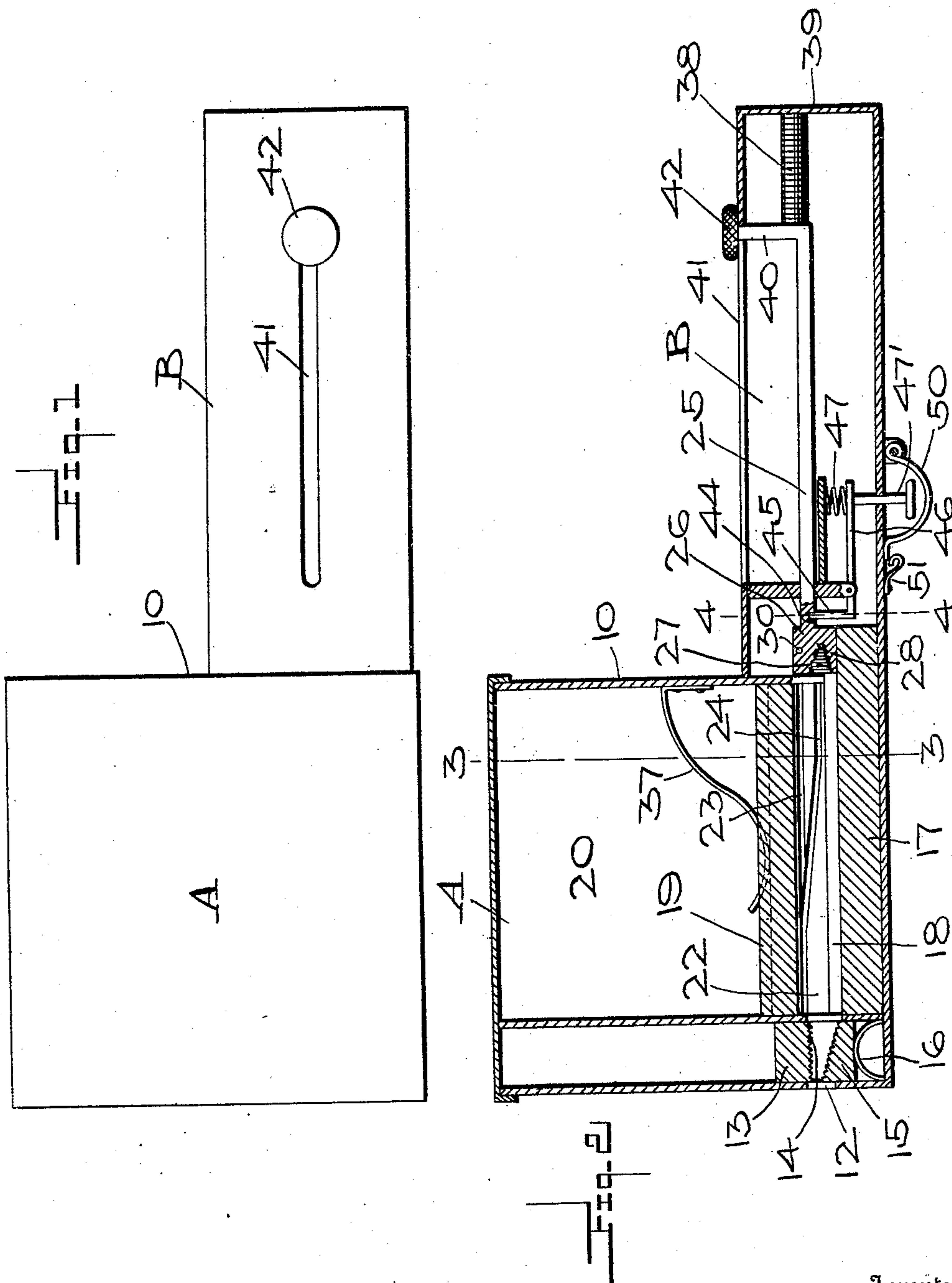


945,047.

H. E. REYNOLDS.
SINGLE DELIVERY MATCH BOX.
APPLICATION FILED MAR. 25, 1909.

Patented Jan. 4, 1910.
2 SHEETS—SHEET 1.



Witnesses

Ed. Lusby
E. L. Chandler

Inventor

Harry E. Reynolds

By

Woodward & Chandler

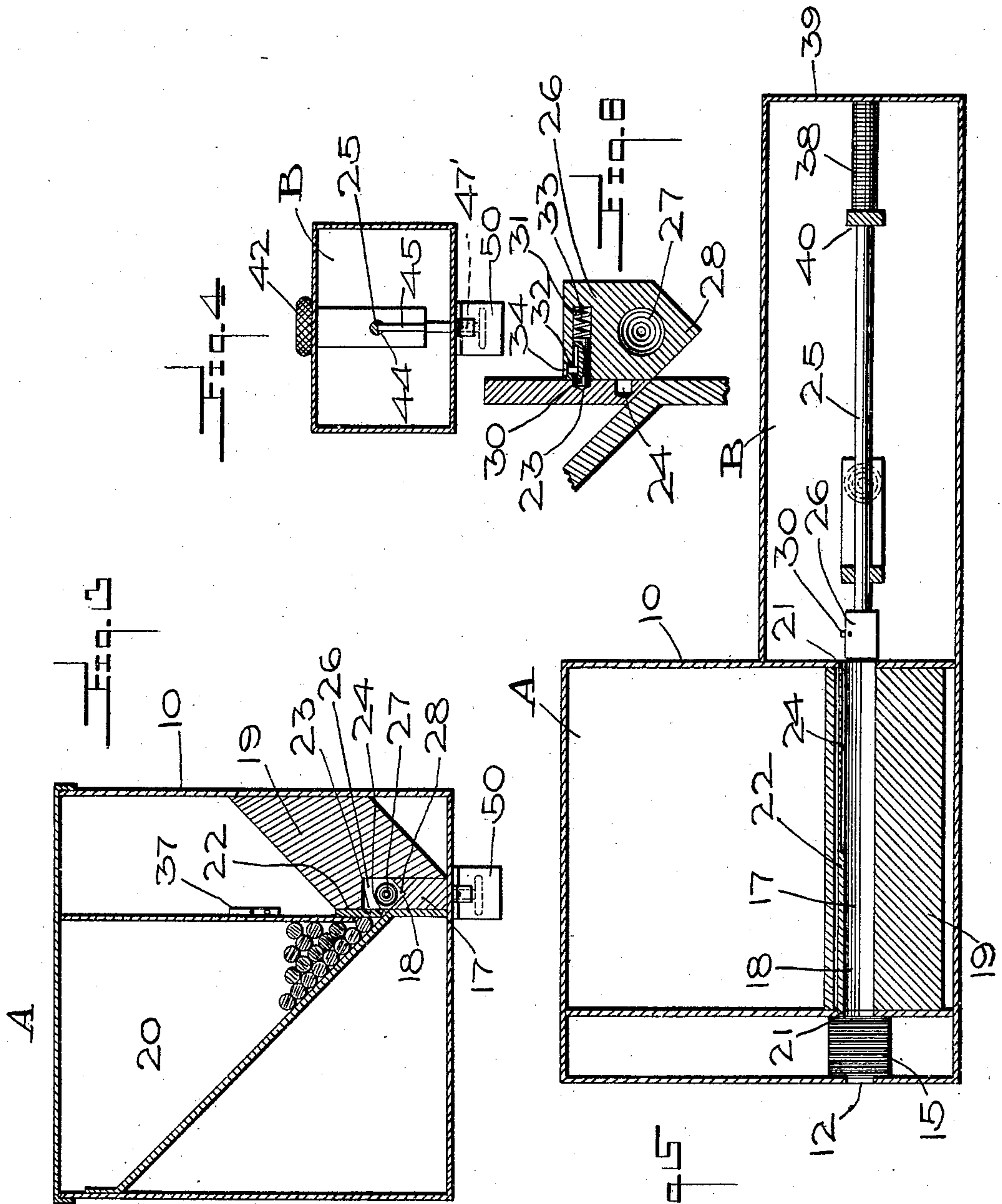
Attorneys

945,047.

H. E. REYNOLDS.
SINGLE DELIVERY MATCH BOX.
APPLICATION FILED MAR. 25, 1909.

Patented Jan. 4, 1910.

2 SHEETS—SHEET 2.



Witnesses
E. L. Lashby
E. L. Chandler

Inventor
Harry E. Reynolds
By *Woodward & Chandler*
Attorneys

UNITED STATES PATENT OFFICE.

HARRY E. REYNOLDS, OF OLMSTED FALLS, OHIO.

SINGLE-DELIVERY MATCH-BOX.

945,047.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed March 25, 1909. Serial No. 485,831.

To all whom it may concern:

Be it known that I, HARRY E. REYNOLDS, a citizen of the United States, residing at Olmsted Falls, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Single-Delivery Match-Boxes, of which the following is a specification.

This invention relates to single delivery match boxes, and has for its object to provide a novel device adapted to deliver a single match and ignite the match at the same time.

Another object is to provide a novel safety device adapted to obviate the liability of more than one match becoming engaged at one time, and to prevent the accidental ignition of matches which are not to be delivered.

Another object is to provide a novel means for engaging a match to be delivered.

Another important object is to provide a novel method for igniting matches which will be positive in operation, and adapted to operate upon matches of various sizes.

Other objects and advantages will be apparent from the following description, and it will be understood that changes in the specific structure shown and described may be made within the scope of the claims, and that any suitable materials may be used without departing from the spirit of the invention.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a top view of the box, Fig. 2 is a longitudinal sectional view of the box, Fig. 3 is a cross sectional view of the box on the line 3—3 of Fig. 2, Fig. 4 is a similar view on the line 4—4 of Fig. 2. Fig. 5 is a horizontal longitudinal sectional view of the box.

Referring to the drawings, there is shown a casing 10 comprising a match holding portion A and an operating extension B. The section A is provided adjacent its bottom on the end opposite the portion B with an opening 12 inwardly and above which there is secured a stationary abrading member 13, having a horizontal abrading face 14 comprising a series of serrations formed upon the face of the block. Disposed oppositely of the opening, there is a resiliently movable abrading block 15 having a similar abrasive face, and secured upon a bowed spring 16, being held normally in close spaced relation

with the block 13, its abrasive face being inclined inwardly and away from the block 13 as shown, to allow the sliding engagement of a match head thereunder under operation of the device as will be subsequently described.

The distance between the blocks 13 and 15 may be varied as may be found desirable, but is preferably about $\frac{3}{32}$ of an inch, which is suitable for operation upon the usual type of parlor match, so called, the head of which usually varies from $\frac{1}{8}$ of an inch to $\frac{3}{16}$ of an inch in diameter. Thus, the positive ignition of the match is insured, while there is but slight liability of the match head being broken and detached from the stem before ignition of the stem occurs.

Disposed inwardly of the blocks 13 and 15, there is a longitudinally disposed channel block 17, having a V shaped groove therein over which there is a retaining member 19 forming a passage adapted to receive a match slidably therein, the space between the edge of the retaining member and the opposite side of the groove being sufficient to allow the passage of a match therebetween. Disposed within the section A, and inclined laterally and diagonally upward from the block 17, there is a magazine 20 adapted to receive a plurality of matches transversely therein for sliding movement toward the groove 18. Suitable guide grooves 21 are formed at the opposite ends of the section A disposed immediately adjacent the lower end of the magazine 20, and receiving slidably therein a door 22 adapted to close the magazine at times, and movable laterally for the passage of a match thereunder. The door 22 is provided on its outer face at its end opposite the abrading block with grooves 23 and 24 respectively, the former being horizontal and disposed adjacent the upper edge of the door, while the latter groove extends outwardly and divergently from the inner end of the groove 23 toward the end of the door, its outer end portion being horizontal and in spaced relation with the groove 23. The groove 23 is approximately one-half the depth of the groove 24 for engagement by an operating member subsequently to be described.

The door operating member comprises a plunger 25 carrying a head 26 provided with a conical recess 27 opening upon its outer end as shown, the face of the recess being roughened for engagement with the end of a match stem. The head 26 is presented to-

ward the groove 18 for sliding longitudinal movement therein, and is provided with an angular extension 28, adapted to engage snugly in the groove 18 to prevent rotation of the head. The head carries upon its side adjacent the door 22, a laterally slidable spring pressed plunger pawl 30, adapted to engage in the groove 23 upon inward movement of the plunger, the pawl being pressed inwardly thereby into a recess or sleeve 31 upon the side of the head 26.

The recess for the plunger 30 as shown, comprises a horizontal portion communicating with which adjacent its outer end, there is a lateral extension 32. The plunger comprises a cylindrical member having a longitudinal slot in one side thereof, stopping short of its inner end, being disposed slidably in the recess 31, a coiled spring 33 being disposed inwardly thereof, under tension to force the member 30 outwardly, a short pin 34 being engaged through the extension 32 and projecting slidably into the longitudinal slot in the member 30. The outer end of the member 30 projects from the head a spaced distance to be engaged by a beveled portion 36 at the outer end of the slot 23, the plunger 30 thus being pressed inwardly for movement through the slot 23, and upon reaching its inner end is pressed outwardly to the full depth of the slot 24. Upon return movement of the plunger 25, it will be seen that the plunger 30 will engage the walls of the groove 24 to raise the door 22, allowing a match to fall into the groove 18 from the magazine 20. When the plunger reaches the full outer limit of its movement, it will be seen that the plunger 30 is disengaged from the groove 24 allowing the door to fall into closed position. The closing of the door may be facilitated by means of a suitable form of spring 37. The plunger 25 is engaged by a coiled spring 38 interposed between its outer end and the adjacent end 39 of the casing, under tension to force the plunger inwardly the full extent of its movement. The plunger is provided with a lateral extension 40 projecting through a suitable slot 41 in the extension B of the casing, and is provided with a knurled head 42 outwardly thereof for operation of the plunger as will be subsequently described.

Adjacent the head 26, the plunger 25 is provided with a notch 34 in which there is engaged a dog 45 adapted to hold the plunger 25 at the outer limit of its movement against the action of the spring 38. The dog is carried by a pivoted lever 46 engaged by a suitable spring 47 to hold the dog resiliently in engagement with the notch, an operating stem 47' being attached to the lever and projecting through a suitable opening in the bottom of the casing to be manipulated to release the plunger as is obvious.

In use, the magazine having been filled with matches the knurled head 42 is pulled outwardly, thus drawing the head 26 outwardly, and engaging the plunger 30 within the groove 24 to operate the door 22 and allow the movement of a match into the groove 18. When the plunger is moved to the outer limit of its movement, the dog 45 becomes engaged in the notch 44 to hold it there, the door 22 falling into place to prevent the projection of more than one match into the groove 18. When it is desired to use a match, the member 47 in the bottom of the casing is pressed inwardly, thus releasing the plunger 25 which slides forwardly engaging the match in the groove 18 and forcing it outwardly, the head of the match coming in contact with the abrading members 13 and 15 and being ignited and projected outwardly of the box. The roughened faces of the recess 27 tend to hold the match against complete disengagement from the box, the match being held with a portion of its stem engaged in the exit opening 12, so that the user may grasp the match without difficulty.

What is claimed is:

1. A single delivery match box comprising a magazine portion, a match receiving member disposed adjacent the magazine and adapted to receive a match therefrom for longitudinal sliding movement in the receiver, a slidable closure member interposed between the receiver and the magazine, said closure being provided with a longitudinally extending groove, and a deeper groove extending outwardly and divergently from the inner end of the first named groove, abrading means at one end of the channel, and a plunger slidable within the channel and carrying a spring pressed plunger adapted to engage slidably in the first named groove upon inward movement of the plunger and in the second named groove for operation of the closure upon retractive movement of the plunger.

2. A single delivery match box including a match receiving channel having an exit opening at one end adapted to receive a match slidably therein for projection through the opening, a transversely slidable closure for the channel, said closure having a diagonal groove therein, and a plunger slidable in the channel, said plunger being provided with a transversely extending spring pressed plunger adapted to engage in said groove upon outward movement of the first named plunger for operation of the closure to allow the entrance of a match to the channel.

3. A device of the class described comprising a channel portion adapted to receive a match therein for longitudinal slidable movement, a longitudinally extending transversely slidable closure for the channel,

said closure having a diagonal groove there-
in, a plunger longitudinally slidable in the
channel, said plunger comprising a head
having a conical recess in its end, said recess
5 having a roughened face, said head being
provided with a transversely slidable spring
pressed member adapted to engage in the
groove upon outward movement of the plun-
ger, said plunger being engaged by resilient
10 means normally under tension to force the
plunger into the channel for ejection of a

match therefrom, releasable means for
checking the plunger at the outer limit of its
movement, and means for setting the plun-
ger in operative position.

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

15

HARRY E. REYNOLDS.

Witnesses:

B. B. FUZIER,

WM. E. STRASSNER.