(Model.)

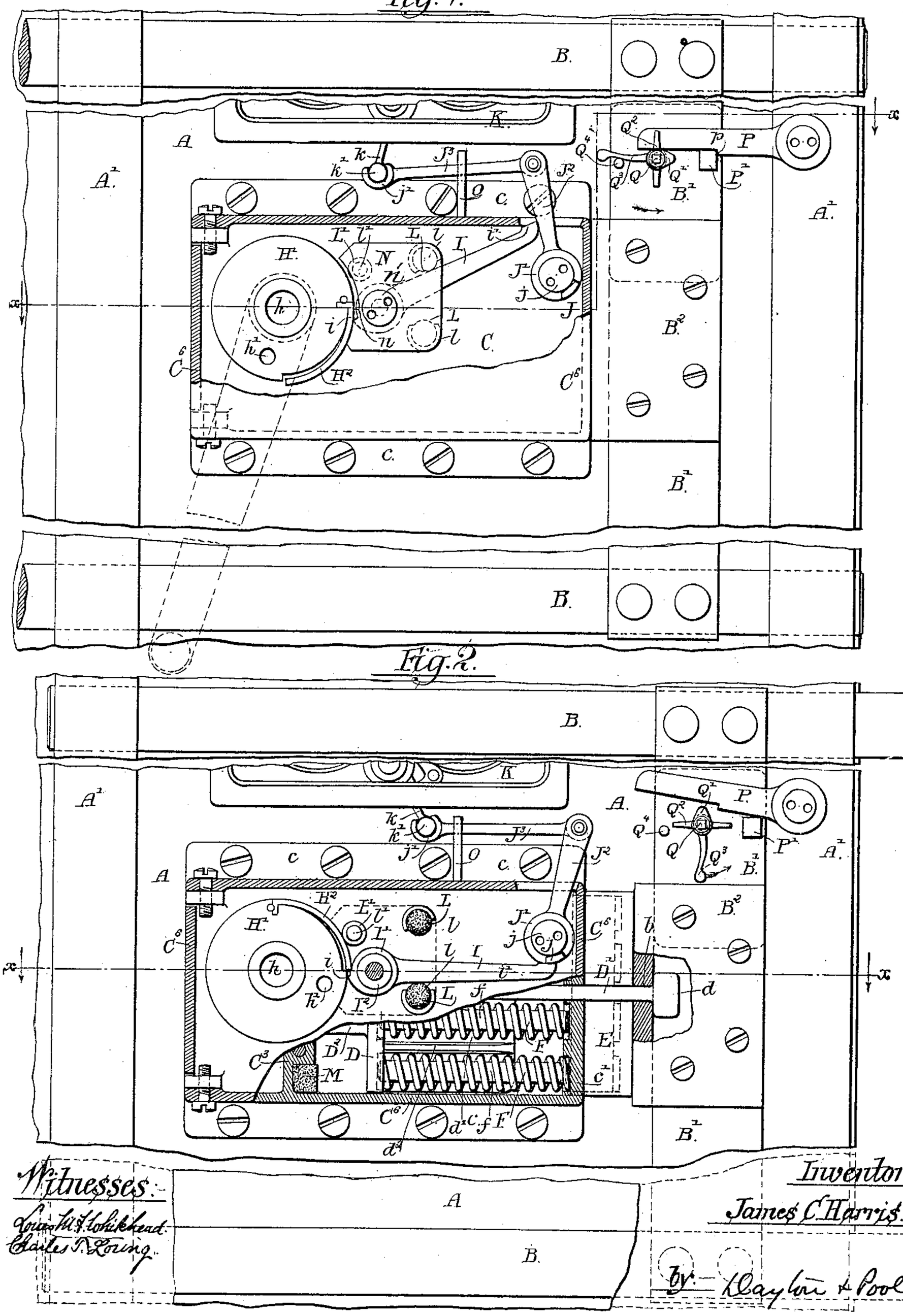
3 Sheets—Sheet 1.

J. C. HARRIS.

SAFE LOCK.

No. 364,922. Patented June 14, 1887.

Fig. 1.



Witnesses:-

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(Model.)

3 Sheets—Sheet 2.

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SAFE LOCK.

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Fig. 3.

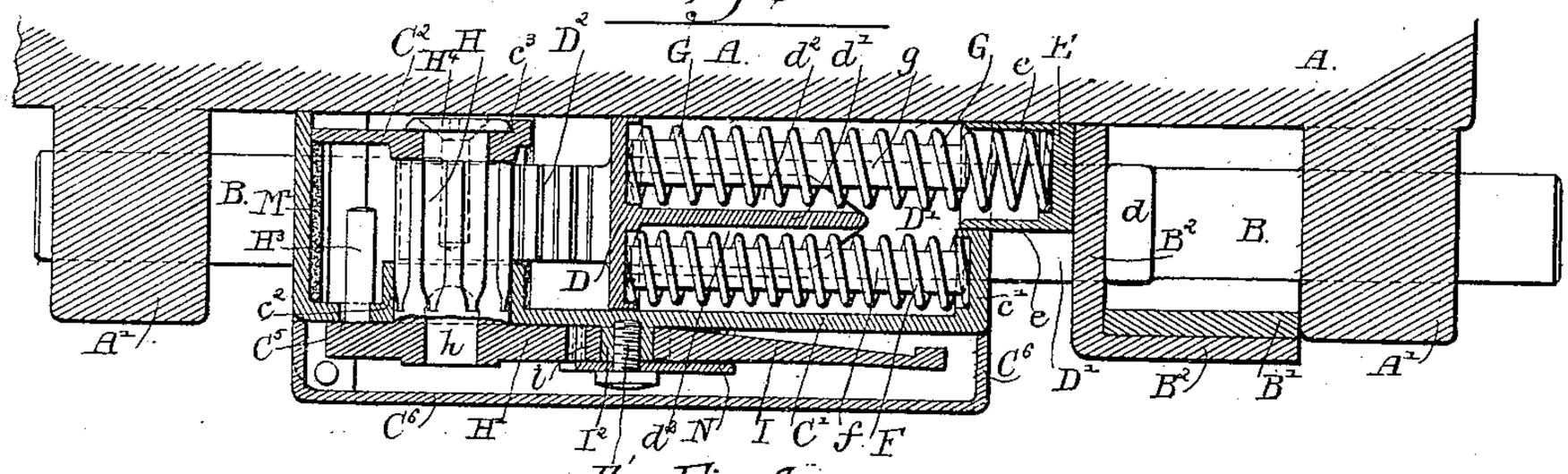


Fig. 4.

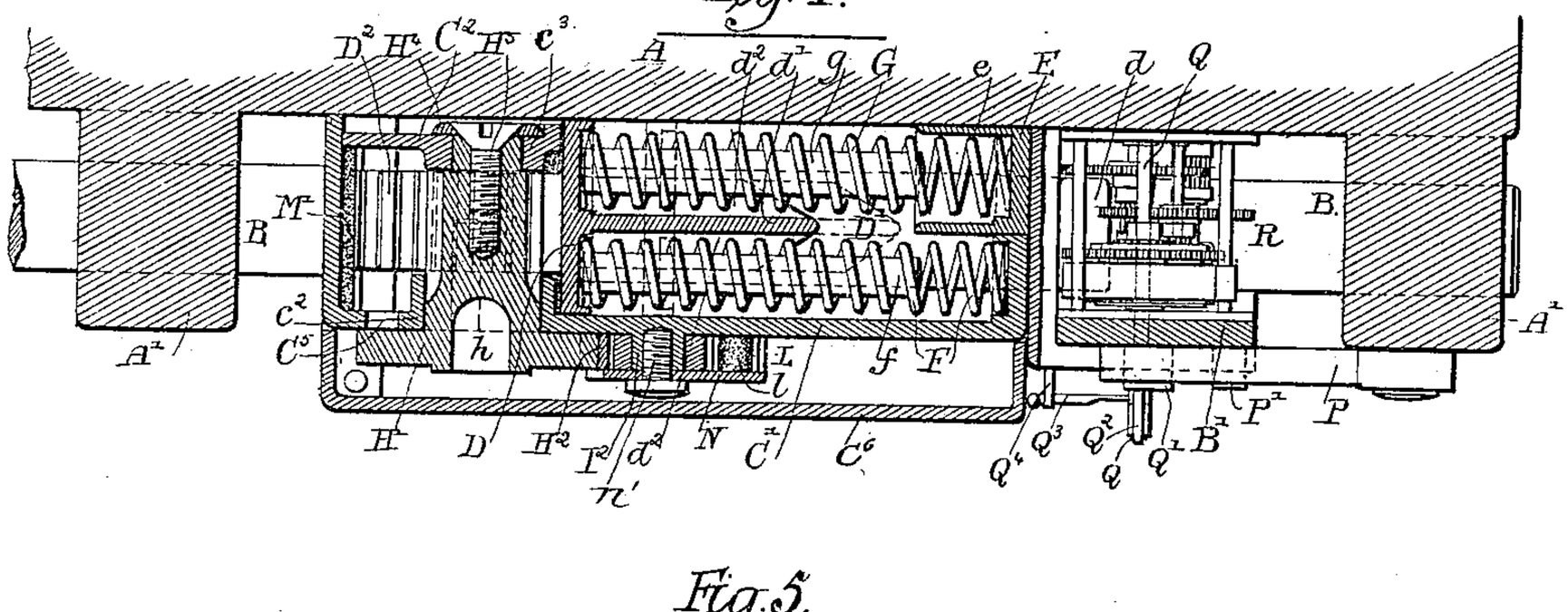
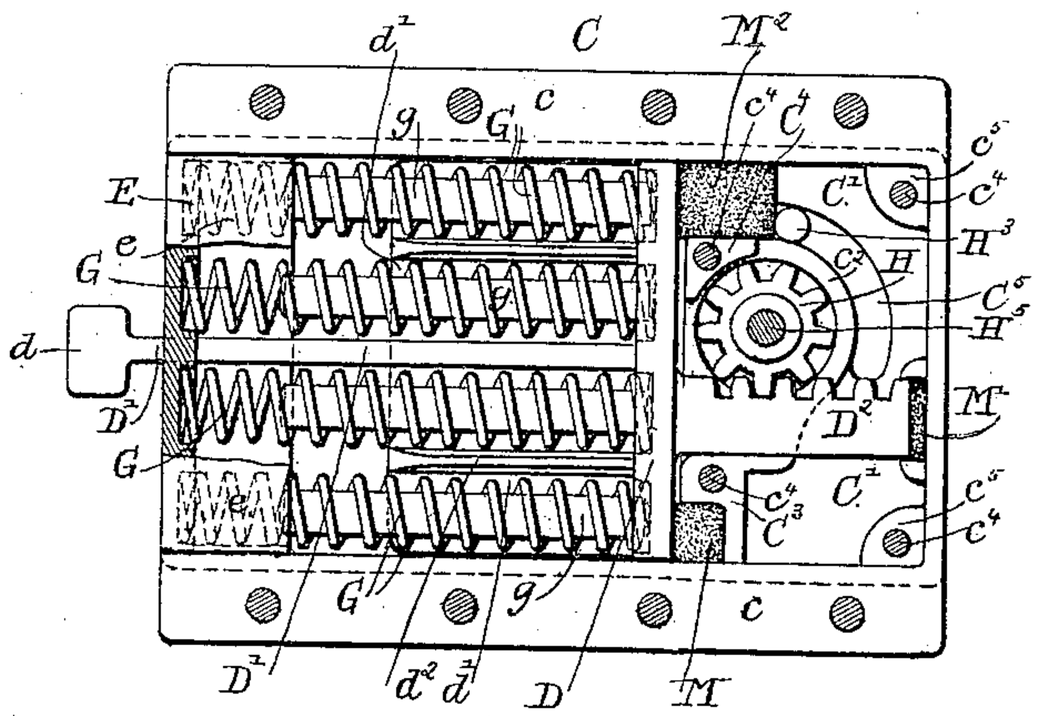


Fig. 5.



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(Model.) 3 Sheets—Sheet 3.

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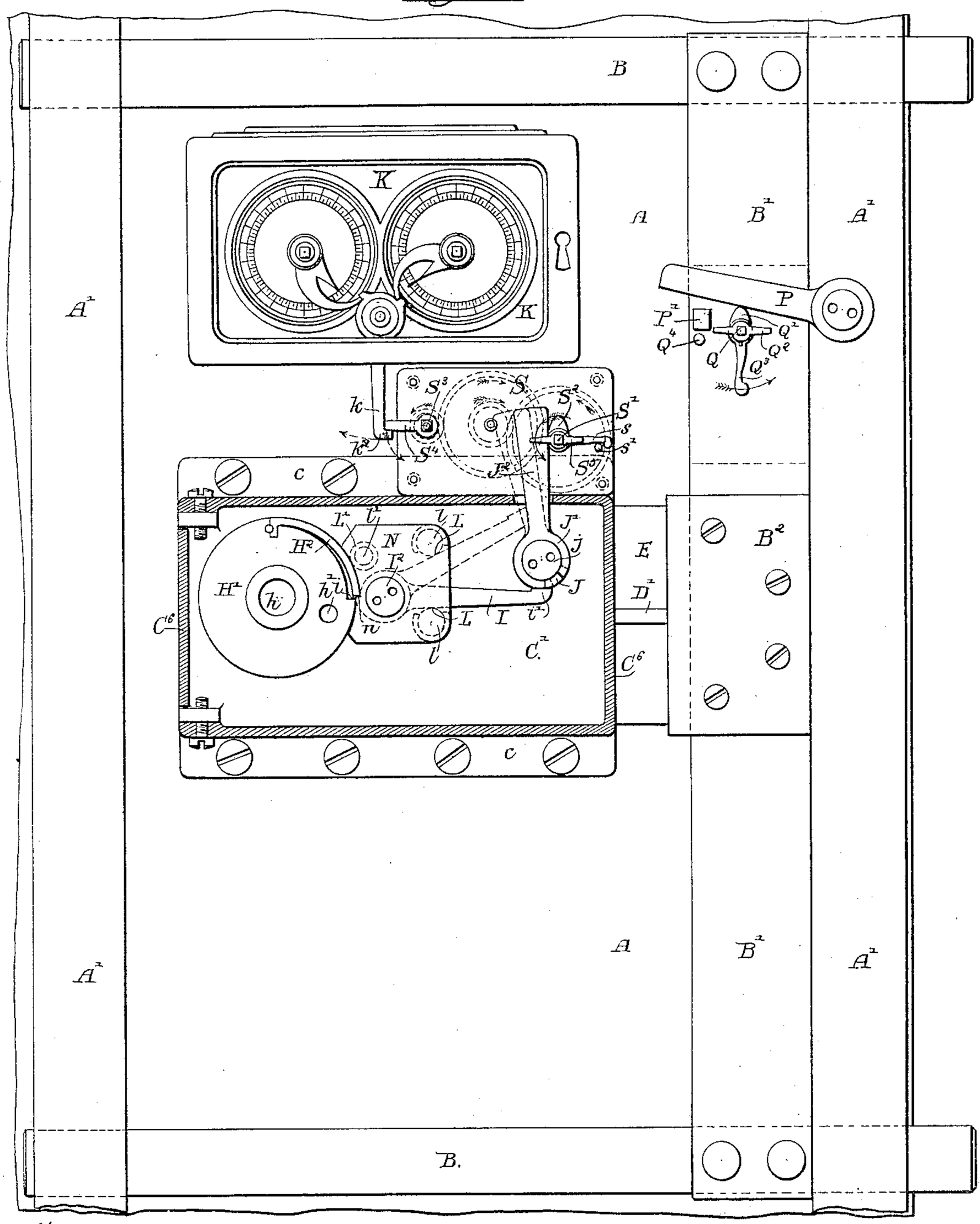
SAFE LOCK.

No. 364,922. Patented June 14, 1887.

Fig. 6.



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UNITED STATES PATENT OFFICE.

JAMES C. HARRIS, OF DAYTON, OHIO.

SAFE-LOCK.

SPECIFICATION forming part of Letters Patent No. 364,922, dated June 14, 1887.

Application filed November 15, 1886. Serial No. 218,860. (Model.)

To all whom it may concern:

Be it known that I, JAMES C. HARRIS, of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Safe-Locks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to that class of locks for safe-doors in which the lock-bolts are actuated solely by means located inside of the safe, and more especially to locks of that class in which the bolt works are cast and retracted by springs, and in which a time mechanism is employed for controlling the springs by which the bolts are retracted to unlock the safe automatically at a desired time.

The object of my invention is to provide an improved construction in the devices for compressing and releasing the springs by which the bolt-work is actuated, in means for controlling the springs by which the bolts are cast in locking the safe, and in other details of construction in devices of the character described, as will hereinafter appear.

The invention consists in the matters hereinafter described, and pointed out in the appended claims.

In the accompanying drawings, illustrating my invention, Figure 1 is a view in elevation of the inner side of a safe-door, showing the bolt-works, and an exterior view of a device embodying my invention for actuating the same, the bolts being shown in their retracted position. Fig. 2 is a similar view showing the parts with the bolts in their position when the door is locked, a part of the casing of the actuating devices being broken away to show the springs thereof. Fig. 3 is a sectional view of the actuating device, taken upon line *x x* of Fig. 2. Fig. 4 is a sectional view of the same, taken upon line *x x* of Fig. 1. Fig. 5 is an elevation of the actuating device removed from the door, as viewed from the rear. Fig. 6 is a view of the inner side of a safe-door, illustrating a novel means for releasing the springs by which the bolts are retracted.

As illustrated in said drawings, A is the safe-door, which is provided with the usual vertical bars, A′ A′, in which the bolts B B are supported and constructed to slide.

B′ is a vertical carrier-bar, which is attached to the bolts B B, and by which the latter are moved.

C is a shell or case containing the bolt-actuating devices, said case, as herein shown, being formed by an integral casting, open at its inner side and provided at its top and bottom with flanges *c c*, through which are inserted screws for securing the case to the inner surface of the door.

D is a sliding plate or casting located within the case C and provided with a stem, D′, which extends through a slot at the end of the case adjacent to the carrying-bar B′, and is connected with the latter by means of a head, *d*, on the stem, engaged with an L-shaped plate, B², which is attached to the outer surface of the said bar B′, and is bent inwardly and provided with a notch, *b*, adapted to receive the part of the shank adjacent to the head *d*, as clearly shown in Figs. 2 and 3. At the end of the case C nearest the carrying-bar B′ the part of the end wall, *c′*, of the said case C adjacent to the safe-door is absent, and the opening thus formed is occupied by a sliding plate or casting, E, adapted to rest against the adjacent surface of the plate B².

F F are a series of springs interposed between the end wall, *c′*, of the case C adjacent to the bar B′ and the sliding plate D, said springs being for the purpose of retracting the bolts, and being arranged to operate thereon through the medium of the plate D, the stem D′, the plate B², and carrying-bar B′.

G G are a second series of springs employed to throw the bolts in locking the door. These springs G G are located between the plate D and the sliding plate E, and operate by their expansion to thrust the plate E toward the plate B², and to thereby move the carrying-bar B′ and the bolts B B.

In connection with the springs and connected parts, arranged as above stated, a detent is provided for holding the bolts in their retracted position against the action of the springs G G while the door is being closed, together with means for automatically moving the said detent to allow the said springs G G to act when the door is fully closed, and devices

are also provided for moving the plate D for compressing the several springs, together with devices embracing a time mechanism for releasing said plate, so as to allow the springs F F to act upon the said plate and to thereby retract the bolts.

The several parts of the apparatus above described operate in the same manner as do the corresponding parts in similar devices heretofore made, the springs G G operating to cast the bolts when the detent holding the bolt retracted is released, after the safe-door is closed, and the springs F F acting, through the medium of the plate D, stem D′, plate B^2, and carrying-bar B′, to retract the bolts, the sliding plate E and springs G G being carried bodily backward with the plates D and B^2 when the latter are moved by the springs F F, in a manner heretofore well known.

The novel devices for compressing and releasing the actuating-springs, together with the particular details of construction present in the device shown, will now be described.

D^2 is a horizontal rack-bar cast upon or attached to the plate D, and extending toward the rear end of the case C, and H is a revolving toothed pinion, mounted to rotate in the said case C, and arranged to intermesh with the rack-bar D^2. The pinion H is, as herein shown, provided with a bearing, c^2, in the front wall, C′, of the case C, and a bearing, c^3, for the inner end of the pinion is provided in a plate, C^2, which is secured by screws c^4 c^4 to projecting parts or lugs C^3 C^4 c^5 c^5, cast in the said case C. At the outer end of the pinion H, exterior to the wall C′ of the case, is located a metal disk, H′, which is rigidly attached to the pinion H, said disk being provided with a central orifice, *h*, and with an aperture, *h′*, near its periphery, for engagement with studs or projections upon a lever, whereby the pinion may be turned for moving the plate D and compressing the springs F F and G G. A compressing-lever suitable for the purpose is indicated by dotted lines in Fig. 1.

For holding the pinion from rotation after the springs have been compressed, the disk H′ is provided with a spring-strip, H^2, attached at one end to the edge of the disk and adapted to stand normally outside of the periphery of the disk at its opposite and free end, so as to form a shoulder, which is adapted to engage the short arm *i* of a lever, I, which is pivoted to the case C at a point adjacent to the disk, and is constructed to engage at the end of its opposite and longer arm, *i′*, a movable stop, J, which is connected with and actuated by a time mechanism, (indicated in the drawings as a whole by the letter K.) In the particular construction of the parts herein shown the stop J is formed upon a disk, J′, which is pivotally supported upon the wall C′ of the case C by means of a headed stud, *j*, said disk being provided with an upwardly-extending arm, J^2, which is connected by means of a rod or bar, J^3, with the movable arm *k* of the time mechanism. The arm *i* of the lever I is preferably made in the form of a pointed tooth or projection upon a hub, I′, through which the pivot I^2, supporting the lever, passes; and the parts are so arranged that when the time mechanism has been set for operation and the stop J placed in position to prevent the movement of the arm *i′* upward or in a direction to release the springs, and the disk H′ is rotated to compress the springs, the spring-strip H^2 will be compressed or thrust inwardly toward the disk until its free end has passed the arm *i*, when it will spring outwardly and engage said arm, so as to prevent the disk from turning backwardly, and thereby hold the springs F F and G G from expanding. The placing of the lever I in the position described before the springs are compressed is desirable, both for convenience in manipulation and to insure that the time mechanism shall invariably be set in operation before the door is closed.

L L are stops upon the case C for limiting the movements of the lever I, said stops being desirably provided with buffers or cushions *l l*, to receive the impact of the lever.

L′ is a roller, mounted upon a stud, *l′*, and adapted to bear upon the spring-strip H^2. Said roller serves to aid in pressing the spring-strip inwardly as the disk is rotated; but its main purpose is to hold the said spring-strip from bending or yielding outwardly in its middle part under the strain thereon incident to the retention of the actuating-springs in their compressed condition.

To prevent excessive shock or strain upon the parts when the springs F F are released for opening the safe, I preferably provide cushions or buffers M M′ M^2 within the case C, in position to engage the plate D when the latter reaches the inner or rearward limit of its movement. As herein shown, the said cushions consist of blocks of rubber held in sockets or recesses formed in the case. The block M is located at the bottom of the case, and is held in a recess formed in the integral projection or lug C^3 in position for engagement with the lower end of the plate D. The cushion M′ is held in a recess in the rear wall of the case in position to engage the end of the rack-bar D^2. The cushion M^2 is located in a space or opening formed between the top wall of the case C and lug or projection C^4 adjacent thereto, said cushion being exposed at its opposite sides, so as to engage both the upper end of the plate D and a pin or stud, H^3, upon the disk H′, which pin or stud H^3 passes inwardly through a circular slot, C^5, in the wall C′ of the case, and is adapted to strike the cushion M^2 as the pinion H is turned, at the same time the plate D strikes the opposite face of said cushion. By this means the impetus of the pinion and connected parts is obviously taken up at the same time that the movement of the plate D is arrested, so that all of the several parts are stopped with little shock or jar, and with a minimum of strain thereon.

The employment of a single cushion, M^2, for the plate D and the pinion is obviously not

essential, as the same general result may be obtained by separate cushions arranged to engage the parts.

As a preferred construction in the plate D, the said plate is provided with a central vertical plate or flange, *d'*, Figs. 3 and 4, extending between the two groups of springs F F and G G, and the said plate or flange *d'* is provided with lateral flanges d^2 d^2 at both sides, forming cells, in which the ends of the said several springs are located.

The casting E is preferably made with flanges *e e* at both its inner and outer edges and at its ends, said flanges affording broad exterior bearing-surfaces, which slide in contact with the face of the door and the adjacent edge of the end wall, C', as clearly shown in Figs. 3 and 4.

To keep the springs F F and G G straight while being compressed, cylindric rods or bars *f f* and *g g* are preferably inserted therein, said rods being preferably made of suitable length to form stops to limit the movement of the plate D in compressing the springs.

In order to prevent the possibility of the springs F F being released by movement of the pinion H sufficient to free the disk H' from the lever *l*—such as may be produced by the shock or concussion caused by the explosion of dynamite against the outer surface of the door—I preferably attach to the outer face of the wall C' of the case C a plate, N, which is arranged adjacent to the disk H', and is provided with a notch, *n*, in position to engage the end of the spring-strip H^2 when the pinion is moved endwise in its bearings. In connection with a plate thus arranged, the pinion H is preferably held in place in its bearings by a relatively weak connection, adapted to break and allow the pinion to move inwardly in case an attempt is made to shift the working parts by concussion, with a view of causing the retraction of the bolts.

The fastening device for holding the pinion in place, herein illustrated, consists of a plate or washer, H^4, which is secured to the end of the pinion by a screw, H^5, and extends at its edges over and bears against the plate C^2. The plate N, as shown, is secured in place by a screw-stud, *n'*, passing through said plate and the pivot I^2 of the lever I. Said plate N also serves to hold the roller L' and cushions *l l* in place.

To prevent the shifting of the devices by which the actuating-springs are held by the concussive action of an explosive upon the time mechanism, the arm *k* of the said mechanism is preferably connected with the rod J^3 by means of a joint consisting of a cylindric enlargement, *k'*, upon the end of the arm *k* engaging a socket, *j'*, in the end of the rod, the said cylindric enlargement being arranged with its central axis at right angles to the face of the safe-door, so that the joint may become disengaged by a shock tending to force the time mechanism inwardly without moving the parts in a direction to release the actuating-springs. A rigid arm or stud, O, is herein shown as arranged to extend in front of the connecting-rod J^3, so as to hold the latter from inward movement in case the time mechanism or a part thereof is shifted.

The inner face of the case C is preferably provided with hinged cover C^6, Figs. 1, 3, and 4, for the purpose of protecting the several parts outside of the case. Said cover C^6 serves also to limit the inward movement of the disk H' in case the latter is dislodged and thrown inwardly by concussion, thereby preventing said disk from being carried past and entirely disengaged from the plate N.

The device herein shown and preferably employed by me for holding the bolts retracted against the action of the springs G G consists of the following parts:

P is a swinging dog pivotally supported upon the vertical frame-bar A' of the door, and constructed to engage a stud, P', fixed in the carrying-bar B', the said dog being constructed by its engagement with the stud to hold the bolts free from the safe-jamb. As shown in Fig. 1, the dog P is provided with a shoulder, *p*, in its lower edge to engage the stud P'; but in another form of the device (shown in Fig. 6) the free end of the dog is arranged to engage the said stud.

Q is a horizontal shaft or arbor which extends through the carrying-bar B', and is provided at its outer end with a cam, Q', constructed to act upon the dog P in such a manner as to raise the latter free from the stud P' when the shaft is turned. The said shaft is connected at its inner end, as clearly shown in Fig. 4, with a clock-work or train of gears actuated by a spring, (indicated as a whole by R,) the train being provided with a rotating fan or other escape device controlling its speed when its actuating-spring is allowed to unwind. The shaft Q preferably forms an extension of the mainspring-arbor of the train, this being the arbor which is acted upon by the spring with the greatest force.

Q^2 is a handle attached to the shaft Q' for winding the spring, and Q^3 an arm rigidly attached to the shaft and constructed to engage a stationary stop, Q^4, for the purpose of arresting the motion of the shaft after each rotation of the latter. Said arm Q^3 is made of spring metal, so that it may be released from the stop Q^4 when it is desired to allow the cam to rotate for the purpose of moving the dog P.

The operation of the several parts, made as hereinbefore described, is as follows: When the safe is unlocked and the door open, the cam Q' will be turned with its prominent part free from the dog P, so that the dog may engage the stud P'. The arm Q^3 at this time rests in contact with the stop Q^4, thereby holding the shaft and cam from turning, as clearly shown in Fig. 1, which represents the several parts in the position which they occupy after the door has been automatically unlocked, the actuating-springs being expanded and the releasing devices disengaged. The actuating

device is set for again closing the door by first setting the time mechanism and the stop J and lever I, controlled thereby, and then turning the pinion H by power applied to the disk H′, so as to compress both sets of springs F F and G G. Any movement of the carrying-bar B′ under the action of the springs G G against the movable plate E, which rests against the plate B^2, attached to the said carrying-bar, is prevented at this time by the engagement of the dog P with the stud P′ on said carrying-bar.

When the parts are set in the manner above stated, and it is desired to close and lock the door, the arm Q^3, which holds the cam Q′ from movement, is drawn outwardly clear of the stop Q^4, thereby allowing the said cam to begin its rotation. The door is then closed, and the continued movement of the cam then lifts the dog P clear of the stud P′, so as to free the carrying-bar and allow the springs G G to expand and cast the bolts. After the cam Q′ has completed one revolution, its motion is stopped by the contact of the arm Q^3 with the stop Q^4 until it is again desired to allow the cam to move in the next locking of the door. The position of the parts when the door is closed and locked is shown in Figs. 2 and 3. The bolts are retracted automatically for opening the door at a time determined by the time mechanism, which moves the stop J, so as to release the lever I and allow the rotation of the pinion H and the inward movement of the sliding plate D and the carrying-bar and bolts connected therewith, in a manner heretofore explained and readily understood.

It is sometimes found in automatic bolt-actuating devices of the general character herein described that the force required to move the stop or detent by which the springs are held in their retracted condition is greater than desirable for the perfect working of the time mechanism. The force required may of course be lessened by increasing the number of levers interposed between the springs and the stop which is directly actuated by the time mechanism, and this construction has heretofore been used; but any increase in the number of said levers is objectionable, inasmuch as it increases the number of parts which are violently or forcibly moved when the springs are released, and thereby renders the mechanism more liable to injury at such time.

As an improved construction in devices for releasing the springs, whereby the objections above named may be obviated, I introduce between the moving part or trip of the time mechanism and the movable stop by which the actuating-springs of the bolt-work are held compressed a spring or spring-motor, which is adapted to actuate the said movable stop, and is held from movement, when wound up or compressed, by a part engaged with the moving part of the time mechanism. In the particular embodiment of this feature of my invention illustrated in Fig. 6 a train of gears actuated by a spring forms the connecting device between the time mechanism K and the stop J of the spring actuating apparatus, the said train of gears being indicated as a whole by the letter S.

S′ is the main or spring arbor of the train, which arbor is provided with a cam, S^2, arranged in position to operate upon the arm J^2, by which the stop J is moved.

S^3 is an arbor of the train of gears, which is connected with and actuated from the arbor S′ by suitable intermediate gearings, and S^4 is an arm upon the said arbor S^3, adapted to engage the hooked end k^2 of the movable arm *k* of the time mechanism K. An arm, *s*, is desirably attached to the arbor S′ in position to engage a stationary stud, *s*′, for the purpose of stopping the rotation of the said arbor and the cam after the latter has made one complete rotation, the spring being wound by a single rotation of the arbor, which brings the arm S against the rear side of the stud S′.

In setting the device for operation, the mechanism is wound and set and the train S is also wound and the arm S^4 engaged with the hook k^2, thereby holding the train from movement. When the hook k^2 is moved by the time mechanism, the arm S^4 is freed and the spring allowed to turn the arbor and cam, and the latter then operates to thrust the arm J^2 laterally and thereby move the stop J and release the actuating-springs.

The clock-work or train of gears S shown is obviously only one of several devices which may be employed in the manner stated to operate the stop for releasing the bolt-actuating springs; and my invention, as it relates to this feature of the device, is not therefore restricted to a device of the particular kind shown, but includes any device actuated by a spring, weight, or otherwise, which is applied to operate the said stop, and is controlled by connection with a time mechanism. It will of course be understood that the bolt-actuating devices herein shown may be employed in connection with devices for releasing the bolts for locking the door, either when said devices embrace a spring as a means of moving the detent by which the bolts are held retracted or when other well-known or preferred devices are used for the purpose. The employment, for the purpose last above referred to, of a spring-motor arranged to move at such speed as to allow time for closing the door after it is put in motion, as above described, is, however, herein broadly claimed as part of my invention, and said motor may obviously be used in connection with bolt-actuating devices made otherwise than as shown. The said motor for actuating the detent by which the bolts are held retracted may, furthermore, embrace, instead of an actuating-spring, an equivalent weight or other prime mover, and the said detent and motor may be mounted upon the bolt-work or upon the safe-door otherwise than in the particular manner herein illustrated.

The means for compressing the springs,

herein shown and comprising, mainly, a rack-bar and pinion, has the important advantage over the toggle joints and levers heretofore employed for the purpose, of embracing fewer moving parts, whereby the device is made more simple in construction, and the parts thereof are rendered less liable to become worn and injured by the shock and strain produced by the sudden expansion of the springs; and a device embracing the features of construction above mentioned, therefore, is also herein broadly claimed as part of my invention in actuating devices embracing levers and toggles for compressing the springs as heretofore made. Furthermore, power applied to the toggle for compressing the springs must obviously be much greater at the beginning of the movement of the toggle, when its arms are flexed, than when the arms are approaching a position in alignment with each other, so that a considerable exertion is required in the beginning of the act of compressing the springs, and much less when the springs are nearly compressed.

An apparatus made as proposed by me, and embracing a rack and pinion as a means of applying power to the springs for the purpose of compressing the same, has the important advantage that the pinion acts upon the rack at all times with the same power, and the force necessary to suitably compress the springs is thus the same at all points in the movement of the parts. It follows that the exertion of much less force at any one time is required in winding or compressing the springs of my device than is required for compressing the springs in a device embracing toggles at the beginning of the movement of the said toggles.

The disk H′, shown as attached to the pinion H, may obviously be replaced by an arm or arms carrying the spring-strip H^2 and the pin H^3, when the latter is used. The main purpose of the said spring-strip H^2 is obviously to afford a yielding shoulder or tooth adapted to engage the lever I, and said strip may therefore be replaced by a yielding part or tooth, sustained or mounted in the disk or arm in any manner found convenient or desirable, with the same general result as is obtained by the device constructed in the particular manner shown.

With regard to the spring-motor herein shown as applied to move the dog P, which operates as a detent to hold the bolts retracted while the door is being closed, it is obviously not essential that the rotation of the arbor to which the cam is attached should be limited to a single rotation, it being entirely obvious that the spring by which the cam is actuated may be wound up and then allowed to unwind or expand each time the door is closed, the rotation of the cam after the dog has been lifted obviously having no effect thereon.

I claim as my invention—

1. The combination, with the bolts of a safe-door, of actuating devices for said bolts, comprising actuating-springs, a movable rack-bar acting on the springs, and a pinion mounted on the door and intermeshing with said rack-bar, said pinion being constructed for the attachment of a hand-lever, whereby the pinion may be turned for compressing the springs, substantially as described.

2. The combination, with the bolts of a safe-door, of an actuating device for the said bolts, comprising a movable casting or plate, as D, connected with the bolts, springs located between said movable casting or plate and a stationary surface of or upon the door, a second set of springs interposed between the said movable plate and a part attached to the bolts, a rack-bar attached to said movable plate, and a pinion intermeshing with the said rack-bar, said pinion being constructed for the attachment of a hand-lever, whereby the pinion may be turned for compressing the springs, substantially as described.

3. The combination, with the bolts of a safe-door and springs for actuating said bolts, of means for holding the springs compressed, comprising a rotating disk or arm, H′, provided with a yielding tooth or shoulder, and a movable part constructed to engage said tooth or shoulder, substantially as described.

4. The combination, with the bolts of a safe-door and springs for actuating said bolts, of means for holding the springs compressed, comprising a rotating disk or arm, H′, a spring-strip, H^2, attached to said disk or arm and forming a yielding tooth or shoulder thereon, and a movable part or lever constructed to engage the free end of said strip, substantially as described.

5. The combination, with the bolts of a safe-door and springs for actuating said bolts, of means for holding the springs compressed, comprising a rotating disk or arm, H′, a spring-strip, H^2, attached to said disk or arm, a movable part or lever constructed to engage the said arm, and a stationary stud or roller constructed to bear against the outer surface of said strip, substantially as described.

6. The combination, with the bolts of a safe and actuating-springs for said bolts, of means for compressing the spring, comprising a rack-bar and a pinion intermeshing therewith, a shoulder or projection rigidly connected with the pinion, and a stationary part located in position to engage the said shoulder or projection when the pinion is thrust endwise in its bearings, whereby the pinion will be held from rotation except when in its normal position, substantially as described.

7. The combination, with the bolts of a safe and actuating-springs for said bolts, of means for compressing the bolts, comprising a rotating arm or disk, H′, provided with a yielding tooth or shoulder, means connecting said arm or disk with the springs, a lever engaging said tooth or shoulder, and a stationary plate, N, provided with a notch, *n*, to engage the said tooth or shoulder when the arm or disk is shifted from its place, substantially as described.

8. The combination, with the bolts of a safe-

door and actuating-springs for said bolts, a movable plate or casting, as D, engaged with the springs and connected with the bolts, a rack-bar attached to the said plate or casting, a pinion intermeshing with said rack-bar, and an arm or stud attached to and turning with the pinion, of a cushion or cushions located in position to engage the said plate or casting D and the said arm or stud, substantially as described.

9. The combination, with the bolts of a safe-door and springs for actuating the bolts, of means for holding the bolts in their retracted position while the door is being closed, comprising a detent, and a spring-motor for moving the same, substantially as described.

10. The combination, with the bolts of a safe-door and springs for actuating the bolts, of means for holding the bolts in their retracted position while the door is being closed, comprising a detent, a rotating cam applied to move the detent, and a spring-motor for actuating the cam, substantially as described.

11. The combination, with the bolts of a safe-door, a carrying-bar connected with the bolts, and a dog or detent pivoted to the door and engaging the carrying-bar, of a rotating cam mounted upon the carrying-bar and engaging said dog, and a spring-motor applied to actuate the said cam, substantially as described.

12. The combination, with the bolts of a safe-door and actuating-springs for the bolts, of means for holding the springs compressed, comprising a movable stop, a time mechanism, and a spring controlled by the time mechanism for actuating said movable stop, substantially as described.

13. The combination, with the bolts of a safe-door and actuating-springs for said bolts, of means for holding the springs compressed, comprising a movable stop, a time mechanism, a cam applied to move the said stop, a spring for actuating the cam, and means for holding the cam from rotation, controlled by the time mechanism, substantially as described.

14. The combination, with the stop J of a bolt-actuating mechanism, of a rotating cam applied to actuate said stop, a spring for rotating the cam, a train of gears connected with the cam, an arbor operated by the said spring through the medium of the said train of gears, and provided with a rotating arm, S^4, and a time mechanism provided with a movable part or hook engaging said arm, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

JAMES C. HARRIS.

Witnesses:
C. CLARENCE POOLE,
AUGUSTUS S. BURTON.