J. ERICSON.

MATCH HOLDER AND DISPENSER.

APPLICATION FILED DEC. 27, 1917.

1,275,010.

Patented Aug. 6, 1918.

2 SHEETS—SHEET 1.

Fig. 3.

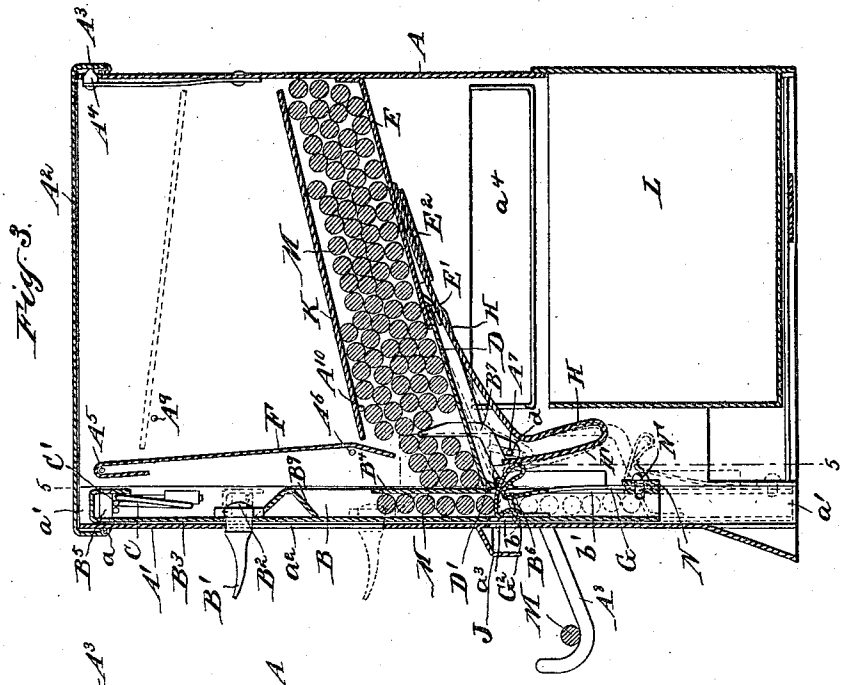


Fig. 4.

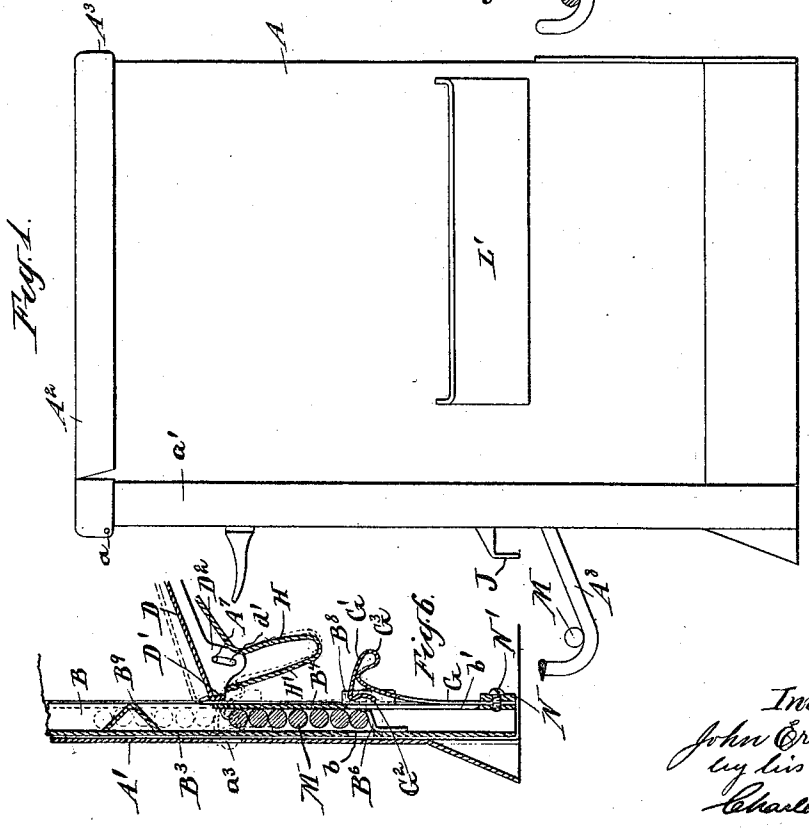


Fig. 5.

Inventor:
John Ericson
by his attorney,
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2 SHEETS—SHEET 2.

Fig. 2.

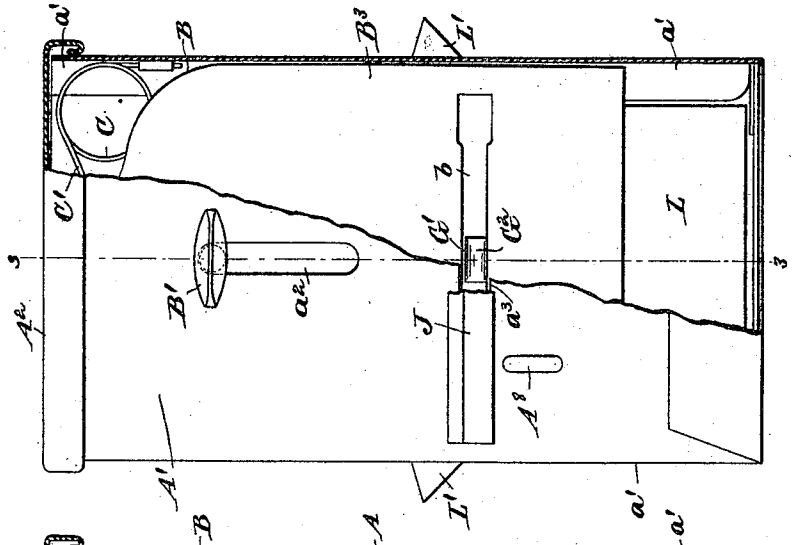


Fig. 3.

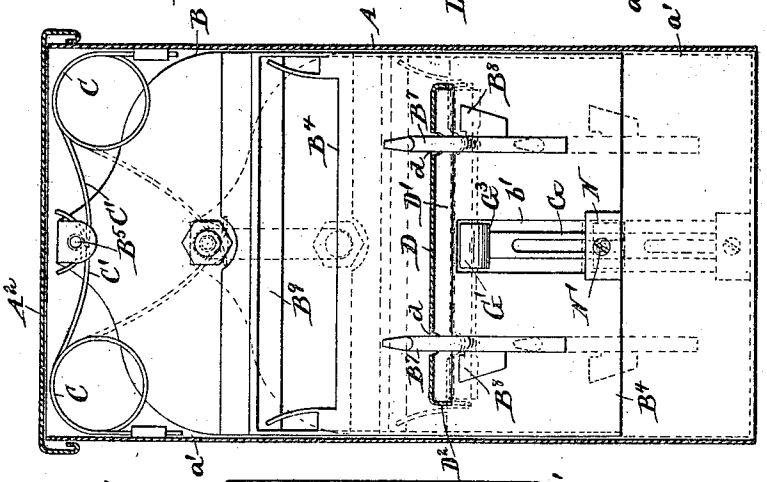
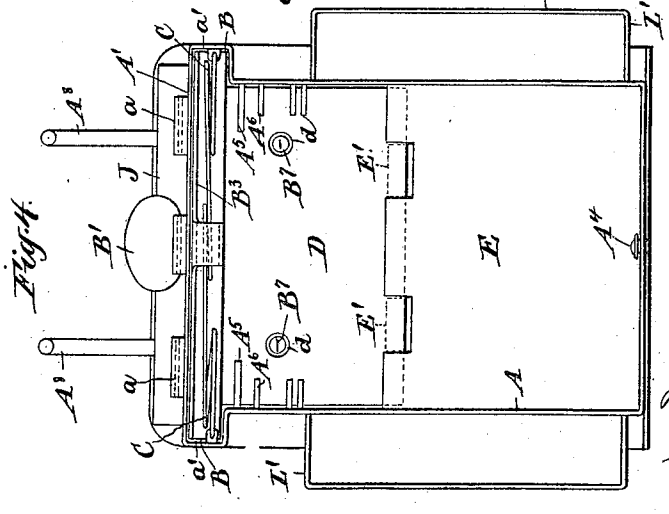


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN ERICSON, OF NEW YORK, N. Y.

MATCH HOLDER AND DISPENSER.

1,275,010. Specification of Letters Patent. Patented Aug. 6, 1918.

Application filed December 27, 1917. Serial No. 209,044.

To all whom it may concern:

Be it known that I, JOHN ERICSON, a citizen of the United States, residing in the city of New York, borough and county of Bronx, in the State of New York, have invented a certain new and useful Improvement in Match Holders and Dispensers, of which the following is a specification.

The invention relates to receptacles having mechanism for delivering matches or other articles singly therefrom, and the object of the invention is to provide a match holder of this character which shall be simple in construction, easily operated, and positive in its action of ejecting the single match and presenting it in position for convenient removal.

The invention consists in certain novel features of construction and arrangement of parts by which the above objects are attained, to be hereinafter described and claimed.

The accompanying drawings form a part of this specification and show the invention as it has been carried out in practice.

Figure 1 is a side elevation of the improved device.

Fig. 2 is a front elevation with a portion of the front plate broken away to show the parts beyond.

Fig. 3 is a central vertical section taken on the line 3—3 in Fig. 2 and partly in elevation.

Fig. 4 is a plan view with the cover omitted.

Fig. 5 is a vertical transverse section taken on the line 5—5 in Fig. 3, partly in elevation, and with certain portions omitted.

Fig. 6 is a vertical section corresponding to a portion of Fig. 3, showing parts of the ejector mechanism in detail.

Similar letters of reference indicate the same parts in all the figures.

A is the casing or body of the holder, of sheet metal, rectangular in form and having a cover A^2 hinged thereto at a on the front A^1 of the casing. The cover has a flange A^3 yieldingly engaged by a spring latch A^4.

The sides of the casing are extended laterally at the front to provide oppositely located interior ways a^1 in which is mounted a hollow flat rectangular slide B operable from the front by a thumb-piece B^1 on a screw B^2 attached to the upper portion of the front plate B^3 of the slide and extending through a vertical slot a^2 in the front A^1 of the casing. The slide moves vertically and its motion is limited by the slot a^2 and it is held normally upward by springs C C mounted in the ways a^1 above the sides of the slide, and having arms C^1 C^1 extending inwardly and engaging a pin B^5 fixed centrally at the extreme upper end of the slide.

The back plate B^4 of the slide covers only the lower portion and is arranged to permit matches to enter the channel in the interior of the slide and lie in the horizontal position one above the other in series when the slide is depressed by operating the thumb-piece B^1. The matches M thus received are supported on the bottom B^6 extending in two separated portions across the interior of the slide and inclined rearwardly therein as in Figs. 3 and 6.

In the interior of the casing is an inclined bottom or floor comprising a fixed portion or deck E extending downwardly from the back wall toward the slide, about half such distance, and is continued thereto by a movable portion or platform D having a downwardly extending lip D^1 at the front adapted to lie adjacent the rear face of the back plate B^4 of the slide. The deck E and platform D support the supply of matches in the receptacle in the horizontal position transversely of the casing and parallel with each other, and the upper part of the mass is held away from the slide by a transverse swinging retainer F hung on pins A^5 on the inner faces of the sides of the casing, and extending downwardly nearly to the platform D; it is held away from the slide B by stop pins A^6 and divides the receptacle into two compartments and limits the flow of matches from the main compartment to the smaller and thus to the slide.

The slide carries on its rear face two vertical spurs B^7 B^7 which project through openings d d in the platform when the slide is elevated, and serve to agitate the mass of matches, to aid in arranging them parallel with each other in that portion of the supply immediately adjacent the slide, and presenting such matches favorably for admission to the channel on the descent of the slide.

B^8 B^8 are lugs on the back plate B^4 arranged to strike the lip D^1 of the platform and lift it by the upward movement of the slide. The angle of inclination of the deck

E is that at which matches of the usual type will roll by gravity toward the slide, and when the platform D is in its elevated position it forms in effect a continuation of the deck at approximately the same inclination, but when permitted to lower by the descent of the slide, the platform assumes a slightly greater downward inclination and also by its downward movement agitates the matches thereon, thus facilitating their forward and downward movement to the open mouth of the channel formed by the interior of the slide. This movement of the platform is effected by mounting its forward part on pins A^7 extending inwardly from the sides of the casing through inclined slots d^1 d^1 in the side wings or flanges D^2 of the platform, and mounting the rear edge of the latter between the forward edge of the deck E and lugs E^1 beneath the deck. This loose connection permits the desired slight vertical movement of the lip D^1 and the sliding movement of the rear edge due to the action of the pins A^7 in the slots d^1. The angularity of the slots is such as to insure a true vertical movement of the lip parallel but out of contact with the back plate B^4, and neutralizes the advance of the lip due to swinging in a vertical arc of which the rear edge of the platform is the center.

On depressing the slide to the full extent allowed by the slot a^2, the forward margin of the platform lowers and the upper edge of the back plate B^4 of the slide is presented adjacent the lip D^1; in this position the matches roll down the platform and fill the channel in the interior of the slide from the bottom B^6 to the top of the back plate B^4. An angular ridge B^9 on the slide above the back plate, aids in directing the matches to the channel and serves as a top to the latter, leaving only the side opening between the plate B^4 and such ridge for the admission of matches.

On the return or upward movement of the slide due to the action of the springs C C, the rise of the upper edge of the back plate cuts off the supply of matches and again elevates the forward portion of the platform D.

The matches thus confined in a superposed series in the channel are ejected therefrom through a horizontal slit or opening b in the front plate B^3 of the slide immediately above the bottom B^6, which registers with a corresponding slot a^3 in the front plate A^1 of the casing when the slide is in the fully elevated position, and the match thus liberated falls by gravity upon the parallel hooked arms A^8 A^8 or other support, on the front of the casing, in position for convenient removal.

The ejecting mechanism comprises a light spring G secured to the back plate B^4 of the slide, extending centrally upward thereof and having a curved ejector-head G^1 at the upper end from which depends a concave flange G^2 at the front shaped to conform approximately to the side of a match. The spring and its head lie in a vertical slot or notch b^1 in the lower portion of the back plate, and the set of the spring tends to retract the head and flange toward the rear, out of the channel, and when the slide is in the depressed position the head is thus retracted. The spring G is slotted or bifurcated as shown, and is secured to the plate B^4 by a clamp N and screw N^1 by which it may be adjusted vertically to present its head and flange properly to the lowermost match and in proper relation to the opening b, and the curve of the head is such as to receive the succeeding match thereon without requiring a vertical movement of the latter and the superposed series.

On releasing the slide and permitting it to rise under the influence of the springs C C, the rearwardly projecting nose G^3 of the head strikes a yielding cam-surface H^1 and is forced forward; this movement engages the concave flange G^2 with the rear side of the lowermost match of the series and moves it forward partially through the opening b, against the rear face of the front plate A^1 and thus retains it until a continuation of the upward movement brings the opening b into register with the slot a^3, when it is forcibly ejected through such slot and falls upon the arms A^8 A^8. During this ejecting operation the succeeding matches in the series are supported by the curved upper face of the head G^1 above the opening b and the escape of the succeeding match is thus prevented. On the descent of the slide the opening b passes out of register with the slot A^3, the head is freed from contact with the cam surface H^1, the series descends by gravity upon the bottom B^6, and the then lowermost match is in position to be similarly ejected by the next rise of the slide.

J is an apron adjacent the slot A^3 and overlapping it upon the exterior of the casing to arrest the flight of the match in case of sudden release, and insure its correct deposition upon the arms A^8.

The cam surface H^1 is an upwardly curved arm of a spring H, of greater tension than the light spring G, and attached to the under face of the deck E at E^2. Its elasticity supplies the desired strong but yielding resistance necessary to overcome the slight force of the spring G in ejecting the lowermost match from the slide, and its tension is such as to yield and hold the head G^1 gently and prevent damage in the event of a misshapen or otherwise imperfect match refusing to be transferred from the slide.

K is a loose plate or follower lying upon

the mass of matches M in the receptacle, serving to hold the upper layers against disarrangement from sudden movements and aiding to maintain parallelism therein. As the supply is gradually reduced the front margin of the follower rests upon the upper pair of pins A^9 while the rear continues to descend as the mass is depleted until a position is reached at which the front margin slides rearwardly from the pins and the follower falls upon the reduced mass, which on further depletion permits the front margin to rest upon the lower pair of pins A^{10}, this arrangement effectually prevents the entrance of the front edge of the follower into the space between the lower edge of the swinging retainer F and upper face of the platform D where it would interfere with the flow of matches to the slide, or with the movement of the latter.

L is a drawer slidably mounted in the rear of the casing beneath the deck E and platform D; its function is to receive refuse matches introduced through the slots a^4 in the sides of the casing and guided thereto by the narrow open chutes L^1 L^1.

The swinging retainer F is so mounted as to allow a slight vertical movement without disengagement from its pins A^5. This permits it to rise if necessary, due to an accumulation of matches beneath its lower edge, on the rise of the platform D, and avoids danger of jamming from this cause.

Although the invention is shown and described as constructed for holding and dispensing matches, it will be understood that it will serve in dispensing other articles to which it may be adapted, and modifications may be made in the forms and proportions, and parts of the invention may be used without the whole, in making such adaptations.

The movable platform D may form the whole bottom of the receptacle, and in holders of small dimensions such arrangement is preferable.

I claim:—

1. A casing, a receptacle therein for articles to be dispensed, a retainer dividing said receptacle into two communicating compartments, said retainer mounted to swing on horizontally disposed supports and arranged to move vertically on such supports, a movable slide adapted to receive such articles from and arranged to operate partly within one of said compartments, and having a channel through which such articles are delivered and stops in said receptacle for limiting the swing of said retainer toward said slide.

2. A casing, a receptacle therein for articles to be dispensed, a slide movable in said casing and having a channel adapted to receive such articles from said receptacle and carry them in a single series side by side, said slide having an opening in its side for the reception of such articles, and a closure for the upper end of said channel, serving to induce the presentation of such articles to said channel in a horizontal position.

3. A casing, a receptacle therein for articles to be dispensed, an inclined bottom in said receptacle, a vertically movable slide adapted to receive such articles from said receptacle and carry them in a single series side by side, agitating spurs on said slide arranged to operate through openings in said bottom and agitate such articles in said receptacle by the movements of said slide.

4. A casing, a receptacle therein for articles to be dispensed, an inclined bottom for said receptacle comprising a fixed upper portion, and a movable lower portion arranged to oscillate and to form a continuation of said upper portion, a movable slide mounted in said casing and arranged to receive such articles from said receptacle, agitating spurs on said slide arranged to agitate such articles in said receptacle, and means on said slide for oscillating said movable bottom portion during the agitating action of said spurs.

5. A casing, a receptacle therein for articles to be dispensed, an inclined bottom for said receptacle comprising a fixed upper portion, and a movable lower portion arranged to oscillate and to form a continuation of said upper portion, means for oscillating said lower portion and increasing its downward inclination relatively to said upper portion, and means for delivering such articles singly from said receptacle.

6. A casing, a receptacle therein for articles to be dispensed, ways in said casing, a slide movable in said ways, a channel in said slide arranged to receive such articles in series from such receptacle, and means actuated by the movements of said slide for automatically ejecting the lowermost of such series.

7. A casing, a receptacle therein for articles to be dispensed, a slide movable in said casing and having a channel arranged to receive such articles one upon another therein from said receptacle, and a spring actuated ejector mounted on said slide and arranged to eject one of such articles laterally from said slide.

8. A casing, a receptacle therein for articles to be dispensed, a slide movable in said casing and having a channel arranged to receive such articles one upon another in series, an ejector arranged to eject the lowermost of such series, and a yielding member adapted to actuate said ejector.

9. A casing, a receptacle therein for articles to be dispensed, a slide movable in

said casing and adapted to receive such articles one upon another in series, an ejector mounted on the lower portion of said slide and arranged to eject one of such series, and a yielding member arranged to coact with said ejector, the latter and said member actuated by the movements of said slide.

10. A casing, a receptacle therein for articles to be dispensed, a delivery slot in said casing, ways in the latter, a slide movable in said ways and having a channel arranged to receive such articles one upon another in series, a delivery opening from said channel located to register with such slot at one position of said slide, and means movable transversely of said channel for ejecting one of such series through such opening and slot.

11. A casing, a receptacle therein for articles to be dispensed, ways in said casing, a slide movable in said ways and having a channel arranged to receive such articles one upon another in series from said receptacle, a support for such series, and means for ejecting one of such series laterally from said slide and for supporting the next superposed article in such series.

12. A casing, a receptacle therein for articles to be dispensed, a slide movably mounted in said casing and arranged to receive such articles one upon another in series, and an ejector arranged to eject the lowermost of said series from said slide and to support the succeeding article of such series.

13. A casing, a receptacle therein for articles to be dispensed, a slide movably mounted in said casing and arranged to receive such articles one upon another in series from said receptacle, an ejector-spring mounted on said slide, an ejector-head on said spring arranged to engage and eject the lowermost of such series and held normally out of such engagement by said spring, and a yielding cam located in the path of said head and arranged to actuate the latter by the movements of said slide.

14. A casing, a receptacle therein for articles to be dispensed, a slide movable in said casing and arranged to receive such articles from said receptacle, an ejector on said slide adapted to eject such articles from said slide, and means for adjusting the position of said ejector relatively to said slide.

15. A casing, a receptacle therein for articles to be dispensed, a slide movable in said casing and arranged to receive such articles one upon another in series from said receptacle, a clamp on said slide, and an ejector adjustably mounted in said clamp and adapted to eject such articles successively from said slide.

16. A casing, a receptacle therein for articles to be dispensed, a channel arranged to receive such articles one upon another in series, and a spring-actuated ejector adapted yieldingly to engage and eject one of such series laterally thereof.

17. A casing, a receptacle therein for articles to be dispensed, a slide mounted to move vertically in said casing and adapted to receive such articles one above another in series from said receptacle, a delivery opening in said slide located to register with a delivery slot in said casing at one position of said slide, an ejector actuated by the movements of said slide and arranged to eject an article of such series through such opening and slot, a support on said casing for the reception of such ejected article, and an apron on said casing adapted to direct such ejected article to said support.

18. A casing, a receptacle therein for articles to be dispensed, an inclined bottom for said receptacle comprising a fixed upper portion and a movable lower portion, means on said upper portion for loosely supporting the rear of said lower portion, side flanges on said lower portion having rearwardly and upwardly inclined slots, pins on said casing received in such slots, a slide adapted to receive such articles from said receptacle and deliver them on the exterior of said casing, said slide arranged to coact with said movable portion to raise and lower the latter, and said pins and slots arranged to limit such movements and to cause the front edge of said movable portion to move in a vertical line.

In testimony that I claim the invention above set forth I affix my signature.

JOHN ERICSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."