(No Model.)

I. O. DAY.

MATCH BOX.

No. 551,156. Patented Dec. 10, 1895.

Fig. 1

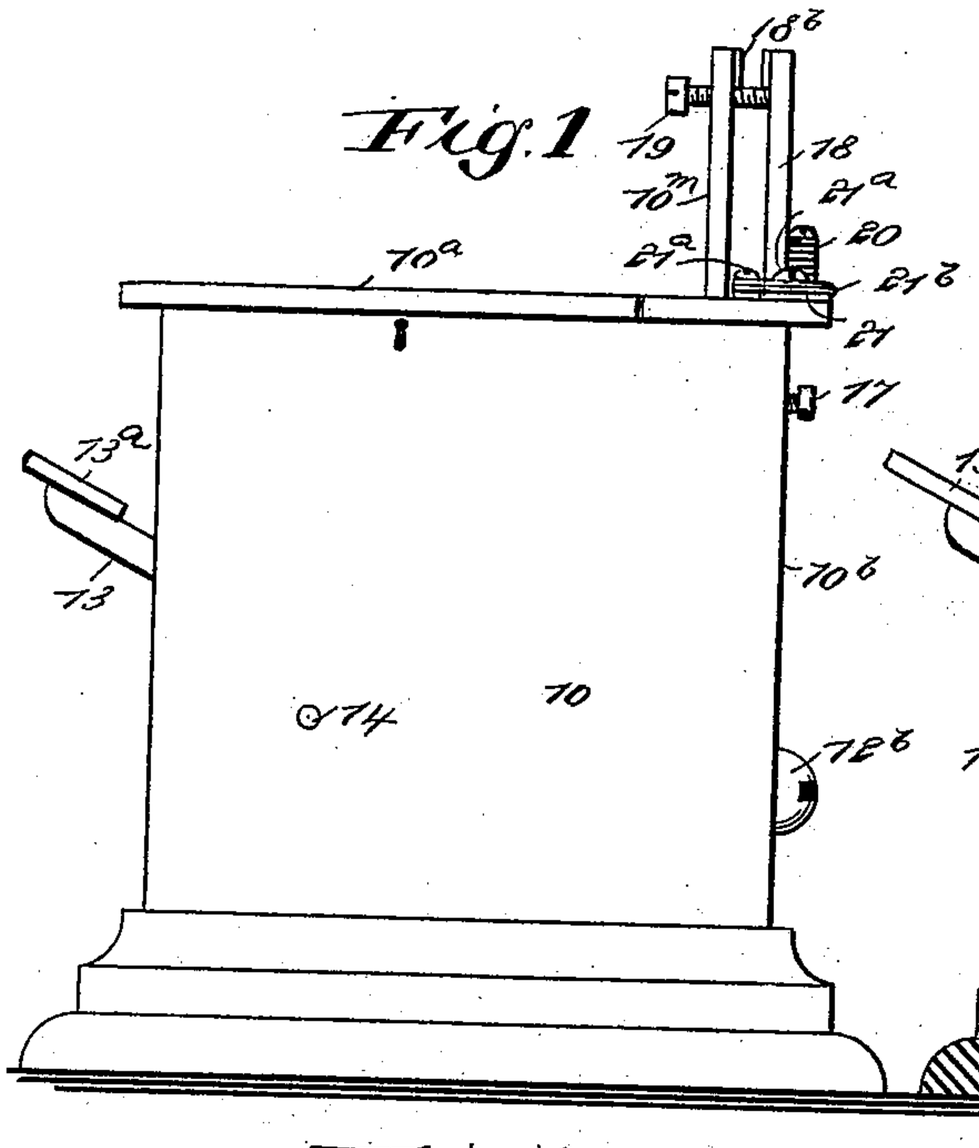


Fig. 2

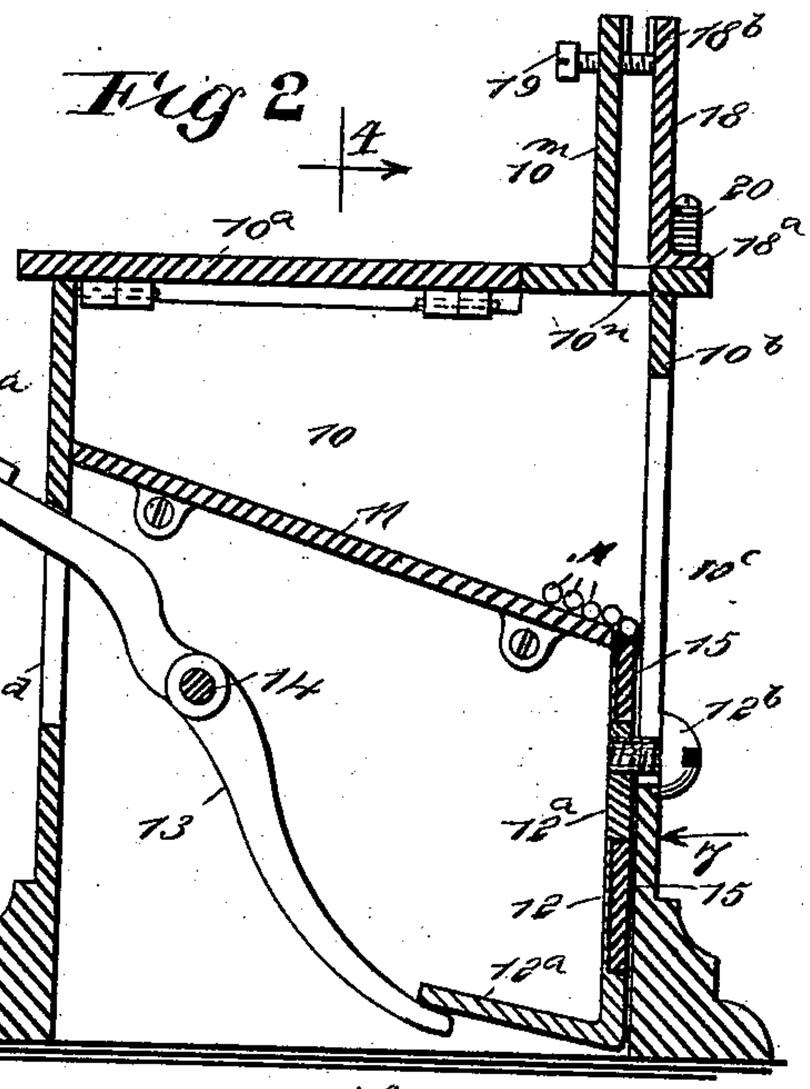


Fig. 3

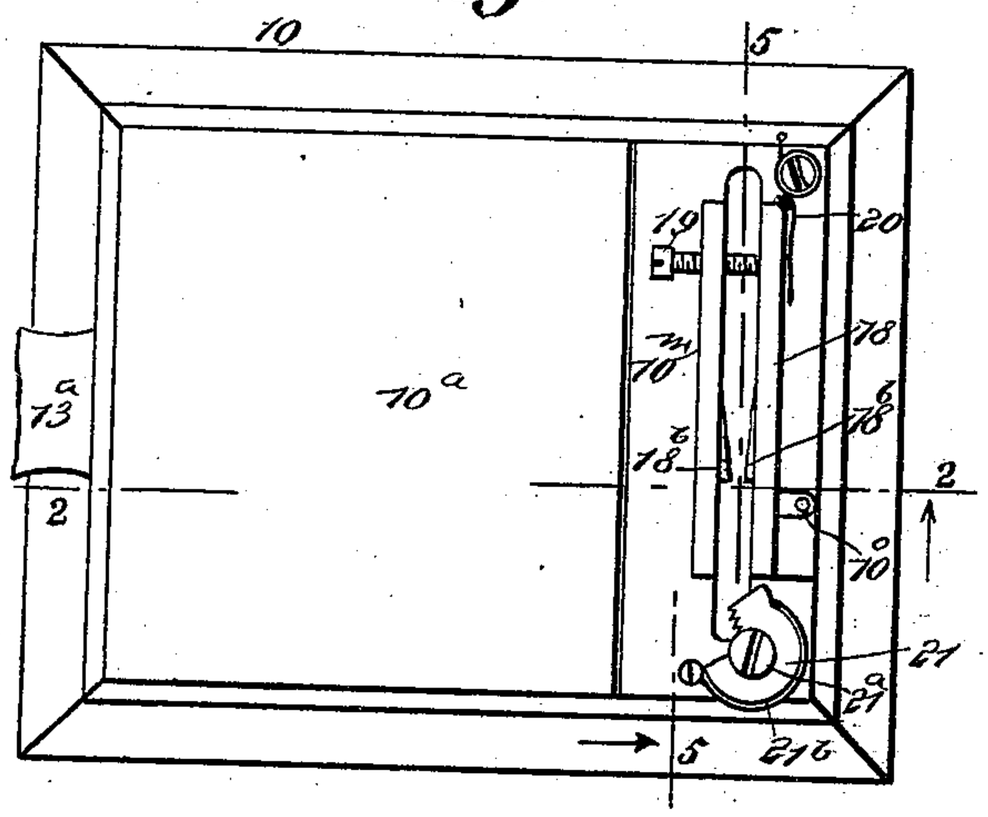


Fig. 4

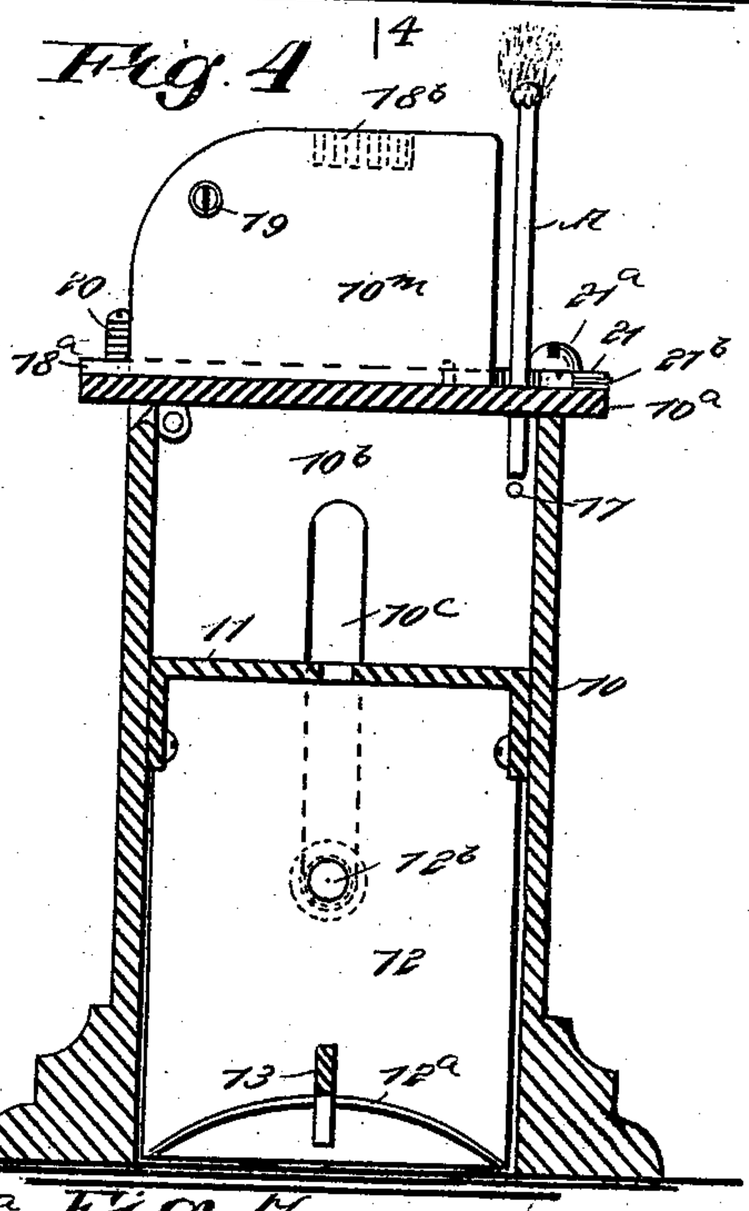


Fig. 5.

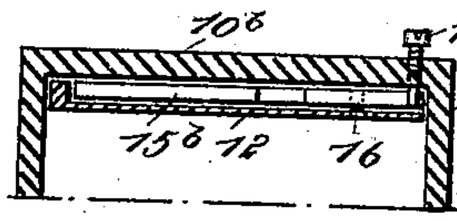


Fig. 6

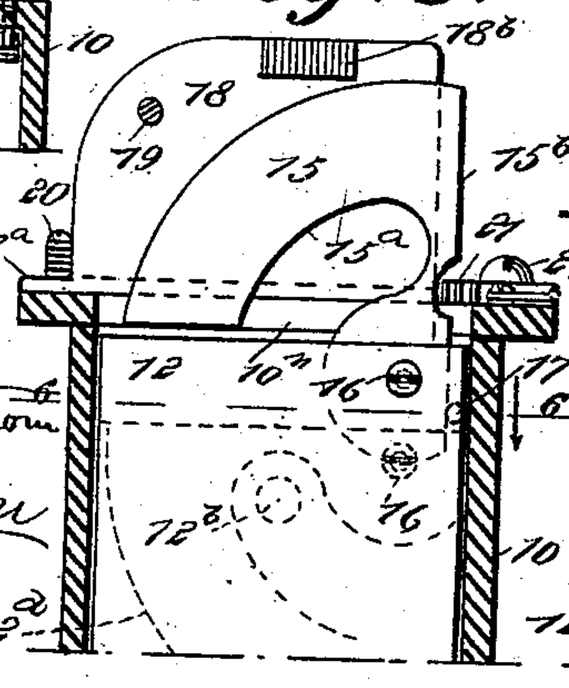
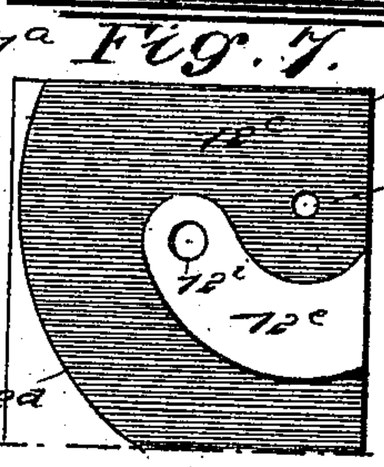


Fig. 7.



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ISAAC O. DAY, OF OTTUMWA, IOWA.

MATCH-BOX.

SPECIFICATION forming part of Letters Patent No. 551,156, dated December 10, 1895.

Application filed February 8, 1895. Serial No. 537,681. (No model.)

To all whom it may concern:

Be it known that I, ISAAC O. DAY, of Ottumwa, in the county of Wapello and State of Iowa, have invented a new and Improved Match-Box, of which the following is a full, clear, and exact description.

This invention relates to match-boxes of a class wherein a match-receptacle is provided that retains matches in a safe condition and affords means for their discharge one at a time.

The object of my invention is to provide a match receptacle or box of the type mentioned which will contain a desired number of matches in a safe condition, be adapted to expel by manipulation a single match at each operation of mechanism in the box, and simultaneously ignite the match, which when lighted is held upright on the box for convenient removal and use to ignite other material.

The invention consists in certain features of construction and combinations of parts, as is hereinafter described, and indicated in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side view of the improved match-box. Fig. 2 is a sectional side view taken substantially on the line 2 2 in Fig. 3. Fig. 3 is a plan view with the outer end of the tilting lever that operates the match-expelling mechanism partly broken away. Fig. 4 is a transverse sectional view essentially on the line 4 4 in Fig. 2. Fig. 5 is a transverse sectional view of the upper portion of the box on the line 5 5 in Fig. 3, showing the match-expelling rocker-plate in elevated adjustment in full lines and the said plate depressed in dotted lines. Fig. 6 is a sectional plan view of the box and contained mechanism that lifts and expels the matches, taken on the line 6 6 in Fig. 5; and Fig. 7 is a front view, taken in the direction of arrow 7 in Fig. 2, of the upper portion of a carrier-plate, forming part of the match-expelling mechanism.

The receptacle or box 10 is preferably formed of metal; but other material may be employed in its construction, and for the advantageous disposition and effective operation of other parts contained in the box 10 it is preferred to give it a rectangular form and is so represented in the drawings. A lid 10^a is furnished for an opening formed in the top of the box 10, and this lid is hinged to one edge of the box.

Any suitable device may be adapted for locking or holding the lid closed when matches are placed in the box through the opening mentioned, so that they may not be removed through the top of the box, and only may be abstracted by means that will now be described.

Below the lid 10^a there is a table 11 secured within the box 10, so as to incline toward one end wall 10^b of the latter, and, as shown in Fig. 2, the table does not touch the end wall mentioned, but is so removed therefrom that a crevice of proper width is produced which extends across from side to side of the box. A suitable height is afforded the table 11 from the base of the box 10, and a carrier-plate 12 is loosely located against the inner surface of the end wall 10^b of such a height that when said carrier-plate is in completely lowered condition its upper edge will lie slightly below the upper surface of the table 11 at its forward or lowest end.

The box 10 may have a bottom wall; but as this is not essential it is omitted from the drawings, and, as represented in Fig. 2, the lower edge of the carrier-plate 12 rests on the supporting-base whereon the box 10 is seated. A lip 12^a is formed on or secured to the plate 12 at or near its lower edge, which lip projects slightly upward and considerably rearward from the upright portion of the carrier-plate, and, as represented in Fig. 4, the said carrier-plate has its side edges parallel, and the plate is of such a proportionate width as will allow it to loosely contact with the inner side walls of the box, that will thus be adapted to guide the plate 12 if it is vertically reciprocated. The carrier-plate 12 is retained in loose connection with the end wall 10^b by a set-screw 12^b that is loosely inserted through an upright slot 10^c, which is produced in the wall 10^b near its transverse center, and then is made to have a screwed engagement with the carrier-plate at a correct distance from the lip 12^a. The end wall of the box 10 that

is opposite the end wall 10^b is also slotted vertically in the same plane with the slot 10^c, said slot 10^c being provided for the reception of one end portion of the rocking lever 13, that is pivoted by a transverse shaft 14 to the sides of the box and has its inner end introduced below the lip 12^a. The other end of the lever which projects outside of the slot 10^c is preferably furnished with a thumb-piece 13^a, so that the lever at this end may be conveniently depressed, and when so moved will slide the carrier-plate 12 upwardly. The face of the carrier-plate which is loosely in contact with the end wall 10^b is recessed so as to produce a depression 12^c therein, which has a level bottom surface and preferably curved on one edge, as shown at 12^d in Fig. 7. A portion 12^e of the plate 12 is permitted to remain of the same thickness as that part of the same which forms the margin of the recess 12^c, said projecting portion 12^e being curved on each edge, which curved edges have their radial center in a screw-hole 12^g, that is formed in the recessed portion of the carrier-plate above the thicker part 12^e, that in service is a guide-piece for another part, which will now be described.

A sector-plate 15 is furnished of such a thickness that it will be adapted to occupy the recess 12^c and lie level with thicker parts of the carrier-plate 12, the sector-plate having a curved slot 15^a produced in it, which extends from its lower edge upwardly and toward one straight edge of the sector-plate, which edge 15^b is uppermost when the plate 15 is in normal condition or occupying the recess 12^c.

There is one portion of the edge on the sector-plate curved to correspond with the inner curved edge of the thicker part 12^e on the carrier-plate 12, and a perforation for the reception of a pivot-screw 16 is formed in the sector-plate near one corner of the same, which pivot-hole is the radial center of the curved slot 15^a and also of the guide-piece 12^e. The pivot-screw 16 passing loosely through the perforation of the sector-plate has a secured engagement with the screw-hole 12^g, so that the plate 15 may be rocked on the pivot-screw 16 and be caused to assume the position indicated by full lines in Fig. 5, with the straight edge 15^b disposed in a vertical plane, or occupy the recess 12^c, as indicated by dotted lines in the same figure.

The set-screw 12^b that loosely engages the vertical slot 10^c in the end wall 10^b of the case 10 is secured by its inner end in the perforation 12^i, that is produced in the guide-piece 12^e near its upper end, which is about at the transverse center of the carrier-plate, and, as shown in Fig. 5, a stud 17 is projected from the end wall 10^b within the box 10, and said stud is located near the pivot-screw 16 along the inner surface of the side of the box and nearly in contact with the straight edge 15^b of the sector-plate when the latter is in lowered adjustment. The stud 17 from its position is adapted to rock the sector-plate 15 upwardly on its pivot-screw 16 when the carrier-plate 12 is lifted by manipulation of the rocking lever 13. The straight edge 15^b of the sector-plate 15 is adapted to lie about in the same plane with the upper face of the inclined table 11, and, as shown in Fig. 2, said edge of the sector-plate is longitudinally grooved for the reception of a single match-splint.

On the top wall of the box 10 in front of the lid 10^a a fixed vertical flange-wall 10^m is erected, and in front of this wall a transverse slot 10^n is formed in the top wall of the box, the said slot having its rear edge coincident with the front face of the wall 10^m, as shown in Fig. 2. A presser-plate 18 is provided, which has a foot-piece 18^a that seats on the upper surface of the box 10, forwardly of the slot 10^n, the foot being at a right angle to the the main portion of the presser-plate, that is thereby maintained about in a vertical plane or nearly parallel with the fixed upright wall 10^m. The presser-plate 18 is slotted across its foot-piece for the reception of a guide-pin 10^o, which projects from the top wall of the box loosely through said slot, as shown in Fig. 3.

A spacing-screw 19 is inserted through the fixed upright flange-wall 10^m, having a threaded engagement therewith, and the point of said screw has contact with the adjacent side of the presser-plate 18 near one end of the latter. A coiled spring 20 is mounted on a screw-stud that is inserted in the top wall of the box 10 near the presser-plate 18, and one end of said spring is adapted to push on the front side of said plate to rock it toward the fixed plate at its end which is opposite from that engaged by the spring, as clearly indicated in Fig. 3.

At a point correctly located between the ends of the presser-plate 18 a vertically and numerously grooved incline 18^b is formed on the inner surface of said presser-plate, there being a like formation on the fixed wall 10^m, both of these inclines converging toward the side wall of the box which is adjacent to the stud 17.

On the top wall of the box 10, at the end of the slot 10^n which is nearest to the stud 17, a notched clamping-plate 21 is pivoted by a screw 21^a. One edge of the notch in said plate, which edge is arranged to extend nearly across the slot 10^n, has serrations formed in it or is otherwise roughened, and a slope is formed on this limb of the clamping-plate, the latter being pressed by the spring 21^b, so as to dispose the serrated edge of the plate 21, as indicated in Fig. 2, when all parts of the device are in normal condition.

The operation is as follows: A quantity of matches A being placed in the box 10 on the table 11, these will by their gravity slide or roll toward the end wall 10^b, and one match-splint will rest in the groove produced in the straight edge 15^b of the sector-plate 15, as

represented in Fig. 2. When the outer end or thumb-piece 13[a] of the rocking lever is depressed, the carrier-plate 12 and sector-plate 15 will be together moved upwardly, and as said upward movement will cause an impinge of the straight edge 15[b] on the stud 17 the sector-plate bearing a match on its straight and grooved edge will be rocked into the position shown by full lines in Fig. 5 when the lever 13 is sufficiently rocked. The rocking of the sector-plate on its pivot will cause the supported match A to be pressed at its head between the serrated or otherwise-roughened inclines 18[b] and thus ignite the inflammable head of the match, the lighted match being subsequently forced into a vertical position outside of the presser-plate 18 and having its lower end gripped by the clamping-plate 21, so that the simple act of depressing the outer end 13[a] of the rocking lever 13 will locate a lighted match upright in position and convenient for removal from the box.

It will be evident from the foregoing description that it will not be permissible to remove more than one match at a time from the box or receptacle 10, and that the act of moving the lever 13 to effect the discharge of a match at the same time ignites the ejected match, so that the removal of matches by pilferers for subsequent use is prevented, and matches furnished gratuitously and supplied by saloon-keepers or in cigar-stores for the accommodation of patrons are economically used and theft of the same is prevented.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a match box, the combination with a receptacle having an opening in its top, of a vertically sliding carrier plate, and a rocking match carrying plate operated by the movement of the carrier plate to project it through the opening of the receptacle, substantially as described.

2. In a match box, the combination with a receptacle having an opening in its top, of a vertically sliding carrier plate in the receptacle, a rocking plate pivoted to the carrier plate and grooved to receive a match, and means for rocking the said plate on the upward movement of the carrier plate, substantially as described.

3. In a match box, the combination with a receptacle having a lid adapted for secured closure, and an inclined table within the receptacle, of an upwardly slidable carrier plate, a match carrying plate adapted to rock and be projected from the receptacle when the carrier plate is slid upwardly, and means to slide said carrier plate, substantially as described.

4. In a match box, the combination with a receptacle having an opening in its top, of a vertically sliding carrier plate, a rocking match carrying plate operated by the movement of the carrier plate to carry a match through the opening in the box, and a clamp for gripping the match and holding it, substantially as described.

5. In a match box, the combination with a receptacle having an opening in its top and an igniting device above the opening, of a sliding carrier plate, a rocking match carrying plate carried by the carrier plate, means for rocking the match carrying plate as the carrier plate moves upward to cause it to carry a match between the igniting device to ignite the same, and a clamp for gripping the ignited match and holding it, substantially as described.

6. In a match box, the combination with a receptacle having a lid adapted for secured closure, and an inclined match-supporting table in the receptacle, of a vertically reciprocating carrier plate, a sector plate pivoted on said carrier plate and adapted to rock and work through a slot in the top of the receptacle when the carrier plate is slid upwardly, the said sector plate receiving a single match and carrying it out of the receptacle at each rocking movement thereof, and means to slide the carrier plate, substantially as described.

7. In a match box, the combination with a receptacle having a lid adapted for secured closure, an inclined match-supporting table in said receptacle, a vertically slidable carrier plate in the receptacle, and a rocking lever arranged to lift the carrier plate when said lever is rocked, of a sector plate pivoted to rock on the carrier plate and adapted to work through a slot in the top of the receptacle when the lever is rocked so as to lift the carrier plate; a match igniting device exterior of the receptacle arranged to contact with the head of a match as it is expelled, and a clamping plate adapted to grip a lighted match and hold it upright, substantially as described.

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Witnesses:
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