

C. BODMER, dec'd.

2 Sheets--Sheet 1.
E. DUENZ & J. A. DUENZ, Adm's.
Locks.

No. 135,702.

Patented Feb. 11, 1873.

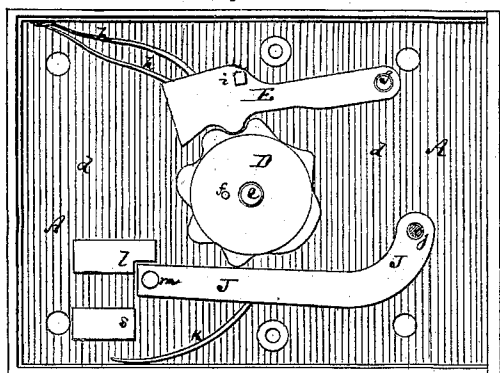


Fig. 1.

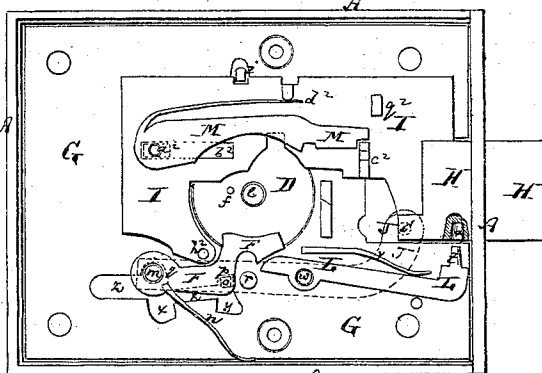


Fig. 2.

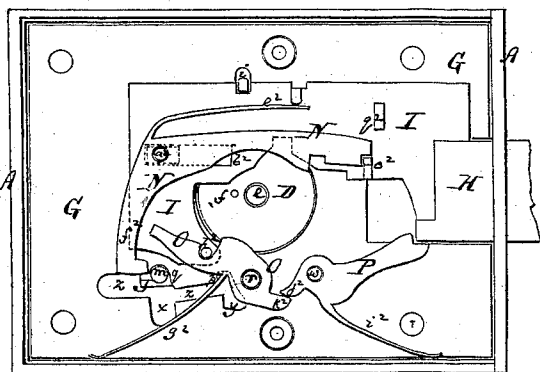


Fig. 3.

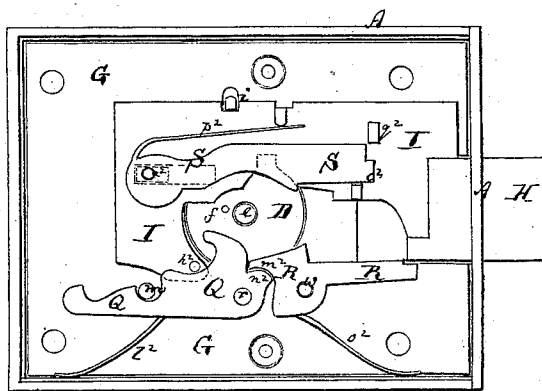


Fig. 4.

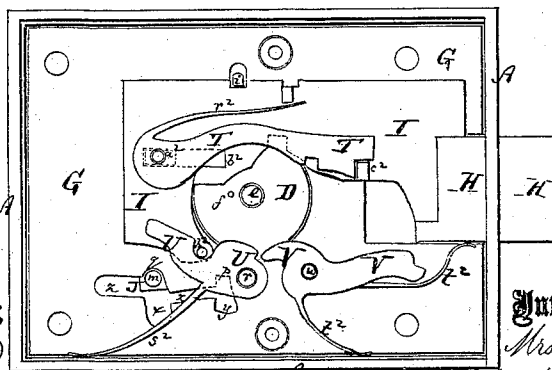


Fig. 5.

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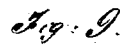
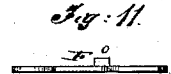
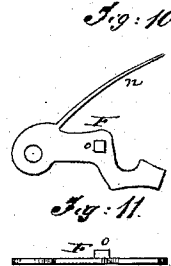
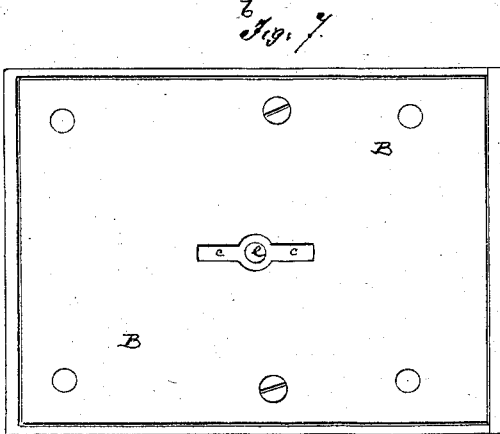
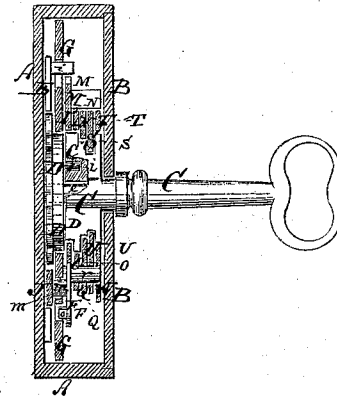
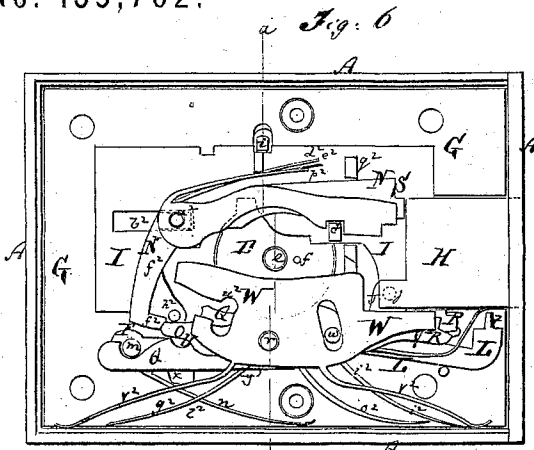
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 Attorneys.

UNITED STATES PATENT OFFICE.

ELIZABETH DUENZ AND JOHN A. DUENZ, OF FAYETTEVILLE, ILLINOIS,
ADMINISTRATORS OF CASPER BODMER, DECEASED.

IMPROVEMENT IN LOCKS.

Specification forming part of Letters Patent No. 135,702, dated February 11, 1873.

To all whom it may concern:

Be it known that CASPER BODMER, late of the city of New York, in the county and State of New York, did during his life-time invent a new and Improved Lock for Doors, &c.; and I, Mrs. ELIZABETH DUENZ, of Fayetteville, in the county of St. Clair and State of Illinois, administratrix to the estate of the said CASPER BODMER, deceased, do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

The invention relates to door-locks having tumblers and dumb-levers; and consists in a false bottom having certain slats and notches; in a tumbler having a stop and pivoted to the sliding bar; in a ward having an arm that operates against a pin to swing sliding bar and tumbler clear of obstructions; in a pivoted tumbler combined with a sliding bar pivoted to bolt; in a tumbler pivoted to sliding bar and having a projection working in a notch of false bottom; in a movable tumbler and stationary plate arranged in the same plane; and, finally, in a vibrating plate that acts at once upon a pin and bolt; all as hereinafter fully described and subsequently claimed.

In the accompanying drawing, Figure 1 represents a face view of the lock, showing only the rotary disk and the levers on the same plane with it. Fig. 2 is a face view of the lock, showing the bolt and one layer of tumblers on it. Fig. 3 is a face view of the lock, showing the bolt and second layer of tumblers. Fig. 4 is a face view of the lock, showing the bolt and third layer of tumblers. Fig. 5 is a face view of the lock, showing the bolt and fourth layer of tumblers. Fig. 6 is a face view of the lock as it appears when the face-plate is removed. Fig. 7 is a plan view of the face-plate. Fig. 8 is a transverse section of the lock on the line *a b*, Fig. 6. Fig. 9 is a face view of the false bottom, below which the rotary disk is concealed. Fig. 10 is an inverted face view of the tumbler *F*, above the face-plate. Fig. 11 is an edge view of the same.

Similar letters of reference indicate corresponding parts.

A in the drawing represents the lock-case, of rectangular or other suitable form. B is the face-plate of the same, having the key-hole *c* large enough to admit the double-armed key C. Upon the bottom or back *d* of the lock-case is placed a disk, D, which is provided with a series of teeth or projections at the edge, as is clearly shown in Fig. 1. This disk is fitted concentrically around the key-post or pin *e*, and can revolve around the same, the pin *e* projecting from the back of the lock-case, to which it is rigidly affixed. From the disk D projects a pin, *f*, or pins, which enter or reach the key, so that the disk may be turned by and with the key. E is a lever pivoted at *g* to the back of the lock, and held by a spring, *h*, in contact with the edge of the disk, so that it will be vibrated when the disk is turned by the key. The lever E carries a projecting pin, *i*, which locks into one of a pair of notches in the bolt, preventing motion of the latter, unless the lever is swung up, to carry the pin *i* out of these notches. Fig. 1 shows the lever E and disk D. Fig. 2 shows the pin *i* locking into the notch of the bolt. G is a false back or bottom placed within the lock-case so as to partly cover the disk D and entirely conceal the lever E. Its shape is clearly shown in Fig. 9. H is the bolt of the lock, made of suitable shape, and fitted through an opening in the end of the lock-case. It is affixed to a plate, I, which forms its shank and rests flat on the false bottom G, so that it can slide thereon when moved by the key. The plate I has a recess for the key to work in when turned for locking or unlocking.

By a pin, *j*, which projects from the bolt through a slot in the false bottom, the bolt is connected with a sliding bar, J, placed under the false bottom upon the back *d*. This bar J is, by a spring, *k*, crowded against a fixed stop, *l*, when the bolt is locked, and prevents thereby the bolt from being drawn back for unlocking as long as said bar is not moved clear of the stop *l*. By a pin, *m*, projecting from the bar J through a slot in the false bottom, said bar is connected with a tumbler, F, which is

placed upon the false bottom, and is, by a spring, n , held in the way of the key. The pin m is, if the bolt is locked, confined in a lateral notch, q , of the false bottom. A stop, o , projecting from the back or under side of the tumbler F, as indicated in Figs. 2, 10, and 11, locks also into a lateral notch, p , of the false bottom. When the key moves the tumbler F it clears the pin o out of the notch p and swings them; also the pin m out of the notch q and the end of the bar J clear of the stop l , and has then liberated said bar, so that it will no longer prevent the longitudinal unlocking motion of the bolt, the bar J and tumbler F sharing such longitudinal movement. If, however, a false key is used which swings the tumbler F too far, it will cause it to hook over a fixed pin, r , that projects from the false bottom, and also carry the bar J against another stop, s , on the plate d , and thereby absolutely prevent the unlocking. The tumbler F would then also act on a lever, L, pivoted, by a fixed pin, w , to the face of the false bottom, and lock a pin, t , on said lever directly into a socket, u , of the bolt, (see Fig. 2,) thereby further preventing the unlocking of the bolt. Otherwise the lever L is kept clear from the bolt by a spring, v . Another effect of too large a key acting on the tumbler F will be to carry the pins m and o into counter-notches x and y , respectively, whereby lengthwise movement is also prevented. With the right key the pins m and o will both be carried into a slot, z , of the false bottom, wherein they can move longitudinally. The slot z , with the cross-notches p , q , x , and y , is clearly shown in Fig. 9. To a pin, a^2 , which projects from the false bottom through a slot, b^2 , of the plate I, is pivoted a ward, M, locking with its hook-shaped end against a pin, c^2 , that projects from I, and held against the same by a spring, d^2 , as clearly shown in Fig. 2. This ward must be lifted clear of the pin c^2 before the bolt can be unlocked. Upon the ward M is placed another ward, N, pivoted also to the pin a^2 , and held against the pin c^2 by a spring, e^2 , as in Fig. 3; but this ward N has also a projecting arm, f^2 , which extends toward the pin m , and serves, when the right key is used, to strike said pin and swing it clear of the notch q , so that the key will not strike the lever F directly at all, merely indirectly by means of said arm f^2 on the ward N. Above the tumbler F is pivoted to the pin r a second tumbler, O, which is, by a spring, g^2 , caused to hook over a pin, h^2 , that projects from the plate I. It prevents the said plate from moving as long as the key does not lift this tumbler O clear of the pin h^2 . Above the lever L is pivoted to the pin w another lever, P, which catches directly against the inner end of the bolt, as is clearly shown in Fig. 3, a spring, i^2 , holding it in such position. A tongue, j^2 , on the lever P is in contact with a tongue, k^2 , of the tumbler O. When the latter is swung by the key it turns also the lever P and carries it clear of the bolt, so

as to allow the same to be unlocked. Upon the tumbler O is placed another tumbler, Q, pivoted to the pin r and hooking over the pin m , as is clearly shown in Fig. 4. A spring, l^2 , holds it against the pin m . The key will first have to push the tumbler Q clear of the pin m before the ward N for moving said pin out of the notch q can be moved. Upon the lever P is placed, upon the pin w , another similar lever, R, locking also against the end of the bolt, and provided with a tongue, m^2 , which fits against a tongue, n^2 , of the tumbler Q, as shown. A spring, o^2 , holds the lever R against the bolt. When the tumbler Q is swung by the key it will carry the lever R clear of the bolt. S is a third ward pivoted to the pin a^2 , and held by a spring, p^2 , in contact with the pin c^2 , not so as to hook over, but merely to lean against the same. This ward is not to be moved by the key, and will, when undisturbed, not interfere with the motion of the bolt; but if it is lifted by a false key it will abut against a pin, q^2 , that projects from the plate I, and thereby prevent the unlocking of the bolt. T is a fourth ward pivoted to the pin a^2 and hooking over the pin c^2 , being held against the latter by a spring, r^2 . It is entirely similar to the first ward M. V is a fourth tumbler pivoted to the pin r , and held by a spring, s^2 , against the pin h^2 to hook over the same, as shown in Fig. 5. The key will have to swing this tumbler, as well as the tumbler O, clear of the pin h^2 before the bolt can be unlocked. V is a fourth lever pivoted to the pin w , but held by springs t^2 clear of the bolt. When a large false key is used it will strike and swing the lever V, so as to carry it against the bolt and prevent the unlocking of the same. W is a final safety-plate. It is placed over the tumbler U and lever V pivoted to the pin r , and slotted to play on the pin w , as shown in Fig. 6. It has notches to lock over the pin h^2 in the position of locked bolt, and must be swung clear of said pin to permit unlocking; but if swung too far it will have its outer end carried against the end of the bolt and prevent withdrawing of the same, and will also have a hook, u^2 , brought over the pin h^2 , to also lock that pin. Springs v^2 retain the plate W in the neutral position.

Fig. 6 shows a face view of the entire lock, showing the bolt drawn in. The first five views show the bolt locked.

It will be noticed that by the several arrangements and combinations of parts above described the lock is made nearly absolutely burglar-proof.

The least mistake in the construction of the key will prevent the opening.

The tumbler U and lever V in the same plane constitute an important element, as one must be moved and the other remain undisturbed to let the lock be opened, both reaching nearly equally far to the key.

Having thus described the invention of CAS-

PER BODMER, I claim as new and desire to secure by Letters Patent—

1. The false bottom G arranged within a lock and provided with the slot z and cross-notches $p\ q\ x\ y$ to admit and lock the pins m and stop o , as set forth.

2. The tumbler F pivoted on the sliding bar J and provided with the stop o , to operate substantially as herein shown and described.

3. The ward N provided with the arm f^2 for the purpose of acting directly against the pin m , and thereby swing the tumbler F and bar J clear of obstructions, as set forth.

4. The tumbler Q pivoted to the pin r and caused to hook over the pin m , in combination with a sliding bar J pivoted to the bolt, as specified.

5. The tumbler F pivoted on stud m of bar J and having a projection working in notch p of false bottom G, to operate substantially as herein shown and described.

6. The tumbler U and lever V arranged within the same plane, one to be moved and the other to remain undisturbed to enable the opening of the lock, as specified.

7. The vibrating plate W acting at once upon the pin h^2 and against the bolt, as set forth.

ELIZABETH DUENZ,

Administratrix of the estate of Casper Bodmer, dec.

Witnesses:

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