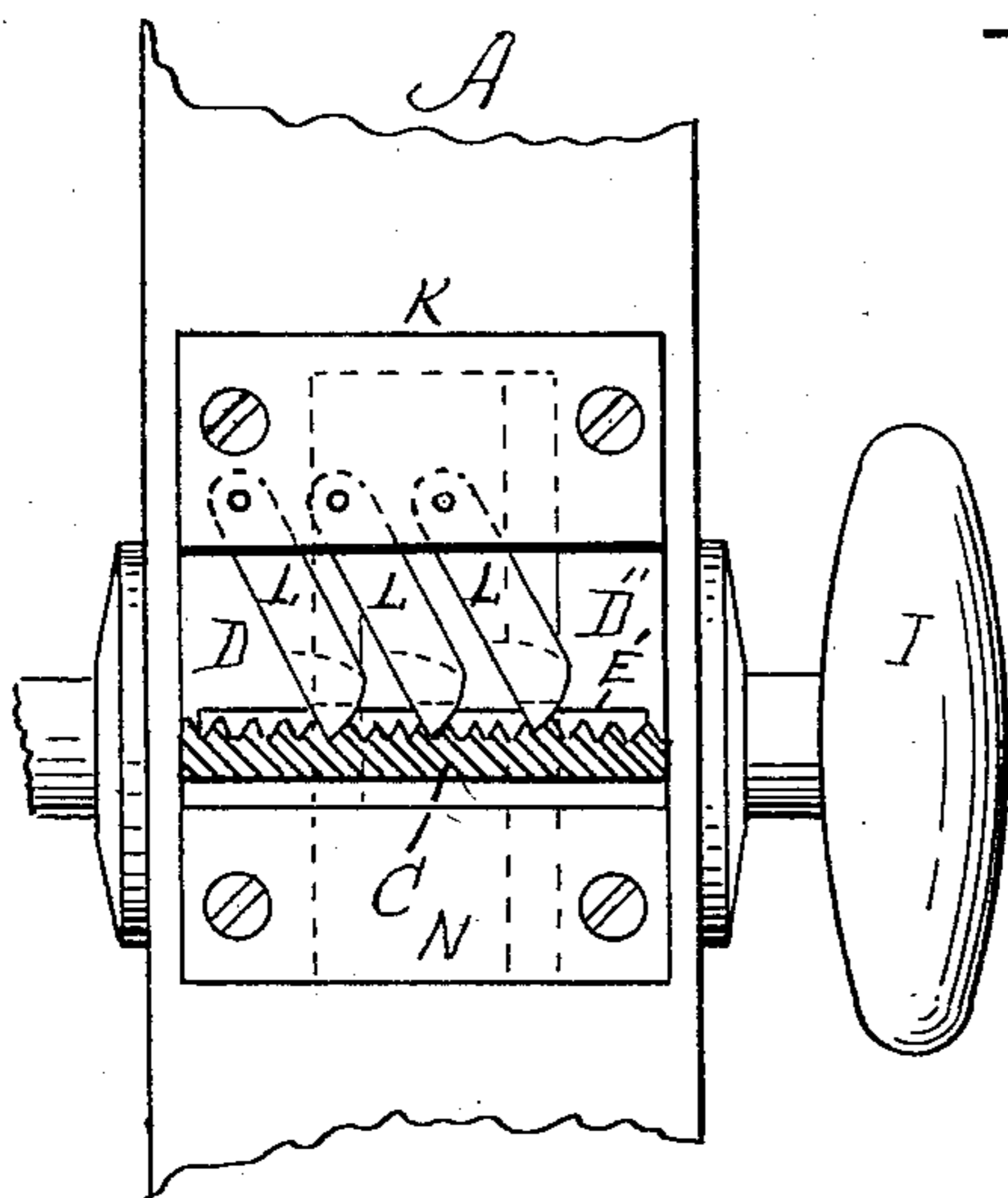
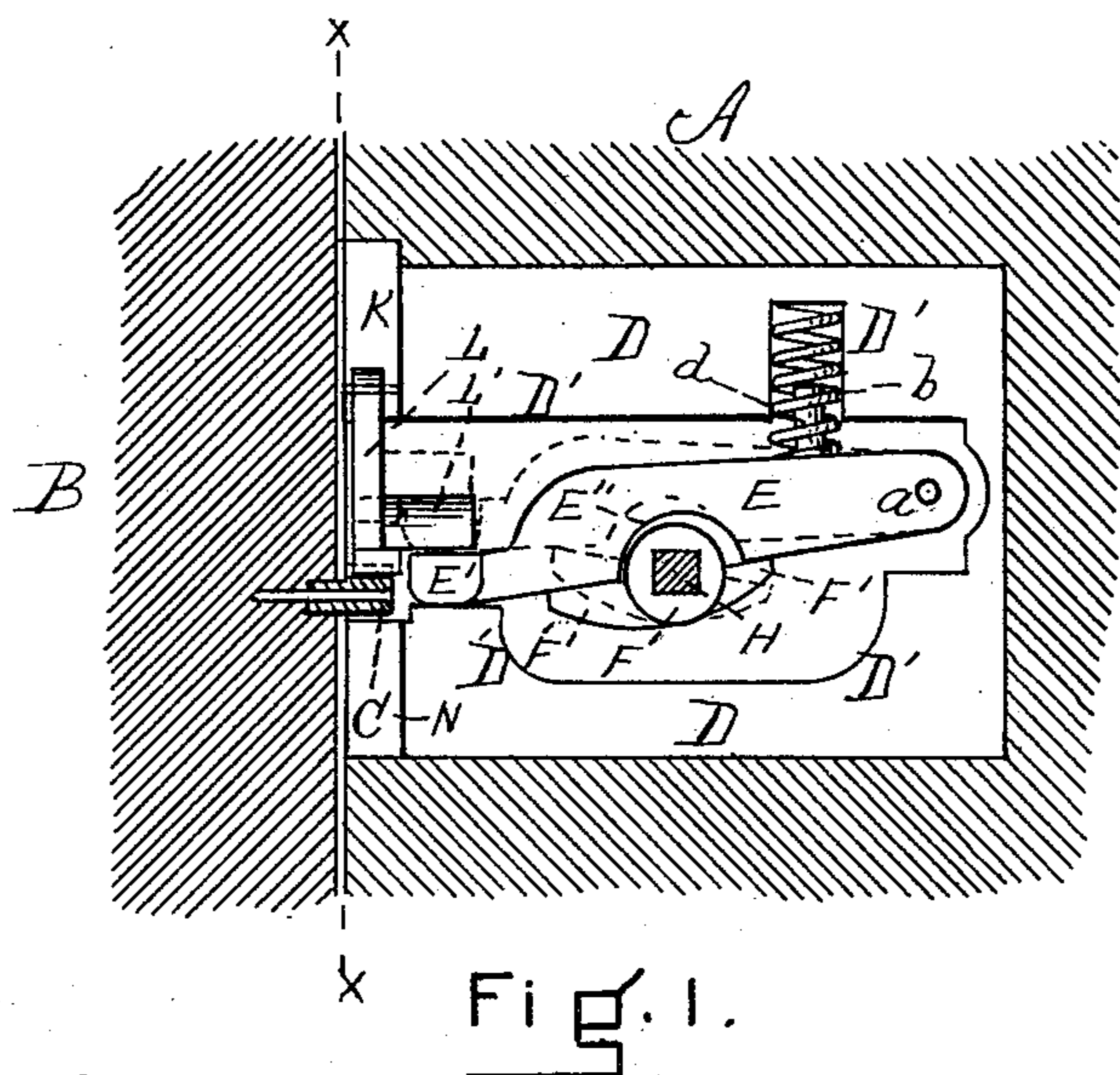


Fig. 2.

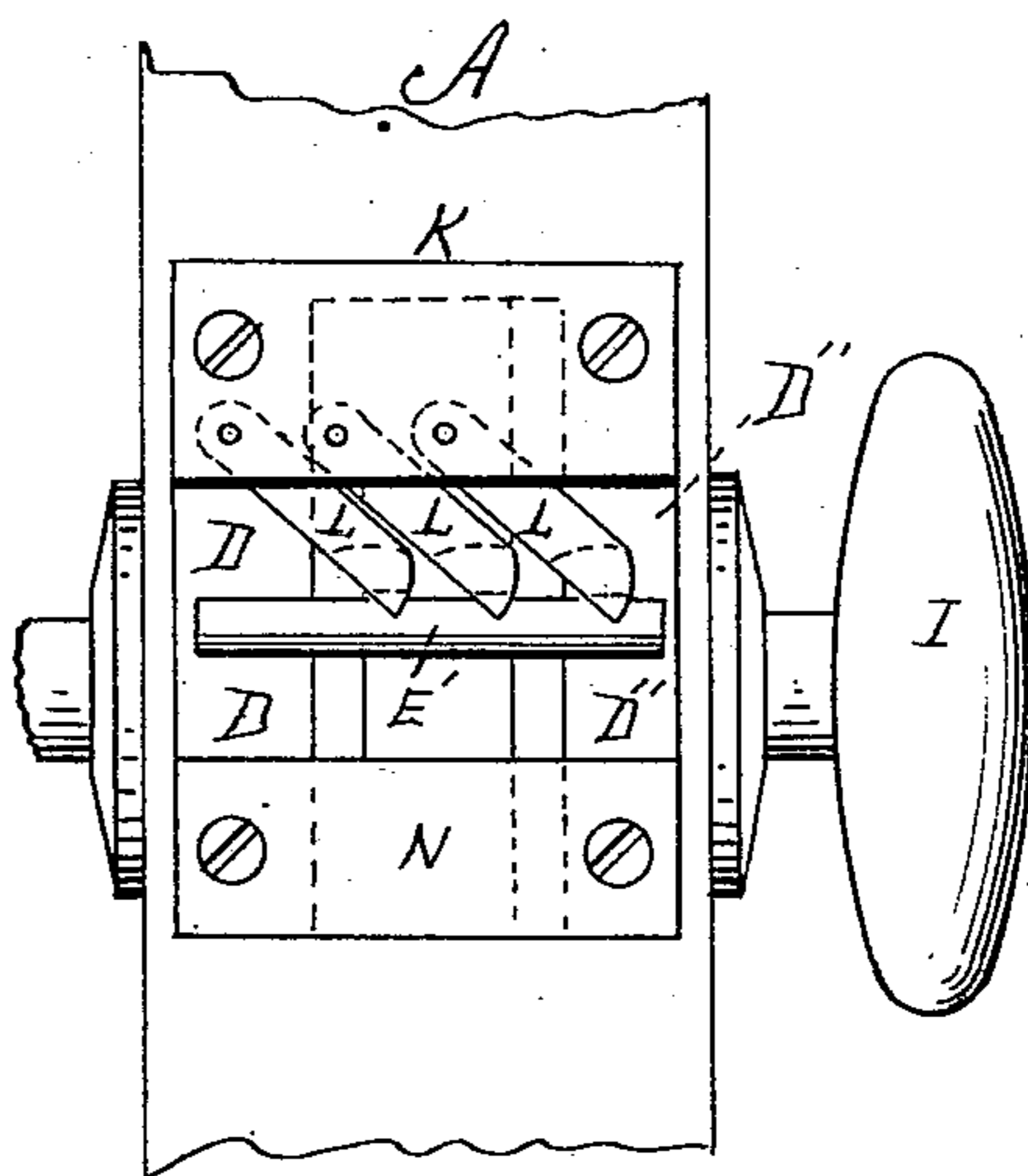


Fig. 3.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

MYRON R. HUBBELL, OF WOLCOTT, VERMONT.

## LATCH.

SPECIFICATION forming part of Letters Patent No. 482,794, dated September 20, 1892.

Application filed October 26, 1891. Serial No. 409,765. (Model.)

*To all whom it may concern:*

Be it known that I, MYRON R. HUBBELL, of Wolcott, in the county of Lamoille and State of Vermont, have invented a new and useful  
5 Improvement in Latches, of which the following is a specification.

This latch is intended principally, but not necessarily exclusively, for self-closing doors; and it consists in the novel construction and  
10 arrangement of parts below described, and illustrated in the accompanying drawings, whereby the latch affords the slightest possible resistance to the closing of the door and securely holds it when closed.

15 In the drawings, in which similar letters of reference indicate like parts, Figure 1 is a front elevation of my improved latch with the covering-plate removed. The knob-spindle is shown in section and the whole is represented as in position on a door. Fig. 2 is a  
20 section on line *x*, Fig. 1. Fig. 3 is an end elevation looking toward the edge of the door.

In Figs. 1 and 2 the latch is represented as closed or locked, and in Fig. 3 it is raised or  
25 unlocked.

A represents the door, and B the jamb. The jamb has secured horizontally to its surface a toothed bar or rack C, projecting far enough therefrom to engage the latch and  
30 having its teeth on its upper surface.

D is a thick plate or case chambered out at D' to receive the operating portions of the latch and set into the door in the ordinary  
35 manner. This plate in practice is covered by a plate D'', Figs. 2 and 3, to protect the parts.

E is the tumbler, pivoted at *a* to the case and provided at its free end with an integral or rigidly-secured horizontal bar E', which is situated about flush with the outer edge of the plate D. This bar is held normally down,  
40 as shown in Fig. 1, on the lower side of the mouth or entrance to the chamber or recess D' by means of a spring *b*, which encircles the pin *d*, extending from the upper side of the tumbler. Moreover, the under surface of the tumbler is chambered out at E'' to accommodate a sleeve F, which is squared to receive the spindle H, on which the knobs I are placed. This sleeve has integral wings  
45 F', which extend horizontally from it and lie under the tumbler, as shown in Fig. 1. Secured to the front edge of the plate D and

substantially flush with the edge of the door is a cross-plate K, grooved on its under side to receive the pivotally-suspended pawls L. 55 These pawls, which may vary in number as desired, are provided near their lower ends with shoulders L', which rest on the horizontal bar E', while their lower ends are pointed and lie normally in the notches on the upper 60 surface of the rack or notched bar C. The pawls are of such a length that they cannot hang quite vertically, but are held at a slight angle by the rack, the angle being toward the direction in which the door swings open. 65

The operation is as follows: The normal position of the device is that represented in Figs. 1 and 2, in which the latch is closed, the pawls L lying locked in the rack-bar C. To open the door, the knob is turned as usual 70 and the spindle F, rotating, swings up one or the other of the integral wings F', thus lifting the tumbler E, which, lifting the bar E' at its end, lifts the shoulders L', thus swinging up the pawls L, and the whole assumes 75 the position shown in Fig. 3 and broken lines, Fig. 1. When the knob is released, the former position is instantly resumed, and when the door swings into a closed position the only resistance which the latch affords is that 80 made by the freely-swinging pawls L in slipping over the teeth of the rack-bar C. As will readily be seen, this resistance is exceedingly slight and almost too little to be calculated. 85

A plate N is usually secured to the edge of the latch directly under the plate K, as shown.

The device applies equally well to doors with rectangular and beveled edges.

Having thus fully described my invention, 90 what I claim, and desire to secure by Letters Patent, is—

1. In a latch, the combination of a rack or toothed bar secured to the jamb or door-frame, pawls pivotally suspended from the door and 95 adapted to drop into and be engaged by said rack when the door is closed, and mechanism for raising the said pawls out of engagement with the rack when the door is to be opened, substantially as described. 100

2. In a latch, the combination of a rack or toothed bar secured to the jamb or door-frame, pawls pivotally suspended from the door and adapted to drop into and be engaged by said

rack when the door is closed, a tumbler adapted to be lifted by means of the knob-spindle, and mechanism intermediate with said tumbler and pawls, whereby the latter  
5 may be lifted out of engagement with the rack, substantially as set forth.

3. In a latch, the combination of a tumbler adapted to be raised by the rotation of the knob-spindle, said tumbler being provided at  
10 its free end with a cross-bar or end piece, as E', a toothed bar secured horizontally to the door-jamb, and pawls pivotally secured to the stationary portion of the latch and hanging normally with the ends in engagement with  
15 said toothed bar and constructed to have their ends swung up directly by the said cross-

bar E' when the spindle is rotated, substantially as described.

4. The herein-described improved latch, consisting, essentially, of the plate or case D 20 D', provided with the cross-plate K, the winged sleeve F F, the tumbler E, provided at its free end with the cross-bar E', the pawls L, pivotally hung from said cross-plate K and provided with the shoulders L', and the 25 toothed bar C, secured to the door-jamb, all substantially as described.

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Witnesses:

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