M. MEYERSON.

SINGLE DELIVERY MATCH BOX.

APPLICATION FILED JAN. 21, 1910.

958,966. Patented May 24, 1910.

Fig. 1

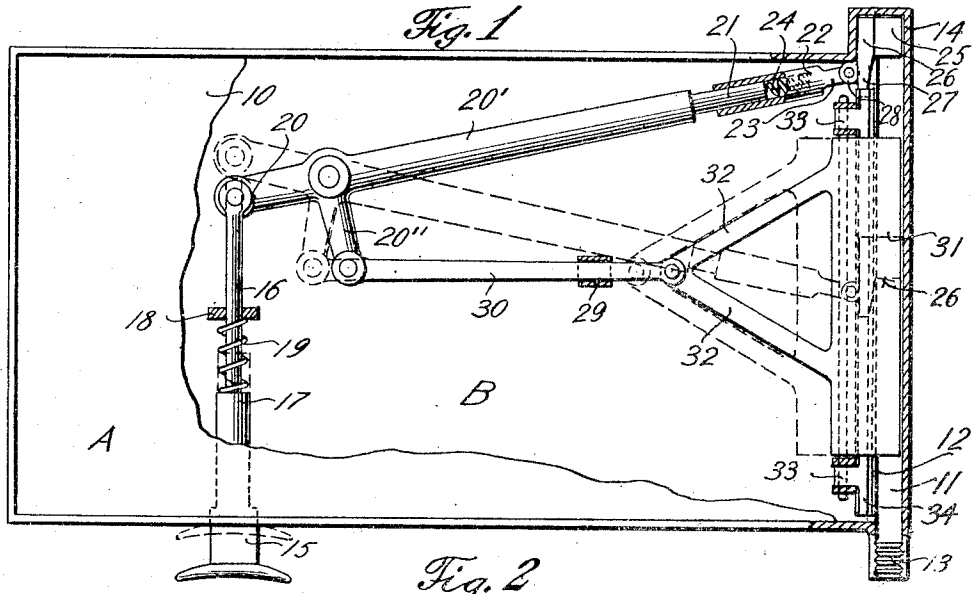


Fig. 2

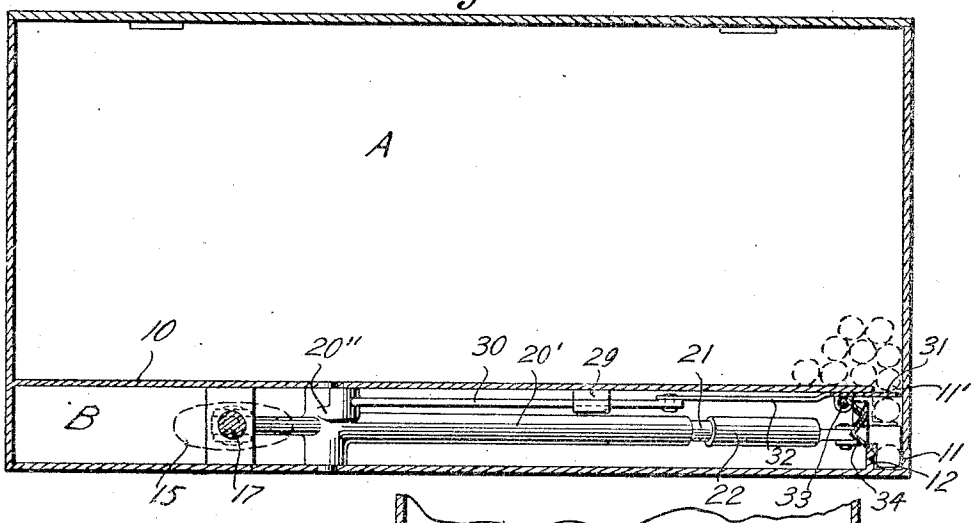


Fig. 3

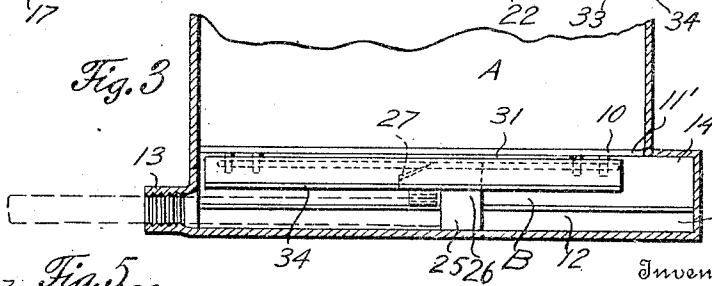


Fig. 4

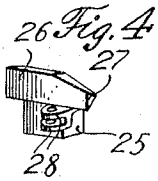
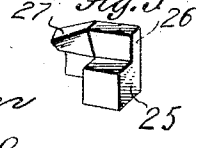


Fig. 5



Witnesses

E. Larson

Charles S. Wilson.

Inventor

M. Meyerson,

By Bakewell & Robb

Attorneys

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

MEYER MEYERSON, OF BENNETTVILLE, MINNESOTA.

SINGLE-DELIVERY MATCH-BOX.

958,966. Specification of Letters Patent. **Patented May 24, 1910.**

Application filed January 21, 1910. Serial No. 539,232.

To all whom it may concern:

Be it known that I, MEYER MEYERSON, a citizen of the United States, residing at Bennettville, in the county of Aitkin and State of Minnesota, have invented certain new and useful Improvements in Single-Delivery Match-Boxes, of which the following is a specification.

This invention relates to improved match boxes wherein the matches are delivered one at a time, by the reciprocation of a plunger operating a bell crank, in such a manner that when a match is withdrawn from the delivery opening, it is ignited.

With the above and other objects in view, this invention consists of the construction, combination and arrangement of parts all as hereinafter more fully described, claimed and illustrated in the accompanying drawings, wherein:

Figure 1 is a top plan view of a match safe constructed in accordance with the present invention, parts thereof being in section; Fig. 2 is a vertical section; Fig. 3 is a transverse section of the end containing the operating mechanism; Figs. 4 and 5 are perspective views of the match delivering shuttle.

The match box forming the subject matter of the present invention comprises a box A of approximately the same width as the length of a match, said box having a partition 10 spaced from the bottom thereof forming a secondary compartment B. The compartments A and B are connected at one extremity of the box by a transverse opening 11′, said opening having the partition 12 adjacent thereto. This partition forms a compartment 11, one side of which is open to the compartment B and the width of which is practically equivalent to the largest diameter of the average match.

An outlet opening 13 is provided on the forward extremity of the compartment 11, the interior of which is roughened in such a manner that upon the passage of the head of a match therethrough, the latter will be ignited, while at the opposite extremity of the compartment or channel 11 is an off-set projection 14 which forms a housing for the operating shutter and permits the complete operation of the mechanism.

A plunger 15 operates in the compartment B through the forward face of the box and is constructed having the rod 16 thereof provided with the shoulder 17, said rod 16 reciprocating in the guide 18, the latter forming a bearing for the spring 19 which operates between the guide 18 and the shoulder 17 of the plunger, projecting the plunger normally from the box.

A bell crank C is pivotally mounted in the compartment B toward the rear thereof and is pivotally connected to the inner extremity of the plunger rod 16 through the instrumentality of the arm 20 of said crank. The arms 20′ and 20″ of this bell crank are the principal operating means of the match safe, the arm 20″ being superposed above the arm 20′ and at right angles thereto, and as the arm 20′ is longer than the arm 20″, the proper ratio of operation is produced between the elements of the match delivering mechanism. The outer extremity of the arm 20′ is provided with the reduced portion 21 which is received in one extremity of the sleeve 22, the opposite extremity thereof being closed and provided with the arm 23. A spring 24 is interposed between the closed extremity and the reduced portion 21, thus the rotation of the arm 20′ about the pivot of the bell crank will cause the shuttle hereinafter more fully described, carried by the sleeve 22, to travel in a straight line.

The shuttle heretofore mentioned comprises a block 25 having the extension 26 projecting upwardly therefrom, the forward side of said extension being provided with the beveled portion 27. A pair of outwardly extending arms 28 are carried by the block adjacent the extension 26 and provide a means whereby the block is pivotally connected to the arm 23 of the sleeve 22, said arm being engaged between the arms 28. The block when not in operation rests normally in the projection 14 of the casing and reciprocates in the compartment 11 upon a radial movement of the arm 20′. The provision of the sleeve containing the reduced portion 21 and the spring 24 provides a means whereby the block or shuttle bears normally against the outer wall of the compartment 11, said block at no time in the reciprocation thereof leaving said wall.

Pivotally connected to the outer extremity of the arm 20″ is the link 30, said link being provided with the guide 29 carried by the partition 10. A plate 31 having the converging arms 32 formed on the rearward

edge thereof is pivotally connected through the instrumentality of said arms to the terminal of the link 30. The plate 31 operates between the partition 10 and the hinge 33 of the closure 34 and is retained normally in position thereby.

The closure 34 comprises a double-angle-bar and is so located that the same swings in the compartment 11 and when raised completely shuts off the latter from the compartment A which contains the matches.

The elements heretofore described are so arranged that upon exerting a pressure against the plunger 15, the same will be forced in swinging the arm 20′ toward the forward face of the box and causing the shuttle to reciprocate in the compartment 11, at the same time the plate 31, through its connection with the arm 20″ of the bell crank will operate horizontally in a straight line. The reciprocation of the shuttle in the compartment will cause the closure 34 to be raised through the medium of the bevel 27 previous to the reciprocation of the plate 31. This construction will prevent more than one match from dropping into the compartment 11.

Describing the operation specifically with reference to the relative location thereof, the matches are placed in the compartment A in such a manner that the same rest lengthwise with respect to the compartment 11. The plunger 15 is then forced inwardly causing the arm 20′ to swing radially reciprocating the shuttle which, through the provision of the bevel portion, raises the closure 34 previous to the removal of the plate 31 from above the opening 11′ of the compartment 11. The reciprocation of the shuttle will cause the block 25 thereof to force the match contained between the partition 12 and the wall of the box to be forced outwardly through the delivery opening 13, at the same time a match will drop from the compartment A upon the double-angle-bar forming the closure. Upon releasing the plunger and permitting the same to be returned to its normal position by the spring 19, the shuttle will return to the projection 14 and the plate 31 will separate the match resting upon the closure from the remainder and permit the same to drop into the compartment 11 between the partition 12 and the adjacent end wall of the box. The delivery opening 13 being provided with a roughened interior ignites the matches as the heads thereof pass through said opening.

Having thus described my invention, what is claimed as new is:

1. In a match safe, the combination with a casing, of a horizontal partition dividing said casing into two compartments of unequal size, a bell crank pivotally mounted in the smaller of said compartments, and a plunger for operating said bell crank, a separating plate reciprocated by said bell crank, and a shuttle adapted to project matches from the safe, resiliently operated by the remaining arm of said bell crank.

2. In a match safe, the combination with a casing, having an outlet opening, of a horizontal partition dividing the casing into two compartments of unequal size, a bell crank pivotally mounted in the smaller of said compartments, a separating plate operated adjacent to said horizontal partition by one arm of said bell crank, a closure pivoted to said partition adjacent to the outlet opening of the casing, a shuttle resiliently connected to the remaining arm of said bell crank, adapted to raise and lower said closure and to project matches through said outlet opening, said matches being contained in the larger compartment aforesaid, and means whereby said bell crank may be operated.

3. In a match safe, the combination with a casing, of a plunger adapted to reciprocate in the forward face thereof, a bell crank rotatably mounted in said casing and pivotally connected to said plunger, a shuttle operated by one arm of said bell crank in approximately a straight line, and a dividing plate reciprocated by the remaining arm.

4. In a match safe, the combination with a casing, of a partition in said casing dividing the same into two compartments, said compartments being connected by a transverse opening at one extremity of the safe, a partition provided adjacent said transverse opening forming a channel, a plunger reciprocating in said casing, a bell crank operated by said plunger, a shuttle operated by one arm of said crank adapted to reciprocate in said channel, and a separating slide operated by the other arm of said bell crank.

5. In a match safe, the combination with a casing having a delivery opening in one extremity thereof, of a plunger adapted to reciprocate therein, a bell crank radially operated by said plunger, a shuttle operated by one arm of said bell crank adapted to project matches through the delivery opening and at the same time separating the delivered match from the remaining supply, and a separating plate operated by the other arm of the bell crank adapted to separate the match next to be delivered from the remaining supply.

6. In a match safe the combination with a casing having a delivery opening in one extremity thereof, of a plunger adapted to reciprocate therein, a bell crank radially operated by said plunger, and a shuttle operated by one arm of said bell crank adapted to project matches from the delivery opening and at the same time separate the delivered match from the remaining supply.

7. In a match safe, the combination with

a casing having a delivery opening in one extremity thereof, of a plunger adapted to reciprocate therein, a bell crank radially operated by said plunger, and a separating plate operated by an arm of the bell crank adapted to separate the match next to be delivered from the remaining supply.

8. In a match safe, the combination with a casing having a delivery opening in one extremity thereof, of a partition dividing said casing into two compartments having an opening therein adjacent said delivery opening, a bell crank rotatably mounted in one of said compartments, a spring pressed plunger pivotally connected to said bell crank, a closure pivoted to said partition adjacent said opening, a shuttle operated by one arm of said bell crank adapted to close said closure upon the reciprocation of said shuttle, and a slide adapted to be reciprocated by the remaining arm of the bell crank.

9. In a match safe, the combination with a casing, of a plunger operating therein, a bell crank mounted in said casing and adapted to be operated by said plunger, a dividing plate adapted to be reciprocated horizontally by one arm of said bell crank, a shuttle adapted to be reciprocated transversely by the remaining arm of said bell crank, and means whereby said shuttle reciprocates in approximately a straight line upon the radial movement of said shuttle.

In testimony whereof I affix my signature in presence of two witnesses.

MEYER MEYERSON.

Witnesses:
C. G. HAUGEN,
O. H. OLSON.