

Feb. 14, 1933.

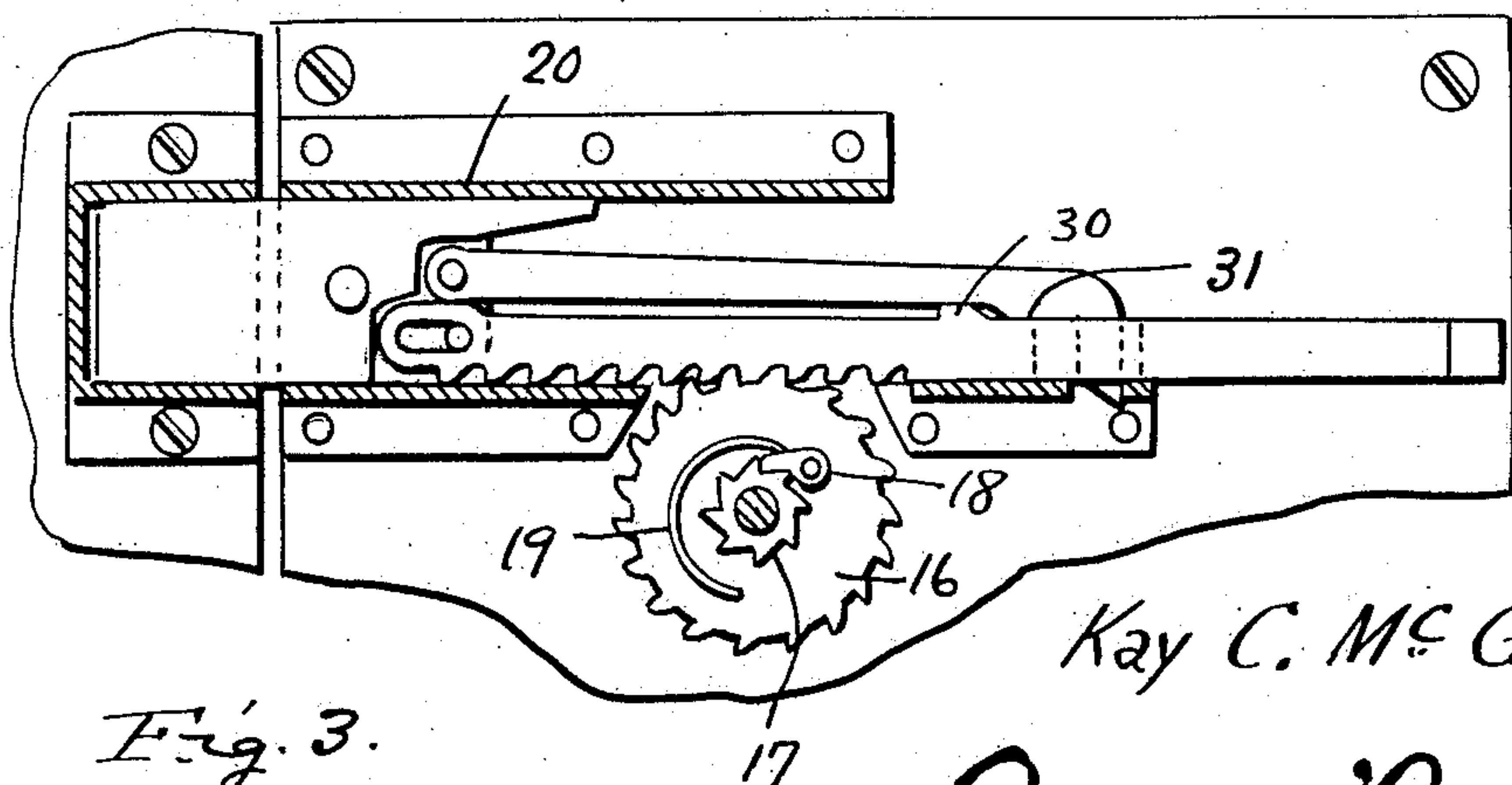
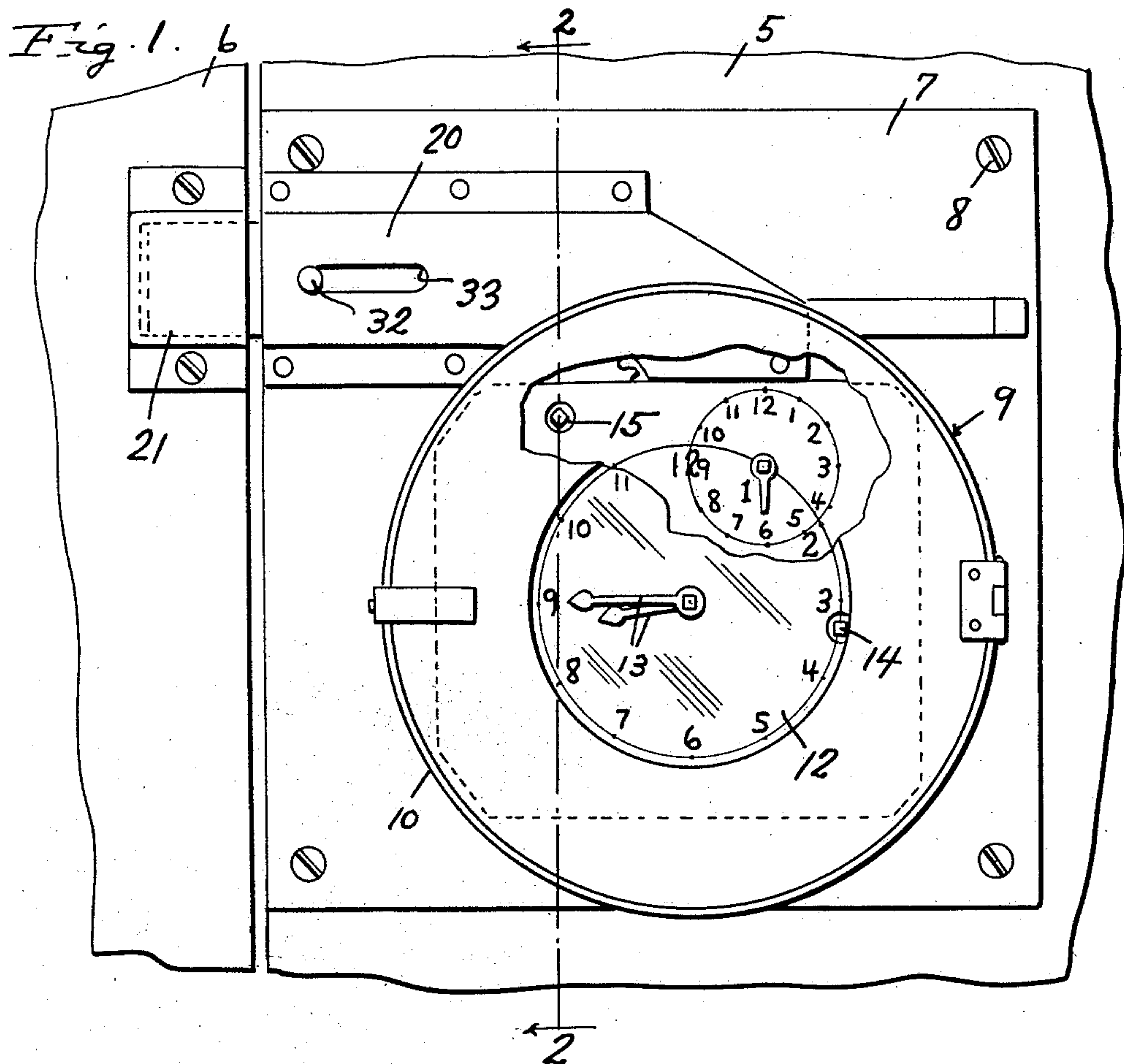
K. C. McGEE

1,897,706

DOORLOCK

Filed May 19, 1932

3 Sheets-Sheet 1



Inventor

Kay C. McGee

*Fig. 3.*

By

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3 Sheets--Sheet 2

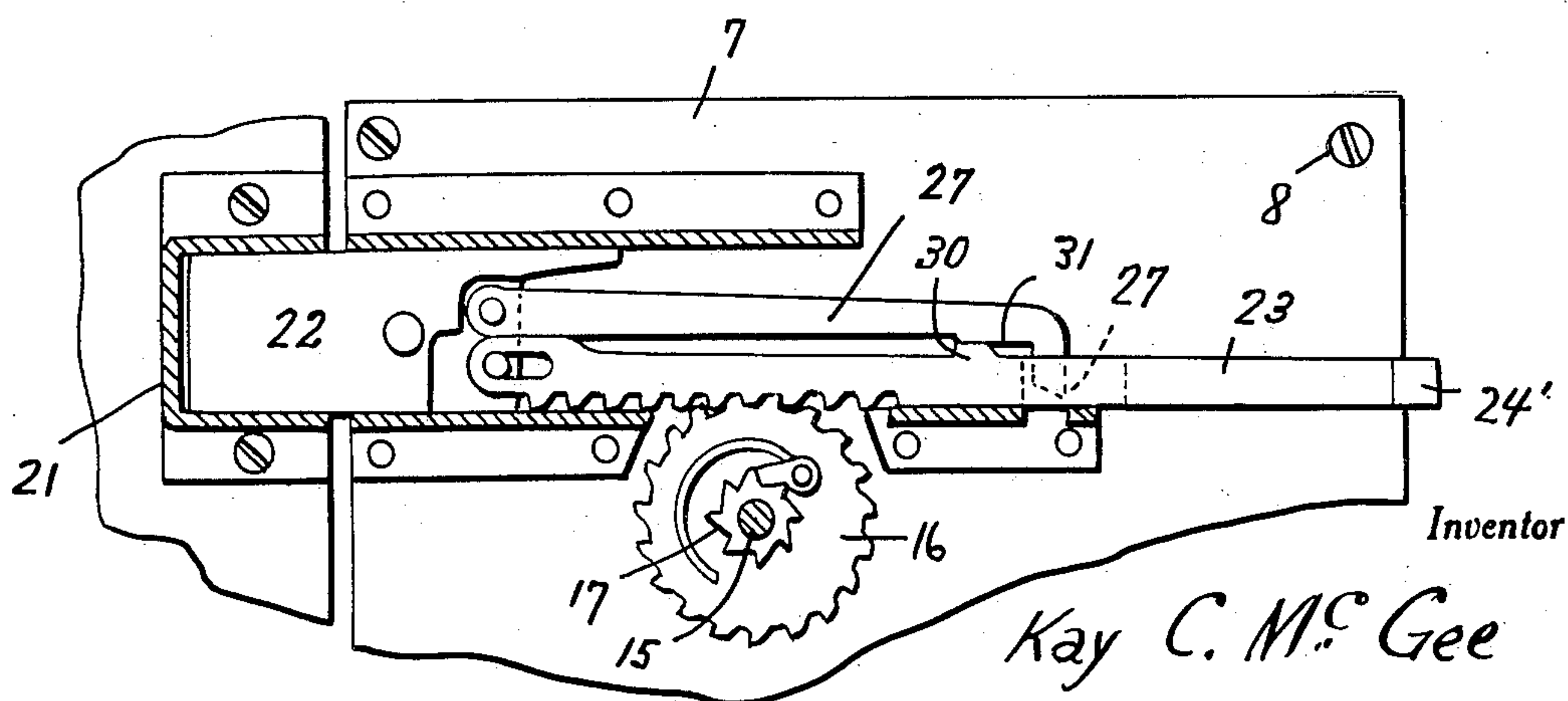
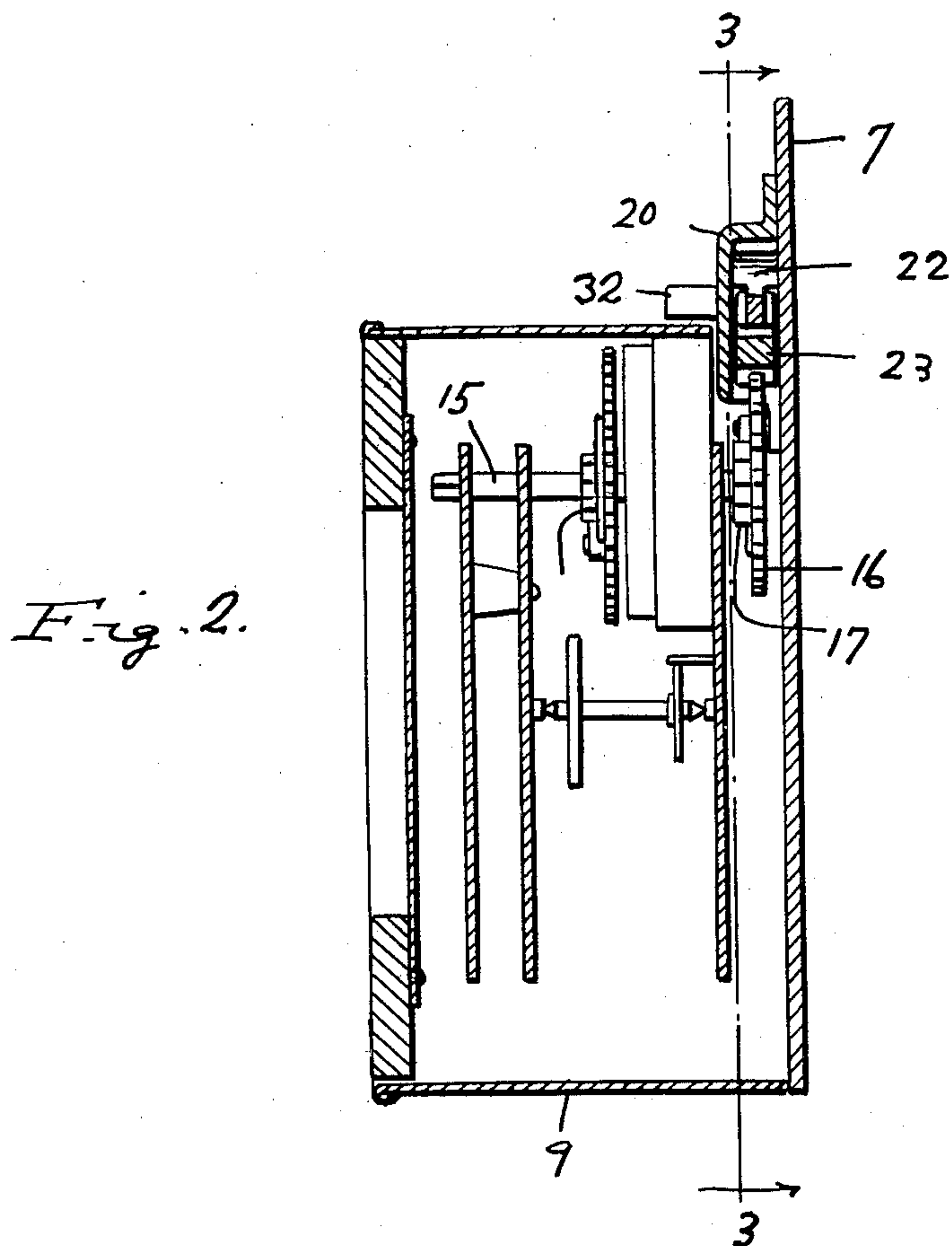


Fig. 4.

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Fig. 7.

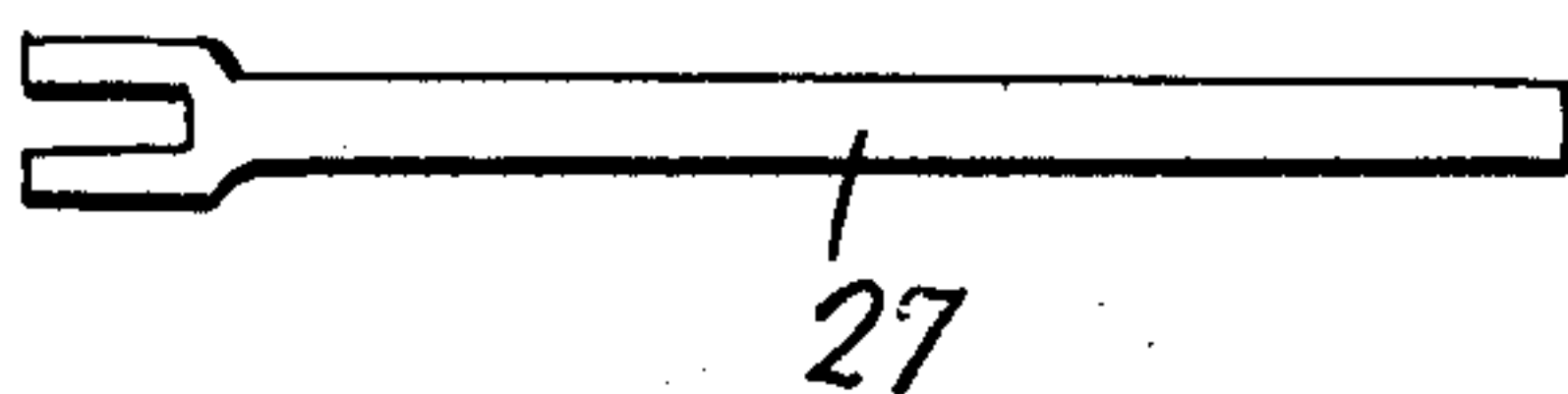


Fig. 5.

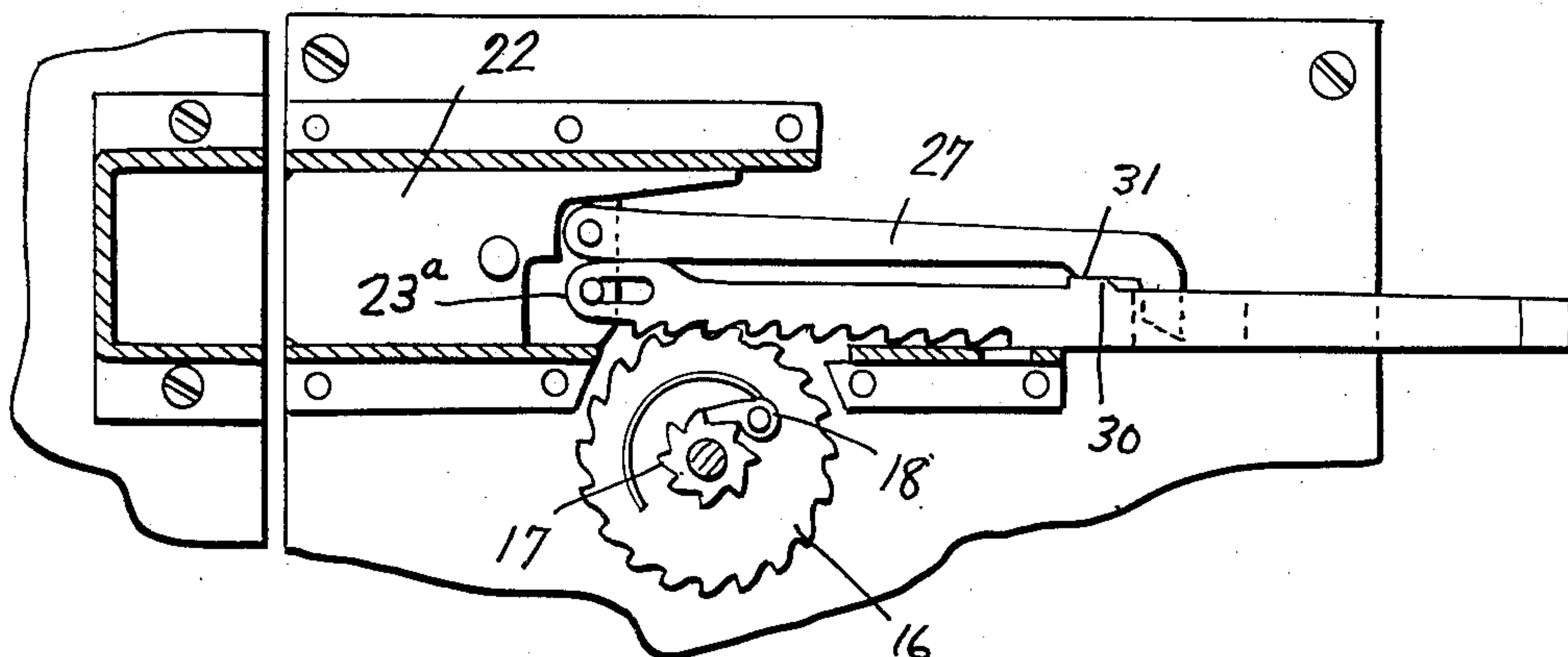


Fig. 8.

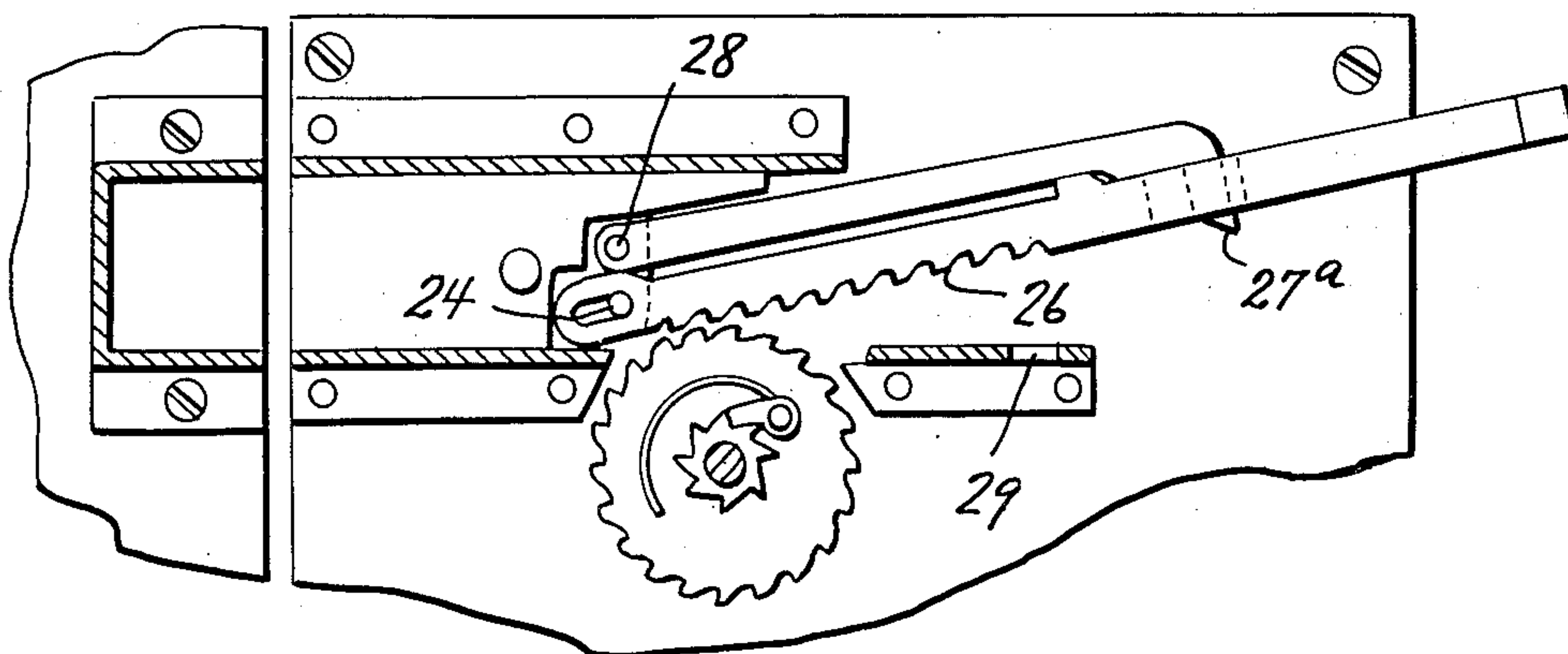
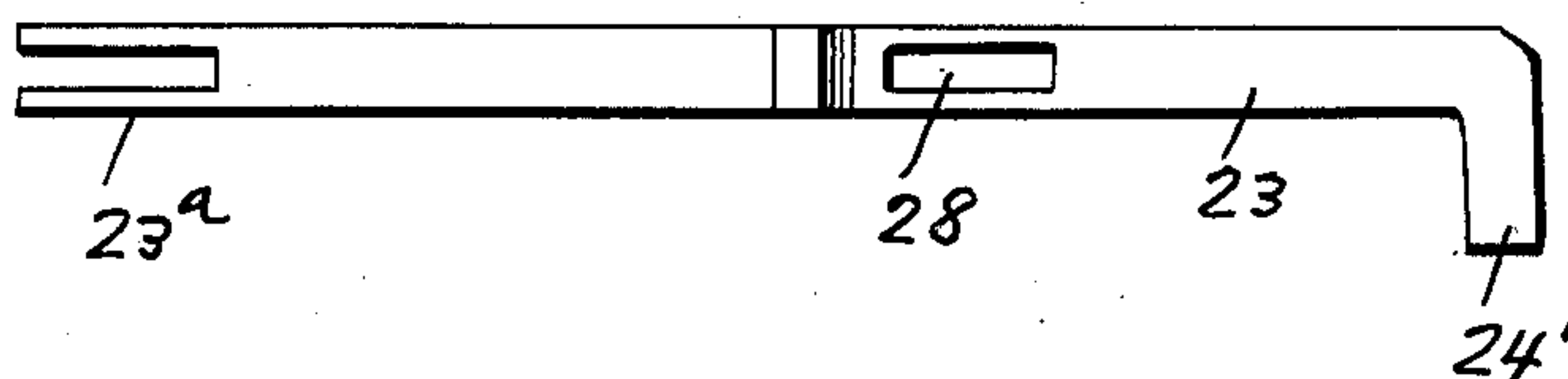


Fig. 6.

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## UNITED STATES PATENT OFFICE

KAY C. McGEE, OF LAUREL HILL, NORTH CAROLINA

## DOORLOCK

Application filed May 19, 1932. Serial No. 612,354.

This invention relates to door locks, and in accordance with the present invention a time controlled lock for doors is provided whereby the door may be locked, and at a predetermined time the bolt of the lock associated with the door retracted for unlocking the door.

The invention is especially adapted for use on doors of houses wherein servants are employed as it will dispense with the need of equipping or supplying each servant with a key to open the door and the invention together with its numerous objects and advantages will be best understood from a study of the following description, taken in connection with the accompanying drawings wherein:

Figure 1 is an elevational view showing the invention as applied to a door.

Figure 2 is a sectional view taken substantially on the line 2—2 of Figure 1 looking in the direction of the arrows.

Figure 3 is a fragmentary sectional elevational view showing the lock with the bolt projected.

Figure 4 is a view similar to Figure 3 showing the position of the parts when the bolt is unlocked in its projected position.

Figure 5 is a similar view with the bolt shown in retracted position.

Figure 6 shows the position of several of the elements subsequent to the projecting of the bolts prior to the setting of the lock.

Figure 7 is a top plan view of a keeper hook, and

Figure 8 is a top plan view of a lever.

Referring more in detail to the drawings it will be seen that the invention is applied to a conventional type of door, a portion of which is shown in the drawings and designated by the reference character 5. The door jamb a portion of which is shown in the drawings is designated by the reference character 6.

In accordance with the present invention there is provided an attaching plate 7 adapted to be secured by screws or other fastening elements 8 to the inner side or face of the door 5. Suitably mounted on the plate 7 is a circular casing 9 and for the front side

of the casing there is provided a hinged door 10 which consists of an annular frame having a transparent panel located therein. Arranged within the casing 9 is a suitable alarm clock mechanism designated generally by the reference character 11 and including among other parts the usual clock face 12, hands 13 and in the present instance the winding shaft 14 is so arranged as to be readily accessible as suggested in Figure 1. The clock mechanism also includes an alarm mechanism minus the audible alarm element duly employed but including the alarm winding shaft 15 which in the present instance is also shown as being readily accessible for winding purposes. Further, in accordance with the present invention there is loose on the alarm shaft 15 a ratchet wheel 16 while a relatively small ratchet wheel 17 is fast to the shaft 15. A pawl 18 is pivoted to the ratchet wheel 16 and is adapted to engage the teeth of the wheel 17, and is normally engaged with the teeth of said wheel through the medium of a spring 19.

Also suitably mounted on the plate 7 and extending to the rear of and adjacent the casing 9 is a relatively narrow horizontally disposed guide casing 20, adapted when the door 5 is in closed position to aline with a keeper socket 21 suitably provided on the jamb 6. Constrained to slide longitudinally in the casing 20 is a lock bolt 22, and the latter, when door 5 is closed is adapted to be projected into the socket 21 for securing the door in closed position. A lever 23 has a bifurcated end 23a adapted to engage the reduced rear end of the bolt 22, and the said end 23a is slotted for accommodating a lateral pin 24 provided at said rear end of the bolt 22. Remote from the end 23a lever 23 is provided with a finger grip 24' to facilitate manual operation of lever 23 and bolt 22. The lever 23 on its under side is provided with rack teeth 25 adapted to engage the ratchet wheel 16 whereby upon rotation of shaft 15 in a clockwise direction, ratchet wheel 16 rotating with the shaft and meshing with the teeth 26 will move the lever 23 from the position shown in Figure 3 to the position shown in Figure 4, and upon continued



movement of lever 23 caused by the rotation of the ratchet wheel 16 bolt 22 will be retracted and the parts will be as shown in Figure 5.

5 A dogging bar 27 is pivoted at one end as at 28 to the bolt 22 and at its free end the dogging bar 27 is provided with a depending lug or hook 27a adapted to engage in a slot 28, and to extend through said slot 28 to engage  
10 an opening 29 provided in the bottom of the guide housing 20 when the bolt 22 is in its projected position, so that as clearly shown in Figure 3 with the bolt 22 engaged in the socket 21 unauthorized retraction of the bolt  
15 is effectively prevented.

Adjacent the slot 28 the lever 23 is provided with a lug 30 with which the under face of the dogging member 27 is engaged when the parts are in the position shown in  
20 Figure 3. In this connection it will be noted the shank portion of the dogging member 27 is tapered being smallest at its junction with the hook 27a, and at said smallest end is provided with a shoulder 31 with which  
25 the lug 30 moves into engagement upon shifting movement of the lever 23 from the position shown in Figure 2 to the position shown in Figure 4 whereupon, as shown in Figure 5 the hook equipped end of the lever 27 will  
30 be raised, and with said hook 27a raised and out of engagement with opening 29 lever 23 will be free to continue its movement for completely retracting the bolt 22 as shown in Fig. 5.

35 In actual practice the alarm mechanism of the clock is set in the usual manner after determining upon the hour the lock is to be automatically actuated for unlocking the door. With the alarm properly set and the  
40 door closed, the lever 23 is raised to the position shown in Figure 6 and the bolt 22 projected into engagement with the keeper socket 21. Lever 23 is then lowered so that the teeth 26 thereof engage the ratchet wheel 16 and  
45 the parts are now in the position shown in Figure 3, it being noted that the hook 27a of dogging member 27 is engaged with the opening 29 in the bottom of the casing 20 so that there can be no unauthorized retraction of  
50 the bolt 22.

Assuming that the alarm has been set for six o'clock it will be apparent that upon the hour shaft 15 will rotate in a clockwise direction carrying with it the ratchet wheel 17  
55 which engaged by the pawl 18 will cause the ratchet wheel 16 to rotate therewith. Longitudinal movement is then imparted to the lever 23. Upon initial movement of the lever 23 lug 30 thereon will engage shoulder 31  
60 to raise the hook 27a out of engagement with the opening 29, and as lever 23 continues to move toward the right in Figure 3 movement of the lever will be imparted to the bolt 22, movement of bolt 22 initiating when the slot  
65 in the end 23a of the lever engages the pin

24 as shown in Figure 4, consequently the pin 24 being engaged with the slot as shown in Figure 5 the movement of the lever 23 will cause the bolt 22 to be moved out of engagement from the socket 21 and drawn inwardly  
70 of the drive housing or casing 20 thus unlocking the door.

Movement of the bolt 22 to its retracted position is limited through the medium of a pin 32 carried by said bolt and operating in a slot 34 provided in the side wall of the housing 20  
75 as shown in Figure 1.

From the above it will be seen that I have devised a comparatively simple and inexpensive time controlled lock mechanism, which  
80 may be readily and easily applied to a door, and in which the clock will serve the usual purpose of a clock for the occupants of the house.

Even though I have herein shown and described the preferred embodiment of the invention, it is to be understood that the same is susceptible of further changes, modifications  
85 and improvements coming within the scope of the appended claims.

Having thus described my invention, what I claim as new is:

1. In a lock of the class described, a casing, a bolt constrained to shift longitudinally of the casing, a lever, pin and slot means connecting said lever with said bolt, time control means operatively connected with said lever for actuating the same to retract the bolt, means for normally locking said lever in protracted position operable upon initial movement of the lever relative to the bolt to release said bolt whereupon said bolt is free to be retracted upon continued movement of said lever.  
95 100

2. A lock of the character described comprising in combination a plate, a casing mounted on said plate, a locking bolt constrained to shift longitudinally of said casing, a second casing mounted on said plate, a clock mechanism arranged within said casing including an alarm actuating mechanism, means for locking said bolt in a projected position, and means operatively connecting said bolt with the alarm mechanism of said clock for subsequently releasing said bolt locking means, and subsequently retracting said bolt upon operation of the alarm mechanism.  
105 110 115

3. A lock comprising in combination a casing, a bolt constrained to shift longitudinally of the casing, a lever, pin and slot means connecting the lever with the bolt, said lever being provided with a slot elongated longitudinally, and said casing having a wall thereof provided with an opening adapted for registry with the slot, and a locking member pivoted to said bolt and having an end formed to pass through the slot in said lever and to engage the opening in the wall of the casing, and inter-engaging means in said lever and  
120 125 130

said locking member for moving said end of  
the locking member out of engagement with  
the aperture in the wall casing upon move-  
ment of the lever in one direction relative to  
5 said bolt.

In testimony whereof I affix my signature.

KAY C. McGEE.