

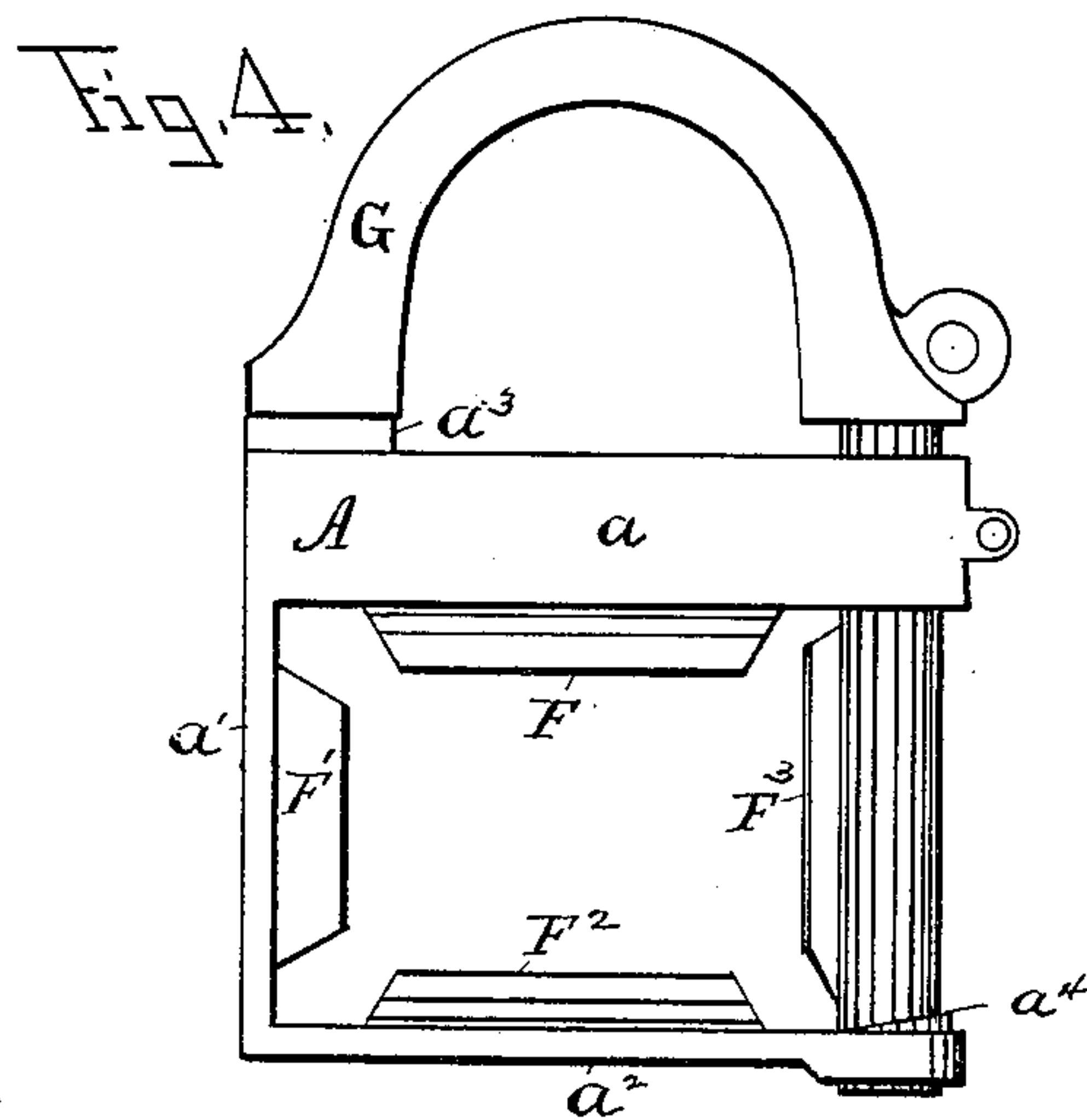
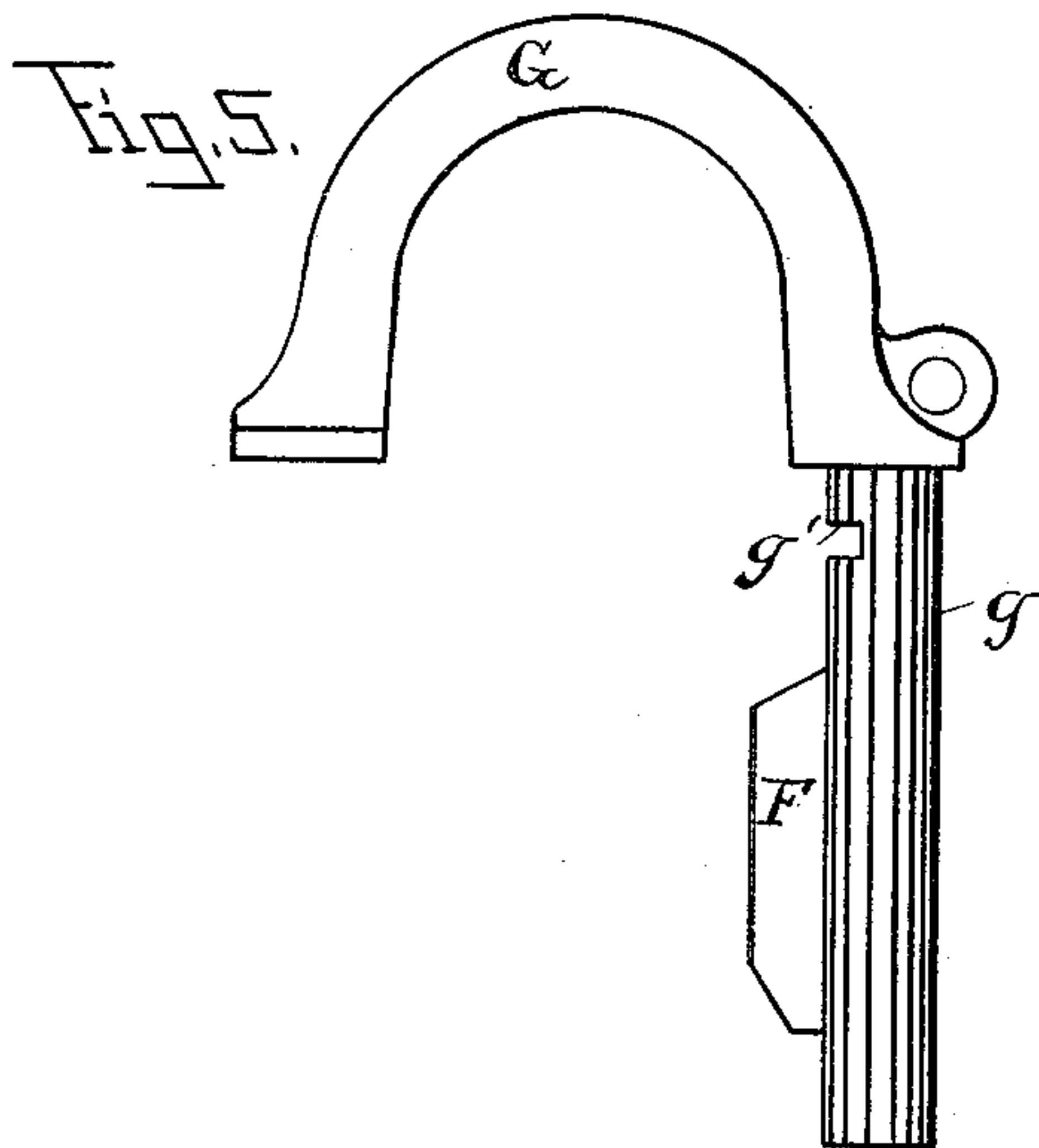
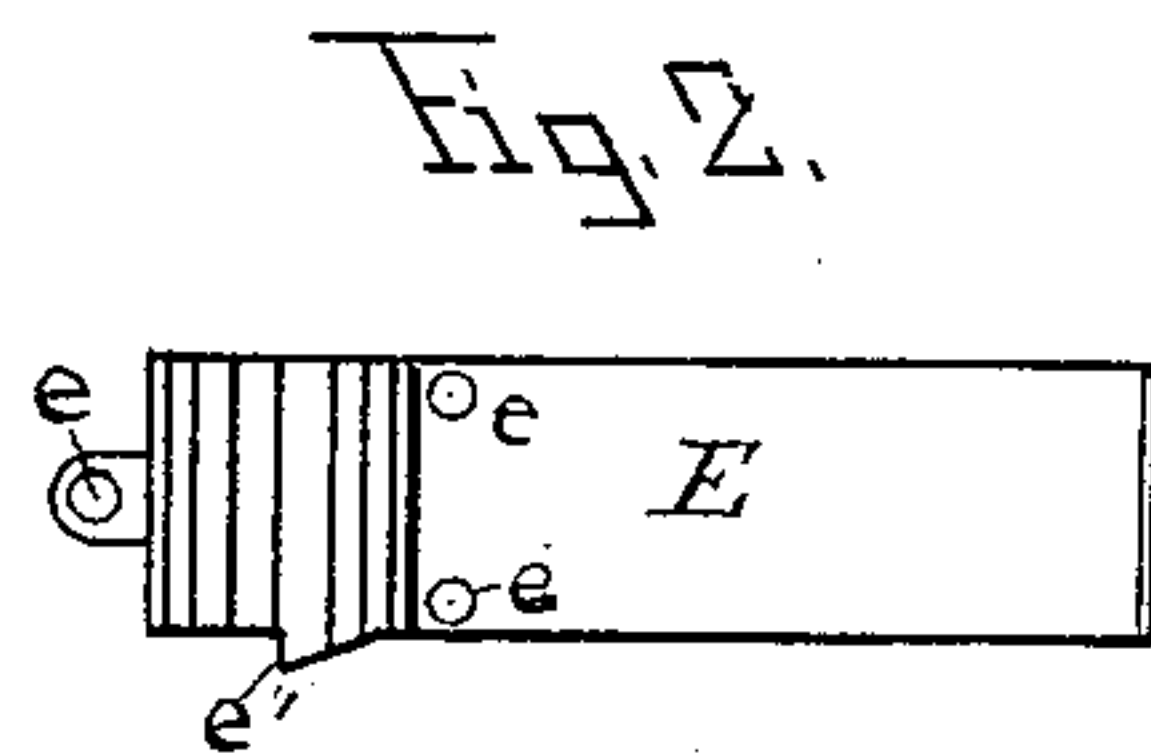
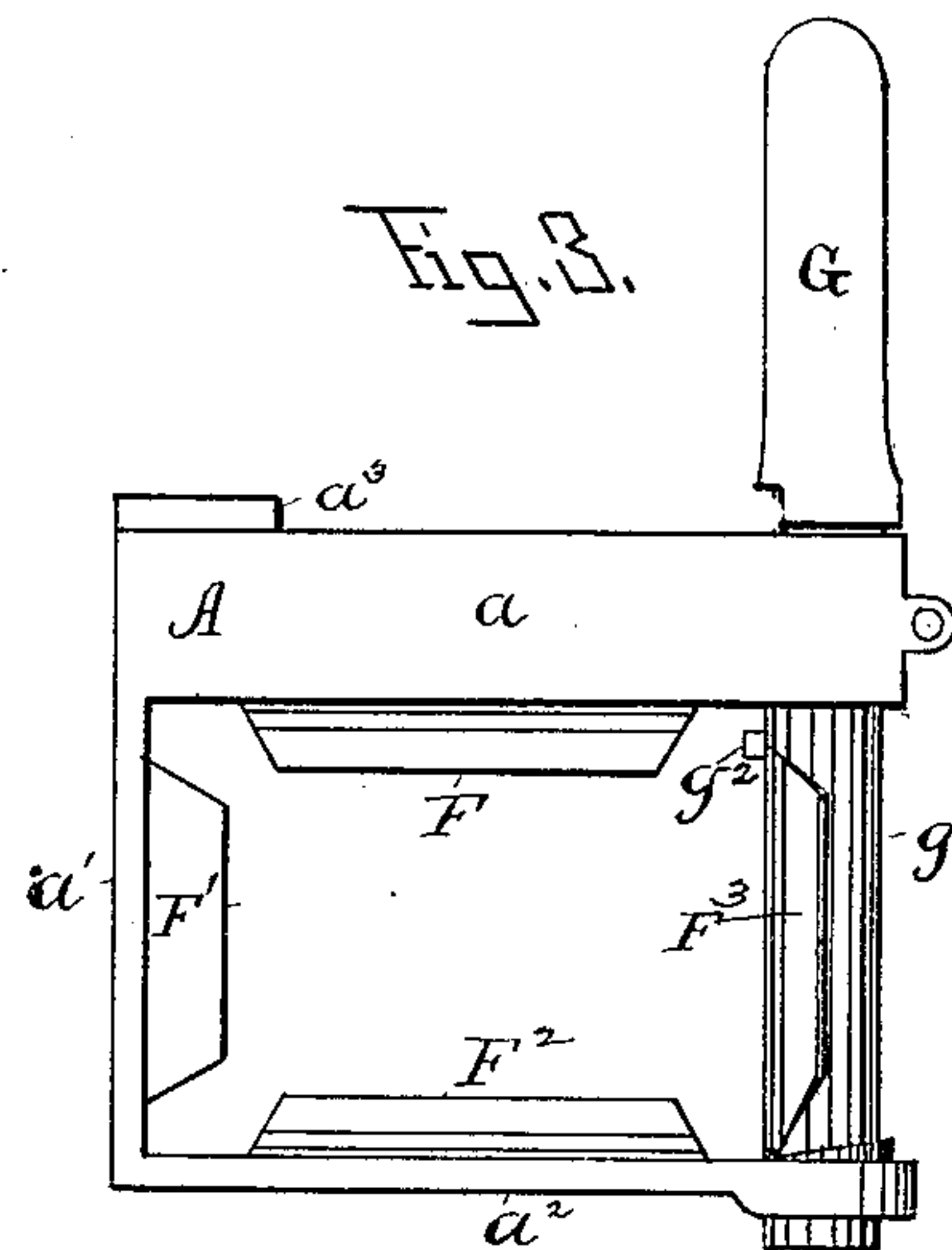
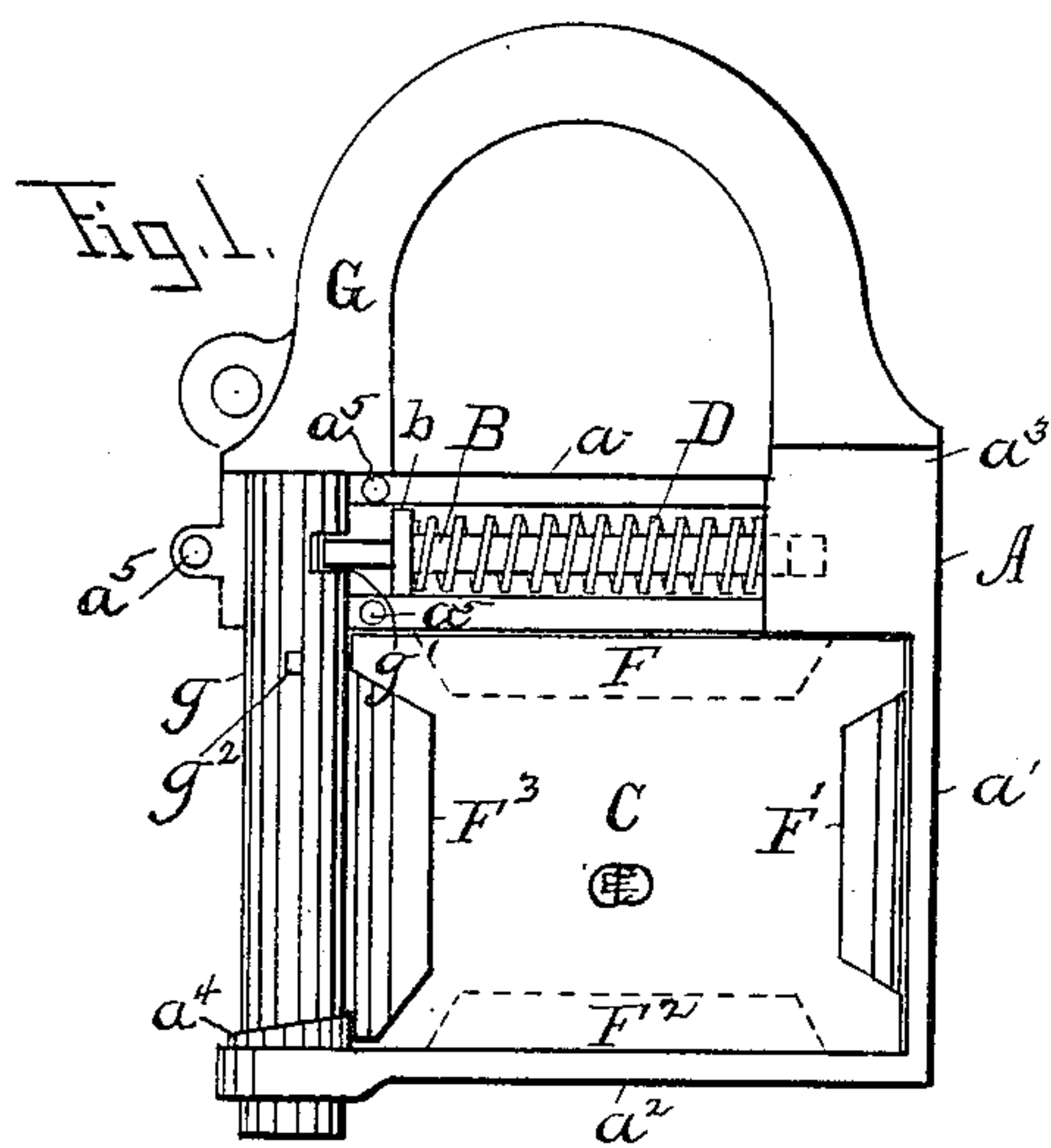
(Model.)

C. E. DAVIS.

SEAL LOCK.

No. 362,823.

Patented May 10, 1887.



WITNESSES:
E. L. Thurston
Chas. H. Curtis.

INVENTOR:
Charles E. Davis
by Hill & Dixon
his Attorneys

UNITED STATES PATENT OFFICE.

CHARLES E. DAVIS, OF CHICAGO, ILLINOIS.

SEAL-LOCK.

SPECIFICATION forming part of Letters Patent No. 362,823, dated May 10, 1887.

Application filed February 2, 1887. Serial No. 226,209. (Model.)

To all whom it may concern:

Be it known that I, CHARLES E. DAVIS, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Seal-Locks, of which the following is a description, reference being had to the accompanying drawings, in which—

Figure 1 is a front view of the lock with the cover of the spring-bolt cavity removed. Fig.
10 2 is a view of said cover. Fig. 3 is a back view of the lock with the shackle revolved one-quarter of its sweep. Fig. 4 is a back view with the shackle revolved nearly to the position where it can be locked. Fig. 5 is a
15 detached view of the shackle.

My invention relates to that class of seal-locks which are designed especially for use on railway freight-cars, and in which a frangible seal must be broken before the lock can be
20 opened.

The object is to provide a lock which shall be very simple and durable, into which snow, ice, or other foreign matter cannot lodge to obstruct its operation, in which the seal will
25 fall clear of the lock when broken, and in which the opening of the lock breaks the seal.

To this end it consists in the construction and combination of parts herein described, and pointed out definitely in the claims.

30 As illustrated in the drawings, A represents the lock-frame or skeleton, which consists of three arms, a a' a'' , lying substantially at right angles to each other, thereby forming three sides of the seal-recess. One of the horizon-
35 tal arms, preferably the upper one, a , is hollow, as shown in Fig. 1, and in this cavity a sliding spring-bolt, B, is located. This bolt is preferably actuated by a coiled spring, D, which surrounds said bolt, and thrusts against
40 the rear end of the cavity at one end and against the shoulder b on the bolt B at the other end, so that said bolt is under a pressure forward at all times.

E represents the cover of the bolt-cavity,
45 which completely incloses the space, and is held in place by pins a^5 on the case, which pass through the holes e in the cover, or in any appropriate manner.

G represents the shackle, which is provided
50 with an arm, g , extending downward from one end of said shackle. Bearings are provided

in the end of the arm a'' , and between the arm a and its cover E, in which bearings cylindrical parts of the arm g are adapted to revolve. A transverse slot, g' , is provided in said arm
55 g , and so placed that when the shackle is closed, as in Fig. 1, the end of the spring-bolt B enters said slot and prevents any up-and-down motion of the shackle-arm g in its bearings, although it does not in any way interfere
60 with the revolution of said shackle-arm g .

On the upper front edge of the arm a , near the point where said arm connects with the arm a' , a shoulder, a^3 , is raised and adapted to engage with the free end of the shackle G.
65 When locked by the spring-bolt B in the position shown in Fig. 1, this shoulder a^3 prevents the shackle from revolving in one direction, and only permits it to revolve so that its free end swings away from said shoulder.
70

Projecting into the seal-recess from the arms a a' a'' are the lugs or flanges F F' F'' , and from the shackle-arm g the lug or flange F^3 . The flanges F and F'' project from the back edge of the case and the flange F' from the front edge
75 of the case, the flange F^3 lying in the plane of the latter. If vertical planes be extended through the flanges F and F'' and F' and F^3 , a space of about an eighth of an inch thick lies between them.
80

C represents a frangible seal which, in its preferable construction, consists of glass coated on its back by a self-luminous paint to render it visible at night, and having a monogram or other device molded on the glass to
85 prevent counterfeiting. This seal fits within the seal-recess between the arms a a' a'' and the arm g' , and it is retained in place by the flanges F , F' , F'' , and F^3 , the two former of which lie behind and the two latter in front of
90 said seal, and cannot be removed when the shackle is in the position shown in Fig. 1.

The operation of the device is as follows, supposing the seal to be locked in place, as described, and shown in Fig. 1: The shackle
95 is revolved, its free end moving away from contact with the shoulder a^3 . This forces the lug F^3 against the glass and necessarily breaks it, and since there is nothing to sustain the broken glass it falls to the ground, so there is
100 no danger of the operator cutting his hand. When the shackle has been revolved about a

quarter of a revolution, the bolt B has been forced back out of engagement with the slot g' , and the shackle can be pulled upward in its bearings until the free end can pass above the shoulder a^3 . The seal is placed in position when the shackle is in the position shown in Fig. 3, and the shackle is revolved until the free end has passed the shoulder a^3 , when it is pressed downward. The bolt B springs into the slot g' , and the seal is locked in place. It cannot be removed nor can the lock be opened without breaking said seal, as above described.

As additional improvements to the above-described lock, I provide means whereby the shackle G may be forced upward by its own revolution, so that the free end shall pass the shoulder a^3 , and also means whereby the further revolution of the shackle will be prevented when it shall have arrived at the position to be pressed downward and locked. These means in their preferable form, and located at what I consider the most convenient position, are shown in the drawings. Upon the upper side of the arm a^2 , and nearly surrounding the arm g , is an annular inclined flange, a^4 . The lug F' is so arranged that as soon as, in the revolution of the arm g , the bolt B has been forced out of engagement with the slot g' , its lower edge strikes the inclined flange, and as the revolution is continued the shackle is forced upward until the free end can clear the shoulder a^3 , as shown in Fig. 4. When this free end has passed the said shoulder, a lug, g^2 , on the arm g , (which may or may not be a part of the flange F^3), strikes against the shoulder e' on the arm, (preferably on the cover part E thereof,) and any further revolution which might accidentally break the glass seal is checked. When the shackle is pushed downward, the lug g^2 no longer engages with the shoulder e' , and the parts are free to operate, as above explained.

I do not limit myself to the precise form of the last-explained part, nor to the precise location thereof, as shown, because it is evident that the lug g^2 and shoulder e' could be arranged at the foot of the arm g and the under side of the arm a^2 , and at other places.

The advantages of this form of lock are numerous. It is very simple and cheap. It consists of but five pieces, of which all except the spring may be cast in the form shown, and are all ready to be put together without drilling or other machine-work. Fig. 1 indicates that a hole has been drilled in the arm a , into which the rear end of the spring-bolt B passes. This, however, is unnecessary to the successful operation of the device, its purpose being merely to give a little more steadiness to the bolt in sliding. The snow and ice cannot get at the locking mechanism, and, indeed, there is no place where snow and ice or other foreign matter can find a lodgment or impede in any way the working of the device. There is no place for the broken glass to lodge and be liable to cut the fingers of the operator, nor is the oper-

ator obliged to put his fingers into the seal-recess to open the lock, as in other devices. It is so constructed that an operator can open the lock in cold weather as well with his mittens or gloves on as with them off.

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

1. In a seal-lock, the combination of a lock-frame, a revolving shackle, which is permitted to revolve from its closed position in one direction only, with a frangible seal, and means whereby the revolution of said shackle necessarily breaks the seal, substantially as and for the purpose specified.

2. In a seal-lock, the combination of the following parts, to wit: a frame having three arms, one of which is provided with a spring-bolt cavity, bearings in the free ends of two of said arms, a shackle having one arm extended and adapted to revolve in said bearings, a transverse slot in said extended arm, a spring-bolt, a frangible seal, and means for preventing the revolution of the shackle in more than one direction, substantially as and for the purpose specified.

3. In a seal-lock, the combination of a frame having three arms, a bolt-cavity in one arm, a cover for said cavity, bearings in the free ends of two arms, a shackle having one arm extended and adapted to revolve in said bearings, a transverse slot in said extended arm, a spring-bolt, a frangible seal, and means for preventing the revolution of the shackle in more than one direction, substantially as and for the purpose specified.

4. In a seal-lock, the combination of a lock-frame having three arms which form sides of a seal-recess, a revolving shackle having an extended arm which forms the remaining side thereof, and means, substantially as described, for preventing said shackle from revolving in more than one direction and from moving up from its closed position, and a frangible seal with lugs on said arms, and an inclined annular flange on the lock-frame surrounding the shackle-arm, substantially as and for the purpose set forth.

5. In a seal-lock, the combination of a lock-frame consisting of three arms forming three sides of a seal-recess, a revolving shackle with an extended arm forming the fourth side thereof, and means for preventing the revolution of said shackle in more than one direction from its closed position, with a frangible seal and means for retaining the seal in the seal-recess, and a lug on the extended shackle-arm adapted to engage a shoulder on an arm of the lock-frame, substantially as and for the purpose specified.

6. In a seal-lock, the combination of a lock-frame and a revolving shackle having an extended arm, and means for holding a seal in the space between said frame and shackle-arm, with the shoulders a^3 and e' and lug g^2 , which permit the shackle to revolve only in one di-

rection from its locked position and to make only one complete revolution before it must be again locked, substantially as and for the purpose specified.

- 5 7. In a seal-lock, the combination of a lock-frame, a spring-bolt operating in a cavity in one arm thereof, a revolving shackle having one arm extended, and a transverse slot in said

extended arm, with the shoulder a^3 , the annular inclined flange a^4 , and the lugs F, F', F², 10 and F³, substantially as and for the purpose set forth.

CHS. E. DAVIS.

Witnesses:

E. L. THURSTON,
J. H. NELSON.