

(No Model.)

2 Sheets—Sheet 1.

G. BERGEVIN.  
SAFETY LOCK.

No. 525,250.

Patented Aug. 28, 1894.

Fig-1.

Fig. 3.

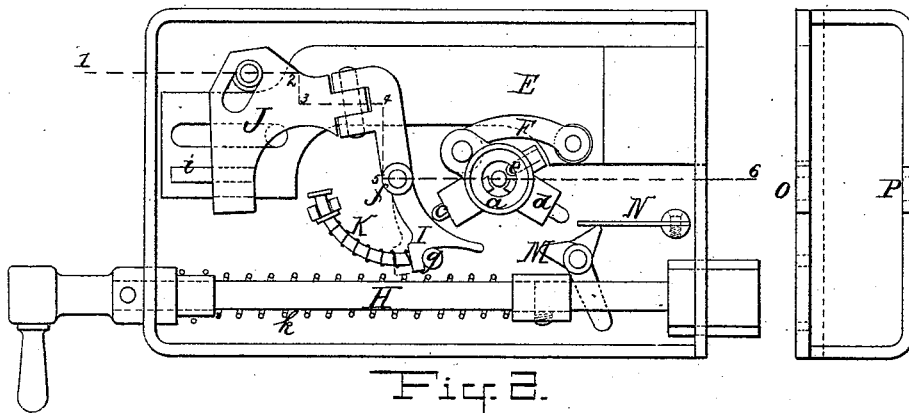


Fig 2.

Fig. 4.

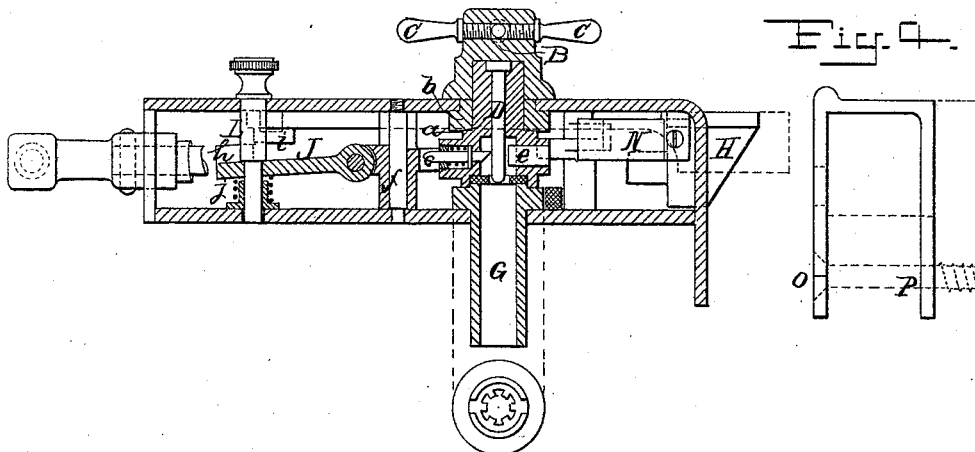
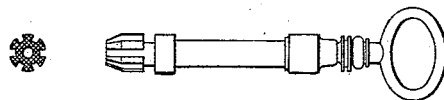


Fig 10.

Fig. 9.



**WITNESSES:**

George Baumann

James Grace

**INVENTOR:**

INVENTOR:  
Georges Bergeman

BY

Howard Howard

ATTORNEYS.

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Fig. 5.

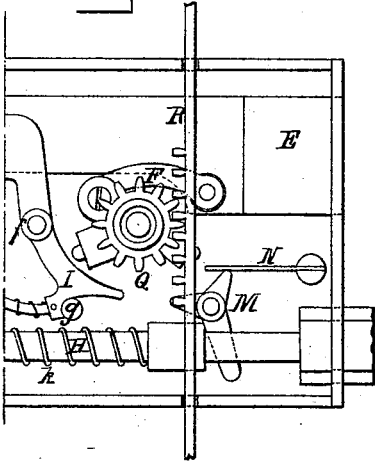


Fig. 6.

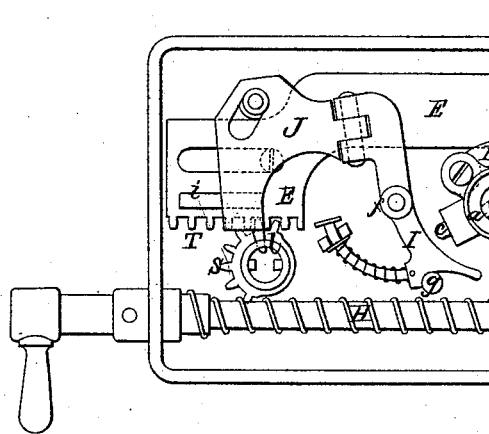


Fig. 7.

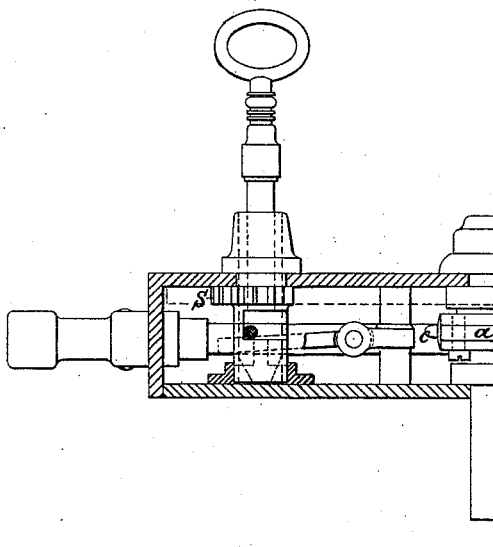
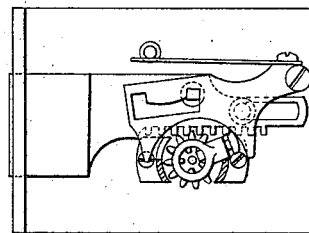


Fig. 8.



WITNESSES:

*George Baumann*  
*James Gracie*

INVENTOR:

*Georges Bergevin*

BY

*Howard Brown*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

GEORGES BERGEVIN, OF PARIS, FRANCE.

## SAFETY-LOCK.

SPECIFICATION forming part of Letters Patent No. 525,250, dated August 28, 1894.

Application filed April 28, 1892. Serial No. 430,979. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGES BERGEVIN, mechanician, of Paris, in the Republic of France, have invented certain Improvements in Safety-Locks, of which the following is a specification.

This invention relates to safety locks, and the object is to form a lock that is not liable to get out of order, that cannot be picked or forced open and which works without lubricating. The parts are formed by machinery which insures precision, and, owing to construction, the lock can be made in an infinite number of varieties. The whole movement is completely inclosed in the case and consequently is protected from dust and impurities.

In the accompanying drawings, Figure 1 is a front view showing the interior of the lock. Fig. 2 is a section on lines 1, 2, 3, 4, 5, 6 of Fig. 1. Figs. 3 and 4 are views of the staple in two perpendicular positions. Fig. 5 shows the arrangement of the lock when it is arranged to actuate, in addition to its own bolt, two other bolts placed at the top and the bottom of a door. Figs. 6 and 7 represent a modification in which the lock is fastened internally by means of a key. Fig. 8 is a front view of a lock of this improved kind applied to furniture. Fig. 9 shows an elevation and Fig. 10 a section of the key.

The key hole is formed by a cylinder *a*, resting on the washer *b* which serves as its base, and, traversing the cover plate *A*, terminates on the exterior by a knob *B*, which has arms *C*, thereby forming a button which can be turned. This cylinder is traversed by two movable pistons *c d*, arranged in suitable bearings and fitted with counter springs which tend to constantly draw them inward toward the axis of the cylinder. The cylinder is also provided with a fixed cotter *e* which engages in some one of the grooves of the key and is moved thereby. The axis of the cylinder has a spindle *D*, which penetrates into the key bore in such a way as to guide it and also not to allow the insertion of any spike or hook. This cylinder, which is movable on its axis, actuates the bolt *E* by means of a rod *F*. In this manner, the use of gearing is avoided, which is liable to become loose by wear, and the smoothness of the back and forward motion of the bolt is insured. A tube *G*, which

forms the entrance for the key, is fixed on the cylinder *a* and is fitted at its base with a casting of hardened steel shown in section at the foot of Fig. 2. This casing preventing the introduction of any article renders the lock unpickable. As may be seen on Fig. 9, the key is terminated by a conical part in order that, when it is being inserted in the lock, it pushes out the two pistons *c d*, which at once return to their former position as soon as the key is withdrawn. The two pistons *c d* are necessary, one for releasing the large bolt *E* and the other for actuating the cam which operates the small bolt *H*. These two results are obtained in the following manner. The pistons, forced outward by the key, move against the curved surfaces of a plate *I* oscillating on the axis *f* and having as a continuation a part *J* hinged thereon. The oscillating movement of the plate compresses the counter spring *K* which brings it back against a catch *g*. The plate *J* has, on its lower face, a kind of cap *h* which engages with a projection *i* forming a part of the large bolt. When the lock is closed, one of the branches of the cap *h* is lowered behind the projection *i* and forms a stop or catch preventing the lock being opened. When opening the lock by means of the key from the outside, one of the pistons causes the plate to oscillate, and the projection *i* comes beside the hollow of the cap and may slip freely past during the return of the bolt. In order to open it from the inside by turning the knob *B*, the hinged part *J* must first be raised. For this purpose, this part is pushed by means of a knob *L* fitted with a counter spring *j* which brings it into its position for the opening of the lock. The bolt *h* is operated by the action of one of the pistons, which, in its rotation, engages the three-branch cam *m*. When the key is withdrawn, the piston returns to its inward position and no longer touches the cam, and then the bolt pushed by the spring *K* resumes its former position. A spring strip *N* serves to retain the cam in such a position that it may be operated by the piston. It will be seen that, with this arrangement of lock, the two bolts, although independent of each other when the key is withdrawn, are opened simultaneously with a third turn of the key only. Further, this key is introduced or withdrawn into any

of its positions without it being necessary to turn it in order to find the entrance or the exit, which makes its use eminently practicable. It may be further noted that the 5 grooves with which the key is furnished present a certain inclination which may be varied *ad infinitum* in such a way as to obtain all possible combinations.

The catch or staple, which is shown in Figs. 10 3 and 4 has two notches O P, which are traversed by a strong screw which firmly connects it with the door post.

When the lock is intended to connect simultaneously several bolts, the cylinder *a* is 15 connected with the pinion Q, Fig. 5, which actuates a rack bar R. This rack transmits the movement to the various bolts.

If it be desired to open the lock from inside with a key, in place of using the knob B, its 20 construction may be slightly modified. As shown in Figs. 6 and 7, the opening for the key has a pinion S, which actuates directly the large bolt, a part of which has teeth in the form of a rack T. Further, the plate J has a 25 peg *l*, against which the key, when introduced, strikes in order to raise the said plate and release the bolt.

Fig. 8 shows an example of the application of this system of locks for furniture, and in 30 general to those which have only one bolt. This system may be also applied to padlocks, and in a general manner, to all kinds of fastenings.

I claim as my invention—

35 1. In a safety lock having two bolts, the combination of a key cylinder adapted to be rotated by the key, and a rod F for actuating one bolt, with a cam to actuate the other bolt,

a locking lever for one of the bolts, and pistons in the key cylinder adapted to be actuated by the key to act on the said cam and the said locking lever respectively, all substantially as set forth. 40

2. In a safety lock, the combination of a key cylinder *a* having two pistons capable of 45 being actuated by a conical key with a hinged plate I, J, a rod F for actuating the large bolt, a cam *m* for actuating the small bolt, a spring pusher L and the counter-springs K, K, all substantially as set forth. 50

3. In a safety lock, a cylinder *a* having two pistons, capable of being actuated by a conical key, in combination with a hinged plate in two parts I J, a rod F for actuating the large bolt, a cam *m* for actuating the small 55 bolt, the entrance hole G with its casing of hardened steel, a spring pusher L and the counter springs K, K, all arranged substantially as hereinbefore described.

4. In a safety lock having two bolts, the 60 combination of a key cylinder adapted to be rotated and provided with a toothed pinion Q, a rod for actuating one bolt, a cam to actuate the other bolt and a locking lever for one of the bolts, with pistons in the key cylinder 65 adapted to be actuated by the key and a rack gearing with the pinion Q, all substantially as and for the purposes set forth.

In testimony whereof I have signed my name to this specification in the presence of 70 two subscribing witnesses.

GEORGES BERGEVIN.

Witnesses:

JOSEPH DELAGE,  
ROBT. M. HOOPER.