No. 864,500. PATENTED AUG. 27, 1907.

E. F. ABBOTT & C. E. MORRIS.

RECORDING DEVICE FOR SAFE DOORS.

APPLICATION FILED AUG. 20, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

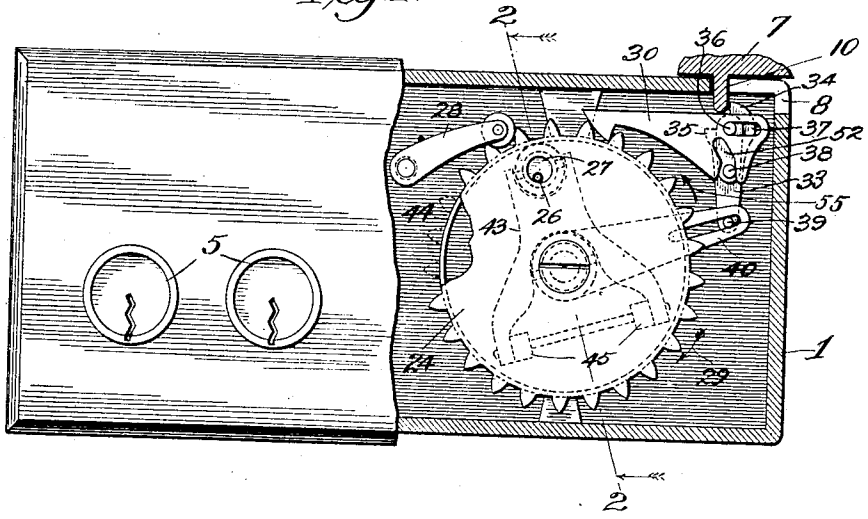



Fig. 2.

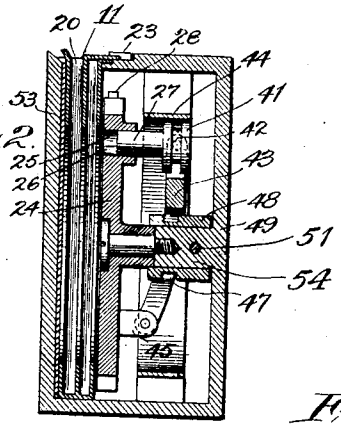



Fig. 3.

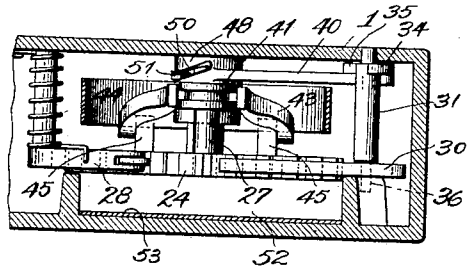



Fig. 4.

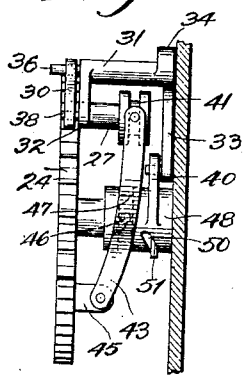



Fig. 5.

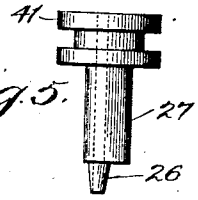
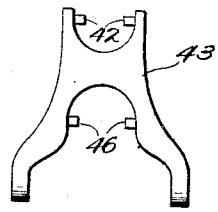



Fig. 6.




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2 SHEETS—SHEET 2.

Fig. 7.

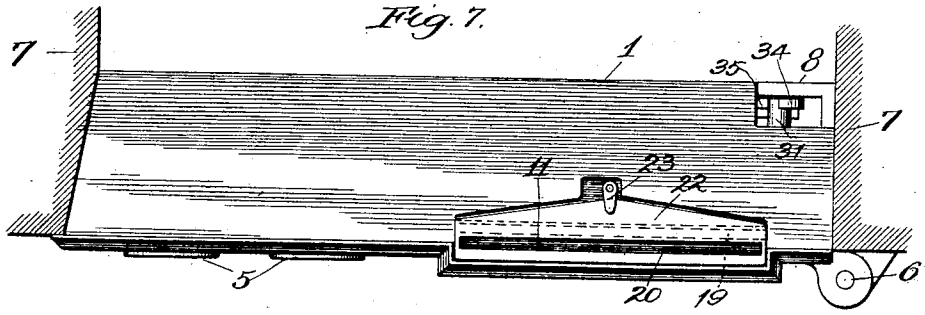



Fig. 8.

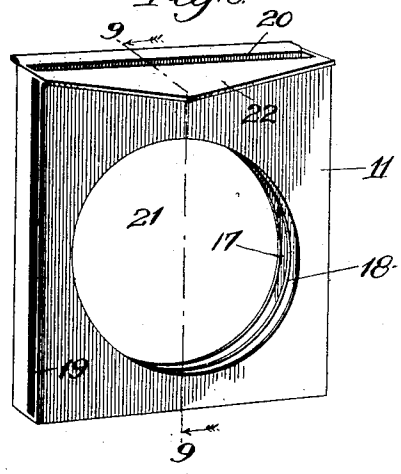



Fig. 9.

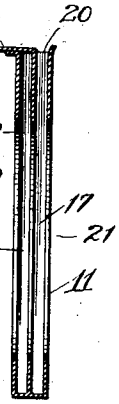



Fig. 12.

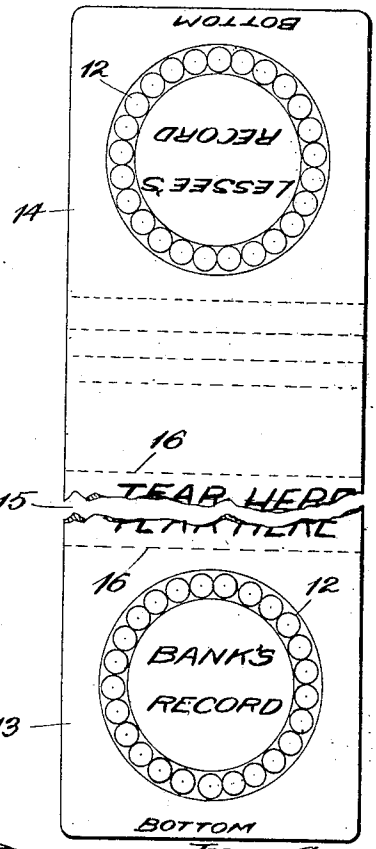



Fig. 10.

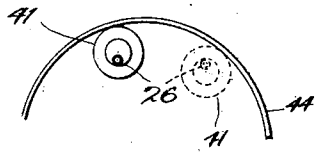



Fig. 11

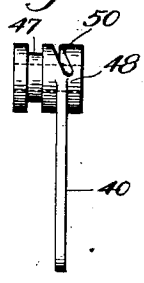
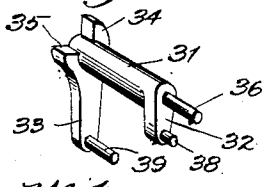



Fig. 13.




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# UNITED STATES PATENT OFFICE.

EDWIN F. ABBOTT, OF CHICAGO, ILLINOIS, AND CHARLES E. MORRIS, OF LANE, KANSAS.

## RECORDING DEVICE FOR SAFE-DOORS.

No. 864,500. Specification of Letters Patent. Patented Aug. 27, 1907.

Application filed August 20, 1906. Serial No. 331,260.

*To all whom it may concern:*

Be it known that we, EDWIN F. ABBOTT and CHARLES E. MORRIS, citizens of the United States of America, and residents, respectively, of Chicago, Cook county, Illinois, and Lane, Franklin county, Kansas, have invented certain new and useful Improvements in Recording Devices for Safe-Doors, of which the following is a specification.

This invention relates to devices for recording the opening of doors such as those of the lock boxes of safety deposit vaults.

The main objects of this invention are to provide an improved recording device, for safety deposit lock boxes, which will make a permanent record whenever the door is opened so that a lessee can readily tell how many times the door has been opened and may readily know if any unauthorized parties have opened the box in his absence; to provide means for varying the successive records so that each will be different from the others; and to provide an arrangement whereby one record will be inaccessibly retained within the device when the door is closed while a duplicate record may be simultaneously made and be withdrawn after each operation of the device and kept in the possession of the lessee as a check upon the original.

These objects are accomplished by the device shown in the accompanying drawings, in which:

Figure 1 is a front elevation, partly broken away, of the door of a safety deposit lock box constructed according to this invention. Fig. 2 is a section on the line 2—2 of Fig. 1. Fig. 3 is a top plan of the same, the casing being in section and partly broken away. Fig. 4 is a side elevation of the punching mechanism, the casing being in section and partly broken away. Fig. 5 is a detail of the punch. Fig. 6 is a detail of the punch operating lever. Fig. 7 is a top plan of the door in its closed position, the frame being indicated in section. Fig. 8 is a perspective view of the retainer which holds the record cards. Fig. 9 is a section of the same on the line 9—9 of Fig. 8. Fig. 10 illustrates the means for rotating the eccentric punch to vary the location of the perforation. Fig. 11 is a detail of the sleeve and lever which operate the punch operating lever. Fig. 12 is a view showing the record card. Fig. 13 is a detail in perspective of the dog which operates the punching mechanism.

In the construction shown in the drawings, the door is in the form of a hollow casing 1 having the usual locking means indicated by the key holes 5 in Fig. 1. The door is hinged at 6 to the frame, a portion of which is indicated at 7 in Figs. 1 and 7. The casing 1 is open a 8 to permit a lug 10 on the frame to pass into the casing when the door is in its closed position.

The door is provided near the top with an opening adapted to permit the insertion into the casing of a sheet metal retainer 11 which is adapted to hold two cards face to face in close proximity to each other, and permit one to be readily inserted or withdrawn while the door is closed, and at the same time prevent the removal of the other.

The general type of record card which is used in this device is indicated in Fig. 12. The two ends of the card are printed in a similar manner with an annular series of spaces 12. The card is intended to be torn in two parts or coupons, respectively the bank's record 13 and the lessee's record 14. The limits between which the tear should be made are indicated by the dotted lines 16, Fig. 12. These cards are similar except that the part which is used as the lessee's record is considerably longer than the other.

The retainer for the cards which is illustrated in Figs. 8 and 9 is provided with two inner compartments 17 and 18. The compartment 18 has a slot 19 opening through the side of the retainer and the compartment 17 has a slot 20 opening through the top of the retainer. Both walls of the retainer and also the partition which subdivides it have large openings 21 in the middle part to permit the punch to operate upon the cards in the vicinity of the spaces 12, as will be hereinafter described.

The retainer 11 is provided with an overhanging lip 22 at the top which is seated in a suitable depression in the top of the door and fastened down by means of a button 23, indicated in Fig. 7. The bank's coupon 13 of the card is inserted into the compartment 18 of the receptacle with the edge marked "Bottom" down and the coupon "14" is inserted into the compartment 17 through the slot 20 with the edge marked "Bottom" down. The retainer 11 is made to exactly fit the cards on three sides so that when the cards are in position, the annular series of spaces on one card will exactly register with those on the other. When the door is closed and locked, it will be impossible to remove the retainer 11 to gain access to the card 13, because the door frame extends over both the lip 22 and a portion of the top of the retainer 11. The slot 20, however, is located just outside of the casing as indicated in Fig. 7 so that the coupon 14 may be readily inserted or withdrawn from the compartment 17.

A wheel 24 is journaled in the casing at the rear of the receptacle 11 with its axis in alinement with the center of the annular series of spaces 12. The wheel 24 has an opening 25 extending through it, in parallel relation to its axis and at right angles to the plane of the receptacle 11. A punch 26 is carried by a cylindrical shank 27 which is rotatable in the opening 25 and adapted to slide longitudinally therein for causing the punch 26 to simultaneously perforate both of the cards. The front wall of the casing is preferably lined with soft metal such as brass or copper at the part 53 against which the

punch operates so as to prevent injury to the cutting edge of the punch. The punch is preferably hollow so that the punchings are discharged at the rear. The punch 26 is eccentrically located on the shank 27 so that when the shank is rotated simultaneously with the rotation of the wheel 24, the relative location of the perforation will be different in different spaces 12. The annular row of spaces 12 corresponds to the circle in which the punch rotates about the axis of the wheel and each space 12 is of a diameter substantially the same or larger than the diameter of the shank 27. The successive spaces 12 are located to correspond with the successive positions of the punch during the rotation of the wheel 24.

The periphery of the wheel 24 is toothed, the number of teeth corresponding to the number of spaces 12 on each card. A spring-pressed pawl 28 serves to center the wheel 24 at each of its different positions. The wheel 24 is rotated in the direction of the arrow 29 on Fig. 1 by means of a pawl 30 which is mounted to reciprocate between certain limits so as to advance the wheel 24 one tooth space through each operation. The movement of the pawl 30 is controlled by means of a dog 31 best shown in Fig. 13. This dog has two depending arms 32 and 33 and two upwardly disposed lugs 34 and 35, the latter being about at right angles to each other. The dog 31 is pivotally mounted in the casing in such position that the lugs 34 and 35 will be acted upon by the lug 10 on the frame when the door is swung open or shut. The pawl 30 is pivotally mounted on a reduced portion 36 of the shank of the dog 31. The pawl 30 is slotted at 37 where it engages the pivot 36 so as to permit the pawl to slide forward and back a sufficient distance for operating the wheel 24. One of the arms of the dog has a pin 38 which engages a slot in the pawl 30 and imparts such forward and backward movement to the pawl through the swinging of the dog. The long arm 33 of the dog 31 is provided with a pin 39 which extends through a slot in the lever 40 and serves to swing that lever 40 when the dog 31 is swung.

The punch 27 has an enlarged circular head 41 which has an annular slot in its periphery for engaging pins 42 on the punching lever 43. The head 41 has frictional contact with a circular track 44 and causes the punch 27 to rotate on its own axis when the wheel 24 is rotated. The lever 43 is pivoted to lugs 45 on the rear face of the wheel 24 and is also provided with pins 46 which engage an annular slot 47 in the hub of the lever 40. This hub is in the form of a sleeve 48 loosely mounted on a stud 54 which is in alinement with the hub of the wheel 24. The wheel 24 is carried by a spindle 49 on the end of the stud 54. The sleeve 48 has an inclined slot 50 in one side which engages a pin 51 on the stud 54. The slot 50 is so arranged as to cause the sleeve 48 to shift toward the wheel 24 and cause the punch to perforate the cards when the lever 40 is swung in the direction of the arrow 55 (Fig. 1). The punch is withdrawn through the reverse movement of the lever 51.

The operation of the device shown is as follows: When the door is swung open, the lug 10 on the frame engages the shoulder 34 and rocks the dog 31 so as to swing the lever 40 in the direction of the arrow 55, causing the punch to be depressed and to perforate the cards in the retainer 11. In passing off of the lug 34, the lug 10 swings the dog 31 to a position substantially at right angles to that shown in Fig. 1. The lug 35 of the dog is then in position for engaging the lug 10 and returning the dog to its normal position when the door is again closed. On account of the shape of the slot 52, the dog 31 will swing a sufficient distance for withdrawing the punch from the cards before the pawl 30 causes the wheel 24 to rotate.

When the lessee wishes to open the door of the vault, he inserts his coupon 14 of the card in the slot 20 before the door is unlocked. He then opens the door, causing both cards to be perforated. If the door is opened during the absence of the lessee or without the insertion of his card into the lock, then a perforation will be made upon the card which is inclosed within the casing only. Upon opening the door at a later time, the lessee's card will immediately show him that some irregularity has occurred in the opening of the box because his card will show an unperforated space between the last perforation and the next preceding. It will therefore be impossible to open the door without leaving a record upon the card which is in the lock. The substitution of a new card for the old one is impossible without the consent of all parties because it would be impossible to make the torn edges match.

It is intended in operating this device to place signatures both of the bank officials and of the lessee upon each of the coupons, and a further precaution against counterfeiting one of the coupons may be taken by requiring a signature to be written across the line on which the tear is to be made.

The diameter of the head 41 of the punch is preferably not an exact multiple of that of the annular track 44 and there is more or less slip between the two so that it is practically impossible to set the wheel 24 back and cause the punch to repeat a record exactly in all respects so that the lessee would be unable to detect the discrepancies by comparison with his coupon.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a door having a retainer for holding a card, a punch mounted on the door and adapted to perforate the card, mechanism for operating said punch through the act of opening the door, and mechanism for automatically shifting said punch with respect to the card after each operation of the punch.

2. In a device of the class described, the combination of a door, a retainer mounted on said door and adapted to hold two cards face to face and in close proximity to each other, a punch mounted at one side of said retainer and movable to a plurality of different positions along the cards, mechanism operated through the act of opening said door, and adapted to cause said punch to perforate said cards, and mechanism for shifting the position of said punch through the closing of said door, said retainer being adapted to prevent the removal of one of said cards when the door is closed and at the same time permit the ready insertion or withdrawal of the other card.

3. In a device of the class described, the combination of a rotatable member, a punch movably mounted on said member and having a rotatable shank with a cutting face located eccentrically thereof, a reciprocating part adapted to operate said punch when moved in one direction and to rotate said member when moved in the opposite direction, and means for rotating said shank on its own axis through the rotation of said member.

4. In a device of the class described, the combination of a rotatable member, a punch movably mounted on said member and having a rotatable shank with a cutting face located eccentrically thereof, a reciprocating part adapted

to operate said punch when moved in one direction and to rotate said member when moved in the opposite direction, and means for automatically rotating said shank on its own axis.

5. The combination of a rotatable member, a punch having a rotatable shank with an eccentric cutting face at one end, a lever fulcrumed on said member and adapted to slide said shank axially for causing the cutting face to perforate an adjacent sheet of material, a friction roller on said shank, and an annular friction surface located concentrically of said member and engaging said friction roller, said friction roller and surface being arranged to cause said shank to rotate on its own axis during the rotation of said member.

6. In a device of the class described, the combination of a frame, a door mounted therein and comprising a casing having therein a retainer for holding a card and adapted to prevent access to said card when the door is in its closed position, said casing having in its walls a slot adapted to permit the insertion of a second card into said casing when the door is in its closed position, mechanism adapted to simultaneously perforate both of said cards through the act of opening the door, and mechanism adapted to automatically shift the location of said punch with respect to the card when said door is closed.

7. In a device of the class described, the combination of a frame, a door mounted therein and comprising a casing having therein a retainer for holding a card and adapted to prevent access to said card when the door is in its closed position, said casing having in its walls a slot adapted to permit the insertion of a second card into said casing when the door is in its closed position, punching mechanism comprising a punch having a cylindrical shank, and an eccentric cutter carried by said shank and arranged to perforate both of said cards through a certain movement of said door, mechanism for shifting the position of said punch through a certain other movement of said door, and means for rotating said punch on its own axis when said punch is shifted.

8. The combination of a casing having therein a compartment for retaining a card and adapted to prevent access to said card from the outside of the casing, a punch mounted in said casing and adapted to perforate said card, said punch being mounted to rotate about two separate parallel axes, means operated from the outside of the casing for shifting said punch about one of said axes; and means for automatically rotating said punch about the other axis when said punch is shifted to different positions about the first axis.

9. The combination of a frame, a door mounted therein and comprising a casing having in its interior a compartment for retaining a card, said compartment being suitably arranged to prevent the removal of said card when the door is in its closed position, said casing having a slot in its walls adapted to permit a second card to be inserted in to the casing adjacent to the first, a wheel journaled in the casing at one side of said cards and on an axis at right angles to the face of the cards, a punch journaled on said wheel on an axis at one side of the first axis and parallel therewith, said punch being adapted to simultaneously perforate both of said cards, means for operating said punch through the act of opening the door, means for rotating said wheel through the act of closing the door, a roller on said punch, and an annular track engaged by said roller and adapted to cause the same to rotate said punch on its own axis when said punch is rotated about the axis of the wheel.

10. The combination of a frame, a wheel journaled on said frame and having thereon an annular series of ratchet teeth, a pawl having a reciprocating movement on said frame and meshing with the teeth on said wheel for intermittently rotating the wheel, a punch slidably mounted on said wheel at one side of the axis thereof, a lever fulcrumed on said wheel and adapted to shift said punch in an axial direction, a sleeve mounted in axial alinement with said wheel, being connected with said lever and arranged to shift in an axial direction when rotated, and an arm for rotating said sleeve.

Signed by EDWIN F. ABBOTT this 7" day of August,, 1906, at Rugby, Tennessee, and signed by CHARLES E. MORRIS, this 2nd day of August, 1906, at Lane, Kansas.

EDWIN F. ABBOTT.
CHARLES E. MORRIS.

Witnesses to signature of Edwin F. Abbott:
S. H. GILES,
C. O. GOAD.
Witnesses to signature of Charles E. Morris:
W. D. ODDWELL,
W. WALTER.