

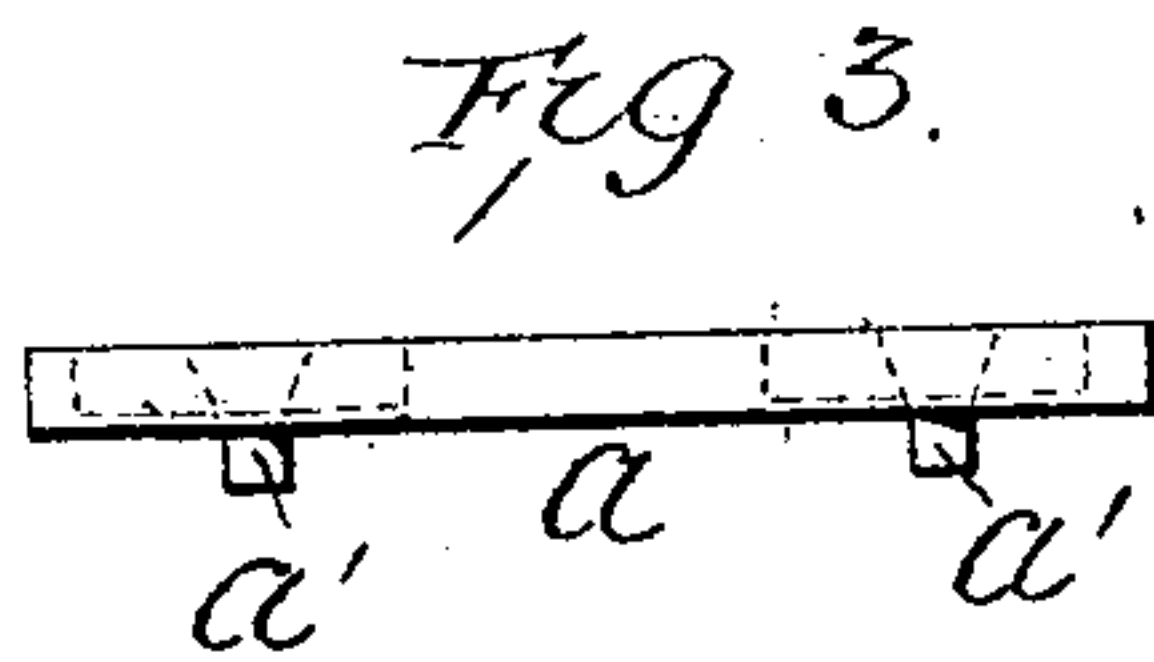
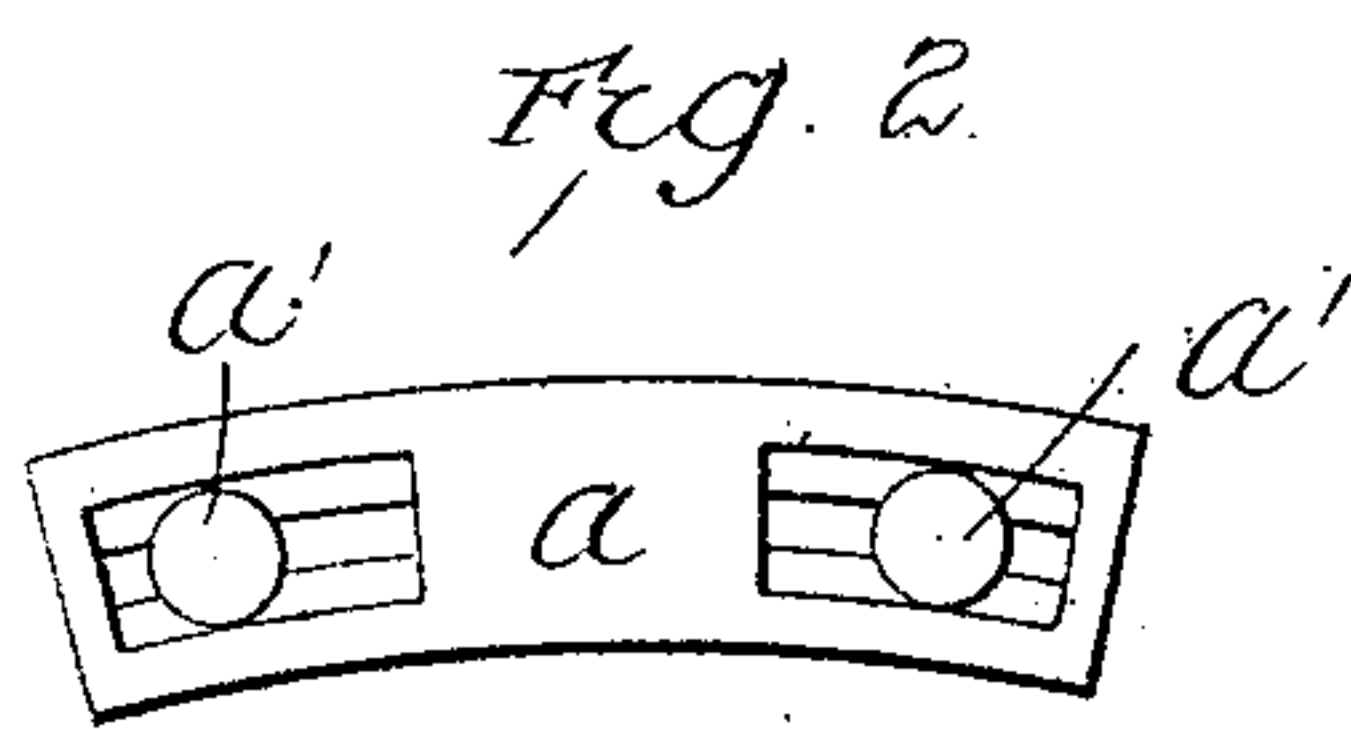
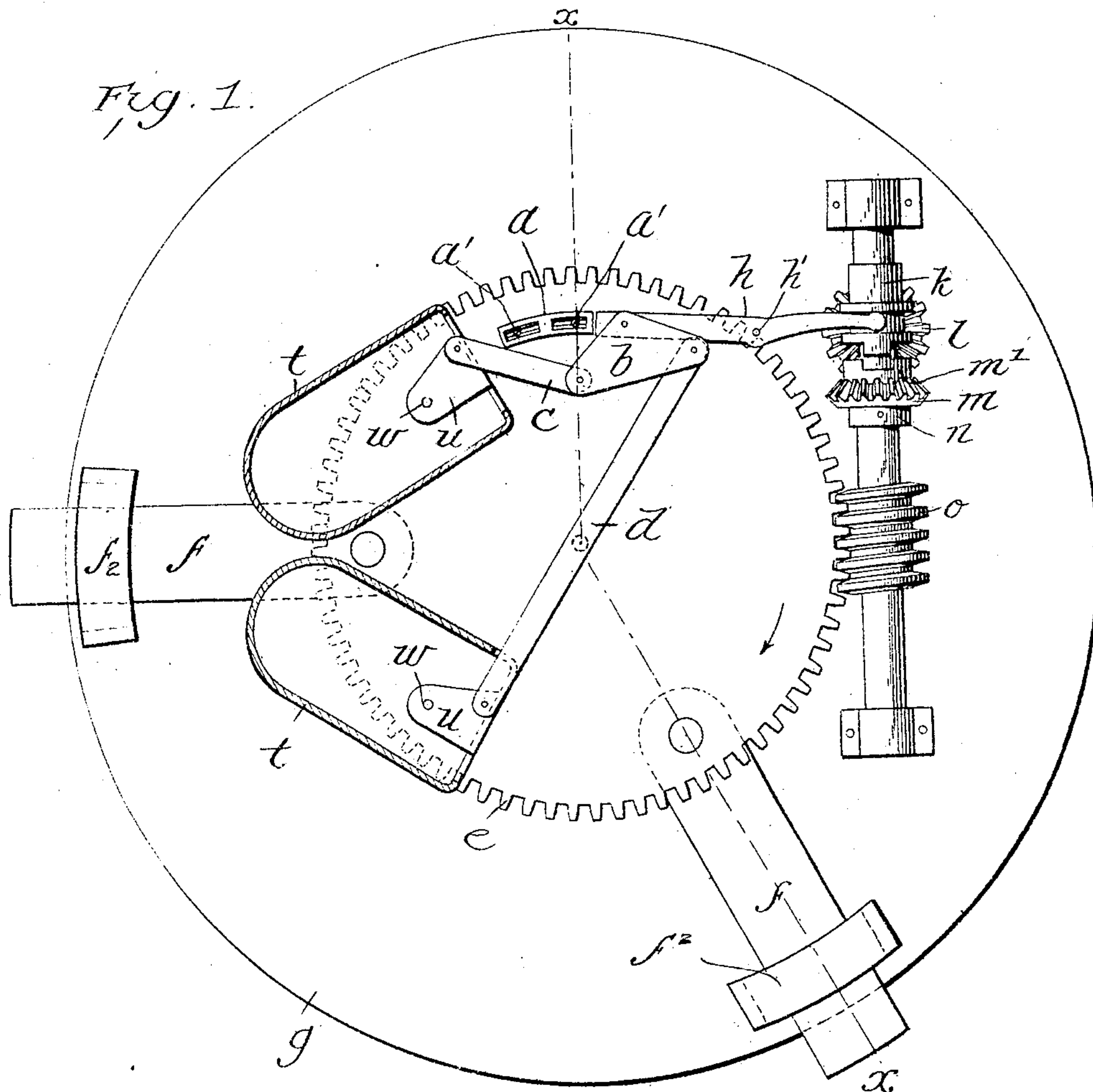
No. 803,638.

PATENTED NOV. 7, 1905.

H. C. STOCKWELL.
SAFE.

APPLICATION FILED OCT. 7, 1903.

2 SHEETS—SHEET 1.



Attest:
Edward Sartor

Inventor
Herbert C. Stockwell.
by *Spear & Seely* Attys

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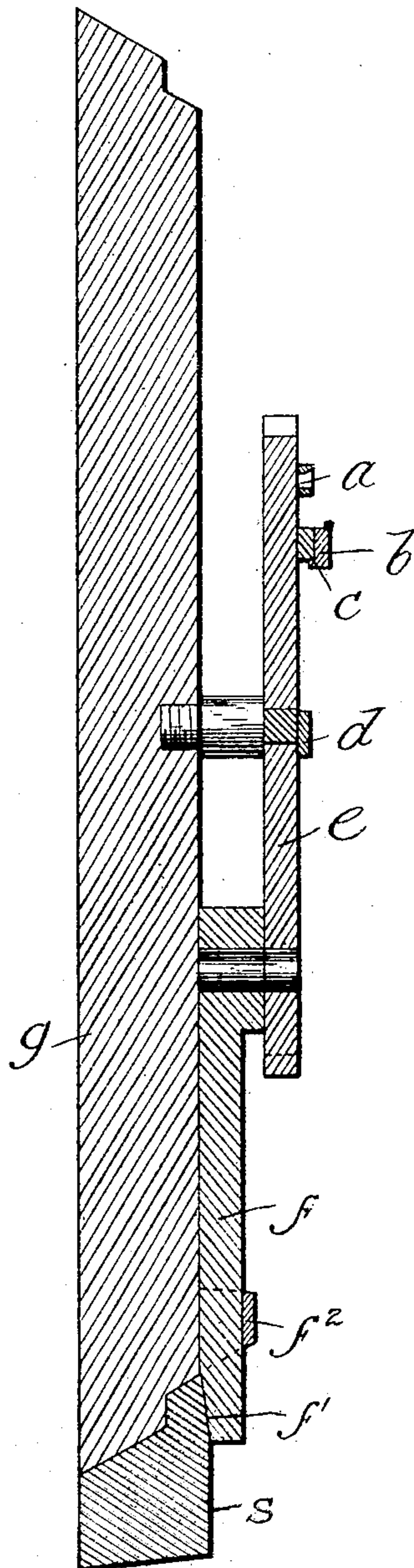
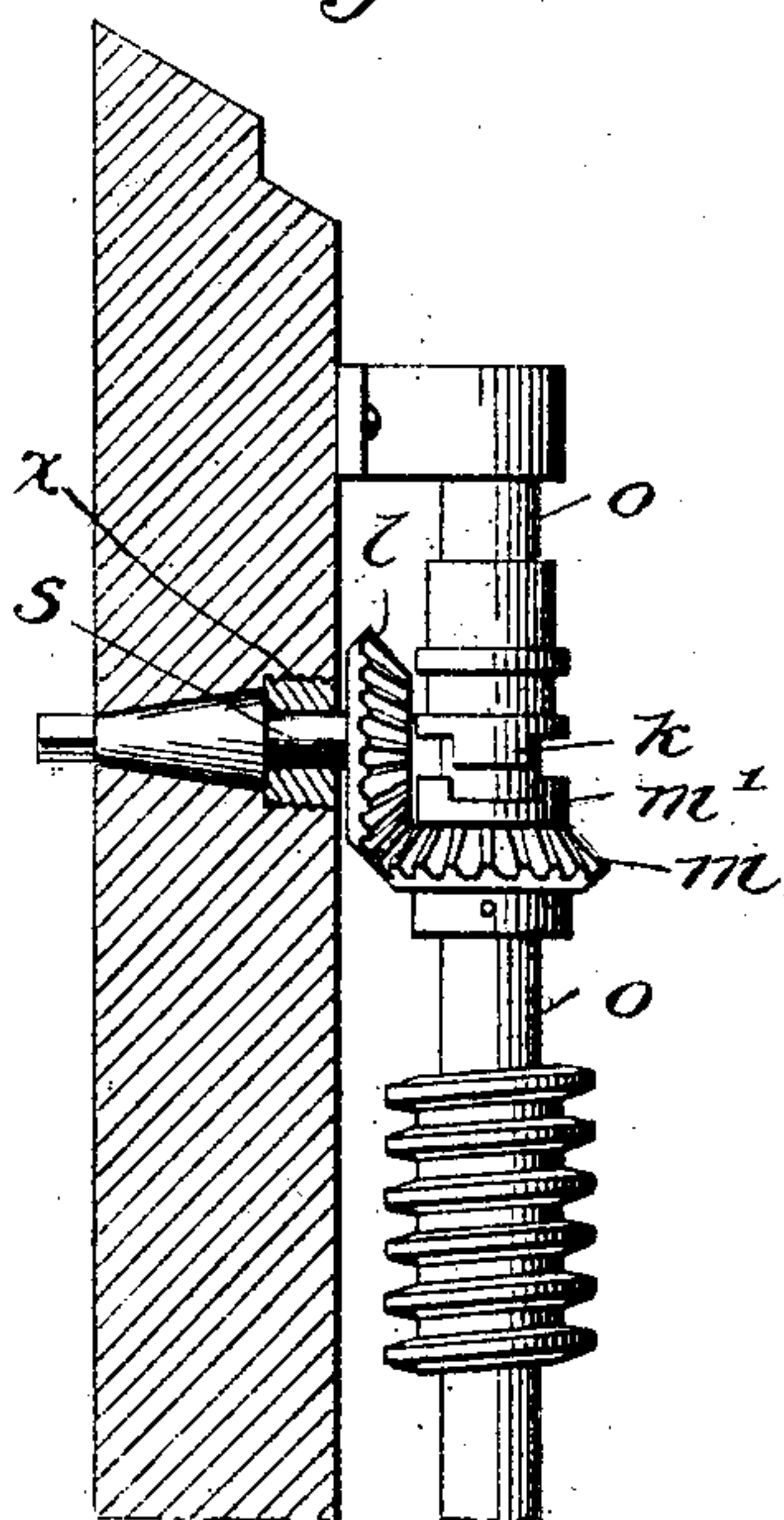
H. C. STOCKWELL.
SAFE.

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2 SHEETS—SHEET 2.

Fig. 4.

Fig. 5.



Attest:

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Edward Sartor*

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UNITED STATES PATENT OFFICE.

HERBERT C. STOCKWELL, OF LOS ANGELES, CALIFORNIA.

SAFE.

No. 803,638.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed October 7, 1903. Serial No. 176,108.

To all whom it may concern:

Be it known that I, HERBERT C. STOCKWELL, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Safes, of which the following is a specification.

My invention relates to safes, and particularly to that type of safe in which a round door has movable radial bolts which engage the jamb and which are connected to and are locked and unlocked by an oscillating disk geared to a suitable shaft operated by a handle from the outside. In the operating mechanism is included a clutch controlled by a combination-lock, and this clutch is shifted into or out of engagement with the operating-shaft by the manipulation of such lock.

My invention is a special improvement in safes of this class; and its object is to provide means for preventing the combination-lock from being thrown off until the door-bolts have been projected to their full extent. The action of the combination-lock can be conveniently prevented by holding the shifter-lever of the clutch while the bolts are being projected, and thus preventing the disengagement of such lever, and this is the manner in which I prefer to carry out my invention.

My object is further to provide an adjustable stop for holding the shifter-lever in order to compensate for possible wear of the door-bolts or other parts of the mechanism.

In the accompanying drawings, Figure 1 is an elevation of the back of a safe-door. Fig. 2 is an enlarged elevation of the adjustable stop for the clutch-lever which controls the operation of the bolts. Fig. 3 is a plan view of the same. Fig. 4 is a section on line $x x$ of Fig. 1. Fig. 5 is a cross-section of the door in the plane of the worm-shaft.

The safe shown and the mechanism for operating and controlling the bolt-work is of a well-known type. The frame or jamb in which the door is seated is shown at S in Fig. 4 and is beveled and shouldered to fit a corresponding bevel and shoulder formed on the edge of the door g . The door is of curvilinear outline, preferably circular, as shown. Journaled centrally on the back of the door is a worm gear or disk e , to which are pivoted any number of radially-disposed bolts f . The bolts slide in the guide f^2 on the door and have inclined faces f' , which coöperate with opposing inclines on the jamb, Fig. 4, in order to

draw the door firmly to its seat. By turning the gear the bolts are advanced or retracted, according to the direction of movement. The gear can be operated at proper times by a worm-shaft o , journaled in bearings on the back of the door and carrying the loose bevel-pinion m , held in place by means of a collar n and a set-screw, pin, or other suitable fastening. The loose bevel-pinion m is formed with a clutch member m' . Feathered on the shaft is a second clutch member k , which can be shifted into and out of engagement with clutch m' . A pinion l is fixed on a shaft s , which passes through to the exterior of the door and can be turned by a key, handle, or crank. Pinion l is in constant engagement with loose pinion m , but is ineffective to operate the shaft o and worm-gear until the clutch members are in engagement. If the clutches are engaged, the handle can be operated so as to turn the disk e in either direction, and so control the bolts in locking and unlocking the door.

The operation of the clutch is controlled by combination-locks, the casings of two of which are shown at $t t$. I have not considered it necessary to show the interior combination-lock mechanism, as that is well known and forms no part of my invention. I have, however, fully illustrated the connections between the said locks and the clutch, as such features are necessary to a full comprehension of my improvements.

I use two combination-locks in order to avoid the danger of the lock-out which might happen if a single lock were used and this should become deranged. By using two locks either of which will unlock the door the danger of such a lock-out is practically avoided, and of course it is only necessary to unlock one of the locks, the other remaining in its locked position.

The clutch-shifter lever is pivoted on the door at h' , and on it is hung a plate b . From this plate arms c and d extend, respectively, into the lock-casings and are pivoted to the swinging bolts $u u$, which form parts of the lock mechanisms. These bolts are secured to rocking pins $w w$ and are operated by the exterior handles of the combination-locks. In Fig. 1 the combination-locks are supposed to be locked, and the clutch is disconnected.

Secured upon the gear e adjacent to the clutch-shifting lever h is a stop a , which I prefer to make and have shown as adjustable upon the gear by pin-and-slot connections a' ,

so that the position can be regulated with great accuracy.

When the safe is to be unlocked, either combination-lock is operated, and as the bolt of
5 each of said locks is pivoted to the triangular plate *b* the movement of such bolt is imparted to the clutch-lever *h*. This will raise one end of the lever *h* above and out of the path of the stop *a*. The same movement will cause
10 the other end of the lever *h* to shift the clutch member *k* into engagement with the clutch member *m'*. In normal locked position one end of the shifter-lever *h* is in line with and in proximity to the stop *a*, as shown in Fig. 1; but the movement of the lever *h* raises that
15 end higher than said stop. One combination-lock being unlocked and the clutches in engagement the outside handle can be turned, the worm-shaft can be rotated, and the disk
20 *e* is moved in the direction of the arrow in Fig. 1, which retracts the door-bolts. Since the stop *a* moves with the disk *e*, it passes under the shifter-lever and stays there until the disk has been moved to the full extent in the
25 other direction, so as to lock the bolts. When this movement has been completed and the bolts have been thrown out to their full extent, the stop *a* is again in the position of Fig. 1, and then and not until then the combination
30 can be thrown off and the clutches disengaged. A certain range of adjustment is provided for the stop in order to compensate for any wear of the bolts or other operative parts of the mechanism, as it is very important
35 that the stop should not free the shifter-lever until the bolts have been fully moved to locked position.

The advantage of the stop will be readily seen. In its absence it would be possible to
40 throw off the combination while locking the door-bolts and before the bolts and door are seated with absolute tightness. If some thin obstruction, such as a piece of cardboard or even a pin, should lie unobserved between the
45 jamb and door, the latter could be locked by the application of ordinary force. This would leave an inappreciable space which might, however, be sufficient for the introduction of enough nitroglycerin to blow out the door.
50 My stop can be regulated with such accuracy that the door and bolts must reach their proper seats and be fully locked before the combination can be thrown off and the clutch disengaged.

55 I do not limit myself to the precise construction and arrangement herein described and shown in the drawings, as I desire to avail myself of such modifications and equivalents as fall properly within the spirit of my invention.
60

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

1. In a safe having a curvilinear door, sliding bolts for locking and unlocking the same,

interior bolt-operating mechanism, mechanism leading to the exterior of the safe, means for connecting and disconnecting said mechanisms, and means for preventing the disconnecting of said mechanisms until the bolts
70 have been moved to their fully-locked positions.

2. In a safe having a curvilinear door and sliding bolts for locking and unlocking the same, interior bolt-operating mechanism,
75 mechanism leading to the exterior of the safe, means for connecting and disconnecting said mechanisms, a lock for controlling said connection and disconnection, and means for preventing the operation of said lock and the
80 disconnection of said mechanisms until the bolts have been moved to their fully-locked position substantially as and for the purposes set forth.

3. In a safe having a circular door and radial sliding bolts, an oscillating disk to which
85 said bolts are pivoted, a shaft for oscillating said disk, a counter-shaft projecting through the door, gearing for connecting said shafts, a clutch for controlling the connection, a lock
90 for controlling the clutch, and an arresting device for preventing the operation of the lock and the clutch while the door-bolts are unlocked.

4. In a safe, having a circular door and radial bolts, a bolt-operating disk, means including a clutch for moving said disk, a combination-lock, a clutch-shifter lever connected
95 therewith, and an arresting device carried by said disk for preventing any movement of said lever before the door-bolts are fully locked.
100

5. In combination with a safe, its door, and its bolt-operating mechanism, substantially as described, and with a clutch included in
105 said bolt-operating mechanism, of a combination-lock, a clutch-shifter lever connected thereto, and an adjustable stop for arresting the said lever, substantially as and for the purposes set forth.

6. In a safe of the character described, a movable bolt-operating disk, a clutch a combination-lock and a pivoted clutch-shifter lever controlled thereby, in combination with a
110 stop carried by the bolt-operating disk and arranged in such relation to the clutch-shifter lever as to prevent any movement of said lever while the safe is unlocked and while it is being locked.
115

7. In a safe of the character described, a movable bolt-operating disk, a clutch a combination-lock and a pivoted clutch-shifter lever controlled thereby, in combination with an adjustable stop carried by the bolt-operating
120 disk, and arranged in such relation to the clutch-shifter lever as to prevent any movement of said lever while the safe is unlocked and while it is being locked.
125

8. In a safe of the character described, the combination with the movable bolt-operating disk, clutch-shifter lever, and combination-
130

lock, of a stop having a pin-and-slot connection with said disk and located in proximity to said lever; whereby in unlocking the safe said stop will ride under the clutch-shifting
5 lever, and will remain there until the completion of the reverse or locking motion of said disk has been fully completed.

In testimony whereof I have affixed my signature, in presence of two witnesses, this 11th day of July, 1903.

HERBERT C. STOCKWELL.

Witnesses:

J. M. RUMSEY,
T. A. LUCKFIND.