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F. W. MEWS.

TUMBLER FOR LOCKS.

APPLICATION FILED MAR. 10, 1908.

Fig. 1.

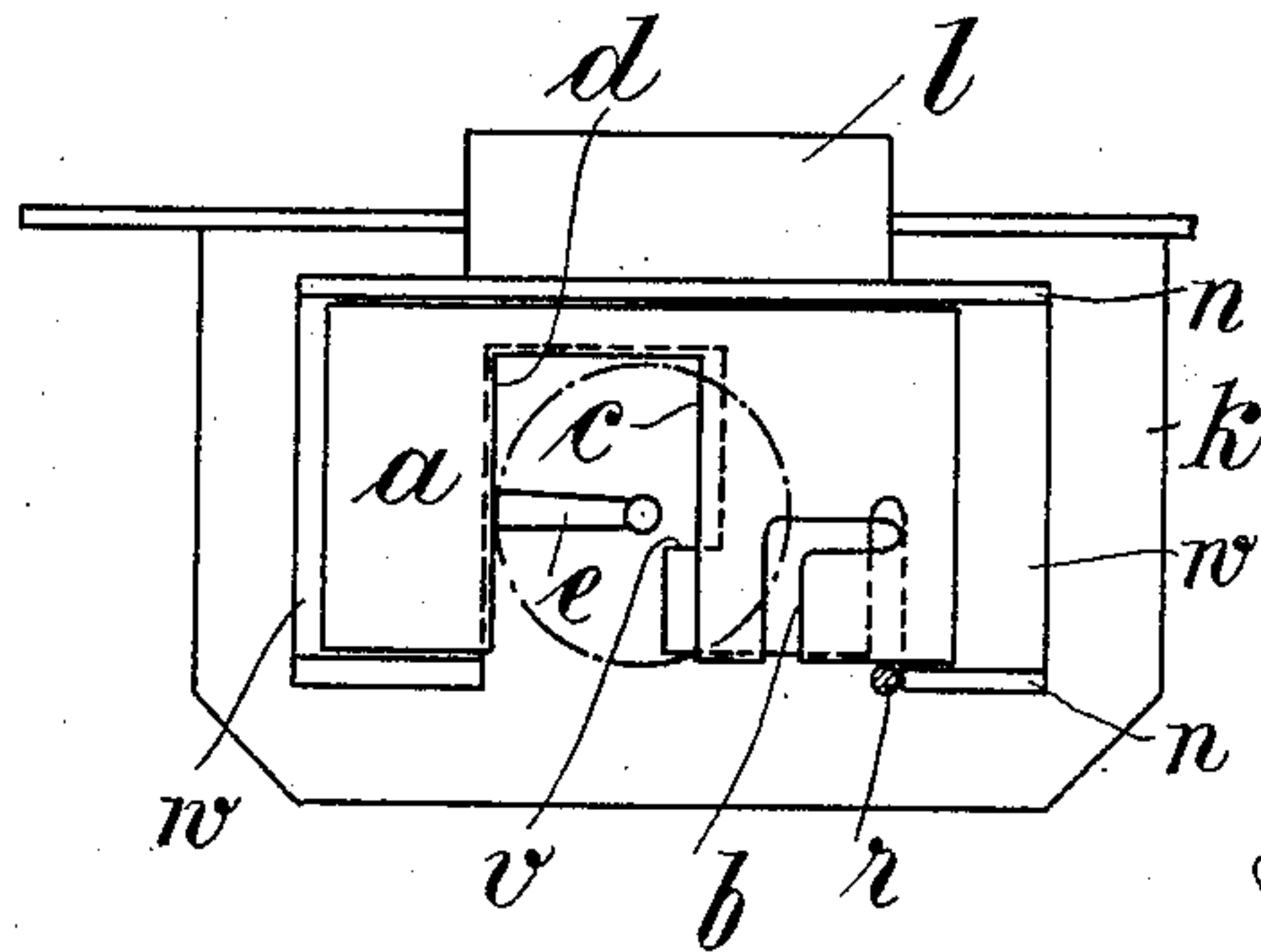


Fig. 2.

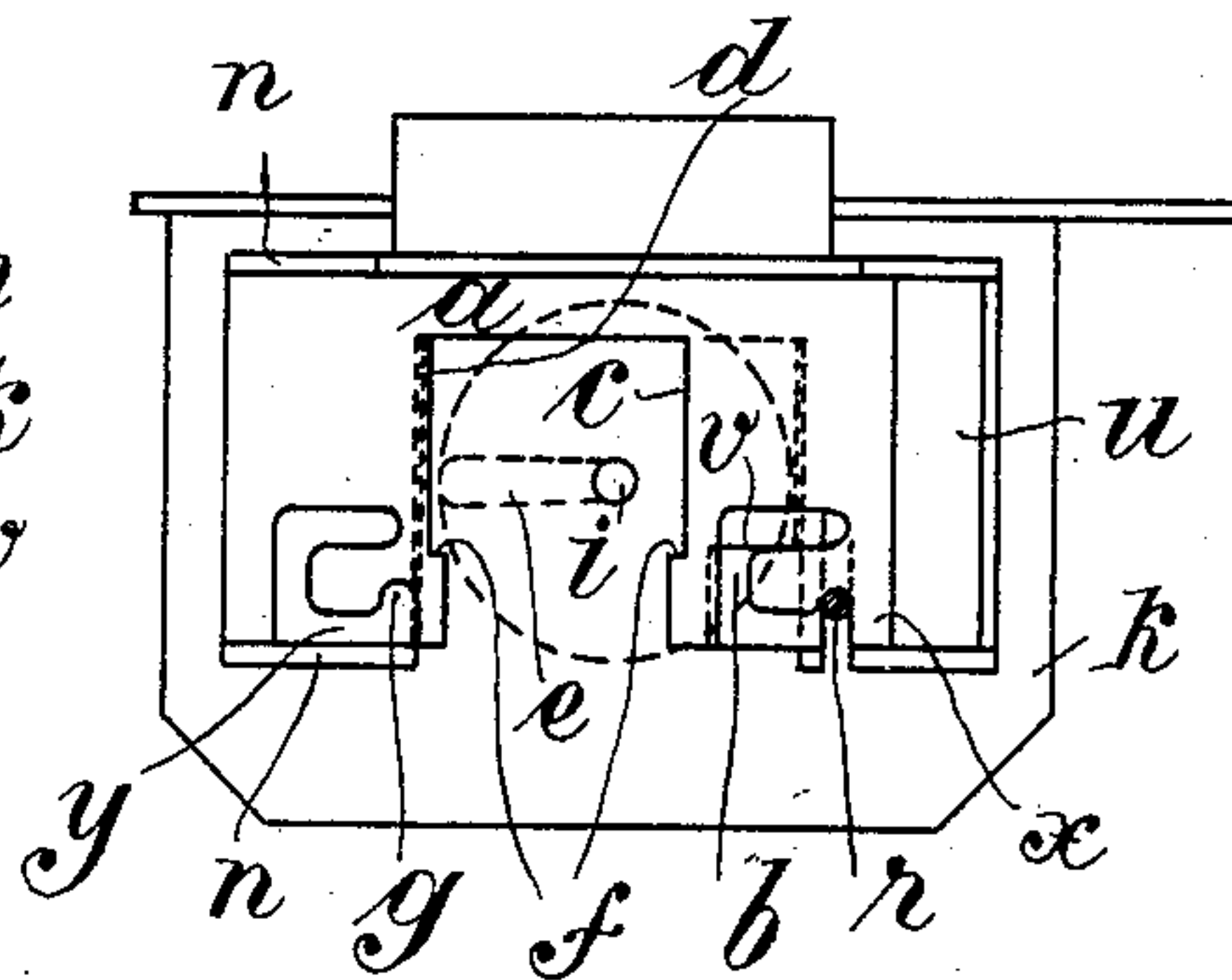


Fig. 3.

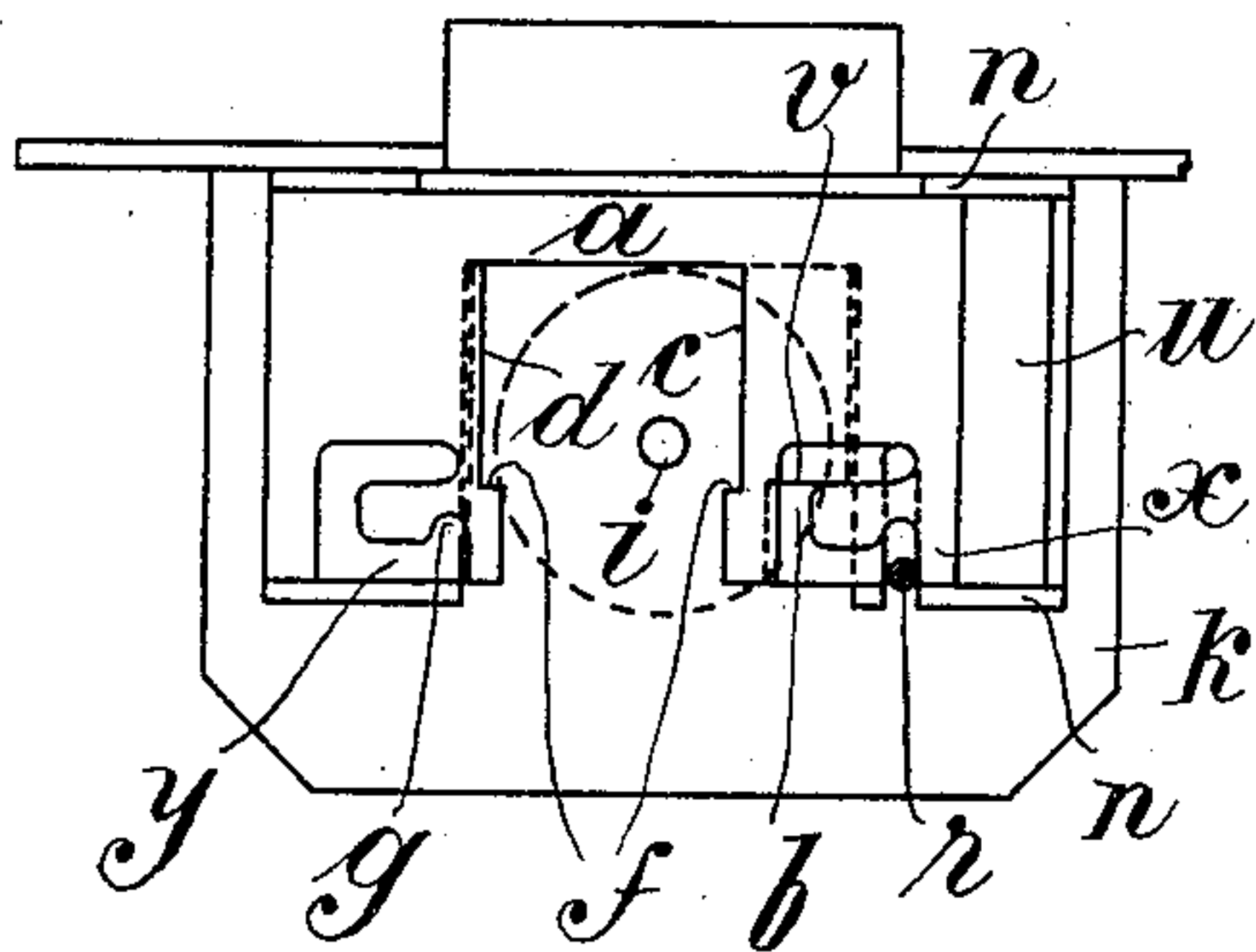


Fig. 4.

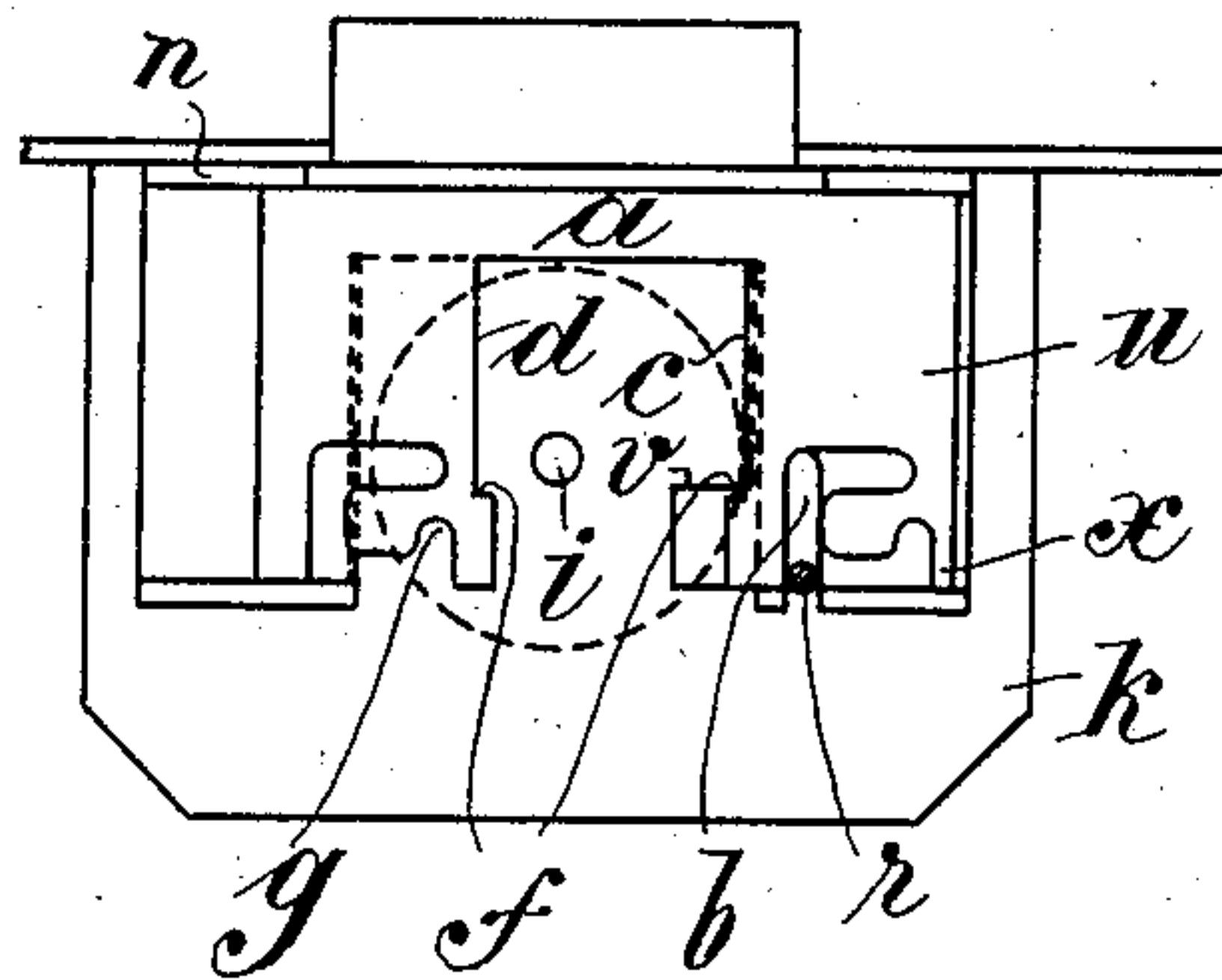


Fig. 5.

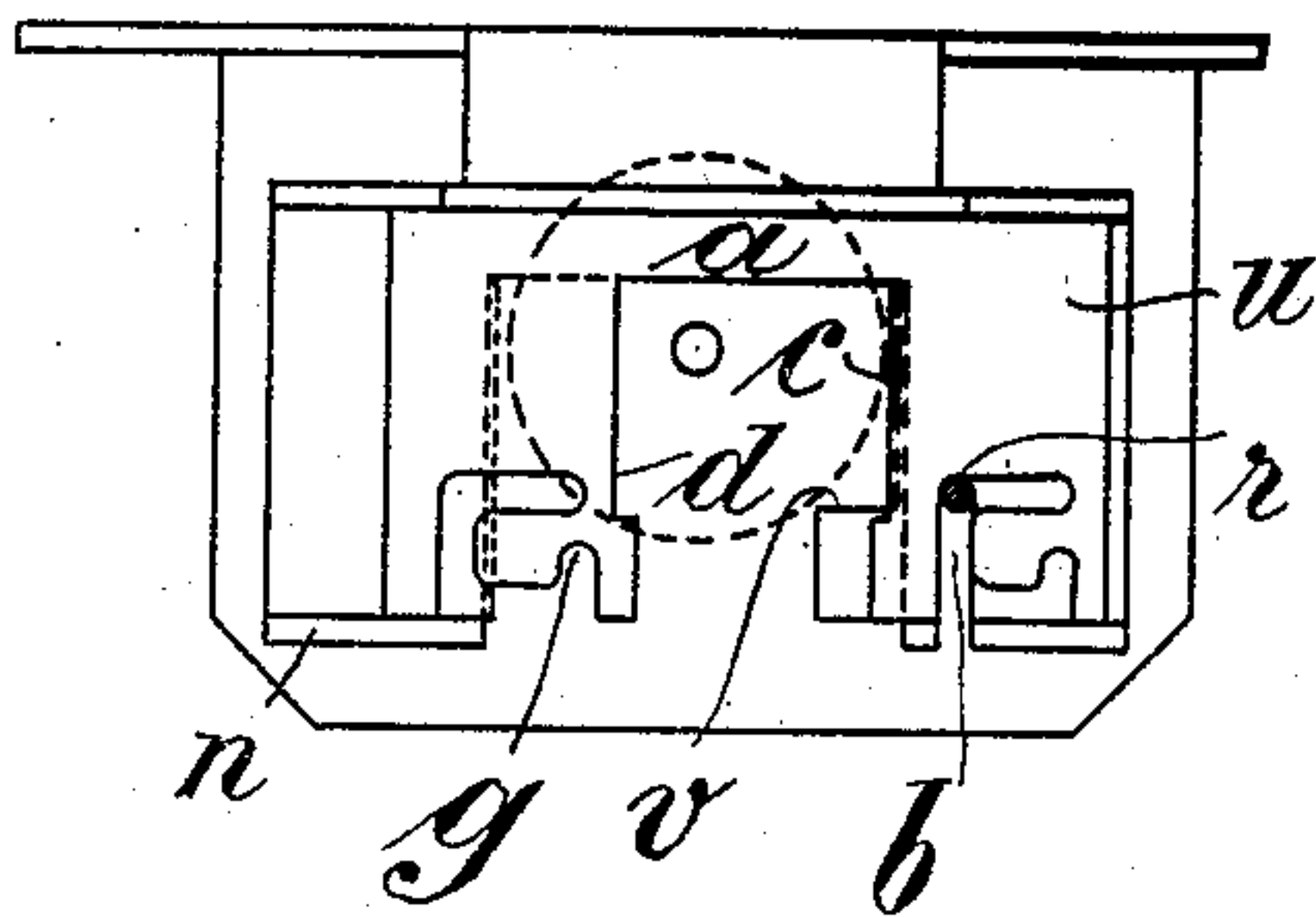
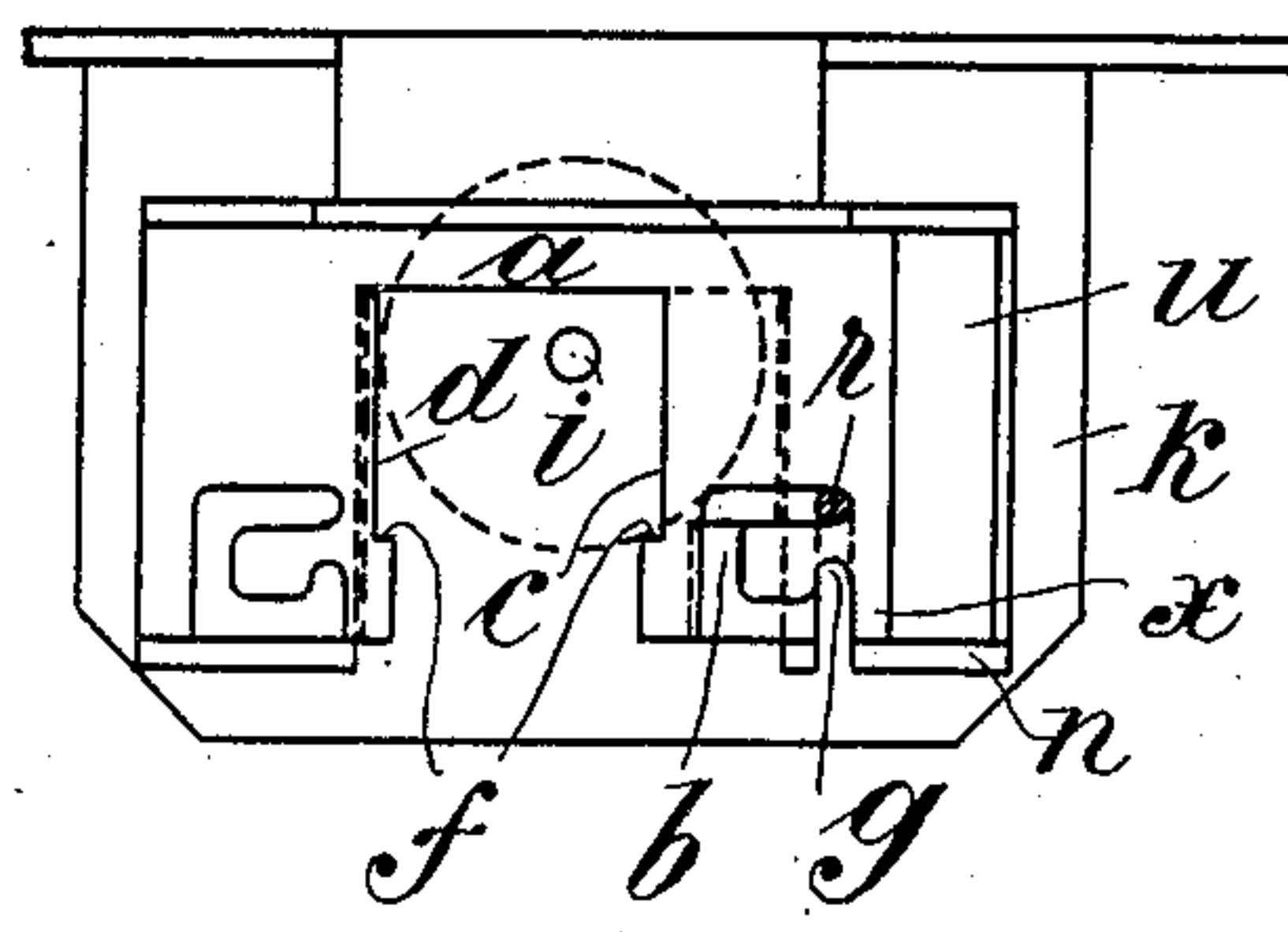


Fig. 6.



WITNESSES:

Fannie Fisk
Henry J. Suberbie

INVENTOR

Friedrich W. Mews
BY *Goebel & Goebel*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

FRIEDRICH WILHELM MEWS, OF MOSCOW, RUSSIA.

TUMBLER FOR LOCKS.

No. 896,456.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRIEDRICH WILHELM MEWS, of the town of Moscow, in the Russian Empire, engineer, having invented certain new and useful Improvements in Tumblers for Locks, do hereby declare that the following is a full, clear, and exact description of the same.

The present invention relates to tumblers for locks with several faces for engagement by the key as well as with a slot which is to be placed close to the detent-pin for opening, and consists in the tumbler being formed U-shaped by means of a notch in its edge away from the bolt-head, in order to be able to insert it in common with a similarly shaped bolt-shaft between the parallel walls of the lock-case for the purpose of assembling the lock, and chiefly to enable the employment of such tumblers for the first time in locks of given dimensions. The notch of the tumbler in combination with an angular slot of a kind known in itself enables a lock having tumblers movable together with the bolt-shaft to be employed as a door-lock or box-lock. If each side or limb of the tumbler is provided with a straight or angular adjusting slot, the tumbler can be turned over on the bolt-shaft, so that when employing the reversible face for engagement by the key for the unlocking movement of the bolt according to my German Letters Patent 190,575, the lock can be used as one which locks right-handedly or left-handedly.

In the drawing Figure 1 is an elevation of a box-lock with the tumbler according to the present invention without reversible faces for engagement by the key, whereas Figs. 2 to 6 are elevations of a box-lock with reversible tumblers and reversible face for engagement by the key in the different positions for unlocking and locking.

The tumbler *a* sliding in known manner between parallel guides *n* of the U-shaped bolt-shaft *w* is formed by a U-shaped notch in its edge turned away from the bolt-head *l*. The two parallel bounding edges *c*, *d* of this notch form the two faces for engagement by the key. The slot *b*, into which the detent-pin *r* can enter for unlocking the lock, is, as in other known tumblers, bent angularly, so that when the detent-pin *r* has entered into the slot *b* the tumbler is moved backwards in the locking direction by the pressure of the

key-bit *e* against the face *d*, and can thereby prevent the bolt-shaft moving into the unlocked position.

In Figs. 2 to 6 the slot *b* is twice bent angularly, namely at its end and likewise at *y*, in order that, when the detent-pin *r* is fixed in such a manner in the case *k* that it does not entirely pass out of the track of the tumbler *a* when locking, the locking movement of the latter is possible.

If the tumbler has a holding notch *g* as special means for holding the parts in the locked position, the bend *y* of the slot forms the junction between *b* and *g*. The tumbler is then provided with a third face *f* for engagement by the key, for engaging the detent-pin *r* in the holding-notch *g* for the purpose of avoiding springs.

If in each side *x* of the U-shaped locking-bolt an adjusting slot *b* is provided which, as mentioned above, may be angular, the tumbler is reversible, and in combination with a plate *u*, which is reversible on the bolt-shaft and which then has the faces *v* for engagement by the key for the unlocking movement of the bolt, enables the lock to be used as a right-handed or left-handed lock. If, in this case, a holding-notch *g* is also arranged in each limb *x* of the tumbler, the latter must of course have two corresponding faces *f* for engagement by the key.

In Fig. 3 the lock is locked, but is turned back again somewhat by pressing the key *a* counter-clockwise against the third face *f* of the left-hand limb *x* of the tumbler, so that the detent-pin enters into the holding notch *g*. (Fig. 2).

When unlocking the lock, the bit of the key rotated clockwise passes the third face *f* of the left-hand limb *x* and past the second face *d* of the same, hits, as the dotted circle shows, against the face which moves the bolt, and then imparts to the bolt a movement locking it further, during which movement (Fig. 3) the detent-pin *r* passes out of the holding-notch *g* close to the notch *y*, and allows the locking-bolt to move on the bolt-shaft into the unlocked position (Fig. 4) under the pressure of the key-bit against the first face *c*. In this position the key engages the face *v* of the plate *u* for engagement by the key which is no longer covered and pushes the bolt with the tumbler into the position shown in Fig. 5, the detent-pin *r* sliding

into the notch *b*. If the key is now turned further, its bit hits against the second face *d* and pushes the tumbler into the position represented in Fig. 6. The latter rotated 90° to the left corresponds to the position of the unlocked door-lock. The lock is locked in the reverse order.

If, in a box-lock, the detent-pin *r* is to enter into the bent part of the slot *b* after the lock has been unlocked, the key must be turned an amount more than one revolution and, as soon as it is to be withdrawn, must be turned back again this amount.

Only by enabling the tumbler to be moved back when the detent-pin *r* has entered into the slot *b* is a lock with one or more tumblers movable with the bolt-shaft able to be employed as a door-lock or box-lock, since in the case of a straight slot *b*, as seen in Fig. 1, turned 90° to the left, the detent-pin *r* enters into the slot *b* by pressing the key-bit against the face *v* of the bolt-shaft before the completion of the full turn of the key, and the face *d* for engagement by the key which is again in the circular path of the bit prevents the movement of the tumbler necessary for the completion of the rotation of the key.

What I claim as my invention and desire to secure by Letters Patent is:—

30 1. In a lock, the combination, with a bolt-shaft, of a tumbler guided therein and provided at its side opposite the bolt-head with a notch the side-edges of which form key-engaging faces, said tumbler also having at

one side of said notch an angular slot, and a 35 detent-pin to coöperate with said slot.

2. In a lock, the combination, with a bolt-shaft, of a tumbler movable therewith and having at its side opposite the bolt-head a notch the side-edges of which form key-engaging faces, said tumbler being also provided at one side of said notch with an angular slot having a bend at the edge of the tumbler terminating in a holding notch, a detent-pin coöperating with said slot, and means on 45 said key-engaging faces whereby said holding notch is moved into engagement with said detent-pin by the key.

3. In a lock, the combination, with a bolt-shaft, of a tumbler having a notch with key-engaging faces, said tumbler being reversible and having angular slots at both sides of said notch, and a detent-pin to coöperate with said slots. 50

4. In a lock, a tumbler provided at one 55 edge with a notch the side-edges of which form key-engaging faces, the lower parts of said faces being offset from the upper parts, said tumbler also being provided at both sides of said notch with angular slots having 60 holding notches at the edge of the tumbler.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

FRIEDRICH WILHELM MEWS.

Witnesses:

WOLDEMAR HAUPT,
HENRY HASPER.