

S. E. BALL.
MATCH SAFE.

No. 536,560.

Patented Mar. 26, 1895.

Fig 1.

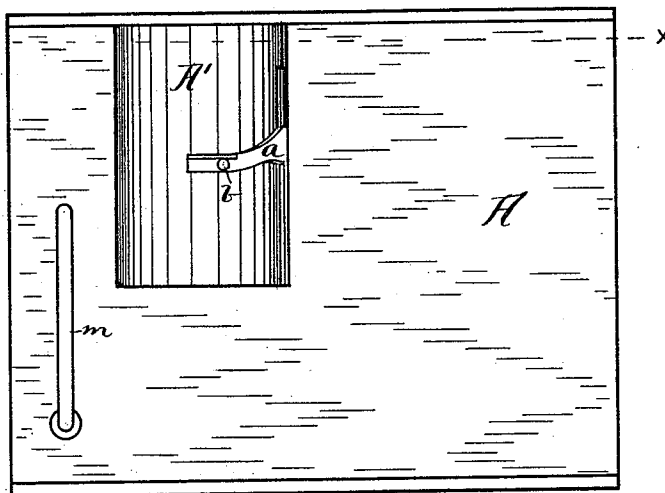


Fig 2.

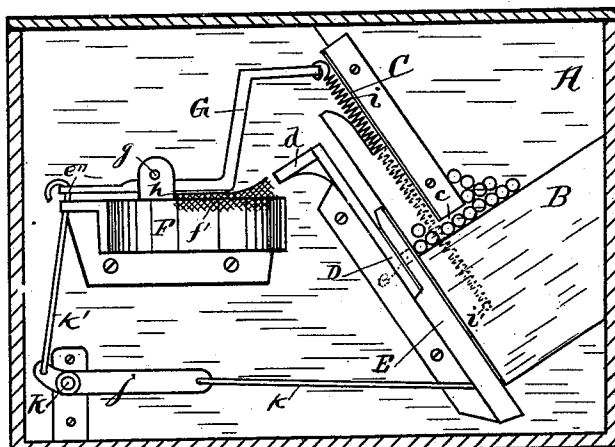


Fig 9.

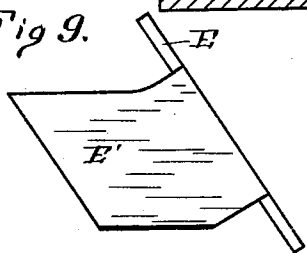


Fig 7.

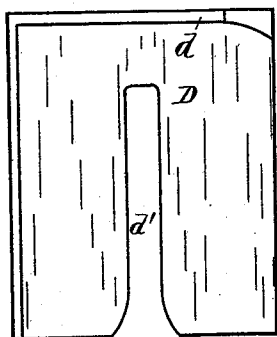
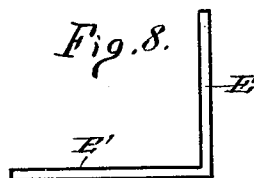


Fig 8.



WITNESSES:

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Chas Smyth

INVENTOR
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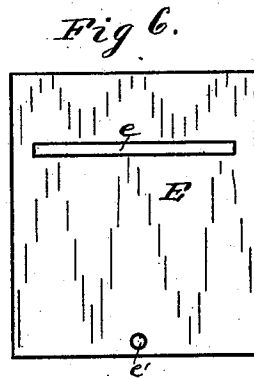
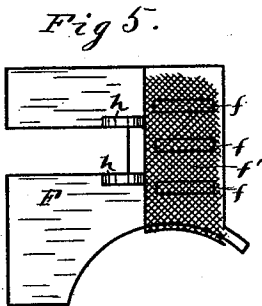
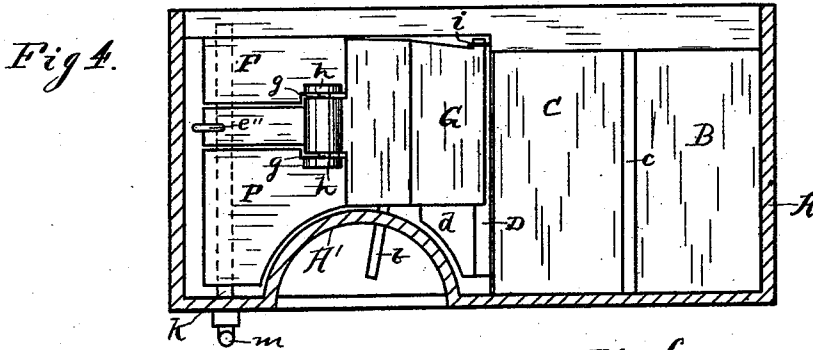
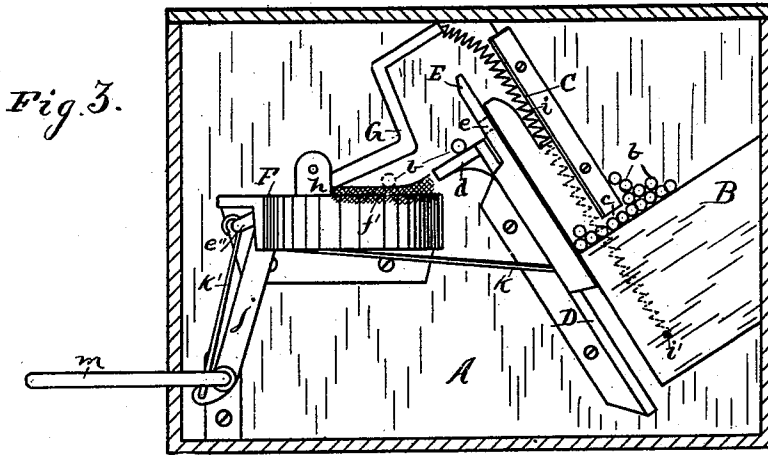
(No Model.)

2 Sheets—Sheet 2.

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WITNESSES:

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UNITED STATES PATENT OFFICE.

SAMUEL E. BALL, OF DAYTON, ASSIGNOR OF ONE-HALF TO JOHN H. MITTENDORF, OF CINCINNATI, OHIO.

MATCH-SAFE.

SPECIFICATION forming part of Letters Patent No. 536,560, dated March 26, 1895.

Application filed January 14, 1895. Serial No. 534,771. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL E. BALL, of Dayton, county of Montgomery, State of Ohio, have invented a new and useful Improvement in Match-Safes; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to new and useful improvements in match safes.

The object of the invention is to provide mechanism through the agency of which, the matches are fed, singly, to a convenient position for the fingers to catch hold thereof, and the act of removing said matches one by one, causes their ignition, so that the striking of the matches on the wall or elsewhere is unnecessary.

A further object is to inclose said mechanism in a case of ornamental design, so that an appearance of cheapness or inferiority will not interfere with the ready sale.

With these objects in view the invention consists of parts that are fully described in the following specification, and pointed out in the claims.

In the annexed drawings, Figure 1, is a front elevation of my improved match safe; Fig. 2, a longitudinal section, showing the position of the movable parts before the operation to discharge a match; Fig. 3, a similar view showing same discharging a match; Fig. 4, a section on the line $x-x$ of Fig. 1; Fig. 5, an enlarged detached view of the match shelf; Fig. 6, an enlarged detached view of the incline slide; Fig. 7, an enlarged detached view of the stationary incline; Figs. 8 and 9, detached detail views, top and side elevation, of a modified form of slide.

In the several views similar letters of reference indicate corresponding parts.

(A) designates the inclosing case having a vertical concave portion (A') in its front, in which there is a slot (a). Through this slot the end of each match (b) projects when said matches are fed to the position to be taken hold of by the fingers. This case is prefer-

ably constructed of metal casting with any ornamental designs on the sides thereof that the eye may fancy or the taste dictate, as thereby an appearance of cheapness is avoided, while the cost of production is not materially enhanced.

The mechanism is mainly supported on the rear of the case and consists of the following devices:

The hopper in which the matches are primarily placed, consists of a base (B) forming the bottom of said hopper, and a plate (C) placed at a right angle to said base, and having a transverse opening (c) into and through which the matches gravitate.

The base (B) of the hopper is arranged on an incline to insure a proper gravitation of the matches, substantially as is shown in Fig. 2.

(D) indicates a plate rigidly mounted on an angle preferably of about forty five degrees. This plate is provided with a ledge (d) extending across its upper end over which the matches slide, as hereinafter referred to, and a slot (d') also to be again referred to.

(E) designates a slide maintained in an operative position by the incline (D) upon which it slides in the same plane, and the base (B) of the hopper. This slide (E) has a transverse slot (e) that normally lies on a line with the upper surface of the base (B), and is adapted to receive the matches one at a time therefrom, and to hold said match while the rear of said slot is inclosed by the incline (D), but when said slide (E) is elevated in the manner hereinafter described, to the position shown in Fig. 3, the match drops by gravity out of said slot on to the ledge (d).

(F) designates a shelf having a series of openings (f) over which a piece of wire gauze f' is secured. This shelf is placed in a position to receive the matches one by one as they drop from the ledge (d). As the match reaches said shelf the end having the combustible matter is clamped against the wire gauze (f') or any other suitable roughened surface, by the clamp (G), and the end to be taken hold of projects as shown in Fig. 4; the slot (a) having the curved form shown, to admit of an uninterrupted movement of each match to the position therein, shown in Fig. 1, and in dotted lines in Fig. 3. The object

of the clamp (G) is to cause an ignition of each match as it is drawn from the shelf. The said clamp has its journal pins (*g*) mounted in ears (*h*) that project from the shelf (F), as shown in Fig. 4.

(*i*) designates a helical spring the ends of which are attached to the upper end of the clamp, and to a lower point on the rear of the case at (*i'*). This spring draws said clamp to the normal downward position shown in Fig. 2, and said clamp is thereby caused to exert a sufficient pressure on the head of the match to cause an ignition of said match as it is drawn outwardly, in contact with the wire gauze (*f'*).

The movements of the slide (E) and clamp (G) are effected simultaneously through the following devices:

(*j*) designates a lever which is rigidly mounted on a shaft (K) that is loosely journaled in bearings in the front and rear of the case.

(*k*) and (*k'*) are connecting rods attached to the slide (E) at (*e'*), and to the clamp (G) at (*e''*). These rods are attached to the respective ends of the lever (*j*) as shown in Fig. 2.

(*m*) designates a crank positioned on the outside of the front portion of the case, and is rigidly attached to the shaft (K). The normal position of said crank is shown in Figs. 1 and 2, and that shown in Fig. 3, is the completion of a quarter turn, which slides the plate (E) to a position to discharge a match from the slot (*e*), and opens the clamp (G) to permit said match to gravitate to the shelf (F) where it is clamped and held by said clamp (G). The slot (*d'*) in the incline (D) permits the rod (*k*) to move upward when actuating the slide (E) to a position to discharge a match. A release of the crank (*m*) permits the slide, and clamp to resume their normal positions shown in Fig. 2, under the tension of spring (*i*).

In Figs. 8 and 9, I have illustrated a construction of the slide (E) designed to prevent the removal of a match from the safe until said match has reached its proper place under the clamp (G). The means consist of a

shield (E') rigidly attached to the slide (E) or cast integrally therewith. This shield closes the opening (*a*) as the slide is moved upwardly, and until said slide returns to its normal (lower) position.

Having fully described my invention, I claim and desire to secure by Letters Patent—

1. In a match safe, the combination with a casing provided with a recessed part (A') having a slot therein; of a shelf provided with a roughened surface; upon which matches are automatically placed; a spring-controlled clamp pivoted adjacent to said shelf and adapted to open, and to close upon each match; and means for simultaneously actuating said clamp, and delivering matches to said shelf, substantially as described.

2. In a match safe, the combination with an inclosing case; of a shelf; a clamp pivotally mounted on said shelf; a stationary incline having its upper end adjacent to said shelf; a slide provided with a transverse slot adapted to contain a match, movable against said incline; and means for simultaneously moving said slide and clamp to discharge a match from the slot, over the upper end of said incline, in a position to be pressed by said clamp, substantially as described.

3. In a match safe, the combination with a casing provided with a hopper as described; of a stationary incline; a slide provided with a transverse slot movable against said incline; a shelf adjacent to the upper end of said slide adapted to catch the matches one at a time as delivered over the incline by said slide; a clamp pivoted to said shelf adapted to close upon each match as it falls upon said shelf; a lever; rods connecting said clamp and slide to said lever, substantially as described.

In testimony whereof I have hereunto set my hand this 23d day of December, 1894.

SAMUEL E. BALL.

Witnesses:

R. J. McCARTY,
S. A. DICKSON.