

No. 651,324.

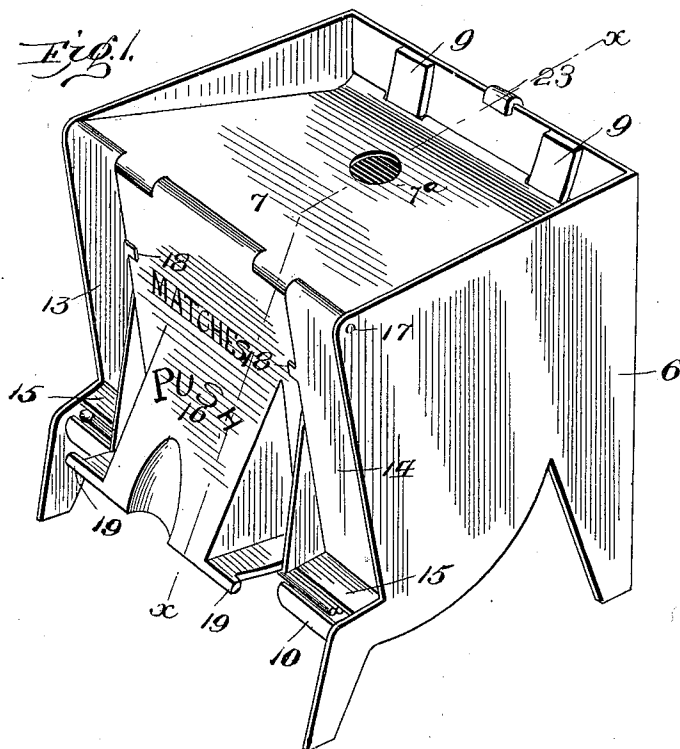
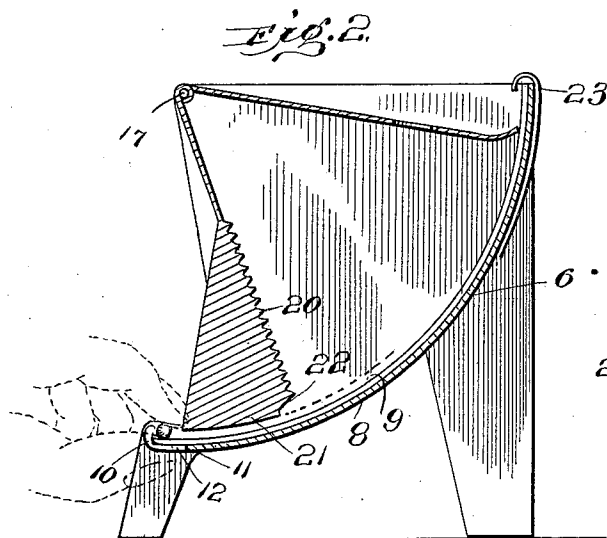
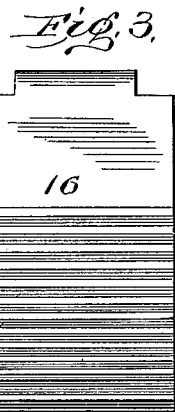
Patented June 5, 1900.

W. D. DOREMUS.
MATCH SAFE.

(Application filed Dec. 16, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
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Blanche C. Rowe

Inventor
Willard H. Doremus
by Joseph M. Buell
his Attorney

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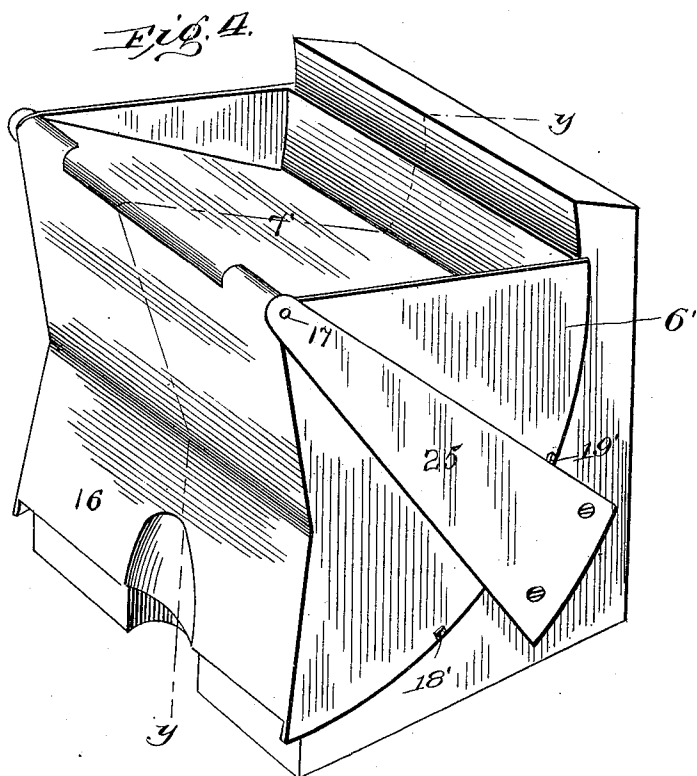
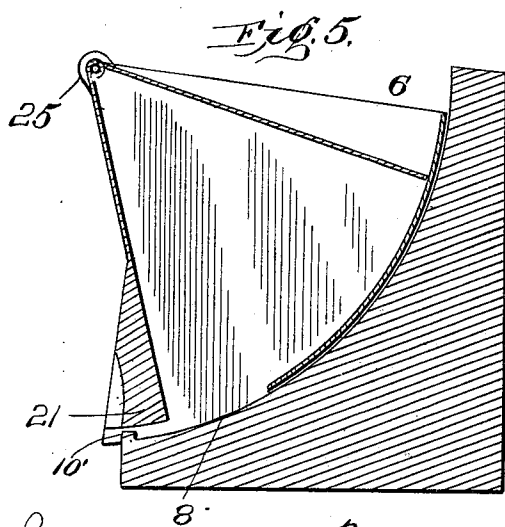
Patented June 5, 1900.

W. D. DOREMUS.
MATCH SAFE.

(Application filed Dec. 18, 1899.)

(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

WILLARD D. DOREMUS, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR
OF ONE-HALF TO ADDISON G. DU BOIS, OF SAME PLACE.

MATCH-SAFE.

SPECIFICATION forming part of Letters Patent No. 651,324, dated June 5, 1900.

Application filed December 16, 1899. Serial No. 740,552. (No model.)

To all whom it may concern:

Be it known that I, WILLARD D. DOREMUS, a citizen of the United States, residing at the city of Washington, in the District of Columbia, have invented certain new and useful Improvements in Match-Safes; and I do hereby 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.

The object of my invention is to provide an improved match-safe which admits of the transverse withdrawal successively therefrom of a single match at a time from an advancing layer at a given point of exposure where the outermost-lying match of the advancing layer may be successively withdrawn by the operator by the pushing back of a guard-plate and the insertion of the thumb and finger to a point where they may grasp the said outermost match, which is made accessible to such an abstraction by reason of the pushing back of said guard-plate.

As shown in the drawings, the apparatus consists, broadly, of a receptacle that is provided at its bottom front portion with a longitudinally-disposed discharge-opening and a downwardly-inclined bottom extending to and slightly beyond the aperture and down which the contained matches tend to descend and which in conjunction with the horizontally-disposed aperture of proper dimensions forms a passage-way that permits of the egress of the matches in a single transverse layer and a swinging front plate or shutter that terminates in an inwardly-projecting flange, the under face of which is arranged in a parallel plane with that of the bottom of said receptacle and which is adapted to swing in a vertical plane to provide an agitating and lifting device that normally rests in a position to cover and protect the central body portions of the advancing layer of matches.

In the drawings, Figure 1 represents in perspective the preferred embodiment of my invention, while Fig. 2 is a sectional view taken on lines *x x* of Fig. 1. Fig. 3 shows a detail of the plate. Fig. 4 represents a modified form of a match-safe constructed according to my invention, while Fig. 5 represents a sectional view of Fig. 4, taken on lines *y y*.

In Fig. 1 the numeral 6 indicates a receptacle in which the matches are stored in bulk. 7 represents the cover of said receptacle and is provided with an aperture 7^a and is hinged to swing upon the pin 17 and by reason of its size and shape is adapted to swing downwardly into the box to act as a follower, thereby serving to imitate the action of an ejective plunger to cause the advance of the contained matches and to prevent any retrograde movement of the bottom layer of said matches. The cover in its downward travel also serves as an indicating means to show at all times the size of the diminishing bulk of matches contained in said box. 8 indicates the bottom of the box, which is inclined forward and downward and which is provided with ribs 9, disposed in spaced parallelism to project sufficiently above the plane of the inclined bottom to form tracks or ways for the transversely-descending matches—a form of construction that admits of the accommodation of the heads of the matches, as well as minimizing the friction thereof in their travel downward. The inclined bottom terminates in a forward projection having a transversely-arranged turned-up portion 10 at its outward extremity, thereby providing a platform or ledge 11 of a suitable depth that is provided at 12 to form a central cut-away portion or finger-way.

The front face of the receptacle shown in Fig. 1 is inclined inwardly from the top, while the side portions 13 and 14 thereof terminate in forwardly-extending flange projections 15, that extend in spaced parallelism at a suitable height above the platform or ledge to provide ways or spaces to the interior of the receptacle, while said flange projections terminate short of the turned-up portion to provide an unobstructed passage-way through which a match therein presented may be withdrawn. The front wall of the receptacle, as shown in Fig. 1, is also provided with a central opening of less width than that of the length of the contained matches and which communicates or extends in open relation with the spaces formed between the discharge end of the inclined bottom and by reason of its dimensions permits of the egress transversely of a single layer of matches from the

bulk stored in said receptacle. Said central opening is provided with a shutter or guard-gate 16, which is also hinged on the cross-pin 17 and which is arranged to swing in a vertical plane in and out of said receptacle and which is adapted to close said central opening and which normally rests to cover and protect the outermost matches of the advancing layer. The shutter extends downwardly to a point short of the inclined bottom, where it terminates in an outwardly-extending flange that approximately registers with the outwardly-projecting flanges 15 and which is adapted to be swung in an arc parallel to the face of the inclined bottom, as shown in dotted lines in Fig. 2, and which when swung within said receptacle presents a bearing-face in parallelism to the inclined bottom and at a height slightly above the body portions of the advancing layer of matches, thereby forming a transverse central channel-space extending within said receptacle and through which an underlying layer of matches may be advanced or separated from the mass during the inward swing of said shutter, while the inner face of said shutter is swung inwardly at an angle to the matches stacked in said receptacle to cause the lifting of the superimposed layers thereof away from the advancing layer of matches and the transference of the weight thereof to the rear. The inner portion of the bearing-face is cut away at 22 to provide for an offset or mouth to the central space-channel, thereby providing for the admission of a few matches in alinement over the underlying layer in a manner to prevent choking and to relieve at that point the underlying layer of the weight of the bulk of matches—a construction and arrangement that facilitates the feed to said channel-way at a point during the swing of the shutter and which makes provision for the filling in of any intervening space in the underlying layer that may be caused in the sweep of said shutter when it lifts and causes the bulk of matches to be pushed back out of the way.

It is important that there should be no bridging of the matches contained in the receptacle, and to prevent this I provide the following means: In the first place the matches in the forward part of the pile lie stacked, with their ends resting, respectively, against the inner face of the front portions 13 and 14 and out of contact throughout their central body portions with the swinging gate or shutter, which latter normally rests in approximately vertical position a slight distance in front of the contiguous body portions of the matches. The inner face of the shutter is corrugated transversely at 20 in order to provide transverse cavities and sharp entering edges or teeth that admit of engagement with the contiguous body portions of the matches in said pile when said gate is swung rearwardly into jarring contact therewith, thereby embracing the contacting matches and lifting them in bulk in a manner to break up any bridging

that may occur and cause their transverse alinement for the purpose of accurate feed to and through the channel-space. The limit of movement of the swinging shutter may be prescribed by limiting-stops 18 and 19, as shown in Fig. 1. From this construction it will be seen that by the movement inwardly of the oscillating gate or shutter the matches in said receptacle are agitated, alined, and separated into an advancing layer from the mass and which are allowed to be fed downwardly to a point where they are exposed and made accessible by the inward movement of said shutter and where they may be withdrawn one by one by the successive seizure of the outermost match of the advancing layer.

In Figs. 4 and 5 there is shown a modification of my match-safe in which the swinging shutter or moving part embraces the front and side walls 16 and 6', as well as a movable bottom integral therewith. This form of shutter is pivotally suspended on the pin 17, which is in turn supported by the arms 25, that project at a suitable angle from the base. 7' indicates a cover that is adapted to swing down into the receptacle. The front wall terminates short of the discharge end of the inclined bottom to provide a transverse opening of proper dimensions and which is so shaped or thickened at its lower extremity as to provide the equivalent of the outwardly-extending flange shown in Fig. 1. 10' indicates the turned-up portion at the extremity of the inclined bottom. 18' and 19' indicate limiting-stops.

The changes in structure, however, do not depart from the spirit of my invention and constitutes only one species thereof.

Having described my invention, what I desire to claim as new and useful is—

1. In a match-safe or analogous device having at its bottom front portion a longitudinally-disposed discharge-opening that is always in open relation to the interior of the safe, an inclined bottom extending to said opening, and means for agitating the contents of said receptacle.

2. In a cabinet or match-safe, the combination of a match-receptacle having a forwardly-inclined bottom and a central front opening extending to the discharge end of said bottom that is of dimensions to provide adjacent to said bottom a longitudinally-disposed outlet that extends the width of said match-safe that is always in open relation to the interior of said match-receptacle, of a vertically-swinging feed-regulating gate or shutter that extends downwardly to within a short distance of said discharge end of the inclined bottom and that is provided on its inner face with a transversely-corrugated portion and that is adapted to normally rest in a position to cover and protect the body portions of the exposed advancing layer of matches, substantially as described.

3. In a match-safe or analogous device having at its bottom front portion a longitudinally-disposed discharge-opening that is al-

ways in open relation to the interior of said match-receptacle, an inclined bottom extending to said opening; and a movable shutter that extends downward to a point short of the discharge end of the inclined bottom, and that terminates in a projecting flange, the under face of which is arranged in a parallel plane with the bottom of said receptacle, said shutter being adapted to normally rest in a position to cover and protect the body portions of the exposed advancing layer of matches, substantially as described.

4. In a match-safe or analogous device having at its bottom front portion a longitudinally-disposed discharge-opening that is always in open relation to the interior of said match-safe, an inclined bottom extending to said opening; and a movable shutter that extends downward to a point short of the discharge end of the inclined bottom, and that terminates in a projecting flange, the under face of which is arranged in a parallel plane with the bottom of said receptacle; and that is provided on its inner face with a transversely-corrugated portion.

5. In a match-safe or analogous device having at its bottom front portion a longitudinally-disposed discharge-opening, an inclined bottom extending to said opening and provided with ribs disposed in spaced parallelism to project sufficiently above the plane of the inclined bottom to form tracks or ways for the transversely-descending matches, a central opening provided in the front face of said receptacle, a swinging shutter or guard-plate, hinged to swing in a vertical plane through said central opening and which extends downward to a point short of the discharge end of

the inclined bottom, and that terminates in a projecting flange, the inner face of which is arranged in a plane parallel to the bottom of said receptacle and that is provided at its inner edge with a transversely-arranged cut-away portion; and said shutter is provided on its inner face with a transversely-corrugated portion, the whole arranged and operating substantially as described.

6. In a match-safe or analogous device, having an inclined bottom and a front face that is inclined inwardly from the top, and that is provided with a central opening of less width than the length of the contained matches, while the side portions thereof terminate in forwardly-extending flanged projections that extend in spaced parallelism at a suitable height above the inclined bottom to provide ways or spaces that extend in open relation with the central opening and which form upper guide-plates for the advancing layer of matches, a movable shutter or guard-plate that is suspended and adapted to swing through said central opening, and that extends downward to a point short of the discharge end of the inclined bottom and that terminates in an inwardly-projecting flange, the under face of which is arranged in a plane parallel with the bottom of said receptacle, while the inner face of said shutter is provided with a transversely-corrugated portion, substantially as described.

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

WILLARD D. DOREMUS.

Witnesses:

ADDISON G. DU BOIS,
JOSEPH W. BUELL.