(No Model.) 2 Sheets—Sheet 1.

J. F ZIMMERMAN.

COMBINED MATCH IGNITING SAFE AND CIGAR CUTTER.

No. 545,932. Patented Sept. 10, 1895.

Fig. 1.

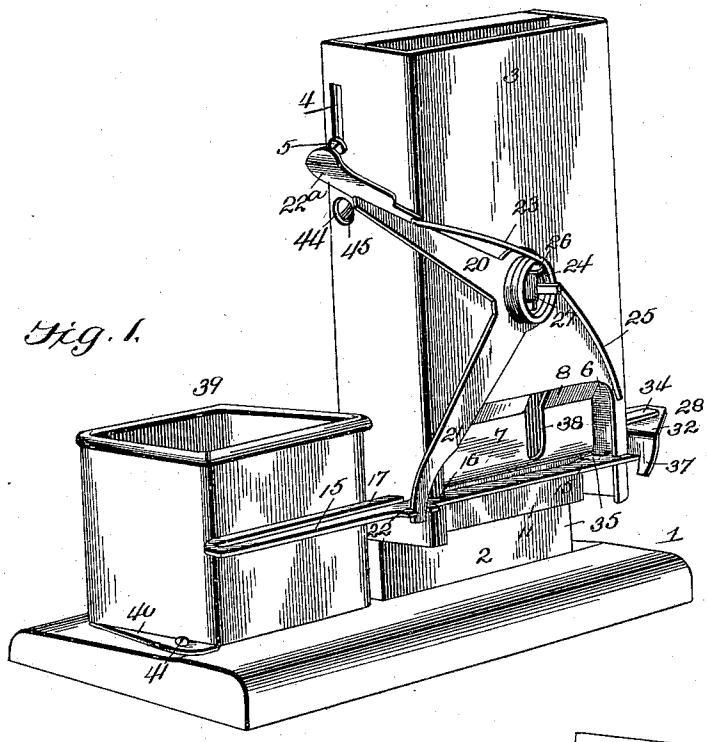


Fig. 2.

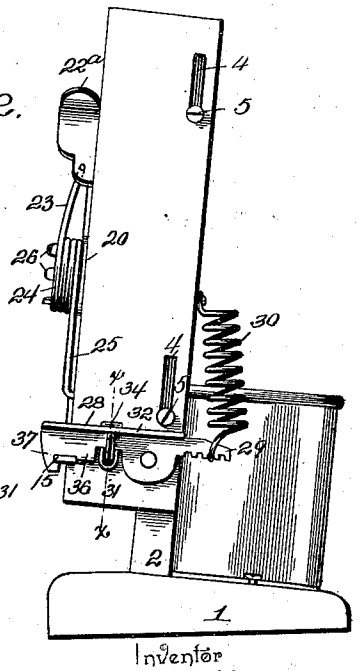
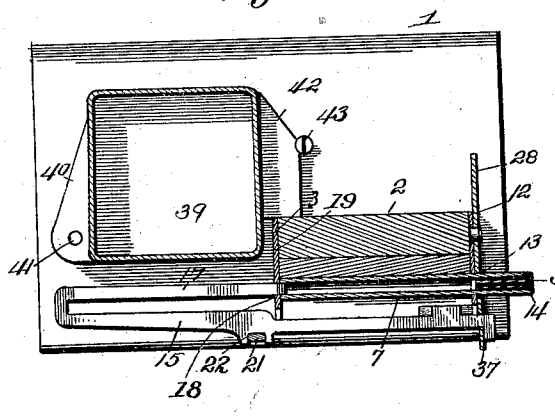


Fig. 3.



Inventor

Witnesses

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

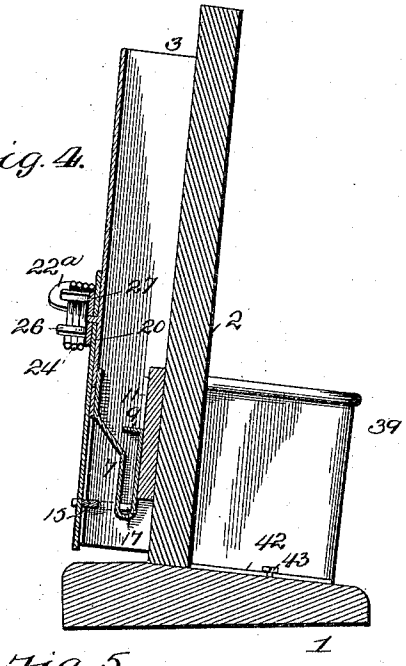


Fig. 10.

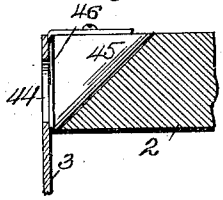


Fig. 7.

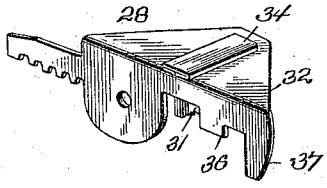


Fig. 5.

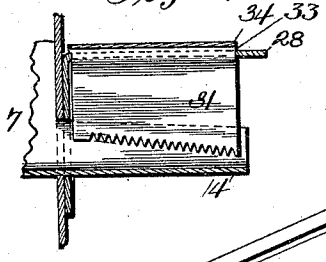


Fig. 6.

Fig. 8.

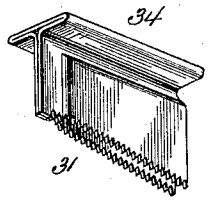
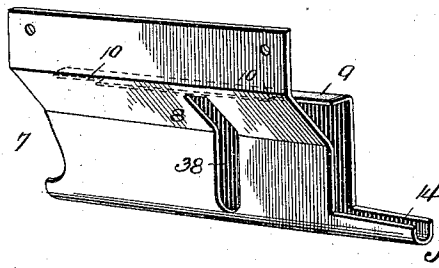


Fig. 9



Inventor

John F. Zimmerman

Witnesses

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John N. Siggers

By his Attorneys.

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

JOHN FRANKLIN ZIMMERMAN, OF WASHINGTON CENTRE, MISSOURI.

COMBINED MATCH-IGNITING SAFE AND CIGAR-CUTTER.

SPECIFICATION forming part of Letters Patent No. 545,932, dated September 10, 1895.

Application filed November 30, 1894. Serial No. 530,433. (No model.)

To all whom it may concern:

Be it known that I, JOHN FRANKLIN ZIMMERMAN, a citizen of the United States, residing at Washington Centre, in the county of Harrison and State of Missouri, have invented a new and useful Combined Match-Igniting Safe and Cigar-Cutter, of which the following is a specification.

The invention relates to improvements in a combined match-igniting safe and cigar-cutters.

The object of the present invention is to provide a combined cigar-cutter and match-safe of simple and inexpensive construction, capable of expelling only one match at a time and of automatically igniting the same for the convenience of customers, and to prevent a large number of matches from being extracted from the match-safe each time recourse is had to the same.

A further object of the invention is to provide such a match-safe which will be capable of discharging matches either end first, thereby obviating the necessity of matches being placed in the safe in a particular manner.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a combined cigar-cutter and match-safe constructed in accordance with this invention. Fig. 2 is an end elevation of the same. Fig. 3 is a horizontal sectional view. Fig. 4 is a vertical sectional view. Fig. 5 is a detail sectional view on line *x x* of Fig. 2. Fig. 6 is a detail perspective view of the reciprocating match-ejector. Fig. 7 is a detail perspective view of the match-igniting lever. Fig. 8 is a detail perspective view of the match-engaging blades. Fig. 9 is a detail perspective view of the guide or chute from which the matches are discharged. Fig. 10 is a detail sectional view illustrating the construction of the cigar-cutter.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a base, which may be of any suitable configuration, and from which rises an upright or standard 2, and slidingly mounted on the same is a vertically-movable hopper or casing 3, rectangular in horizontal section, and consisting of a front wall and parallel end walls, the upright or standard 2 forming the back of the casing or hopper. The sides or ends of the vertically-movable casing or hopper are provided with vertical slots 4, receiving fastening devices 5, which limit the vertical movement of the casing or hopper.

The front wall of the casing or hopper 3 is cut away at the bottom at 6, and secured within the casing is a contracted guide or chute 7, adapted to receive and arrange matches preparatory to their ejectment and comprising inner and outer parallel vertical sides and a rounded bottom. The outer side is provided with an inclined extension 8, located at the top of the outer side and secured to the inner face of the front wall of the casing 3. The inner wall of the guide or chute is provided with a horizontal flange 9, extending from the inner wall in the direction of the outer side and located intermediate of the upper and lower edges of the inclined portion 8 and contracting the space between the inner and outer sides of the guide or chute at that point and forming an entrance for matches of a size to permit the passage of only one match at a time. The inner and outer sides of the guide or chute have a space between them sufficient to permit the downward passage of only one match at a time, and the horizontal flange 9 is provided at its ends with recesses 10 for increasing the width of the space or opening between the flange and the inclined portion 8 at the ends for allowing the heads of matches to pass freely. Spaces for the heads of matches are provided at both ends of a horizontal flange in order that the head of a match may be arranged at either end of the casing or hopper without interfering with the operation of the device. A block 11 is secured to the upright or standard 2 and is interposed between the same and the inner side of the guide or chute to close the casing at that point.

One end wall 12 of the vertically-movable hopper or casing is provided with an opening 13, through which projects a horizontally-disposed extension 14 of the guide or chute. This

extension projects outward from the bottom of the guide or chute and is U-shaped in cross-section and forms a way for the matches.

The matches are ejected or thrown out singly from the match-safe by a reciprocating ejector 15, comprising a horizontally-disposed bar guided in opposite notches or ways 16 of the end walls of the casing and an inner rod 17, arranged substantially parallel with the main portion of the bar of the ejector and passing through an opening 18 of the end wall 19 of the vertically-movable casing and arranged to reciprocate over the bottom of the guide or chute 7. This rod of portion 17 engages the inner end of the lowermost match in the guide or chute and is adapted to force the engaged match outward endwise to eject the same from the casing. The outward movement of the slide or ejector 15 expels a match and the inward movement returns the match-engaging portion 17 to its initial position to permit another match to drop to the bottom of the chute or guide to be engaged and discharged in the same manner.

The match-ejector is operated by a bell-crank lever 20, fulcrumed at its angle on the front wall of the casing 3 and having one arm depending and provided with a curved terminal 21, engaging a recess or notch 22, whereby the slide or ejector 15 is connected with the bell-crank lever. The curved end 21 of the depending arm of the bell-crank lever facilitates the starting of the ejector 15 and renders the reciprocating movement of the same easy. The upper arm of the bell-crank lever is provided with a thumb-piece 22^a and is connected with one arm 23 of a spring 24, having a central coil and provided with an arm 25, secured to the casing. The coil of the spring is supported at the angle of the lever 20 by arms 26, extending outward from the periphery of a disk 27 and arranged in an annular series, the disk 27 being mounted on the pivot or fastening device that fulcrums the bell-crank lever on the casing.

The matches on being ejected from the casing are automatically ignited by means of a lever 28, fulcrumed on the end wall 12 of the casing 3 and having one end or arm 29 adjustably connected with a spiral spring 30, mounted on the standard or upright 2, and the other arm of the match-igniting lever carries depending serrated or toothed blades 31, located above and within the extension 14 of the guide or chute and adapted to engage the head of a match, whereby when the match is forced longitudinally out of the guide or chute its head will scrape the toothed or notched blades and be ignited. The spiral spring 30 by having its upper end attached to the standard or upright 2 and its lower end connected to the lever 28, which is mounted on the casing, the latter is normally held in an elevated position, and in depressing the bell-crank lever 20 and forcing the casing downward the spiral spring 30 is distended and serves to lift the casing to its normal position when the pressure is removed. The lever 28 is provided with a horizontal flange 32, extending outward from it and provided with a slot 33. The blades 31 are preferably constructed of a single piece of sheet metal, which is bent into substantially T-shaped form, as shown in Fig. 8 of the accompanying drawings. The head 34 of the blades rests upon the upper face of the horizontal flange 32, the blades being passed through the slot and spread slightly to secure them to the lever. The blades are substantially parallel and have inclined lower edges and engage the head of a match at two points and are positive in their igniting action. The spiral spring 30 causes them to engage yieldingly the head of a match, and the latter passes freely through the guide or chute.

The ejecting-slide 15 is provided at the inner side of its bar with a double wedge-shaped lug 35, located at the inner side of the bar of the ejector or slide and arranged to engage a depending lug 36 of the lever 28 to lift the blades slightly to permit the head of a match to interpose itself between the blades and the bottom of the extension 14 of the guide or chute. When the spring 24, which operates the bell-crank lever, returns the reciprocating slide or ejector, the inner end of the double wedge-shaped lug engages the lever 28 and lifts the same to enable the ejector or slide to be completely returned to its initial position.

The front end of the lever 28 is provided with a depending lug 37, which engages the outer edge of the bar of the ejector or slide and serves to retain the same in the notches or ways 16 of the end walls of the sliding casing, and the depending arm of the bell-crank lever also assists in retaining the slide or ejector in proper position.

The guide or chute, which separates and arranges the matches preparatory to their discharge from the match-safe, is provided with a vertical slot 38 to permit the condition of the match-safe to be readily inspected to ascertain whether or not the matches are properly arranged in a vertical series.

A bottomless receptacle 39 is pivotally mounted on the base 1, adjacent to the match-safe, and is adapted to receive the remains of the ignited matches. It is provided at its outer side with a flange 40, receiving the pivot 41, and at its opposite side it is provided with a flange 42, frictionally engaging a projection 43 of the base, whereby the receptacle is retained in position on the base. When it is desired to empty the receptacle of its contents, it is only necessary to swing it around clear of the base and the burned matches will be deposited.

The vertically-movable casing is provided at one of its end walls with a circular opening 44 to receive an end of a cigar. The upright or standard 2 is provided with a groove 45, and at the bottom thereof is located an L-shaped knife 46, provided at the top with a cutting-edge located normally at the bottom

of the opening 44 of the vertically-movable casing. As the casing moves downward or is depressed the cigar, inserted in the opening 44, is carried in contact with the knife and the end is severed, the cut portion passing out through the groove or notch 45.

In operating the match-safe the upper arm of the bell-crank lever is depressed, swinging the lower arm for actuating the slide, and also depressing or moving downward the casing or hopper 3. This downward movement of the casing or hopper 3 causes the matches to roll on one another and operates to maintain the guide or chute properly supplied with matches. Parlor matches are employed, and they may be readily introduced into the casing or hopper by opening one end of a commercial match-box and allowing the matches to drop into the same hopper or casing.

It will be seen that the device is exceedingly simple and inexpensive in construction, that it is positive and reliable in operation, and that it is arranged to prevent matches from clogging. It will also be seen that the matches are expelled singly and automatically ignited simultaneously with the cutting of a cigar and that matches are prevented from being removed from the match-safe in large quantities. It will also be apparent that the tension of the spring 30 may be readily regulated for controlling the pressure of the toothed or serrated blades, as the arm 29 of the igniting-lever is provided with a series of notches, any one of which is adapted for the reception of the lower terminal of the spiral spring.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

What I claim is—

1. In a match box, the combination of a standard, a casing slidingly mounted on the standard and having a limited vertical movement a sliding ejector mounted at the bottom of the casing, a bell-crank lever fulcrumed on the casing and having one arm connected to the ejector, and having its other arm forming a handle, the yieldingly mounted igniting lever carried by the casing and arranged to engage the head of a match, and a spring connected with the igniting lever and the standard and holding the casing normally elevated, substantially as described.

2. The combination in a match box, of a standard, a casing having a limited vertical movement on the standard, a contracted chute or guide located at the bottom of the casing to receive and arrange matches, a spring for holding the casing normally elevated a sliding ejector mounted at the bottom of the casing, and consisting of a bar arranged in suitable ways and an inner parallel portion located at the bottom of the chute or guide and arranged to reciprocate over the same, and a bell-crank lever fulcrumed on the casing and having one arm connected with the ejector, and having its other arm serving as a handle, substantially as described.

3. In a match box, the combination of a casing, a guide or chute located at the bottom thereof and comprising parallel vertically disposed inner and outer sides, and a bottom, one of the sides being provided at its top with an inclined extension, and the other having a horizontal flange contracting the space at the top of the guide or chute and provided at its ends with recesses, an injector, and means for operating the same, substantially as described.

4. In a match box, the combination of a standard, a vertically movable casing slidingly mounted thereon, an ejector carried by the casing, an igniting lever pivoted intermediate of its ends on the casing and having one end arranged to engage the heads of matches, and a spring connected to the other end of the lever and to the standard and holding the casing normally in an elevated position, substantially as described.

5. In a match box, the combination of a casing, an ejector, means for operating the same, an igniting lever pivotally mounted on the casing and provided at one end with notches, and having a slotted flange at the other end, said igniting lever being provided with parallel igniting blades having inclined lower edges provided with teeth, and constructed of a single piece of sheet metal bent into an approximately T-shaped form with the head arranged on the flange of the lever, the blades being passed through the slot of the flange and spread, and a spring engaging one of the notches of the lever, substantially as described.

6. In a match box, the combination of a casing, a yieldingly mounted igniting lever arranged at the discharge outlet of the casing and adapted to engage the heads of matches, a sliding ejector mounted on the casing and provided with a double wedge-shaped lug arranged to engage the igniting lever, and means for operating the ejector, substantially as described.

7. In a match box, the combination of a base, an upright rising therefrom, a casing slidingly mounted on the upright, and having a match outlet at its bottom, an ejector slidingly mounted on the casing, a bell-crank lever fulcrumed on the casing and connected with the ejector, an igniting lever mounted on the casing at the outlet opening and arranged to engage the heads of matches, and a spring connected with the igniting lever and with the upright, and holding the casing normally elevated substantially as described.

8. In a match box, the combination of a vertically movable casing, a contracted match arranging chute or guide located at the bottom thereof and provided with an outward extension, an ejector slidingly mounted on the casing and having a portion arranged to reciprocate over the bottom of the guide or chute, an igniting lever fulcrumed on the casing and provided with depending blades lo-

cated above the extension of the guide or chute, a spring connected with the igniting lever and holding the casing normally elevated and a bell-crank lever fulcrumed on the casing and connected with and operating the ejector, substantially as described.

9. In a match box, the combination of a vertically movable casing provided with an extension at its outlet opening, and having opposite recesses forming ways, a sliding ejector mounted in the ways and provided with a notch, an igniting lever located above the extension of the casing and provided with a depending lug engaging the outer edge of the ejector, and a bell-crank lever fulcrumed on the casing and engaging the recess of the ejector, substantially as described.

10. In a match box, the combination of a casing, a match ejector, a bell-crank lever fulcrumed on the casing and connected with the ejector, a disk located at the fulcrum point of the lever and provided with an annular series of outward extending arms, a spring having a coil arranged on and supported by said arms and connected with the casing and with the bell-crank lever, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN FRANKLIN ZIMMERMAN.

Witnesses:

GANUM VAN HOOZER,

ED. BALDWIN.