

(Model.)

H. H. FREEMAN.

LOCK AND LATCH.

No. 290,024.

Patented Dec. 11, 1883.

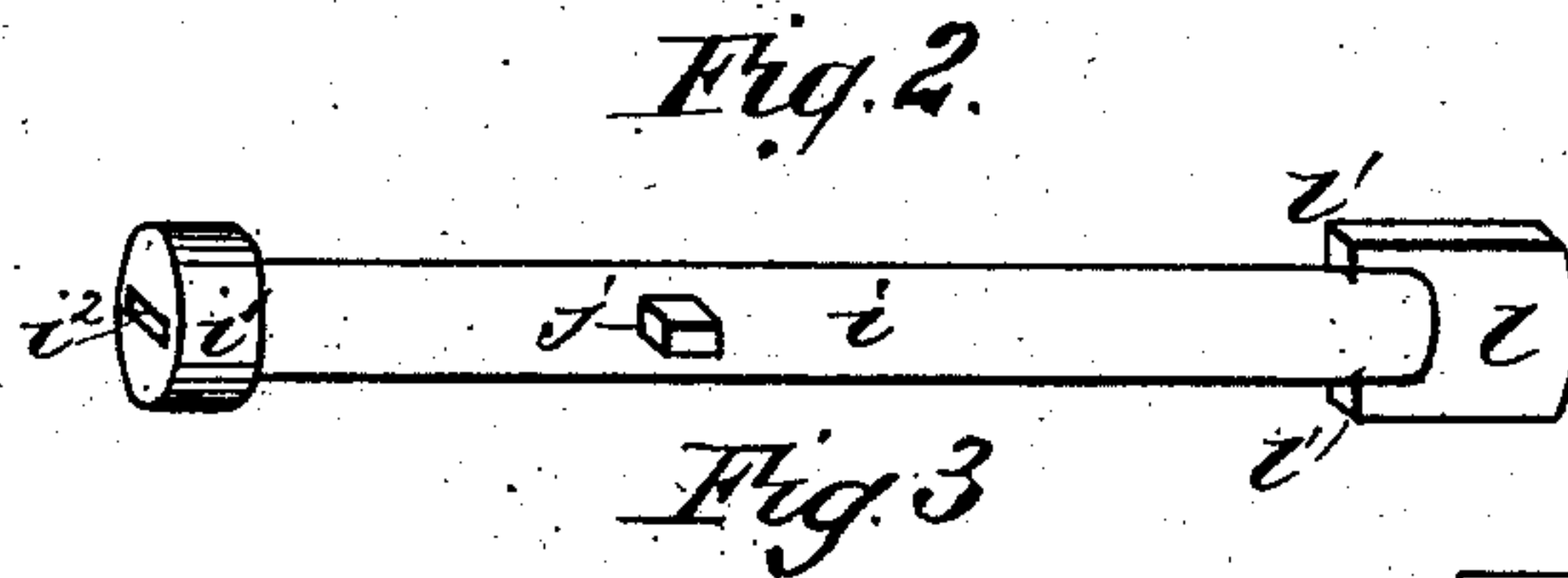
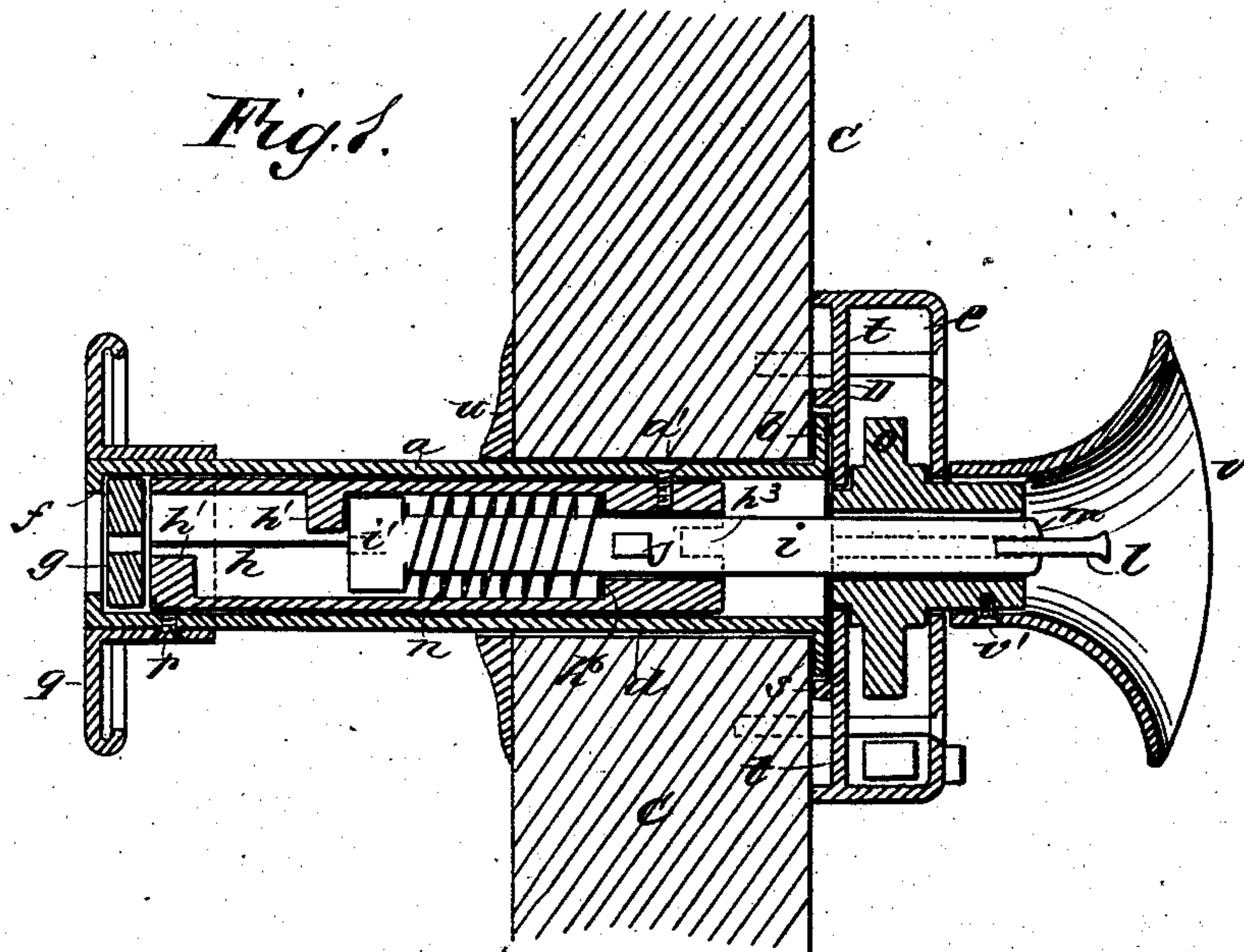


Fig. 7.

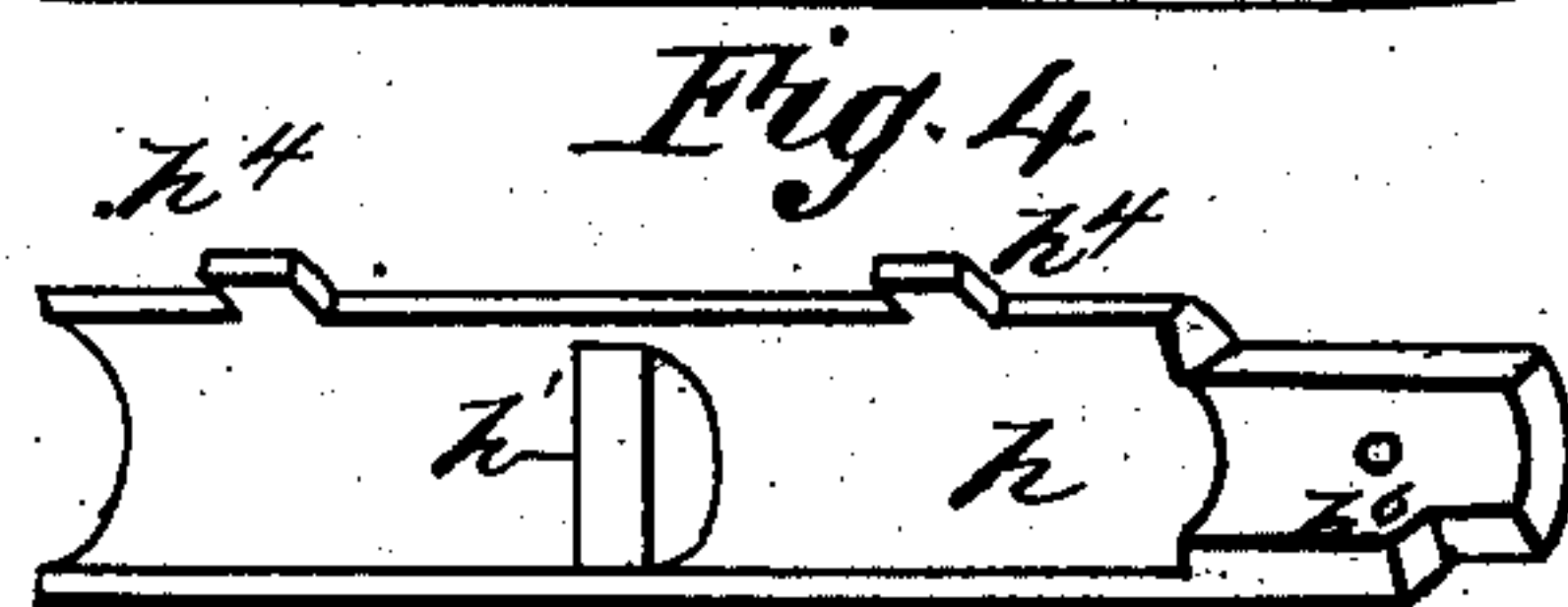
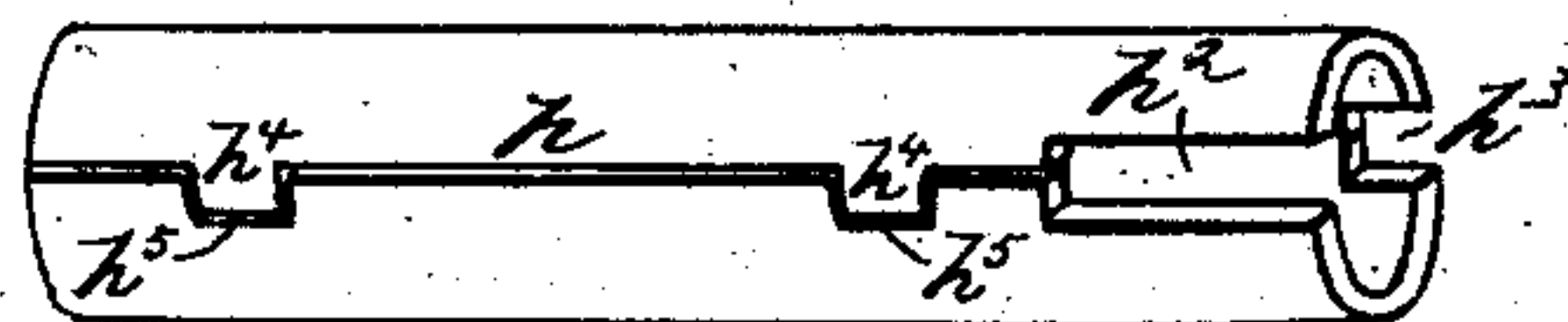


Fig. 5.

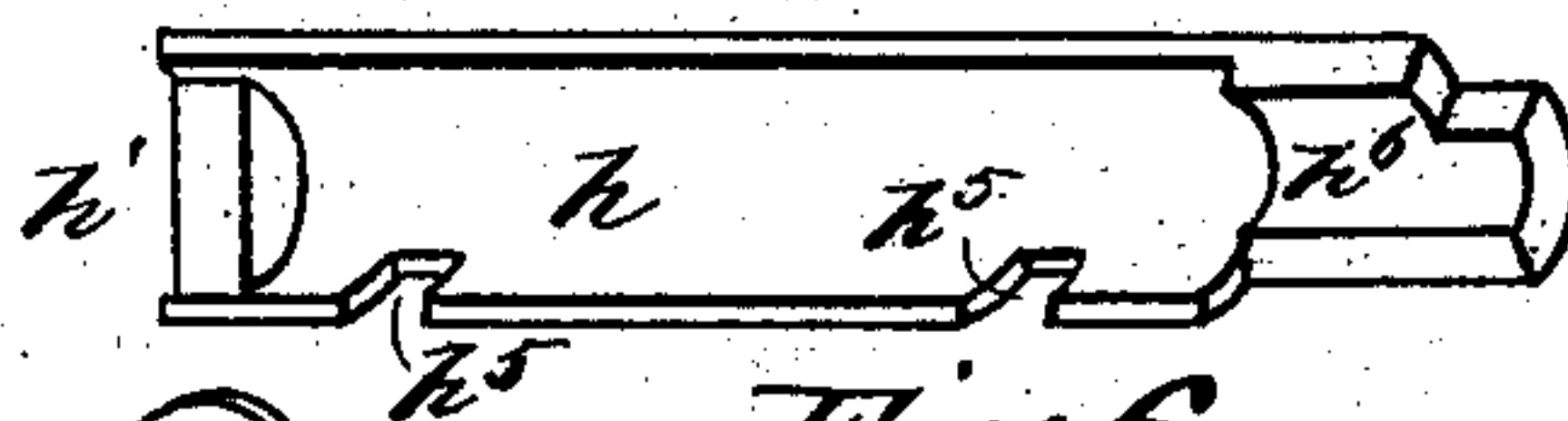


Fig. 6.

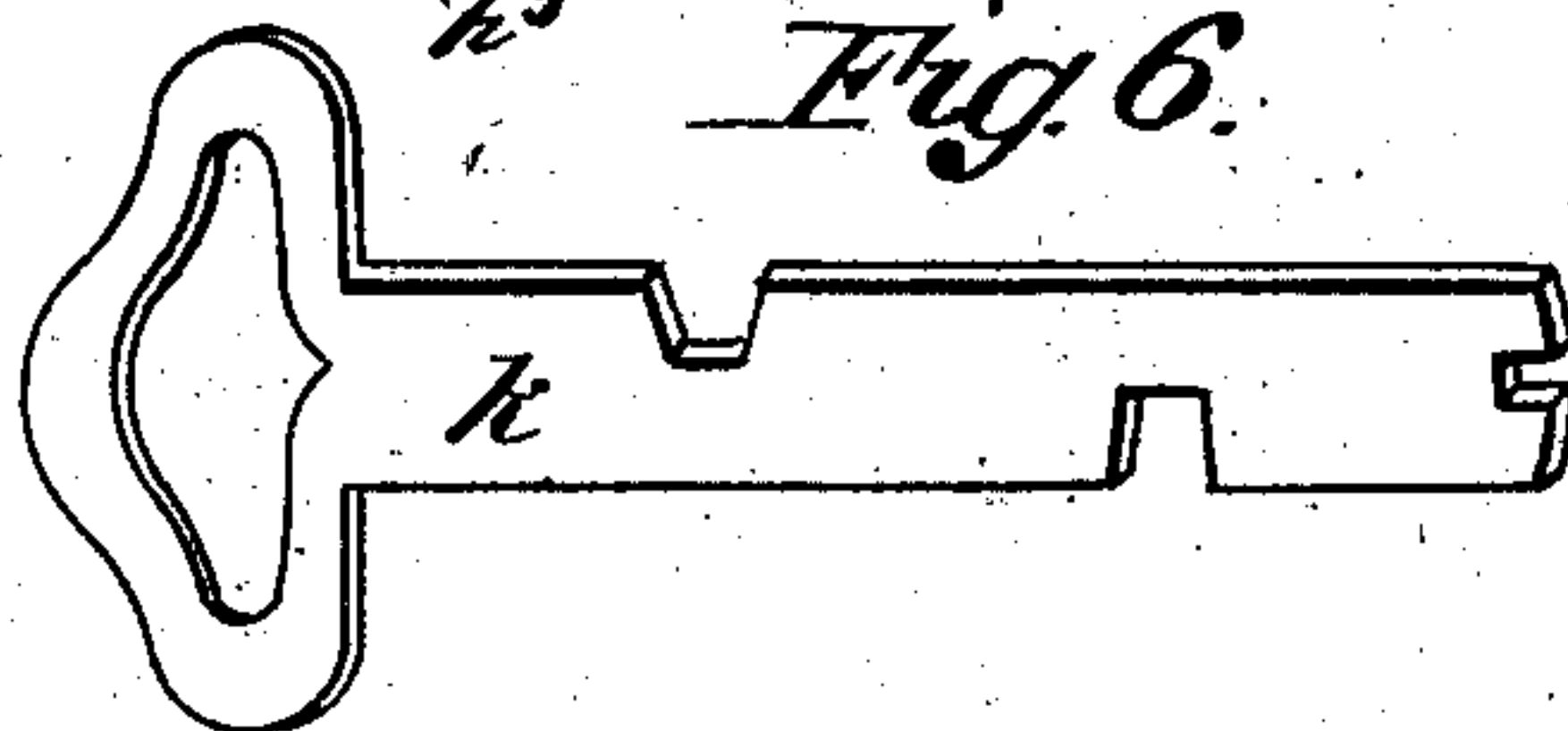
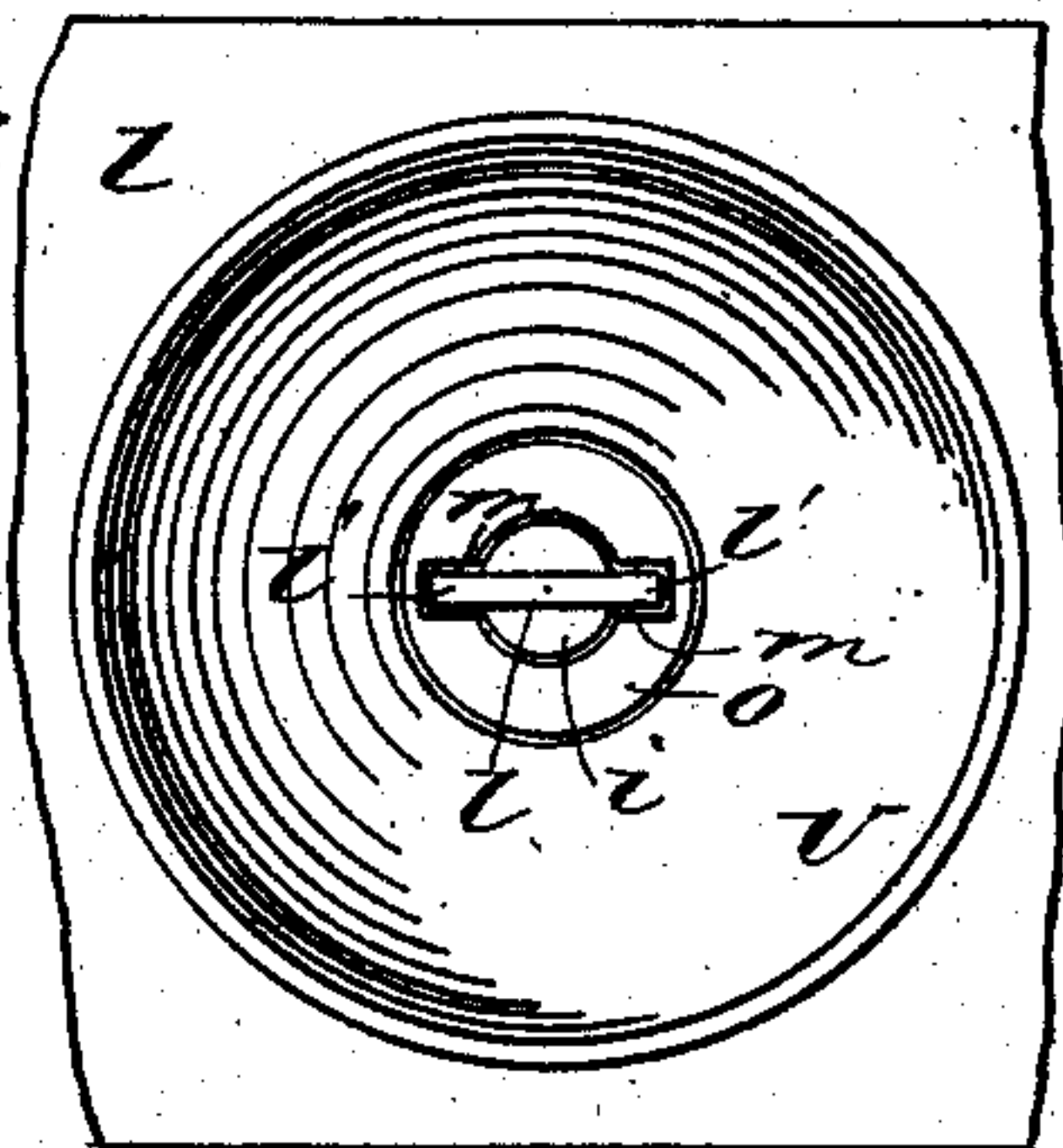


Fig. 8.



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LOCK AND LATCH.

SPECIFICATION forming part of Letters Patent No. 290,024, dated December 11, 1883.

Application filed April 18, 1883. (Model.)

To all whom it may concern:

Be it known that I, HENRY HERSEE FREEMAN, of Milton, in the Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Locks and Latches, of which the following is a full, clear, and exact description.

My invention relates to that class of locks in which the knob at the outside of the door may be disconnected at will from the bolt-throwing tumblers of the lock or latch, to prevent opening the door from the outside.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a small section of a door with my improved lock applied thereto, with parts in longitudinal sectional elevation. Fig. 2 is a perspective view of the spring-pressed sliding bar. Fig. 3 is a perspective view of the bar-casing. Figs. 4 and 5 are inside views of the two half-sections of the bar-casing. Fig. 6 shows the key; Fig. 7, the revolving key-plate; and Fig. 8 is a front view of the lock and its hollow or bell-mouthed knob.

In carrying out my invention I make a hollow spindle, *a*, preferably in one piece, circular in form, and about seven-eighths of an inch in diameter for light locks or latches. The spindle has a flange, *b*, at the inner end, to rest against the face of the door *c* when the spindle *a* is passed into the bore or mortise *d* of the door, in which the spindle fits loosely for axial rotation, with the latch or lock body *e* resting against or close to the flange *b*, to hold the spindle against end movement in the mortise. The outer end of the spindle *a* is apertured, preferably, to leave the annular shoulder *f*, against which the loose revolving key-plate *g* may rest, to confine the key-plate within the spindle by the casing *h* for the sliding bar *i*. This casing *h*, (shown in detail views, Figs. 3, 4, and 5,) I make in two parts or halves, so that the casing may be finished in casting it, and with any suitable number and form of wards *h'* for the flat key *k*, Fig. 6, and with a deep open slot or notch, *h²*, and shallow notch *h³* in one end of the casing, the notches *h²* *h³* being preferably arranged diametrically opposite each other, as shown; and I form the

side edges of the halves of the casing with any suitable lugs or lips, *h⁴*, and notches *h⁵*, to receive the lips, so that when the halves of the casing are laid together, as in Fig. 3, the wards *h'* and notches *h²* *h³* shall remain in proper relative position with each other when the casing *h* is slipped into the spindle or barrel *a*, as in Fig. 1, and behind the key-plate *g*, in which position the casing *h* is held to the spindle and to axially rotate with it by the fastening pin or screw *a'*. Before the casing *h* is inserted in the spindle, the sliding clutch-bar *i* is placed within the casing. This bar *i* is preferably formed with a head, *i'*, slotted at *i²*, to receive the end of the key *k*, and has also a projecting pin or stud, *j*, to engage the slots or notches *h²* *h³* of the casing *h*, and a bit, *l*, at the inner end, having shoulders *l'* at one or both sides of the body of the bar, for engaging a notch or notches, *m*, formed in the hub *o*, which notches preferably extend clear through the hub, to allow the bit *l* to pass through in adjusting the lock or latch to the door.

A spring, *n*, on the bar *i* acts against the head *i'* of the bar and shoulders or lugs *h⁶* of the casing *h* to throw the bar outward, to keep the stud *j* and bit *l* engaged, respectively, with the notches *h²* and *m* of the casing *h* and hub *o*, or to engage the stud *j* of the bar with the shallow notch *h³* of the casing, and to hold the bit *l* disengaged from the notches *m* of the hub; and the head and body of the bar *i* are fitted to the interior of the casing *h* and to the hub *o*, so that while the bar slides freely it shall be held steadily, with the key-slot *i²* in proper alignment with the wards *h'*, to facilitate the quick and correct adjustment of the key to the lock. The casing *h* being secured to the spindle *a* by the pin or screw *a'*, and the outside knob, *q*, made fast to the spindle by the pin or screw *r*, the knob *q*, spindle *a*, casing *h*, and bar *i* will turn together axially; and to avoid undue wear of the door-mortise *d* by the spindle, I provide an annular bearing rim or rib, *s*, on the inner plate, *t*, of the lock, as a bearing for the flange *b* of the spindle at the inside of the door, and provide the metallic rose-plate *u*, for a spindle-bearing at the outside of the door. The inside knob, *v*, of the lock or latch is fixed to the hub *o* by a pin or screw, *v'*, so that the door may always

be unlocked or unlatched by using the inside knob, *v*, which is made hollow or bell-shaped, as shown, to admit the fingers to grasp the projecting bit *l* of bar *i* to work said bar, as next described.

With the parts in the positions of Fig. 1 the stud *j* of bar *i* rests in the deep notch *h*² of the casing *h*, and the bit *l* is engaged with the hub *o*, so that the latch-bolt may be thrown to open the door by turning the outside knob, *q*. To disconnect the hub from the knob *q* from the inside, the bit *l* is grasped and the bar *i* drawn inward to release said bit from the notches *m* of the hub and withdraw stud *j* from the deep notch *h*² of casing *h*, when the bar *i*, with the casing *h* and spindle *a*, may be turned half-round by the bit, to permit stud *j* of the bar *i* to be lodged by spring *n* in the shallow notch *h*³, which will hold the bit *l* clear of the hub and prevent the throwing of the latch-bolt by axial movement of the outside knob, *q*, and its connected spindle *a*, casing *h*, and bar *i*; and to set the lock or latch back to the position of Fig. 1 to again connect the outside knob with the hub, the stud *j* is to be lifted from notch *h*³ and the parts turned to engage the stud with the deep notch *h*². These movements of the parts to connect and disconnect the tumblers can be quickly performed by the use of the key from the outside by passing the key along the wards *h'* and into the slot *i*² of the head of bar *i*, which may be pushed inward by the key, to disengage and engage stud *j* from and with either slot *h*² *h*³, substantially as above described.

My improved lock answers all the purposes of the ordinary rim-lock, with increased ad-

vantages, while avoiding the cutting of a key-hole through the door, thereby shutting out the undue attention of curious persons.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A lock or latch constructed with a hollow spindle flanged at one end, and a casing within the spindle carrying a spring-pressed bar adapted to engage slots of the casing and slots of the tumbler-hub, substantially as shown and described.

2. The combination, with the spindle *a*, flanged at *b*, and adapted to turn axially in a mortise, *d*, of a door, of the casing *h*, notched at *h*² *h*³, and carrying the spring-pressed sliding bar *i*, having a stud, *j*, for engaging the notches *h*² *h*³, and a bit, *l*, for engaging a slot or slots, *m*, of the hub *o*, substantially as shown and described.

3. The combination, with the rotary spindle *a*, having the end flanges, *b* *f*, of the loose key-plate *g*, the case *h*, having wards *h'* and opposite notches *h*² *h*³, the slide-bar *i*, having slotted head *i'*, stud *j*, and shouldered bit *l*, the spring *n*, and the notched hub *o*, as shown and described.

4. The combination, with a spindle, *a*, casing *h*, having wards *h'*, and the spring-pressed bar *i*, of the revolving slotted key-plate *g*, confined at the end of the spindle *a* by the flange *f*, and the casing *h*, substantially as shown and described.

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Witnesses:

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