

P. S. FELTER.
BURGLAR PROOF LOCK.

No. 44,859.

Patented Nov. 1, 1864.

Fig 1

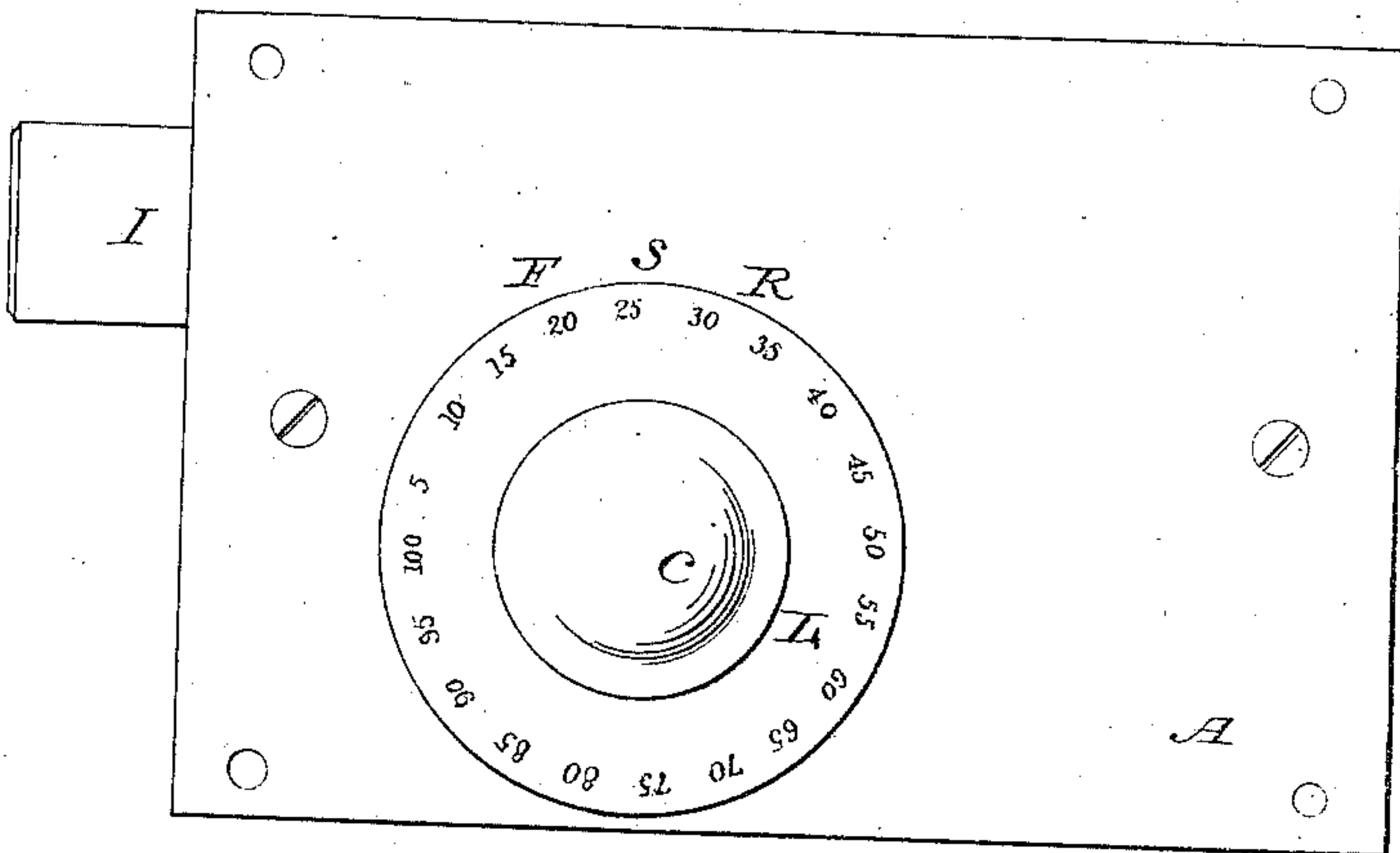


Fig 4

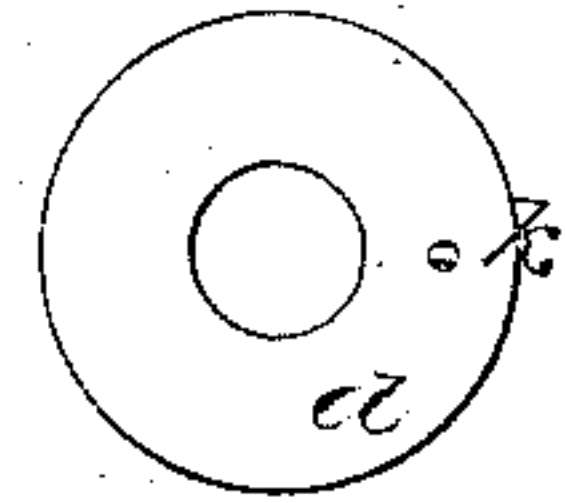


Fig 5

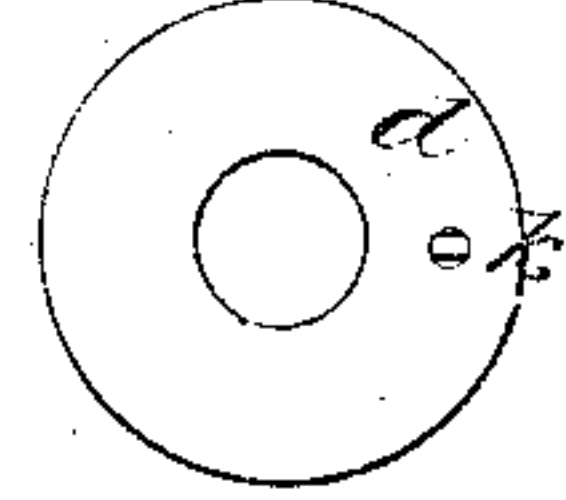


Fig 6

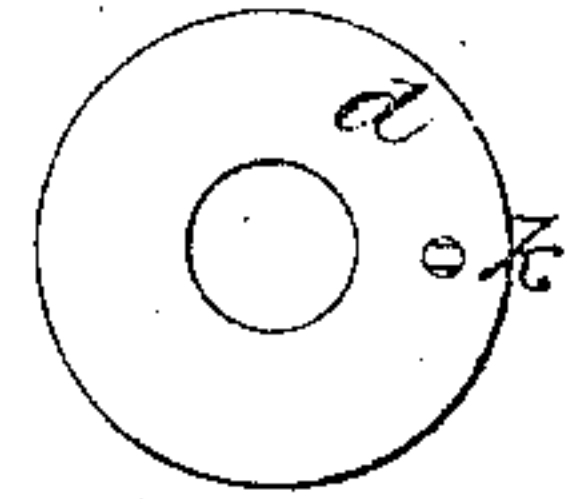


Fig 2

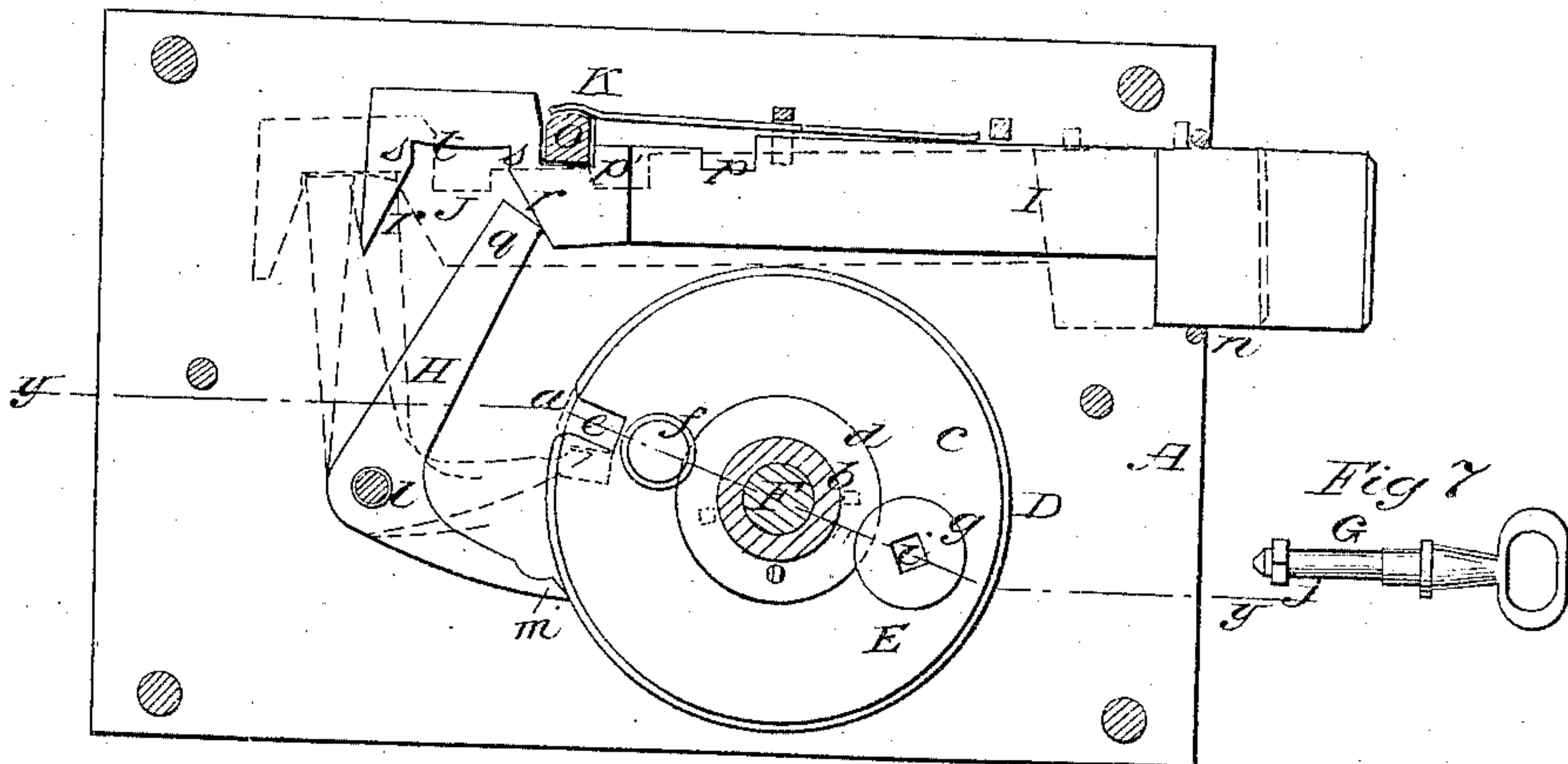
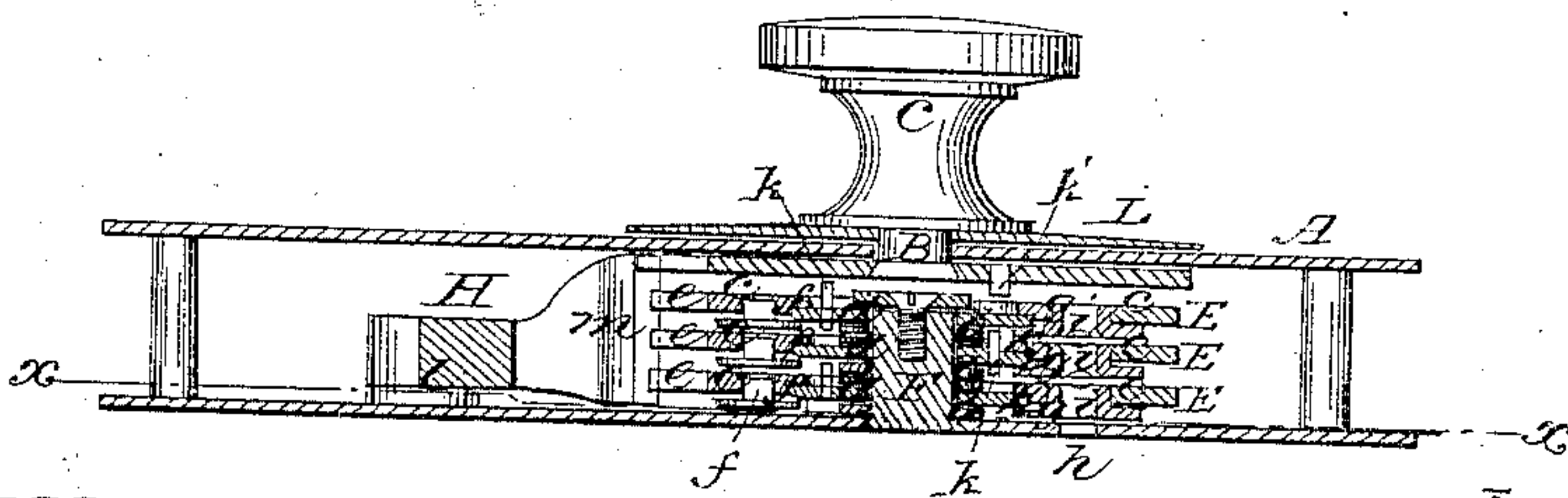


Fig 3



Witnesses:

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Inventor:

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By *William H. Allen*
Att'y

UNITED STATES PATENT OFFICE.

PHILO S. FELTER, OF CINCINNATUS, NEW YORK.

LOCK.

Specification of Letters Patent No. 44,859, dated November 1, 1864.

To all whom it may concern:

Be it known that I, PHILO S. FELTER, of Cincinnati, in the county of Cortland and State of New York, have invented a new and Improved Burglar-Proof Safe-Lock; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is an external view of my invention; Fig. 2, a vertical longitudinal section of the same, taken in the line x, x , Fig. 3; Fig. 3, a horizontal section of the same, taken in the line y, y , Fig. 2; Figs. 4, 5 and 6 detached views of parts pertaining to the tumblers of the lock; Fig. 7, a detached view of a key for making the changes of the tumblers.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and improved burglar proof lock of that class in which a key is not employed for operating the bolt—and in which circular tumblers are used.

The object of the invention is to obtain a lock of the class specified which will not admit of the tumblers being tampered with so that a knowledge of their position can be obtained in order to pick or illegitimately unlock the lock—and also to have a ready and convenient means for effecting the “changes” of the tumblers so that they may be adjusted by different marks, figures or letters in order that the lock may be unlocked—and further to have the dog and bolt so arranged that the latter may in connection with a slotted disk be acted upon by the former in a perfect manner.

A, represents the case of the lock which may be of rectangular or other suitable form, the outer plate of the case, that is the side nearest the eye, having a knob arbor B fitted in it, the knob C, being on the outer end of the arbor and a circular disk or plate D being on its inner end, the disk or plate having a rectangular slot a made radially in it from its edge.

E, represents a series of tumblers any proper number being used, three being shown in Fig. 3. These tumblers are of circular form, a trifle less in diameter than the disk D, and they are fitted loosely on a fixed arbor F and kept at a proper distance apart

by washers b , as shown clearly in Fig. 3. The arbor F, of the tumblers E is in line with the knob arbor B, and the tumblers E, are each composed of two parts, a central disk d , and an extension c , the former lying concentrically within the latter, their opposing beveled edges overlapping each other and the two being prevented from separating by two buttons, which attached to the rim overlap the disk at two opposite points. As thus arranged and being held together in the same place the inner disk may be freely revolved independently of the rim or vice versa, and thus permit the tumblers to be arranged to a new combination. In order to clutch permanently the one to the other, so that they shall revolve together, one of the two buttons is a turn button having a square hole through it and its bearing surface made cam-shaped so that when the holes of the several buttons are brought in line with each other and with a hole through the back plate of the lock, a key may be inserted and each turn button may be in succession be turned, so as to clutch the two parts together or to revolve them as desired.

Each part d , of the tumblers has a pin k one from the outer side of the innermost tumbler E and one from each side of the parts d of the two other tumblers—see Fig. 3. These pins k which come in contact with each other are at equal distances from the centers of the tumblers and constitute the means whereby the tumblers are turned or adjusted by the turning of the knob arbor B, the disk D being provided with a similar pin k' to act against the pin k of the tumbler adjoining it—see Fig. 3.

H, represents a dog of bent or right-angled form and fitted loosely at its angle on a pin l —see Fig. 2. This dog is made broader at its lower end m , than at any other part and said end m bears against the edge of the disk D when the lock is in an unlocked or locked state.

I, represents the bolt of the lock which is arranged to slide in a guide n in the lock case A, said guide being near the outer end of the case through which the bolt works. The inner end of the bolt is free or is allowed to work or have a certain degree of vertical play a stop or bearing o determining the length of its upward movement and also of its outward and inward movement in consequence of fitting in notches p, p in the upper edge—see Fig. 2.

The upper end *g*, of the dog H works within a notch or recess J at the inner part of the bolt, said notch or recess having inclined sides *r r'* and a top notched upward at each end as shown at *s, s* leaving a pendant swell *t* shown clearly in Fig. 2. The bolt I has a tendency to rest upon the upper end of the dog H, either by its own gravity alone or with the aid of a spring K.

On the bolt arbor B at the outer side of the case A, there is a circular disk L which turns with the arbor and is stamped, engraved or otherwise marked with figures or other characters, figures being shown in Fig. 1.

From the above description it will be seen that when the lock is in a locked state, the stop *o* will be in the notch *p'* in the bolt I the upper end of the dog H, bearing against the side *r'*, of the recess J, and the lower end *m* of said dog bearing against the edge of the disk D—as shown clearly in Fig. 2. In order to unlock the lock the tumblers E require to be turned so that their several recesses *e* will come in line with each other and the recesses *a* of the disk D, also come in line with the recesses *e* in order that the lower end of the dog H may pass into said recesses. When this is allowed the dog H, in moving admits of the inner end of the bolt I dropping so that it will clear the stop *o*, and the dog H, is then actuated so that it will throw back the bolt I by turning the knob C, the disk D, in consequence of the lower end of the dog fitting in its recess *a* forming the connection between the dog and the knob arbor. In throwing back the bolt I, the upper end *g* of the dog strikes the swell *t* and slightly raises the inner part of the bolt, the end *g*, then passes into the rear notch *s* and draws back the bolt and then bears against the inclined side *r* and throws the inner part of the bolt upward so that the notch *p* will receive the stop *o* as shown in red in Fig. 2. In order to lock the lock or throw out the bolt I, the dog H, is moved in a reverse direction, but the action is the same, the upper end of the dog in the latter case bearing against the side *r'* of the recess J.

The tumblers E are moved so that their recesses *e* will come in line with each other by means of the pins *h* on the parts *d* of the tumblers and the pin *h'* on the disk D—and the distance each tumbler is to be turned is made known by the figures on the disk L—certain ones being brought opposite to marks on the outer plate of the lock case. These

slotted tumblers with pins attached constitute quite an old device and their construction and operation being well known to locksmiths and those skilled in the art they do not require a minute description. The novelty attending the tumblers herein described consists in constructing them of the two parts *c, d*, connected together as shown by which the inner parts *d* may at any time be released and turned so as to bring the pins *h* in different positions relatively with each other. This turning of the plates *d*, is effected by inserting the square *j* of the key G, into the holes *i* of the buttons *g* as previously explained so that said buttons may be turned in order to loosen the plates *d*. By this simple means the "changes" may be effected from time to time so as to require a different adjustment of the tumblers to unlock the lock and in making the "changes" the holes *i*, of the buttons *g* of the several plates are all brought in line with each other by adjusting certain figures on the disk L with a certain mark on the outer side of the front plate of the lock case.

The lower end of the dog H, as has been previously stated bears upon the edge of the disk D, which keeps it free from the edge of the tumblers on account of the latter being a trifle less in diameter than the disk D. This prevents the lock being picked by obtaining a pressure of the dog on the edges of the tumblers in order to ascertain the position of the recesses or slots *e*, the means usually resorted to by burglars to effect that end.

I do not claim a series of circular slotted tumblers to form a burglar proof lock for that is an old device, but,

I do claim as new and desire to secure by Letters Patent,

1. The constructing of the tumblers E of two parts *c, d* connected together by fixed buttons *f*, and adjustable or turn buttons *g*, provided with square holes *i*, to be operated upon by a key G, substantially as and for the purpose herein set forth.

2. The circular disk D, in combination with the circular tumblers E when the latter are rather less in diameter than the former and both used in connection with the dog H, for the purpose specified.

PHILO S. FELTER.

Witnesses:

CHAS. C. GEE,
O. C. GEE.