

No. 627,149.

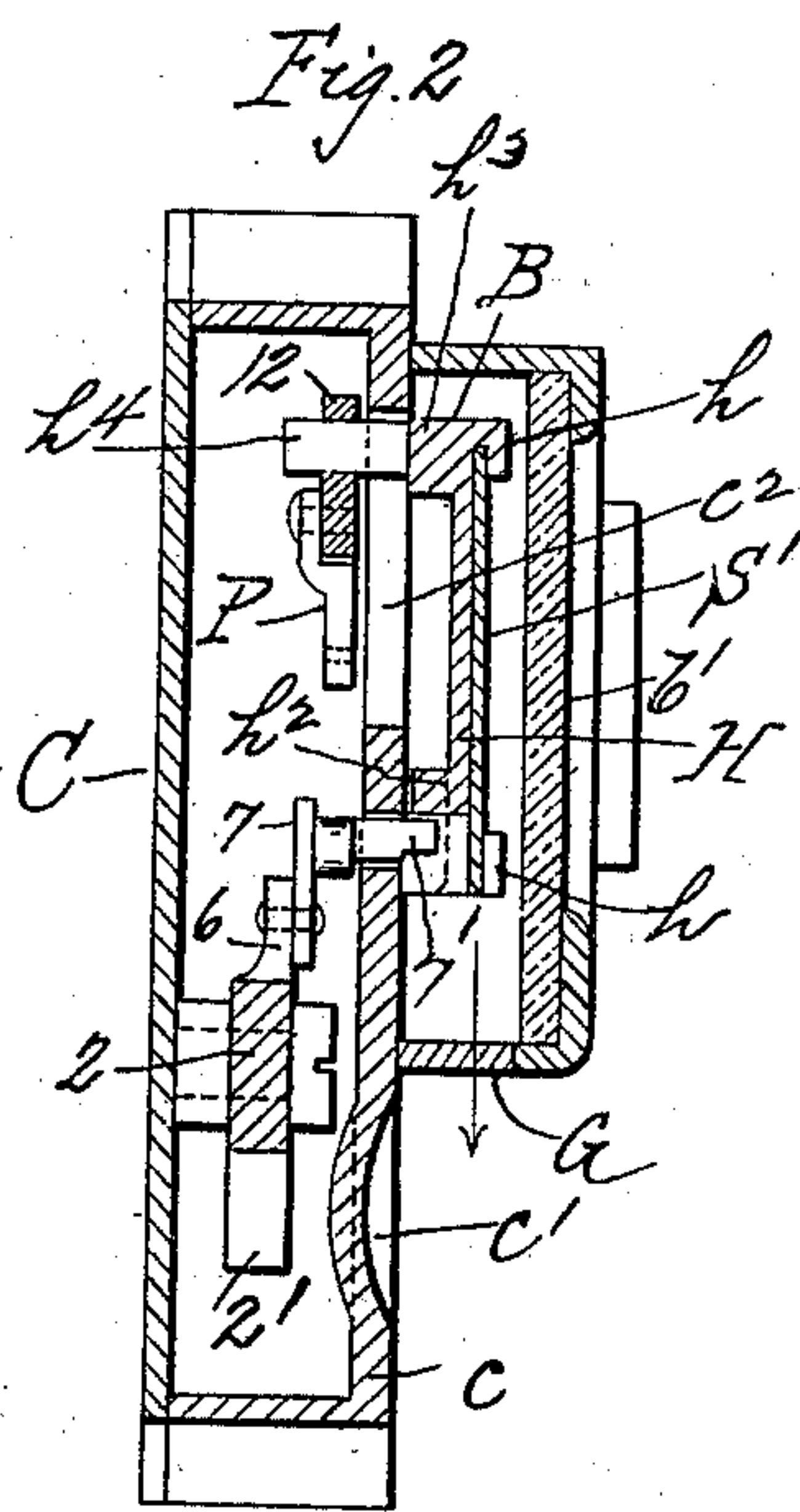
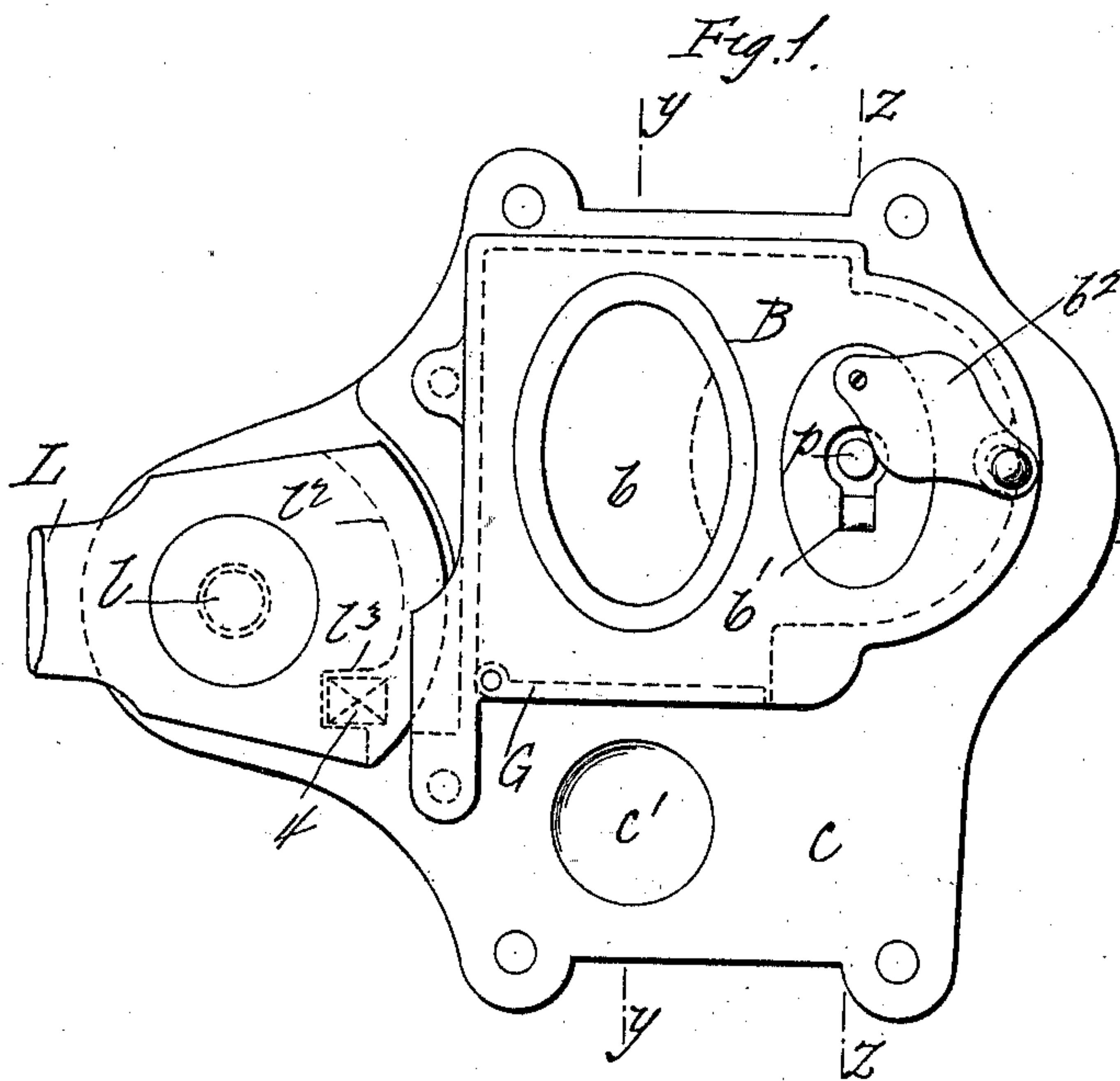
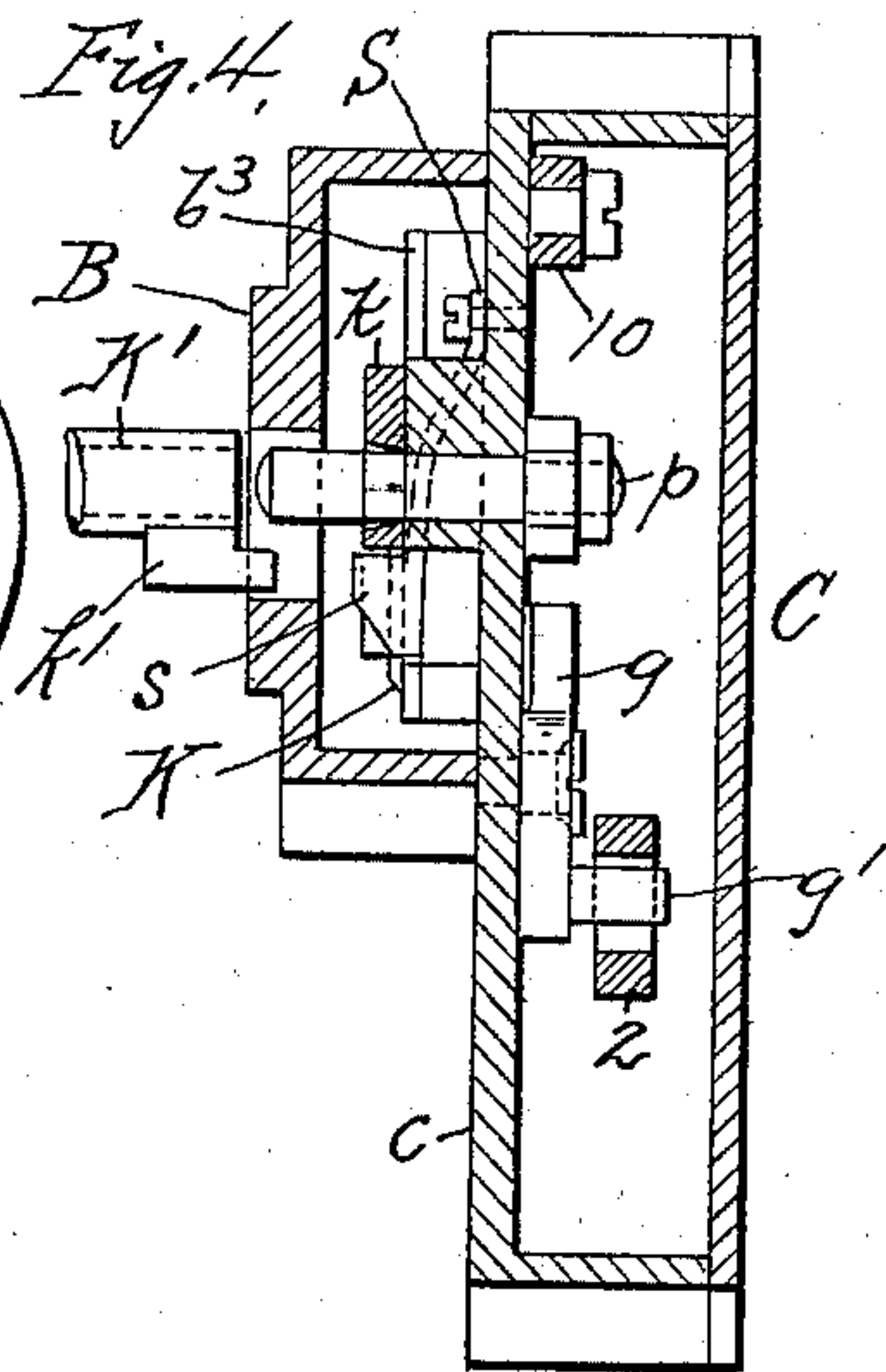
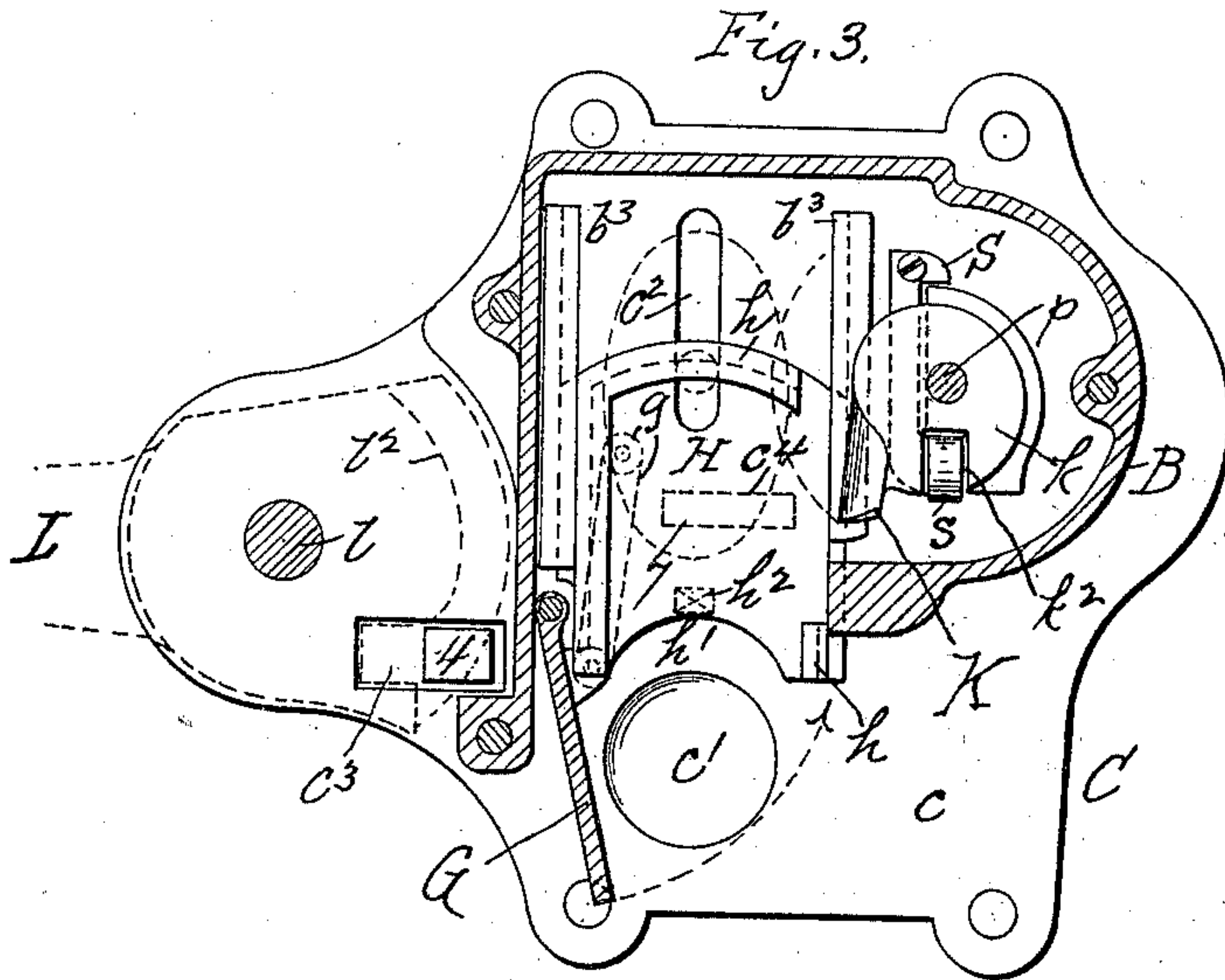
Patented June 20, 1899.

C. STEFÁN.
SEAL LOCK.

(Application filed June 28, 1897.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses.
B. H. L. L.
B. H. L. L.

Inventor.
Solomon Stefán.
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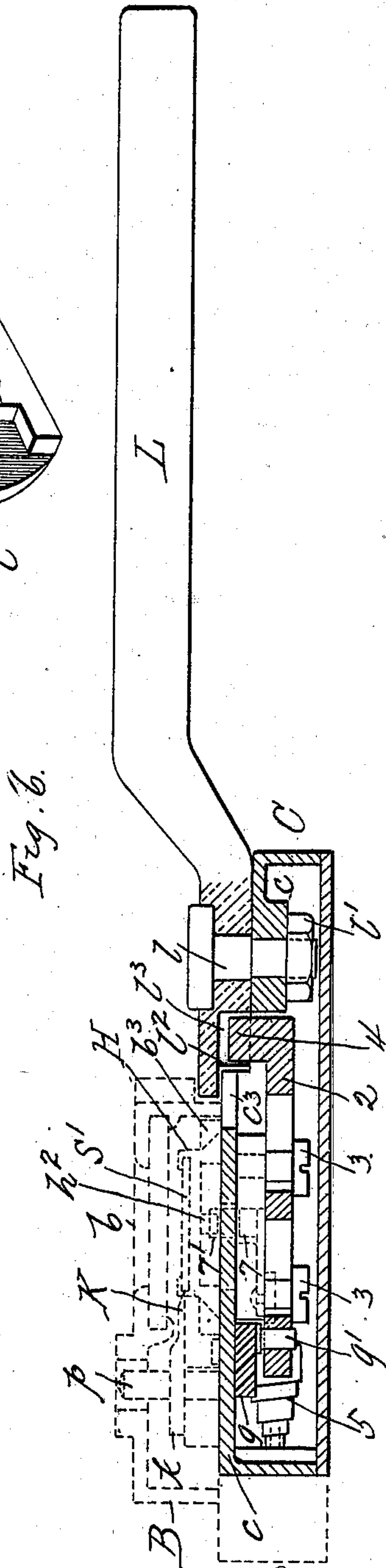
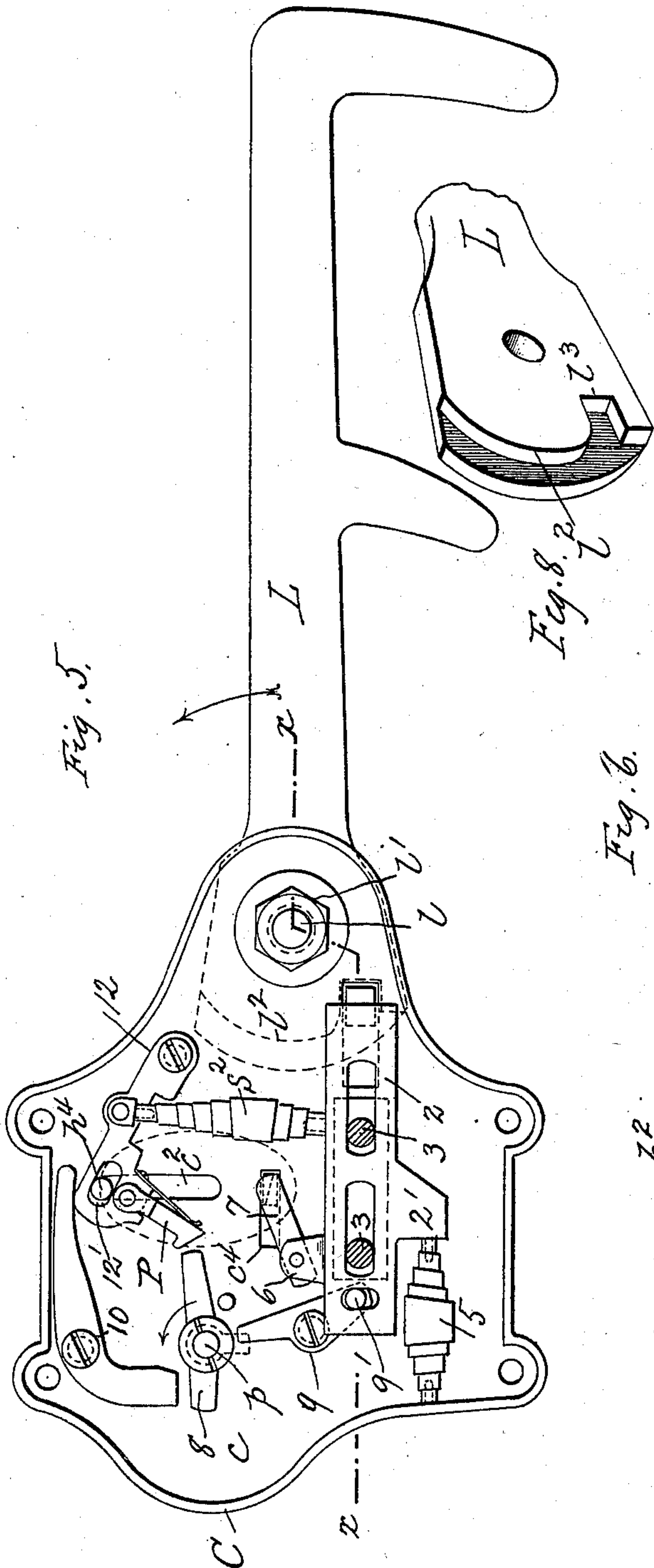
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(No Model.)

3 Sheets—Sheet 2.



Witnesses
Attest.
O. Sommers

Inventor.
Coloman Stefân
by [Signature] atty.

No. 627,149.

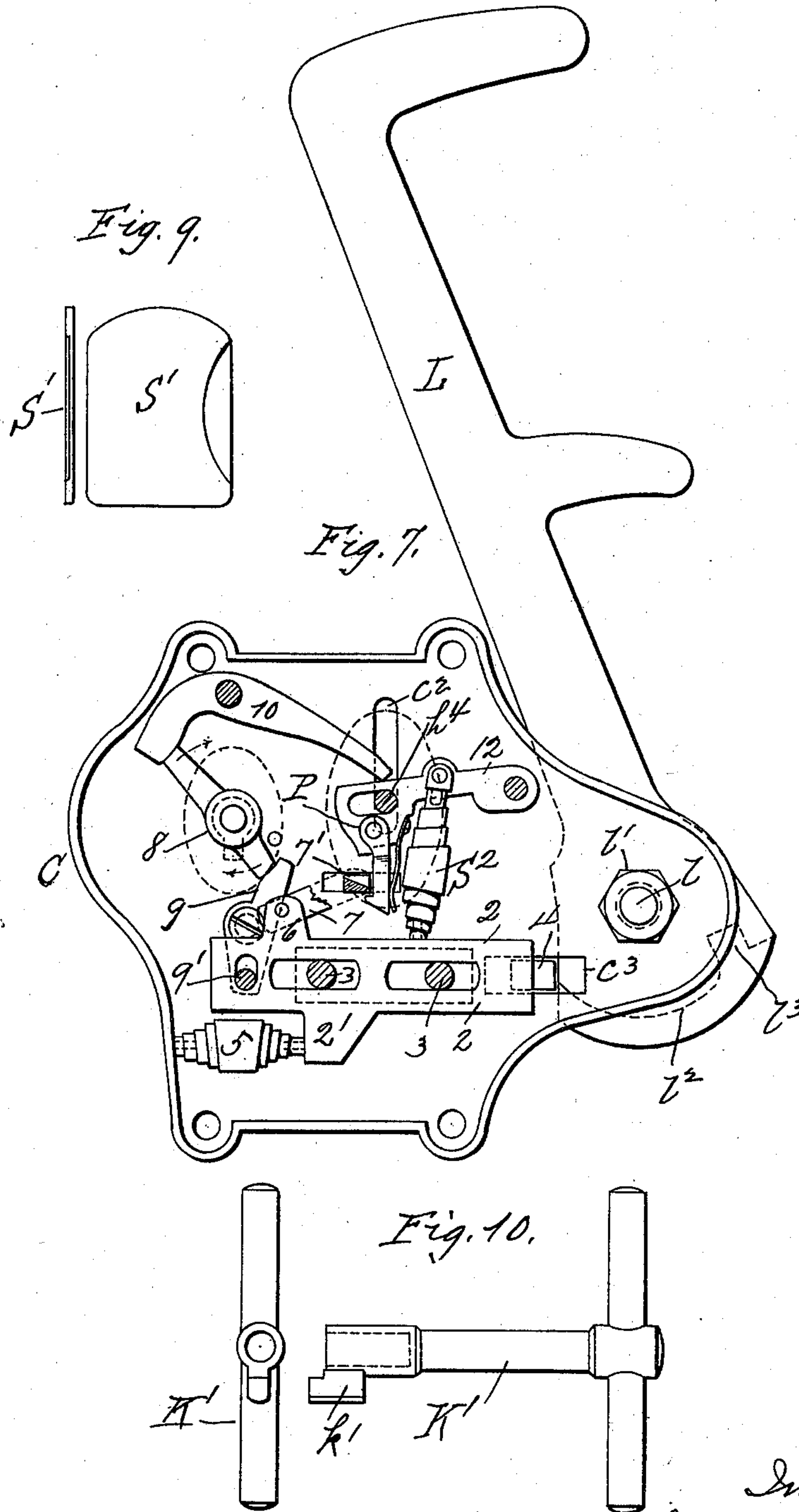
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(Application filed June 28, 1897.)

(No Model.)

3 Sheets—Sheet 3.



Witnesses
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UNITED STATES PATENT OFFICE.

COLOMAN STEFÁN, OF VIENNA, AUSTRIA-HUNGARY.

SEAL-LOCK.

SPECIFICATION forming part of Letters Patent No. 627,149, dated June 20, 1899.

Application filed June 28, 1897. Serial No. 642,694. (No model.)

To all whom it may concern:

Be it known that I, COLOMAN STEFÁN, a subject of the Emperor of Austria-Hungary, residing at Vienna, in the Province of Lower Austria, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Safety-Locks, (for which Letters Patent have been granted in Austria, dated June 24, 1896, registered Vol. XLVI, Fol. 2,547; in Hungary, dated May 31, 1896, No. 6,784; in Germany, dated March 31, 1896, No. 90,140; in France, dated July 24, 1896, No. 258,339, and in England, No. 14,029, dated June 8, 1897, accepted August 7, 1897;) and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

This invention has relation to seal-locks; and it has for its object the provision of means whereby the opening of the seal-box and the projecting therefrom of the seal-holder are effected by key-operated appliances when the locking-bolt is withdrawn from its keeper and whereby the seal-holder is automatically returned into its box and the latter closed when said bolt moves into engagement with its keeper.

The invention has for its further object the provision of means whereby on the withdrawal of the locking-bolt from its keeper and therethrough the opening of the seal-box and the projection therefrom of the seal-holder the seal is simultaneously mutilated.

In the accompanying drawings I have shown my improved seal-lock constructed for use on railway-cars, the lock-bolt instead of engaging an ordinary keeper engaging a locking-lever, which latter engages a keeper on the body of the car when the lock is secured to a car-door, or a keeper on such door when the lock is secured to the car-body, or to one of a pair of double doors, as the case may be.

In the aforesaid drawings, Figure 1 is a front elevation of the lock, the locking-lever being broken away. Fig. 2 is a vertical cross-section taken about on line *yy* of Fig. 1. Fig.

3 is a view similar to Fig. 1, the seal-box being shown in vertical section and a part of the locking-lever in dotted lines. Fig. 4 is a vertical cross-section taken about on line *zz* of Fig. 1. Fig. 5 is a rear elevation of the lock, the rear plate being removed and showing the mechanisms in their positions when the bolt is in engagement with the locking-lever. Fig. 6 is a longitudinal sectional view taken about on the irregular line *xx* of Fig. 5. Fig. 7 is a view similar to Fig. 5, showing the mechanisms in their relative positions when the lock-bolt is held out of engagement with the locking-lever, which latter is shown as turned up, presumably out of engagement with its keeper. Fig. 8 is a perspective view of the rear end of the locking-lever. Fig. 9 shows by a face and edge view a mutilated seal, and Fig. 10 shows by a side and end view the key for the lock.

In Figs. 1 to 7 of the above-described figures of the drawings, C indicates the lock-case, to the front plate *c* of which is secured a seal-box B, that has a glass-faced opening *b*, the keyhole *b'*, adapted to be closed by a guard-plate *b²*, pivoted to the box B above the keyhole, and below said box the front plate *c* of the lock-case has a recess *c'* for one of the fingers to facilitate the introduction of a seal into the seal-holder or the removal of such seal therefrom. Within the seal-box B are two vertical parallel-grooved guide-ribs *b³*, in the grooves of which the seal-holder H has sliding motion.

The seal-holder H consists of a plate provided with overhanging edge flanges *h* on three sides, forming a grooved framing for the reception of the seal *S'*, Fig. 9. On the guide stud or pin *p* for the key *K'*, Fig. 10, is secured a knife-holder *k*, on which is formed or to which is secured a knife *K*, wedge-shaped or prismatic in cross-section. In the knife-holder *k* is formed a slot *k²*, in which lies a projection or lug *s* on the free end of a spring *S*, secured to the front plate *c* of the lock-case C within the seal-box B.

In the front plate *c* of the lock-case C and centrally between the parallel guides *b³* for the seal-holder H is formed a vertical slot *c²*, and the said seal-holder has in its lower edge a concave recess *h'* to facilitate the taking hold

of the seal for its introduction into or removal from the holder and on a line with the vertical slot c^2 in the front plate c of the lock-case C above referred to, and at its lower edge said seal-holder has a lug or shoulder h^2 on its back (shown in dotted lines in Fig. 3 and in full lines in Fig. 2) for locking the holder against motion in the seal-box, as hereinafter described, said lug or shoulder, together with a similar rib or shoulder h^3 , Fig. 2, serving also to guide the seal-holder on the front plate c of the lock-case in proper position relatively to the vertical guides in the seal-box and the knife, and from said projection h^3 a stud or pin h^4 extends through the vertical slot c^2 above mentioned, for purposes presently to be explained.

As shown in Fig. 3, the grooved guide b^3 for the seal-holder H on the side of the key stud or pin p is cut away, as is also the grooved framing on the seal-holder, so as to permit the knife when revolved by the key to penetrate edgewise into the seal or controlling-card S' and cut out a portion thereof, as shown in Fig. 9.

The open lower end of the seal-box B is closed by a gate G, hinged on a pintle within the said box and provided with a lug or ear near its hinged connection, to which is pivoted one end of a link g , whose opposite end is pivoted to the rear face of the seal-holder H, as shown in dotted lines in Fig. 3, so that as said holder is raised or lowered, as hereinafter described, the gate G will be automatically opened or closed.

As hereinbefore stated, the keeper for the lock-bolt is a locking-lever adapted to engage a keeper of any suitable kind on a car. This lever L is pivoted to the front plate c of the lock-case C through the medium of a headed pivot-pin l , screw-threaded at its inner end for a nut l' within the lock-case C, Figs. 5, 6, and 7. The rear end of the lever L is enlarged and made tapering outwardly, the rear edge being arcuate, the arc having for center the axis of rotation of the pivot-pin l , a similar offset or shoulder l^2 being formed near said arcuate edge, which shoulder merges into a longitudinal recess l^3 .

The lock-bolt 2 has sliding motion within the lock-case on two pins 3, extending into slots in said bolt, the latter having at its forward end a locking-nose 4, formed at right angles to the bolt and adapted to engage the recess l^3 in the locking-lever L above referred to, said locking-nose projecting through a longitudinal slot c^3 in the front plate c of the lock-case C, Fig. 6. A spring 5, acting upon a projection $2'$ from the bolt 2, holds the nose 4 thereof in engagement with the recess l^3 at the rear end of the locking-lever L. From the upper face of the lock-bolt 2 projects a lug 6, to which is pivoted a stop-lever 7, that has at its free end a nose $7'$ at right angles thereto, which projects through a transverse slot c^4 in the front plate c of the lock-case C,

which nose when the seal-holder is in its normal position lies beneath the shoulder h^2 of said holder, and thus locks it in position, as more clearly shown in Fig. 2.

On the key stud or pin p is secured a bolt-actuating dog 8, so that when the key K' is inserted into the keyhole its bit k' will push the nose or lug s on the spring S out of the slot or notch k^2 in the knife-holder and engage said slot, so that on turning the key in the proper direction the dog 8 is likewise turned. This dog 8 is a two-armed one, the shorter arm acting upon the longer arm of a lever 9, whose shorter arm has a pin $9'$, that projects into a slot in the rear end of the lock-bolt 2. The longer arm of dog 8 acts upon the short arm of an angle-lever 10, whose longer arm has bearing on a lever 12, provided with a longitudinal slot $12'$.

As hereinbefore stated, the seal-holder H has near its upper edge a boss or shoulder h^3 , from which projects a pin or stud h^4 , that extends through a vertical slot c^2 in the front plate c of the lock-case, said pin h^4 extending also into a slot $12'$ in lever 12, a spring S^2 , connected with the lock-bolt 2 and with said lever, tending to hold the same in a normal elevated position, Fig. 5, thus supporting the seal-holder H also in its normal position within the seal-box B.

To the lever 12 is pivoted a spring-controlled pawl P, adapted to engage the nose $7'$ on lever 7 when lever 12 is depressed in opening the lock.

The operation of the lock may be briefly described as follows: The lock mechanism being in the position shown in Fig. 5, the seal-box B being closed and the seal-holder supported from the lever 12 and the nose $7'$ of lever 7, said nose lying beneath the boss or rib h^3 on the back of the seal-holder H, as shown in Fig. 2, the key K' being inserted into the keyhole and onto the guide-pin p the bit k' on said key will push the lug or nose s on the spring S out of the slot k^2 in the knife-holder k . Upon turning the key in the proper direction, Figs. 1 and 3, the knife-holder k , as well as the dog 8, will be turned, the knife cutting a slice from the seal or controlling-card. At the same time the short arm of the dog 8 acts upon the arm of lever 9, which latter will move the bolt 2 against the stress of its spring 5 out of the notch l^3 in the rear end of the locking-lever L, which may now be turned up from the position shown in Fig. 5 to the position shown in Fig. 7, the offset or shoulder l^2 on said lever sliding along the locking-nose of the bolt 2 until said nose bears upon the upper edge of said lever, where by the bolt is held against forward movement. As the lock-bolt is drawn back the lever 7 is likewise drawn back, thereby moving its nose $7'$ from under the shoulder h^2 on the seal-holder H. Simultaneously with these operations the longer arm of dog 8 acting upon the shorter arm of angle-lever 10 causes the longer

arm thereof to depress the lever 12 against the stress of its spring S^2 , and as the seal-holder H is supported from said lever 12 and now free to move down by the withdrawal of the lock-nose 7' on lever 7 from under the shoulder h^2 on said holder the latter will also move down, and inasmuch as the gate G, which closes the lower end of the seal-box B, is linked to the holder H, the said gate is opened simultaneously, as shown in Fig. 3. As the lever 12 is about to reach the limit of its downward movement the inclined under face of the pawl P rides over the locking-nose 7' on lever 7 and under the action of its spring said pawl engages the said nose, Fig. 7, thus locking the seal-holder projecting from the open end of the seal-box against movement, so that the mutilated seal can be removed and a fresh seal introduced. If now the locking-lever L is turned down into its operative position, Fig. 5, the bolt 2 will be projected by its spiral spring 5 into the notch or recess l^3 in said lever, and in this movement of the bolt the lever 9 is tilted, thereby tilting dog 8 and releasing lever 10. At the same time the lever 7 is moved forward, thereby pushing aside the pawl P, so that under the action of the spring S^2 on lever 12 the seal-holder is moved back into the seal-box and the gate thereof closed, while the nose 7' on lever 7 will have moved under the shoulder h^2 on the back of the seal-holder, thus again locking the same in position, the knife-holder K being likewise returned to its normal position and will be locked against motion by spring S.

From the relative arrangement of the levers 9 and 10 and dog 8 on the key stud or pin p it will be readily seen that before said levers can be acted upon by the dog it is necessary to impart to the latter about half a revolution, so that the knife K, which is acted upon by the bit k' of the key, has completed its cut a little before or about the time said levers are acted upon by said dog 8.

It is obvious that a lock constructed as described cannot be tampered with without detection, since the bolt 2 cannot be moved out of engagement with its keeper without at the same time turning the knife K and mutilating the seal.

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

1. In a lock such as described, the combination with the key-operated lock-bolt, the lock-case, a seal-box thereon and a seal-holder in said box; of key-operated mechanism for displacing the lock-bolt and moving the seal-holder partly out of its box, and means likewise operated by the key for mutilating the seal in the holder before the latter is moved partly out of its box, for the purpose set forth.

2. In a lock such as described, the combination with a spring-actuated bolt, the lock-case, a seal-box thereon and a seal-holder in said box; of key-operated mechanism for moving the lock-bolt against the stress of its

spring and for moving the seal-holder partly out of its box, said mechanism organized to move the holder back into its box under the action of the spring on the lock-bolt, and means for automatically mutilating the seal before the holder is moved partly out of its box, for the purpose set forth.

3. In a lock such as described, the lock-case, a seal-box thereon, open at one end, a seal-holder therein and a gate for closing the open end of said box; in combination with the lock-bolt and key-operated mechanism for displacing the lock-bolt, opening the gate of the seal-box and moving the seal-holder partly out of said box, for the purpose set forth.

4. In a lock such as described, the lock-case, a seal-box thereon open at one end, a seal-holder therein and a gate for closing the open end of said box; in combination with the lock-bolt, key-operated mechanism for displacing said bolt, opening the gate of the seal and moving the seal-holder partly out of its box, and means for locking said bolt, gate and holder against motion, for the purpose set forth.

5. In a lock such as described, the lock-case, a seal-box thereon, open at one end, a seal-holder therein, and a gate for closing the open end of said box; in combination with the lock-bolt, means operated by the key and arranged relatively to the seal-holder to mutilate the seal held thereby, and mechanism likewise operated by the key for displacing the bolt, opening the gate of the seal-box, and moving the seal-holder partly out of said box, for the purpose set forth.

6. In a lock such as described, the lock-case, a seal-box thereon open at one end, a seal-holder therein, and a gate for closing the open end of said box; in combination with the lock-bolt, a key-operated knife arranged relatively to the seal-holder to mutilate the seal held thereby, and mechanism likewise operated by the key for displacing the lock-bolt, opening the gate of the seal-box and moving the seal-holder partly out of said box, for the purpose set forth.

7. In a lock such as described, the lock-case, a seal-box thereon open at one end, a seal-holder therein, and a gate for closing the open end of said box; in combination with a key-operated revoluble knife, a key-operated locking device for locking the knife against revolution, the lock-bolt, and mechanism likewise operated by the key for displacing said bolt, opening the gate of the seal-box and moving the seal-holder partly out of said box, for the purpose set forth.

8. In a lock such as described, the lock-case, a seal-box thereon open at one end, a seal-holder therein, and a gate for closing the open end of said box; in combination with a spring-operated lock-bolt, and key-operated mechanism for moving said bolt against the stress of its spring, opening the gate of the seal-box, and moving the seal-holder partly out of said box, said mechanism organized to move the

seal-holder back into its box and close the gate when the lock-bolt is displaced by the stress of its spring, for the purpose set forth.

9. In a lock such as described, the lock-case, a spring and key operated lock-bolt having longitudinal motion in said case, and a locking-nose at one end projecting at right angles therefrom through a slot in the front plate of the lock-case; of a locking-lever fulcrumed to said front plate and provided with a sector-shaped inner end having a longitudinal recess in its inner face into which the locking-nose of the bolt is projected by the action of its spring, and an arcuate shoulder forward of the inner arcuate end of the bolt merging into said recess, for the purpose set forth.

10. In a lock such as described, the combination with the lock-bolt, the lock-case, a seal-box thereon open at one end, a seal-holder therein, a locking-lever pivoted to the lock-case and engaged by the lock-bolt, said locking-lever constructed to engage a suitable keeper; of key-operated mechanism for moving the lock-bolt out of engagement with the locking-lever, and the seal-holder partly out of its seal-box, for the purpose set forth.

11. In a lock such as described, the combination with the lock-bolt, the lock-case, a seal-box thereon open at one end, a seal-holder therein, a locking-lever pivoted to the lock-case and engaged by the lock-bolt, said locking-lever constructed to engage a suitable keeper; of key-operated mechanism for moving the lock-bolt out of engagement with the locking-lever, and the seal-holder partly out of the seal-box, and means likewise operated by the key for mutilating the seal before its holder is moved partly out of its said box, for the purpose set forth.

12. In a lock such as described, the combination with the key-operated and spring-actuated lock-bolt, the lock-case, a seal-box thereon open at one end, a gate for closing said open end, a seal-holder in said box, and a locking-lever L pivoted to the lock-case and provided with the recess l^3 engaged by the bolt, and the arcuate shoulder l^2 merging into said recess; of key-operated mechanism for moving the bolt against the stress of its spring out of the aforesaid recess, opening the gate of the seal-box and moving the seal-holder partly out of said box, whereby when the locking-lever is turned to move its recess out of line with the lock-bolt the latter is locked against motion by the lever, said key-operated mechanism organized to move the seal-holder back into its box and close the gate thereof when the aforesaid recess in the locking-lever is brought into alinement with said bolt, for the purpose set forth.

13. In a lock such as described, the combination with the lock-case, a seal-box thereon

open at one end, a seal-holder having sliding motion therein provided with the shoulder h^3 having stud or pin h^4 , the spring-supported lever 12 provided with a longitudinal slot, said pin h^4 projecting through a vertical slot c^2 in the front plate of the lock-case and into the slot of said lever, the angle-lever 10 one of the arms of which has bearing on lever 12, the lock-bolt and the lever 9 connected therewith; of the key stud or pin, and the two-armed dog 8 secured thereto and arranged to act on levers 9 and 10, substantially as and for the purpose set forth.

14. In a lock such as described, the combination with the lock-case, a seal-box thereon, open at one end, a seal-holder having sliding motion therein and provided with the shoulder h^2 , and the shoulder h^3 having pin h^4 , a gate for closing the lower end of the box, linked to said seal-holder, the slotted and spring-supported lever 12, said pin h^4 projecting through a vertical slot in the front plate of the lock-case into the slot of said lever 12, a spring-actuated pawl pivoted to the last-named lever, the angle-lever 10, one of whose arms has bearing on lever 12, the lock-bolt, the lever 9 pivotally connected with the lock-bolt and provided with a nose projecting through a horizontal slot in the front plate of the lock-case and adapted to be moved under the shoulder h^2 of the seal-holder and to be engaged by the aforesaid pawl on lever 12 when moved away from said shoulder, and the lever 9 connected with the lock-bolt; of the key stud or pin having secured thereto a two-armed dog 8 adapted to act upon the levers 9 and 10, substantially as and for the purpose set forth.

15. In a lock such as described, the combination with the lock-case, a seal-box thereon, a seal-holder therein, the lock-bolt, and key-operated mechanism for operating the lock-bolt and moving the seal-holder partly out of its box; of the key stud or pin p , the knife-holder k secured to said pin and provided with a vertical slot for the key-bit, the lock-spring S provided with a lug or nose projecting into said slot k^2 and moved out of the same by the key-bit, and the knife K on the knife-holder arranged relatively to the seal-holder, and the seal carried thereby, to cut a slice out of said seal before the key-operated mechanism moves the seal-holder partly out of its box, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

COLOMAN STEFÁN.

Witnesses:

HARRY BELMONT,
DAVID ALBIN.