

(Model.)

W. TEN EYCK & G. GREEN.
SEAL LOCK.

2 Sheets—Sheet 1.

No. 414,605.

Patented Nov. 5, 1889.

Fig. 1.

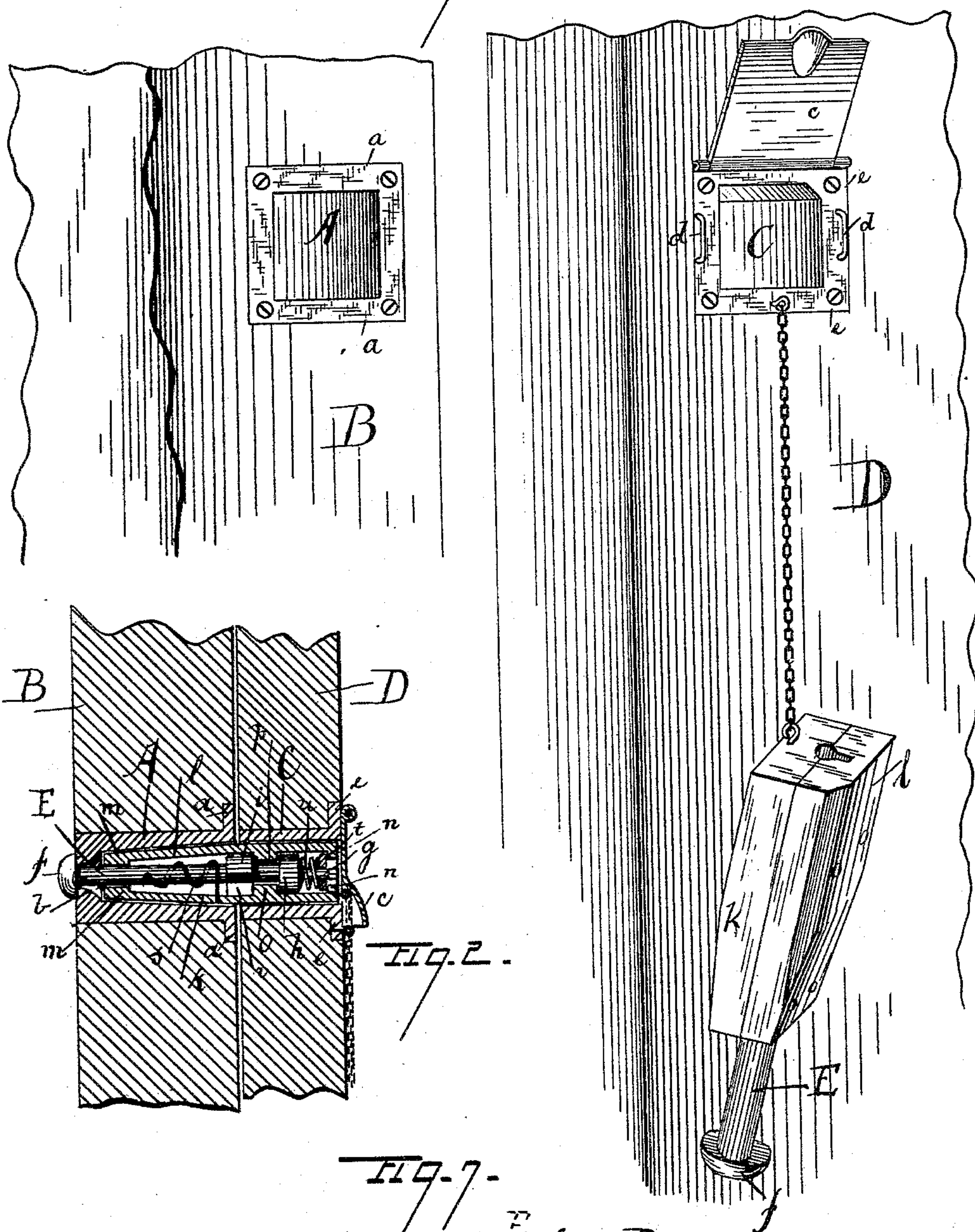
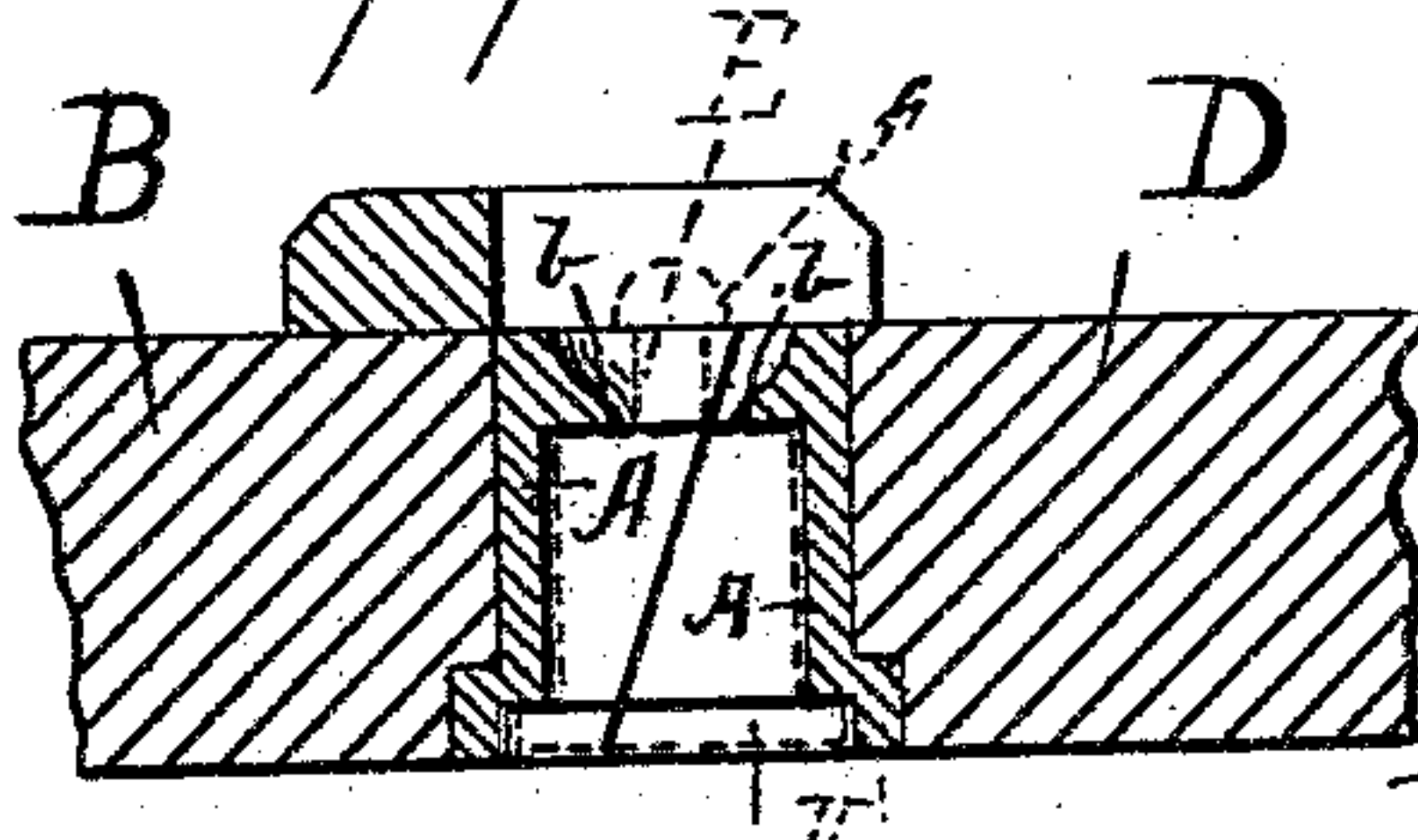


Fig-7-

Witnesses

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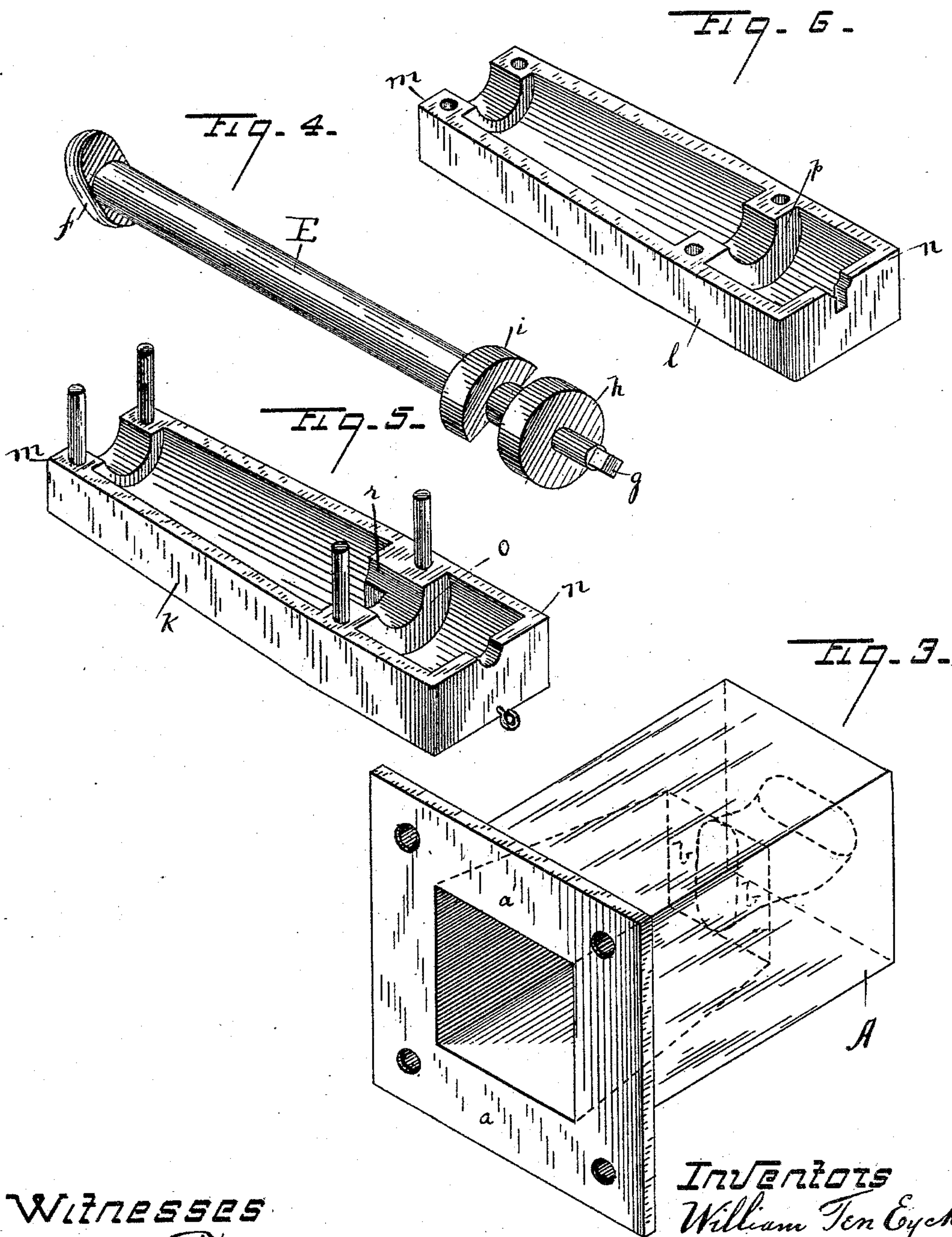
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WITNESSES

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WILLIAM TEN EYCK AND GEORGE GREEN, OF OAKLAND, CALIFORNIA.

SEAL-LOCK.

SPECIFICATION forming part of Letters Patent No. 414,605, dated November 5, 1889.

Application filed October 15, 1888. Serial No. 288,141. (Model.)

To all whom it may concern:

Be it known that we, WILLIAM TEN EYCK and GEORGE GREEN, citizens of the United States, residing at Oakland, in the county of Alameda and State of California, have invented a new and useful Seal-Lock, of which the following is a specification.

Our invention relates to improvements in that class of locks used in connection with doors that it is advisable to seal, but is designed more especially for use on a freight-car door; and the object of our improvements is to provide a device that will afford every safeguard expected of seal-locks, and yet so simple of construction that the cost of manufacture of such articles will be materially reduced.

The nature of these improvements is fully set forth in the accompanying drawings, in which—

Figure 1 is a broken elevation of the side of a freight-car with a sliding door, showing the relative position of the different parts of our device when the door is open; Fig. 2, a vertical section of the entire mechanism when in position on a locked door; Fig. 3, a detailed view, in perspective, of the posterior thimble; Fig. 4, a perspective view of the locking-bolt; Fig. 5, a perspective view of the lower half of the bolt-case; Fig. 6, a perspective view of the upper half of the bolt-case; and Fig. 7, a horizontal section of the posterior thimble, showing a modification of our invention to meet the requirements of a folding or swinging door.

The same letters refer to the same parts in all the figures.

The thimble A, made preferably of metal and cast of one piece, is inserted into a hole cut for the purpose through that side B of a car lapped by the door, and into which the flange *a* is countersunk and held by screws. The interior of thimble A has a gradual taper from its front end to the butting-flange *b*, which has an elliptical bore, with a twist of one quarter-turn in its whole length—that is, in about one inch. This is illustrated in dotted lines in Fig. 3. Another thimble C, of same material and provided with a hinged lid *c* and staples *d d*, the use of which will be explained hereinafter, is inserted into the

door D, its flange *e* being also countersunk, so as to lie flush with the outer surface of the door to which it is fastened. The inner right-hand top corner of this thimble is filled in, so as to correspond with the beveled edge of the bolt-case described below. Both of the thimbles are placed in such a way that they may be brought into the same plane—one in front of the other—when the door is closed and form one continuous tube, so to speak, through which a locking-bolt may be shot.

The shank of the locking-bolt E, (shown in perspective in Fig. 4,) carries an elongated stump *f* at one end and a key-shaft *g* at the other. It is provided, moreover, with a circular flange *h* and a semicircular flange *i*, the purpose of which will be better understood after the description of the bolt-case. This case (shown as inclosing the locking-bolt in Fig. 1) is cast in two halves *k* and *l*, which are riveted together and have a taper corresponding to the interior of the thimble A. The lower half *k* (illustrated in Fig. 5) is recessed to correspond to similar recesses in the upper half *l* (shown in Fig. 6) for the reception of the bolt E. The ends *m m* are fitted closely enough together to encircle snugly the protruding stump end of the bolt, while the ends *n n* unite, so as to cover the other end entirely, leaving only a key-hole. Ribs *o* and *p* form, when brought together, a butting-ring, which fits around the shank of the locking-bolt E between the flanges *h* and *i* and prevents any longitudinal motion of the bolt within the case. The rib *o*, besides, is cast in such a shape as to form a right-angled protuberance *r*, against the straight faces of which the ends of the semicircular flange *i* may alternately abut when the bolt E is revolved on its axis, thus limiting the movement to a quarter-revolution. In order to take advantage of this construction and insure the usefulness of the bolt E as a locking device, it is necessary to provide means for its keeping a set position, to which it may revert of itself if displaced. With this end in view we insert one end of a spring *s* through a hole in the bolt, as shown in Fig. 2, and after winding it around the shank attach the other end to the side of the lower half of the bolt-case.

The spring constantly tends to keep one end of the semicircular flange *i* in contact with the top surface of the protuberance *r*, and if by means of a key or through any cause the bolt is given a quarter-turn and the other end of the flange *i* forced against the vertical side of the protuberance the spring will recoil and bring the bolt as soon as relieved back to its former position.

10 The shaft or pin *g*, adapted to fit into the barrel of a key, can be given any desirable shape.

A washer or key-hole protector *t* (shown in Fig. 2) is slipped over the key-shaft, where it is kept in place by a small spiral spring *u*, for the purpose of warding off dust and moisture.

Having put all the parts together, the locking-bolt *E*, with its case, assumes the appearance shown in Fig. 1, where it is represented hanging by a chain to a staple on the flange of the thimble *C*, ready for use, the beveled edge of the case and the filled-in corner of the anterior thimble indicating the proper mode of insertion.

25 When a car has been loaded with freight or for some reason it is desired to lock it, the door (shown ajar in Fig. 1) is closed, and the thimbles, if properly set, correspond, as represented in Fig. 2. By inserting the locking-bolt *E* in the manner indicated by the beveled corners it will easily slip through these thimbles as far as the butting-flange *b*, against which the tapering end of the bolt-case is brought to bear. In the operation the stump *f* engages in the flange *b*, through which it revolves until it emerges out of the bore, giving the bolt a quarter-twist as it is shot through. As soon, however, as the stump is released, the tension of the spring *s* forces the bolt back to its former place, bringing the longer diameter of the stump across the lesser width of the bore, and thus locking the door. The lid *c* is then dropped, protecting and concealing all the parts, and a seal affixed over it through the staples *d d*, leaving the lock in such a shape that it cannot be tampered with without detection.

When it is desired to unlock the door, the seal is broken, the lid raised, and the key gently pressed against the washer *t* and the spring *u*, slipping over the pin *g*. Being given a quarter-turn, the key webs into the end of the bolt-case and easily withdraws the locking-bolt by revolving it, so as to cause the stump end to follow back the twist of the elliptical bore. Upon the key being disengaged the spring *u* reacts on the washer *t* and presses it back against the key-hole.

The mechanism just described is designed more particularly for sliding doors.

In the case of folding or swinging doors—such as are used, for instance, in refrigerator-cars—a slight modification of the above has to be resorted to. In that case we dispense

with the anterior thimble *C* and make the thimble *A* after the manner shown in Fig. 7, in which it is represented as split in two pieces, one part being attached to the door-case *B* and the other to the door *D*. In closing the door these two parts are united and form practically but one piece. The locking-bolt *E*, being provided with a collar or flange *v*, presses against a corresponding shoulder in the thimble *A* on one side, while the stump *f* lies across the other side at a right angle with the longer diameter of the bore, and thus fastens the door as securely as by the former method.

It is evident that the locking-bolt could always be provided with a collar or flange adapted to rest against a shoulder in one of the thimbles, but in the case of sliding doors it is deemed unnecessary. Numerous other changes could be effected in the mechanism without departing from the spirit of our invention, and therefore we do not wish to limit ourselves to the precise mode of construction or the exact arrangement of the different parts set forth.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a lock, of a thimble having a twisted elliptical bore, a locking-bolt adapted to be shot through said bore, an elongated stump on the inner end of said bolt, and a spring to set the longer diameter of said stump across the lesser breadth of said bore, substantially as set forth.

2. The combination, in a lock, of two corresponding thimbles, a locking-bolt engaging the same, and a lid covering the outer end of said bolt and said thimbles, substantially as and for the purpose set forth.

3. The combination, in a lock, of a locking-bolt, a case inclosing and confining the same, and corresponding thimbles adapted to be engaged by said bolt and case, substantially as described.

4. The combination, in a lock, of the bolt *E*, the flange *h*, the semicircular flange *i*, the corresponding half-cases *k* and *l*, the ribs *p* and *o*, the protuberance *r*, the end flanges *m* and *n*, and the spring *s*, substantially as and for the purpose described.

5. The combination of a locking-bolt, a key-shaft at one end thereof, a key-hole shutter adapted to slide along said shaft, a spring acting upon said shutter, a case inclosing and confining the above parts, and thimbles arranged for the reception of said case, substantially as and for the purposes set forth.

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