

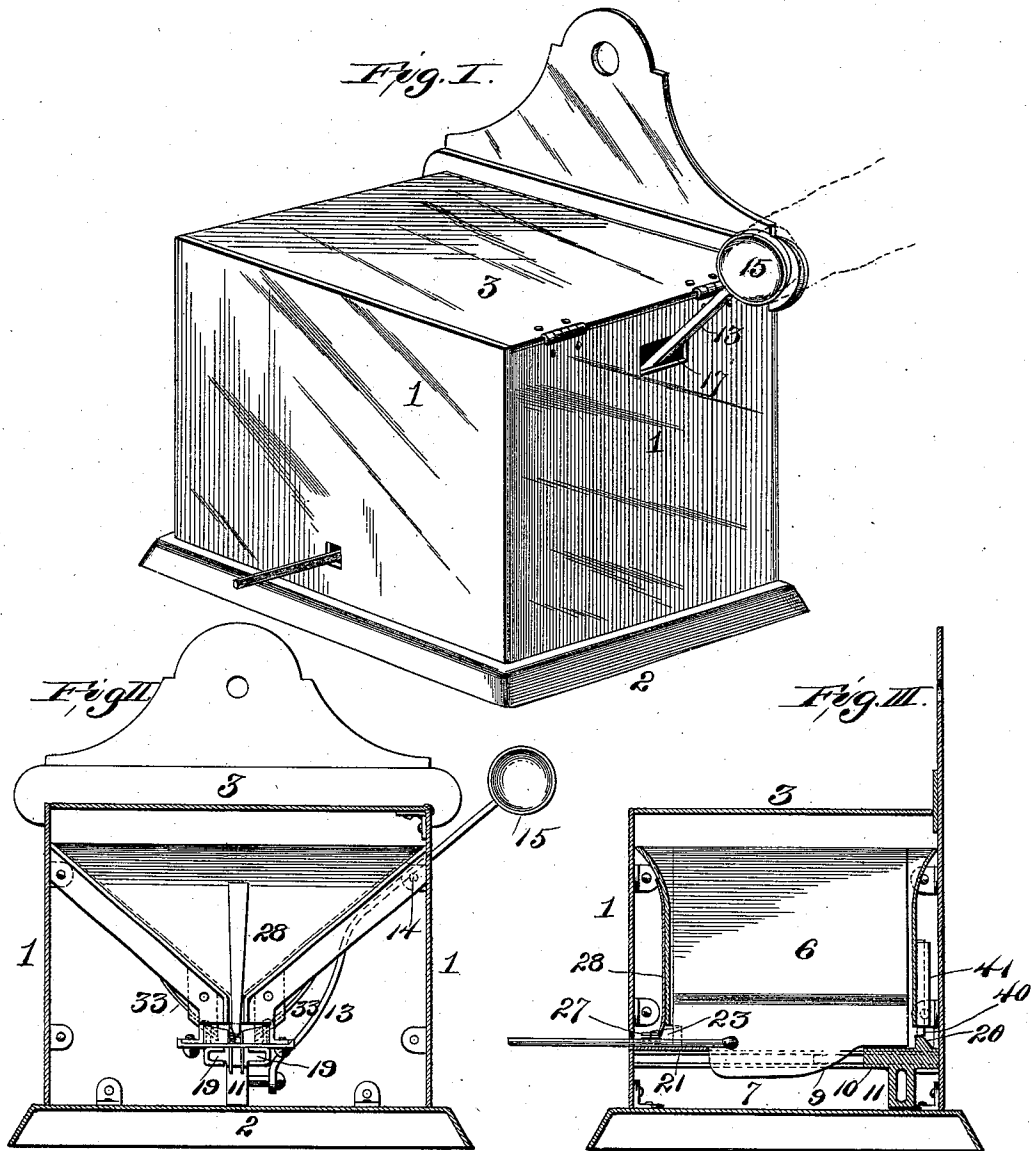
(No Model.)

2 Sheets—Sheet 1.

A. ROTHSCILD.  
SELF LIGHTING MATCH BOX.

No. 534,176.

Patented Feb. 12, 1895.



Attest:  
*W. J. Edwards*  
C. S. Edwards.

Inventor:  
*Adolph Rothschild*  
By *Wright Bros* Attys

(No Model.)

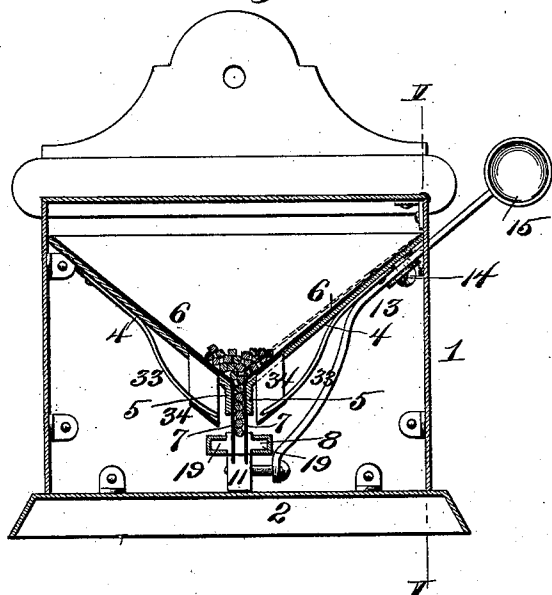
2 Sheets—Sheet 2.

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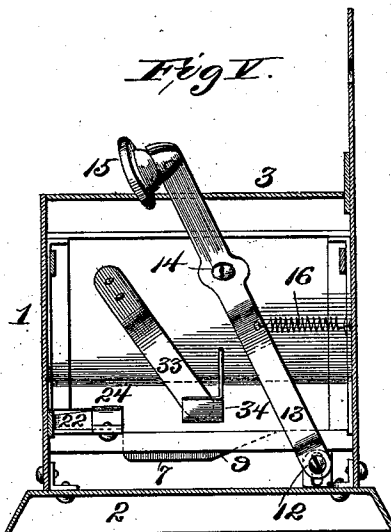
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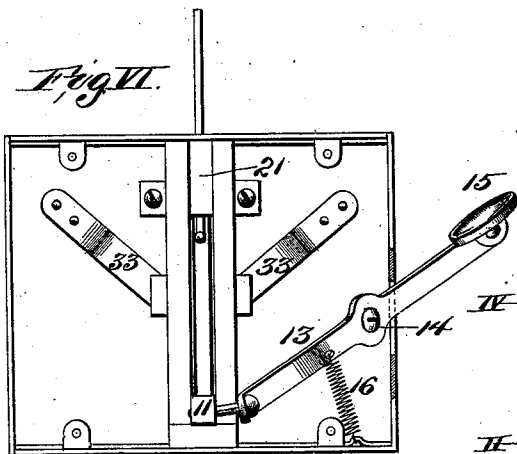
*Fig. IV.*



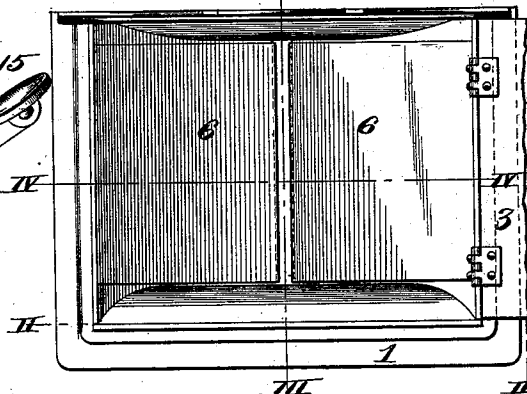
*Fig. V.*



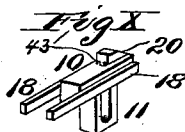
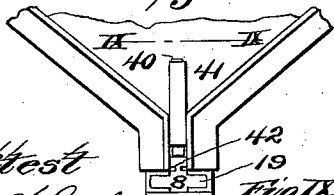
*Fig. VI.*



*Fig. VII.*



*Fig. VIII.*



*Fig. XI.*



*Attest*  
*Wm. Edwards*  
Feb. 12, 1895.

*Inventor:*

*Adolph Rothschild*  
*By Knight Bros*

# UNITED STATES PATENT OFFICE.

ADOLPH ROTHSCCHILD, OF ST. LOUIS, MISSOURI, ASSIGNOR TO WILLIAM  
EINSTEIN, OF SAME PLACE.

## SELF-LIGHTING MATCH-BOX.

SPECIFICATION forming part of Letters Patent No. 534,176, dated February 12, 1895.

Application filed March 19, 1894. Serial No. 504,153. (No model.)

*To all whom it may concern:*

Be it known that I, ADOLPH ROTHSCCHILD, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Self-Lighting Match-Safes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an improved match safe, wherein the matches are exposed, one at a time, by the operation of a lever, and then when the match is withdrawn from the case, it is ignited.

My invention consists in features of novelty hereinafter fully described and pointed out in the claims.

Figure I is a perspective view of my improved match safe. Fig. II is a vertical, longitudinal section, taken on line II—II, Fig. VII. Fig. III is a vertical, transverse section, taken on line III—III, Fig. VII. Fig. IV is a vertical, longitudinal section, taken on line IV—IV, Fig. VII. Fig. V is a section, taken on line V—V, Fig. IV. Fig. VI is a bottom view, part in section, and with the base removed. Fig. VII is a top or plan view with the lid open, and the operating lever removed. Fig. VIII is a detail end view. Fig. IX is a detail, section taken on line IX—IX, Fig. VIII. Fig. X is a detail perspective view, showing the shuttle or slide. Fig. XI is an enlarged, detail, perspective view of the friction plates.

Referring to the drawings, 1 represents a case, which may be of rectangular, or other form.

2 represents the base or bottom of the case, and 3 represents the top or lid, which is preferably hinged at one end, as shown in Fig. I. Within the case is a hopper having inclined sides 4, secured to the ends of the case, and extending in a downwardly direction, not quite meeting at their lower ends, where they are provided with vertical flanges 5.

6 represents a lining plate. There is preferably one for each side of the hopper, which rests loosely on the upper surface of the inclined side 4 of the hopper. This lining has a down-turned flange 7, fitting inside of the

down-turned flanges 5 of the hopper, as shown in Fig. IV. The lower edges of the flanges 7 extend beneath the shuttle race 8, and are beveled on one end, as shown at 9, Fig. V.

10 represents the shuttle or slide, fitting in the race 8, and having a downwardly extending slotted projection 11, in which fits a pin or screw 12 that connects a lever 13 with the shuttle or slide. The lever is pivoted at 14 to one side of the hopper, and has a button 15 on its upper end, by which it is moved against the pressure of a spring 16, that connects it to the case, as shown in Fig. V. One end of the case has a slot 17, through which the lever 13 projects. The shuttle, (see Fig. X,) is provided with side pieces 18, which fit in the grooves or channels 19 of the race, and the shuttle is further provided with a head or projection 20, which comes in contact with the matches and forces them from the case when the lever 15 is operated.

The matches are fed down the channel between the flanges 7 of the lining 6, and their downward movement is arrested at one end by their coming against the upper surface of the shuttle 10, and at the other end by their coming against a plate 21, which extends across the discharge end of the race. When a match drops onto these rests and the lever 13 is operated, the match is forced out of the case between two roughened plates 22 and 23. These plates are preferably secured to the outside of the lower end of the hopper, as shown at 24, and their outer ends are close together, as shown in Fig. II. They are preferably placed on an incline so that the matches will readily pass in between them from the interior of the box. One or both of these plates is made of spring metal, so as to create considerable friction on the matches. The outer ends of the two plates are shown in Fig. XI, the plate 22 having a series of ribs 25, and the plate 23 having a series of ribs 26, which project in the form of points 27, so as to obtain the greatest amount of friction on the matches. By operating the lever 13, the matches are moved to about the position shown in Fig. III, and then the match is withdrawn from the safe by taking hold of its end and drawing it out between the friction

plates 22 and 23, which cause it to be ignited. As soon as the pressure on the lever 13 is removed, the spring 16 draws the lower end of the lever and the shuttle back to their normal position, shown in Figs. III and V. The discharge end of the hopper has a plate 28, the lower end of which extends down between the friction points 22, 23, so as to hold the matches down as they are pulled out; and the lower end of this plate may be serrated or roughened to afford additional friction. One or both of the linings 6 is made loose, as stated, and as the shuttle is moved forward to discharge a match, it comes against the inclined surface 9 of the flange 7, and raises the lining within the hopper. This agitates the matches so as to keep them loose and free within the hopper. If preferred, one of the linings 6 may be higher at its lower end than the other lining, as shown by dotted lines in Fig. IV, which with some matches would better facilitate their feed or movement into the channel between the flanges 7 of the lining. After the lining is forced upwardly by the movement of the lever, as stated, it is forced downward again when the shuttle returns to its normal position, by means of a spring 33 secured to the under side of the hopper, and the lower free end of which bears against a bar or arm 34 secured to the lining.

40 represents a pin or bar held to the end of the hopper at which the shuttle rests when in its normal position, by means of a keeper 41, which allows the pin to move freely in a vertical direction. When the shuttle moves forward, this pin drops onto two flanges or lips 42, shown in Figs. VIII and IX, and thus avoids any danger of matches being forced along with and by the backward movement of the shuttle, in which case the head 20 of the shuttle would fail to get behind the end of the match. As the shuttle returns to its normal position, the inclined, rear face of the head 20 raises the pin 40 to the position shown in Fig. III. The head 20 is grooved, as shown at 43 to receive the ribs 42, so that the ribs do not interfere with the movement of the shuttle.

I claim as my invention—

1. In a match safe, the combination of a hopper, linings located within the hopper having down-turned flanges forming guides for the matches, a race located beneath the flanges, a shuttle adapted to slide in the race, a pivoted lever connected to the shuttle, and igniting plates between which the matches are advanced by the shuttle when the lever is operated; substantially as described.

2. In a match safe, the combination of a hopper, linings, located within the hopper, having down-turned flanges formed with inclines, a race between which the flanges extend, a shuttle adapted to slide in the race, and to bear upwardly against the inclines for agitating the linings, a pivoted lever connected to the shuttle, and igniting plates between which the matches are advanced by

the shuttle when the lever is operated; substantially as described.

3. In a match safe, the combination of a hopper, linings, located within the hopper, having down-turned flanges forming guides for the matches, a race located beneath the flanges, a shuttle adapted to slide in the race, a spring actuated lever connected to the shuttle, and igniting plates, between which the matches are advanced, one of the plates having projecting points; substantially as described.

4. In a match safe, the combination of a hopper, linings, located in the hopper, having down-turned flanges forming guides for the matches, a race located beneath the flanges, a shuttle adapted to slide in the race, having a head to engage the matches, a spring actuated lever, connected to the shuttle, and igniting plates between which the matches are advanced, one of the plates having projecting points; substantially as described.

5. In a match safe, the combination of a hopper, linings, located in the hopper, having down-turned flanges forming guides for the matches, a race, located beneath the flanges, a shuttle, adapted to slide in the race, a spring actuated lever connected to the shuttle, igniting plates between which the matches are advanced, and a vertical friction plate located between the igniting plates; substantially as described.

6. In a match safe, the combination of a hopper, a movable spring actuated lining located within the hopper, a race located beneath the hopper, a shuttle fitting in said race, a lever for operating the shuttle and for moving said lining, and friction plates between which the matches are forced by said shuttle; substantially as set forth.

7. In a match safe, the combination of a hopper, a race located beneath the hopper, a shuttle fitting in the race, means for operating the shuttle, friction plates at one end of the race, and a drop pin 40 located at the other end of the race; substantially as set forth.

8. In a match safe, the combination of a hopper, a race located beneath the hopper, a shuttle fitting in the race, means for moving the shuttle, friction plates at one end of the race, and a drop pin 40, and ribs 42 at the other end of the race; said shuttle having a head 20 with grooves 43; substantially as set forth.

9. In a match safe, the combination of a hopper, a loose lining located within the hopper, a race located below the hopper, a shuttle located in the race, friction plates located at the discharge end of the race, and means for moving said shuttle and the loose lining of the hopper simultaneously; substantially as set forth.

ADOLPH ROTHSCCHILD.

In presence of—

C. G. EDWARDS,  
A. M. EBERSOLE.