No. 751,308. PATENTED FEB. 2, 1904.

M. R. LAND.

MATCH SAFE.

APPLICATION FILED JUNE 6, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

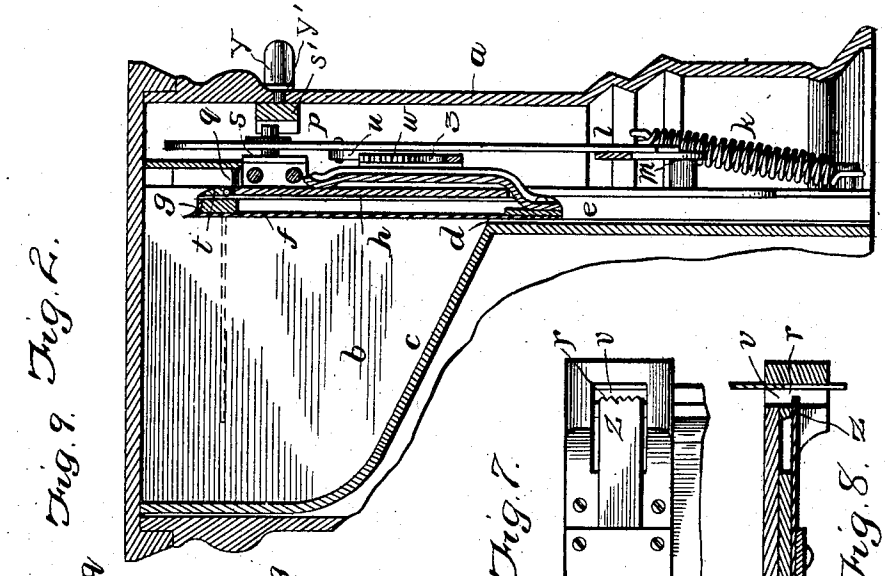


Fig. 2.

Fig. 9.

Fig. 7.

Fig. 8.

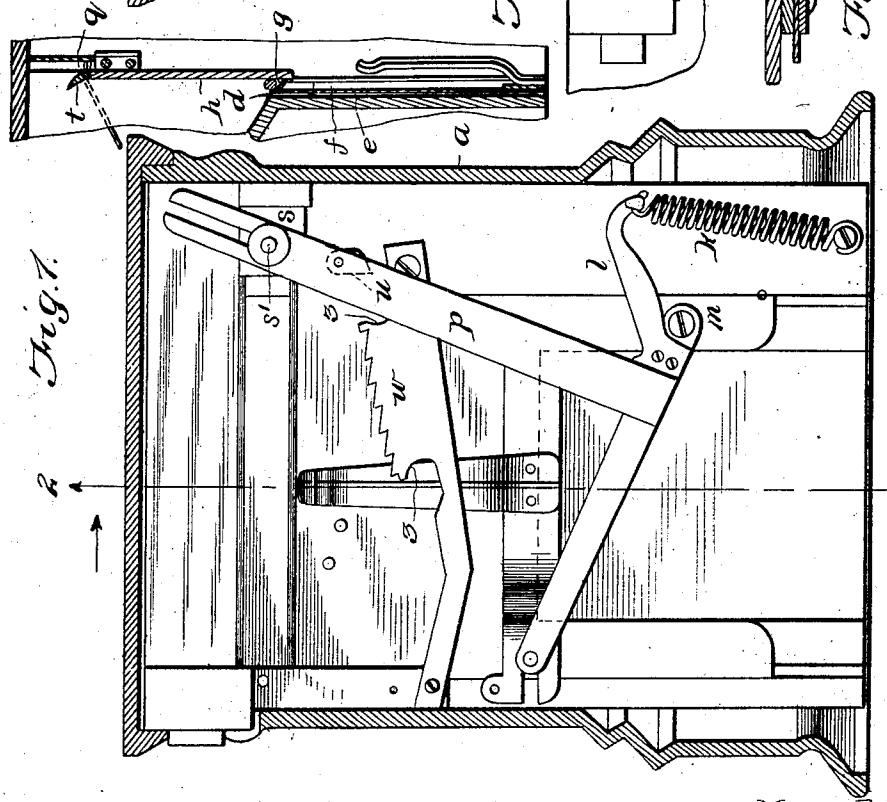


Fig. 1.

Witnesses

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 2 SHEETS—SHEET 2.

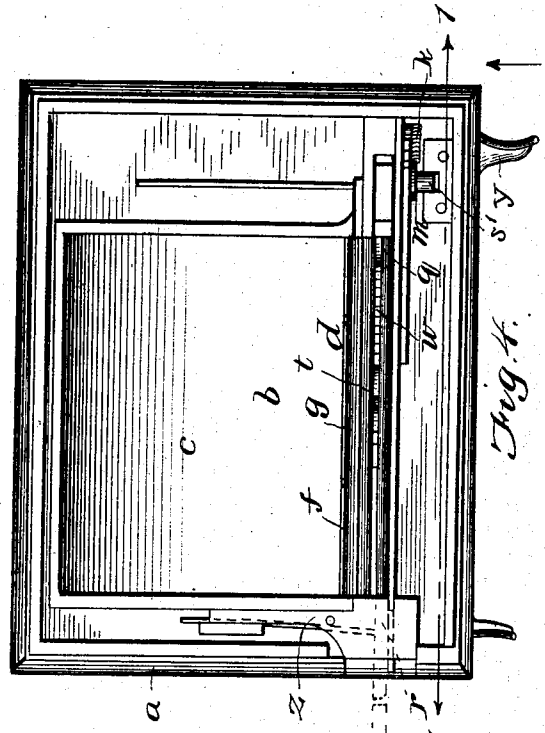


Fig. 4.

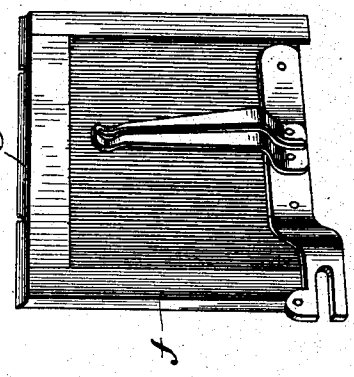


Fig. 6.

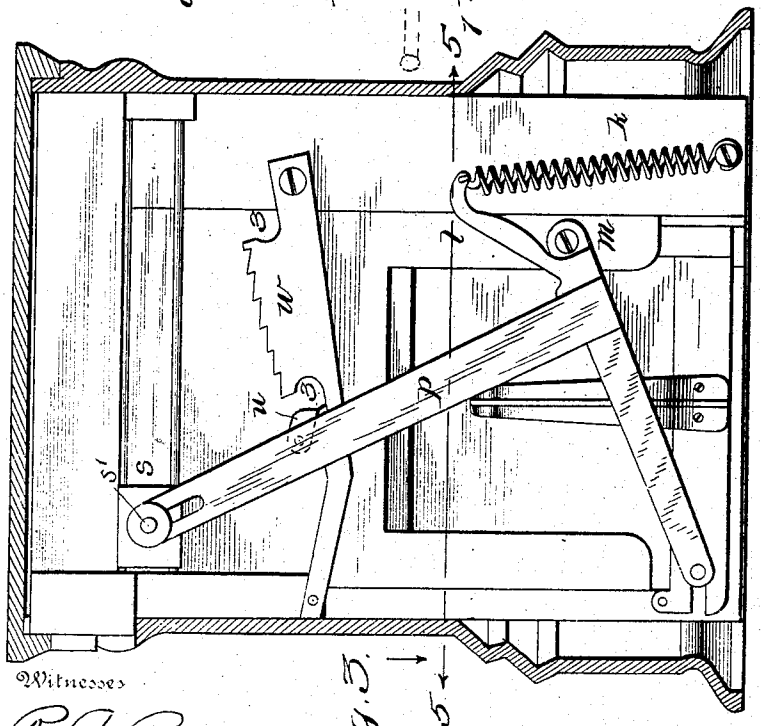


Fig. 5.

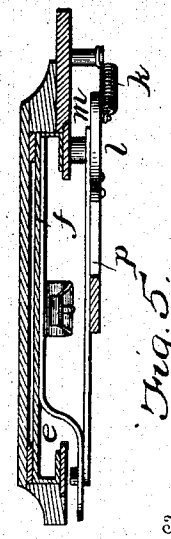


Fig. 5.

Witnesses
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No. 751,308. Patented February 2, 1904.

UNITED STATES PATENT OFFICE.

MARTIN R. LAND, OF NORFOLK, VIRGINIA.

MATCH-SAFE.

SPECIFICATION forming part of Letters Patent No. 751,308, dated February 2, 1904.

Application filed June 6, 1903. Serial No. 160,394. (No model.)

To all whom it may concern:

Be it known that I, MARTIN R. LAND, a citizen of the United States, and a resident of Norfolk, in the county of Norfolk and State of Virginia, have made a certain new and useful Invention in Match-Safes; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the invention, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 is a section on the line 1 1, Fig. 4. Fig. 2 is a section on the line 2 2, Fig. 1. Fig. 3 is a view similar to Fig. 1 with slide *s* at limit of its forward movement. Fig. 4 is a plan view of the match-box with cover removed. Fig. 5 is a section on the line 5 5, Fig. 3. Fig. 6 is a detail perspective view of plunger *f*. Figs. 7 and 8 are detail views illustrating the spring-igniter *z*. Fig. 9 is a detail sectional view showing the plunger *f* at the limit of its downward movement.

The invention relates to match-safes; and it consists in the novel construction and combinations of devices, as hereinafter set forth.

In the accompanying drawings, illustrating the invention, the letter *a* designates the frame or encasement, in which is provided the match-reservoir *b*, having a bottom plate *c* sloping downward to the slot or mouth or opening *d* of a plunger channel or slideway *e*, in which plays a lifting-plunger *f*, having in its upper edge a rabbeted seat *g* of proper width to hold one match. When the plunger *f* is in its depressed position at the bottom of the reservoir, it is below the marginal edge of the sloping bottom plate, and a match from the reservoir will drop into the match-seat *g*, and when the plunger rises it will lift the match to the top of the reservoir, the plunger passing in such movement along the vertical wall *h* of the reservoir.

The plunger is designed to be depressed by hand and to be lifted by the action of a spring *k*, attached to an operating-lever *l*, pivoted to the frame at *m*. The operating-lever is also provided with an arm *p*, extending upward to engage a transverse pusher-slide *s*, moving in a trough or guideway *q* exterior to the wall *h*. The pusher-slide *s* is below the level of the match-seat *g* of the lifting-plunger when the latter is in its highest position, and the match lifted on the seat *g* is deposited on the pusher-slide *s*. A pivoted clearer-lip *t* is provided on the upper edge of the vertical wall *h*, and this clearer-lip has a normal inclination backward or over the path of the plunger, it being designed to push off any superfluous matches which may be carried up on the match-seat, leaving in such match-seat but one to be dropped on the holder-slide.

The pusher-slide is designed to move transversely under the operation of the lever *l*, carrying the match with it and pushing it through a lateral opening or passage *v* in the casing-wall, which is provided just outside this opening with a toothed spring or igniter *z*. The igniter shown consists of a spring-tongue, usually removable and having a toothed edge which forms one edge of the opening through which the charged end of the match is pushed. The other edge of this opening is of elongated or abutment form, as indicated at *r*, the toothed edge of the spring presenting toward its middle portion. When, therefore, the match is pushed through the opening, the charged head passing along the abutment *r* is scratched by the teeth of the spring and igniter. The pusher-slide is designed to push the match sufficiently to cause it to project half its length or more beyond the igniter, so that it will be easily taken hold of for withdrawal and use.

In order to prevent the pusher-slide from being retracted into the match-safe after its movement outward has commenced, the lever-arm *p* is provided with a pendent or swinging pawl *u*, designed to engage a ratchet-bar *w*, at each end of which is formed a shoulder recess or cut-out 3, into which the pawl will swing downward after it has moved beyond either end of the ratchet. As the pawl has a reciprocating movement when it is carried backward under the retracting action of the spring, it will pass freely over the teeth of the ratchet in non-acting position; but when it is moved forward under the opera-

tion which pushes out the match and ignites it the pawl will be automatically reversed and will assume the acting position for engagement with the rack.

In the operation of the device the projection or handle-piece Y, having an engagement with the stud s' of the slide s, is pushed forwardly in transverse slot Y', thus moving forwardly the slide s and in connection therewith through bell-crank lever $l\,p$ moving the plunger f downwardly in its slideway. A match in the match-trough will thus be forced outwardly through the igniter, and at the same time the plunger will receive a match from the receptacle. Upon reverse movement of the bell-crank lever and slide s through spring k the plunger will rise and deposit its charge in the match-receiving trough, any superfluous matches being knocked off by the clearer-lip t, the parts being thus restored to their original positions. During the forward movement of the slide s it will be prevented from backward movement through the pawl connection u of the bell-crank lever acting with the rack w.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. In a match-safe, the combination of the casing containing the match-receptacle, the vertically-reciprocatory plunger at one side of said receptacle, the match-receiving trough, the transversely-reciprocatory slide or follower working therein, means for operating said plunger and slide coincidently, and means for preventing backward movement of said slide until it has completed its forward movement, substantially as specified.

2. In a match-safe, the combination of the match-receiving trough, the transversely-reciprocatory slide working therein, means for depositing the match in said trough, means for operating said slide and match-depositing means coincidently, and means for preventing backward movement of said slide until it has completed its forward movement, substantially as specified.

3. In a match-safe, the match-receiving trough, the transversely-reciprocatory slide working therein, means for operating said slide, and means for preventing backward movement of said slide until it has completed its forward movement, substantially as specified.

4. In a match-safe, the combination of a match-receiving trough, a transversely-reciprocatory slide working therein, a vertically-reciprocatory match-carrying plunger discharging into said trough at the limit of its upward movement, and a device for removing superfluous matches from and located in the path of said plunger as its rises, substantially as specified.

5. In a match-safe, the combination of a match-receiving trough, a transversely-reciprocatory slide working therein, a vertically-reciprocatory match-carrying plunger discharging into said trough at the limit of its upward movement, and a pivoted lip located upon the side wall of and guarding said trough to remove superfluous matches from the plunger as it rises, substantially as specified.

6. In a match-safe, the combination of the casing containing the match-receptacle, the vertically-reciprocatory plunger at one side of said receptacle, the match-receiving trough, the horizontally-reciprocatory slide working in said trough, an operating-lever connected with said plunger, and having an upward extension connected with said slide, a rack adjacent to said extension, and a pawl carried by said extension and adapted to engage said rack, substantially as specified.

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

M. R. LAND.

Witnesses:
S. HETH TYLER,
GEO. PILCHER.