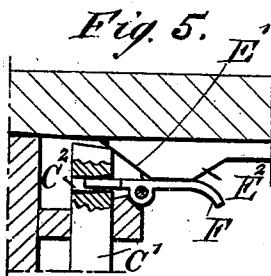
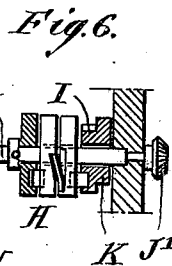
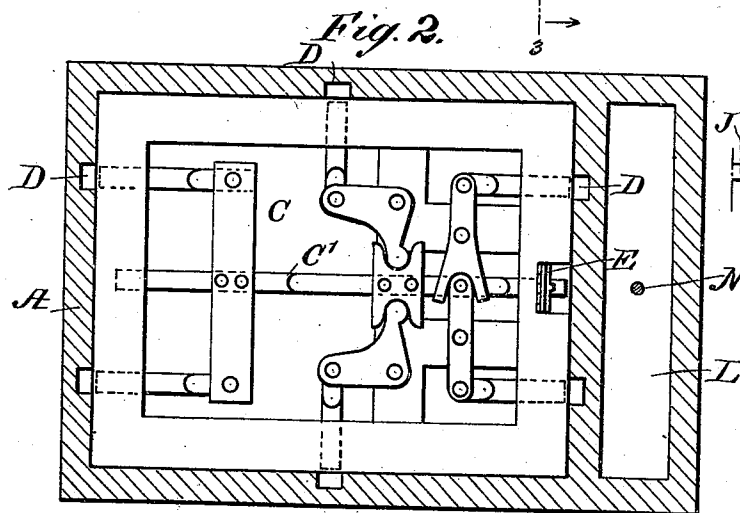
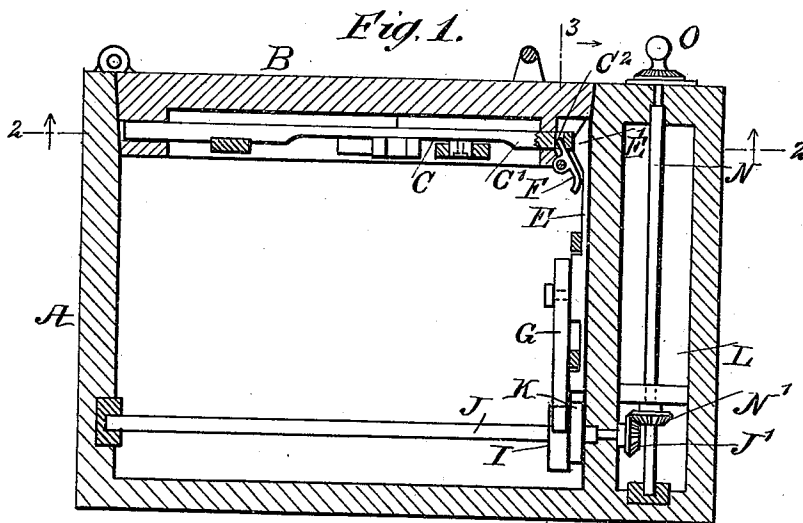


(No Model.)

E. N. GOWER, Jr.
SAFE.

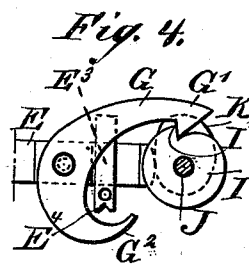
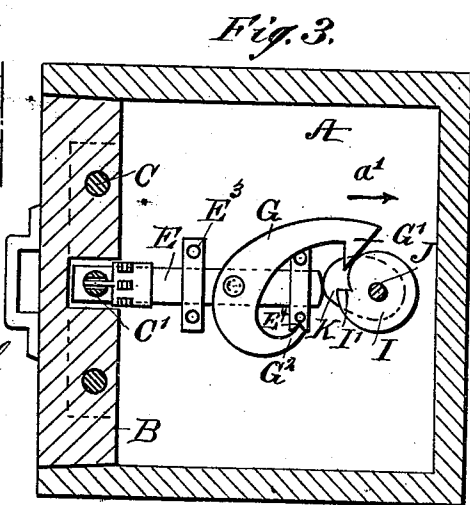
No. 512,022.

Patented Jan. 2, 1894.



WITNESSES:

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BY

ATTORNEYS.

UNITED STATES PATENT OFFICE.

EBEN N. GOWER, JR., OF FLOWERY BRANCH, GEORGIA.

SAFE.

SPECIFICATION forming part of Letters Patent No. 512,022, dated January 2, 1894.

Application filed March 6, 1893. Serial No. 464,712. (No model.)

To all whom it may concern:

Be it known that I, EBEN N. GOWER, JR., of Flowery Branch, in the county of Hall and State of Georgia, have invented a new and Improved Burglar-Proof Safe, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved burglar proof safe, which is simple and durable in construction, and formed without apertures in the outside part of the door, to prevent burglars from tampering with the door.

The invention consists of certain parts and details and combinations of the same, as will be hereinafter described and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional plan view of the improvement. Fig. 2 is a sectional side elevation of the same on the line 2—2 of Fig. 1. Fig. 3 is a transverse section of the same on the line 3—3 of Fig. 1. Fig. 4 is a like view of part of the same in a different position. Fig. 5 is an enlarged sectional plan view of part of the bolt actuating mechanism; and Fig. 6 is a sectional side elevation of the combination lock arrangement for the cam.

The safe A is provided at its front end with the usual hinged door B on the inside of which is arranged the bolt mechanism C of any approved construction and adapted to engage with its several bolts corresponding recesses D in the walls of the safe A. One of the bolts C' of the bolt mechanism C is adapted to be engaged by the wedge-shaped head E' of a transversely-extending bar E mounted to slide in suitable bearings E³ on the inner face of one of the walls of the safe A. When the door B is closed and the several individual bolts of the bolt mechanism C are in alignment with the recesses D, and the bar E is pushed forward, then the head E' presses on the said bolt C' to actuate the bolt mechanism C to engage the individual bolts of the latter with the recesses D to lock the door B in place.

In order to unlock the bolt mechanism, I provide a lever F pivoted to the inside of the

door, see Figs. 1 and 5, and engaging with one end a recess C² near the outer end of the bolt C', the other end of the said lever being adapted to swing onto the inclined back E² of the head E', when the bolt C' is actuated by the forward wedge-shaped end of the head E'. Now, when the bar E is moved rearward, the lever F travels up the inclined back E² so as to impart a swinging motion to the said lever, which, by its connection with the bolt C' causes the latter to move outward, thus actuating the bolt mechanism so as to withdraw the individual bolts of the latter from the recesses D. The door B is then unlocked and can be opened in the usual manner.

Near the rear end of the bar E is pivoted a cam lever G having a hook-shaped head G' held by its own weight in peripheral contact with a cam I connected by a combination lock arrangement H of any approved construction, with the longitudinally-extending shaft J mounted to turn in suitable bearings in the side walls of the safe A, as plainly shown in Fig. 1. The cam I is provided with a shoulder I' adapted to engage the head G' so as to exert a pull on the latter to move the bar E rearward for the purpose of opening the door B, as above described. The shaft J turns the cam I only when the said shaft is turned according to a predetermined combination, the combination lock arrangement H then turning the cam I in the direction of the arrow a' to move the shoulder in contact with the head G' and to exert a pull thereon to move the bar E rearward for opening the door locking mechanism.

On the shaft alongside the cam I is secured a second cam K which presses against the rear end of the bar E so as to impart a forward sliding motion to the latter when the shaft J is turned. Thus, one cam serves to move the bar in one direction to actuate the bolt mechanism to lock the door, while the other cam serves to shift the bar backward to again actuate the bolt mechanism to unlock the door. When the cam K pushes the bar E forward to lock the door, the head G' of the cam lever G rises out of the shoulder I' in the cam I, the said head traveling up the periphery of the cam; and when the cam K reaches its greatest distance horizontally and forwardly then the lower hook end G² of the le-

ver G moves into a V-shaped notch E⁴ formed on one of the bearings for the bar E as plainly shown in Fig. 3. The lever G is now locked in place, as the head G' rests firmly on the cam I and the lower end G² of the lever G is engaged with the notch in the fixed bearing. The bar E is thus held in a locked position by the locked lever G. If the lever G were not locked the bar E would slide back in case the safe were placed on its back, or subjected to jar, &c. One end of the shaft J extends into a compartment L arranged in one side of the safe A, and on this inner end of the shaft J is secured a bevel gear wheel J' in mesh with a bevel gear wheel N' secured on a transversely-extending shaft N mounted to turn in suitable bearings arranged in the back and front wall of the separate compartment L. See Fig. 1. The front end of this shaft N extends to the front of the safe and is provided on this end with the usual dial O. By turning the knob of the dial O, the shaft N is rotated in one direction to cause a rotary motion of the shaft J by the gear wheels N' and J' and when the knob O is turned in the opposite direction, a reverse movement is given to the shafts N and J. When the knob of the dial is turned to the proper predetermined combination, the cam K is turned as previously explained to first unlock lever G and then exert a pull thereon to draw bar E rearward. When the door has been swung shut, and the cam K has pushed the bar E forward and outward to actuate the locking mechanism C to move the individual bolts of the latter, in engagement with the recesses D, then the lever F swings onto the back E² of the head E', and only the return movement of the bar E causes the said lever F to swing to unlock the bolt mechanism C. The door B can then be opened. It will be seen that by this construction, no apertures whatever are formed in the face of the door, so that burglars cannot get at the bolt mechanism on removing the usual combination lock arranged on the door, as is the case in ordinary safes. Tampering with the combination lock H is not possible as the lock is inside of the safe and only the dial O is on the outside, and in case the latter is removed, it does not affect the combination lock H and bolt mechanism C, so that the safe cannot be opened.

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

1. The combination with a safe provided at one end with a transverse partition extending from its front wall to its rear wall and forming a closed compartment, of a safe bolt work mounted on the door, a dial shaft extending through the front wall of the safe to the rear end of said closed compartment and bolt operating mechanism within the main compartment of the safe and connected with the rear end of the said dial shaft through the

rear end of the said partition, substantially as set forth.

2. The combination with a safe having a separate and independent closed compartment to one side of its door opening and main compartment, of a bolt work on the safe door, a dial shaft extending through the front of the safe into said compartment, a counter shaft extending through the said partition and geared to the dial shaft, a combination mechanism on said counter shaft, and bolt operating mechanism to be actuated from the counter shaft upon properly actuating the said combination mechanism, substantially as set forth.

3. The combination with a safe having a separate and independent closed compartment to one side of its door opening and main compartment, of a bolt work on the door, a dial shaft extending through the front wall of the safe to the rear of said closed compartment and adapted to actuate from its inner end the bolt work and an intervening combination lock at the rear of the safe, substantially as set forth.

4. The combination with the safe bolt work, of a dial shaft, a counter shaft extending through the front of the safe (at one side of its door opening) to the rear end thereof geared thereto to the inner end thereof, a combination lock at the rear end of the shaft and operated by the rotation of the counter shaft and a bar parallel with the dial shaft actuated from said lock and in turn operating the safe bolt work, substantially as set forth.

5. The combination with the bolt work operating bar and a hook like lever pivoted on the bar near its rear end, of a cam engaging the extremity of the bar to throw it, a second cam to engage the hook lever and retract the bar, a shaft on which the cams are loosely mounted, a combination mechanism also on the shaft to lock the cams thereon, and means for rotating said shaft from the exterior of the safe, substantially as set forth.

6. The combination with the bolt-work operating bar, and a curved hooked lever pivoted between its ends to the bar near the rear end thereof, of a shaft at right angles to the bar and rotated from the dial shaft, cams loose on the shaft, and engaging respectively the rear extremity of said bar and the hooked end of the lever to throw and retract the bar, a relatively stationary stop in the upward path of the lower end of the lever, and a combination mechanism on said first named shaft for locking the cams thereto, substantially as set forth.

7. The combination with the bolt work having a common connecting rod or bar and a lever on the door engaging the bar to retract the bolts, of a sliding bar having opposite inclines at its outer end one of which inclines engages the extremity of said connecting rod and the other the free end of the said lever, substantially as set forth.

a dial shaft parallel with the second named bar and a combination lock mechanism connecting the inner ends of the dial shaft and said second shaft, substantially as set forth.

- 5 8. In a burglar proof safe, the combination with a bar mounted to slide and provided with a head adapted to actuate the bolt mechanism on the inside of the door, of a cam engaging the inner end of the said bar to move
10 the latter in one direction, a cam lever pivoted on the said bar, a second cam engaging the said cam lever to move the said bar in the opposite direction, a combination lock on the said second cam, a shaft carrying the said
15 arms and arranged longitudinally in the safe, and a dial shaft geared with the said first

named shaft and arranged in a separate compartment of the safe, substantially as shown and described.

9. In a burglar proof safe, the combination 20 with a locking mechanism arranged on the inside of the door and provided with an individual bolt engaged by one end of a lever pivoted on the door, of a bar mounted to slide transversely and provided with a wedge- 25 shaped head having an inclined back to engage the said individual bolt and the said lever, substantially as shown and described.

EBEN N. GOWER, JR.

Witnesses:

H. J. COOPER,
J. A. MOONEY.