

J. E. P. PENDER.
MATCH BOX.
APPLICATION FILED MAR. 11, 1907.

969,076.

Patented Aug. 30, 1910.

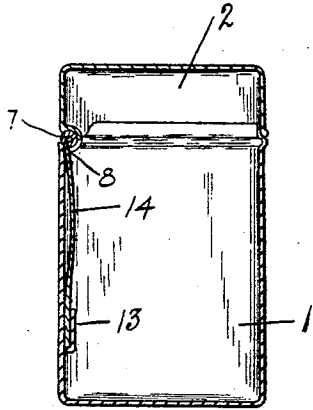


FIG. 1.

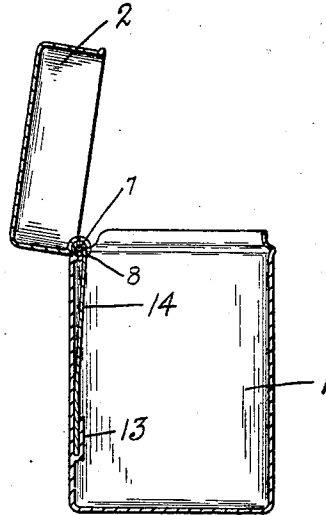


FIG. 2.

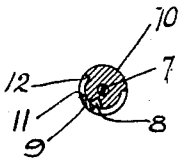


FIG. 4.

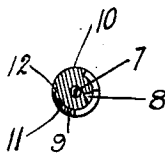


FIG. 5.

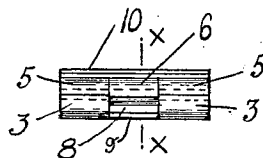


FIG. 3.

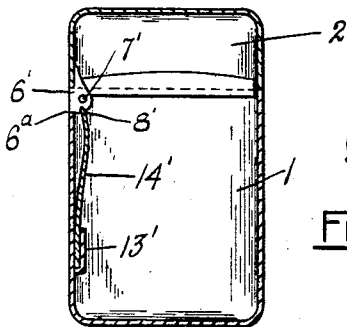


FIG. 10.



FIG. 7.

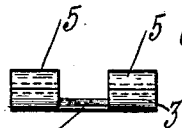


FIG. 6.

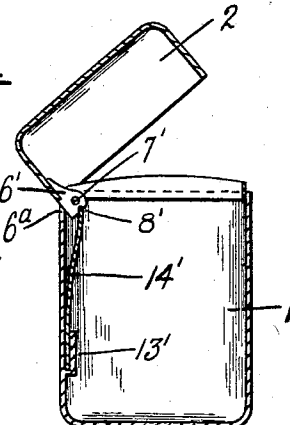


FIG. 11.

WITNESSES

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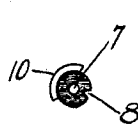


FIG. 9.

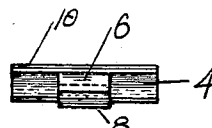


FIG. 8.

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MATCH-BOX.

969,076.

Specification of Letters Patent. **Patented Aug. 30, 1910.**

Application filed March 11, 1907. Serial No. 361,637.

To all whom it may concern:

Be it known that I, JAMES E. P. PENDER, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Match-Boxes; and I do hereby declare the following specification, taken in connection with the accompanying drawings, forming a part of the same, to be a full, clear, and exact description thereof.

The invention relates to pocket match-boxes of that class in which a spring is provided for throwing the cover to its open or closed position and holding it in one or the other of such positions. As such match-boxes have been heretofore constructed the construction of the parts and the arrangement of the spring have been such that the spring extended a considerable distance into the body of the box and so as to materially lessen and impair the capacity of the box. In addition the spring, and particularly the upper end thereof, was unprotected and exposed to view when the cover was opened, and was unsightly and otherwise objectionable.

The object of the invention is to provide a match-box having a spring-actuated cover in which the parts are so constructed and the spring so arranged that the capacity of the box is materially increased as compared with prior constructions, and in which the spring is largely out of sight when the cover is open and is practically concealed from view when the box is filled with matches.

To that end the invention consists in the construction, arrangements and combinations of parts hereinafter described and claimed.

Referring to the drawings, Figure 1 is a longitudinal section of a match-box embodying the invention and showing the cover closed. Fig. 2 is a corresponding section showing the cover open. Fig. 3 is an elevation on an enlarged scale of the hinge-joint employed in the box shown in Figs. 1 and 2. Figs. 4 and 5 are transverse sections on the line $x-x$ of Fig. 3 showing the parts of the hinge-joint in different positions. Fig. 6 is an elevation, and Fig. 7 an end view of one member of the hinge-joint shown in Fig. 3, while Fig. 8 is an elevation and Fig. 9 an end view of the other member of said hinge-joint. Fig. 10 is a longitudinal section of a match-box

showing the invention applied in connection with a different form of hinge-joint and showing the cover closed. Fig. 11 is a corresponding section of the box shown in Fig. 10, showing the cover open.

Referring first to the construction shown in Figs. 1 and 2, 1 represents the body of the box and 2 the cover hinged to the box. In the construction shown in Figs. 1 and 2 the hinge-joint by which the cover is hinged to the box is of that construction commonly known as an exposed hinge, by reason of the fact that a portion of the hinge-joint is exposed to view on the outside of the box when the cover is closed. This style of hinge-joint is composed of two members 3 and 4, the member 3 being secured to the box and the member 4 being secured to the cover. The hinge-member 3 is provided with two ears 5, 5, and the hinge-member 4 is provided with an ear 6, each of said ears being centrally perforated to receive the connecting pintle 7, as usual. The ear 6 of the hinge-member 4 is provided on its periphery with a notch 8, preferably V-shaped as shown. In the construction shown the ears 5, 5, are secured to a curved plate 9, and the ear 6 of the member 4 is secured to a curved plate 10, the edges of which plates form abutting shoulders 11, 12, to limit the movement of the hinge-joint in opening, as shown in Figs. 4 and 5. Secured to the body of the box at its rear side is a bent plate 13 forming a recess adapted to receive the lower end of a flat spring 14, the upper end of which spring is arranged to enter the notch 8 formed in the ear 6 of the hinge-member 4 and engage the walls thereof, as shown in Figs. 1 and 2.

Referring to the construction shown in Figs. 10 and 11, the hinge-joint by which the cover 2 is hinged to the body 1 in the construction there shown is of the character commonly known as a concealed hinge-joint, the construction being such that the hinge-joint is practically concealed from view from the outside of the box. In such construction the cover is provided with an ear 6' projecting inwardly therefrom and arranged to enter a slot 6^a formed in the back of the body 1, and through which ear the pintle or hinge-pin 7' passes, the ends of said pintle being secured to the side walls of the body 1. Said ear 6' is provided with a notch 8', preferably V-shaped. Secured to the body

of the box at its rear side is a bent plate 13' forming a recess adapted to receive the lower end of the flat spring 14'. The upper end of said spring is arranged to enter the notch 8' 5 formed in the ear 6' and arranged to engage the walls thereof, as shown in Figs. 10 and 11.

The operation of the construction above described is as follows: Referring first to 10 the arrangement shown in Figs. 1 and 2, when the cover 2 is closed, the parts occupy the position shown in Figs. 1 and 4, with the upper end of the spring 14 bearing against the left-hand wall of the V-shaped 15 notch 8, in which position said spring will be under sufficient tension to hold the cover closed. As the cover is opened the position of the hinge-members 3 and 4 with relation to each other will be changed from the position shown in Fig. 4 to the position shown 20 in Fig. 5, that is, assuming the body to be held stationary and the cover to be turned in relation thereto, the ear 6 on the hinge-member 4 will be turned so as to move the notch 25 8 therein from the position shown in Fig. 4 to the position shown in Fig. 5. During this movement the end of the spring 14 which, with the cover closed, stands slightly buckled, as shown in Fig. 1, will be thrown from en- 30 gagement with the left-hand wall of the notch 8 over into engagement with the right-hand wall of said notch, and the straightening out of said spring which will then take place will exert a thrust against said right 35 hand wall of the notch, which will serve to throw the cover to its open position, and the cover will be held in such open position by the end of the spring abutting against said right-hand wall of the notch, as shown in 40 Fig. 2. It will be noted that when the cover is thus thrown to its open position by the action of the spring 14, the engagement of the shoulder 12 on the plate 10 with the shoulder 11 on the plate 9 will serve to limit 45 the movement of said cover. When now the cover is closed, the reverse movements will take place, that is, the ear 6 and the notch 8 therein will be moved back from the position shown in Fig. 5 to the position shown in 50 Fig. 4. This movement will cause the spring 14 to buckle somewhat, and will also serve to throw the end of said spring from engagement with the right-hand wall of the

notch 8 over into engagement with the left-hand wall of said notch, and so that the re- 55 action of said spring will serve to throw the cover to its closed position, in which position the cover will be held by the end of the spring abutting against the left-hand wall of the notch, as shown in Fig. 1. 60

The operation of the construction shown in Figs. 10 and 11 in opening and closing the cover is the same as that already described with respect to the construction 65 shown in Figs. 1 and 2. The means for limiting the opening movement of the cover, however, is slightly different by reason of the different construction of the hinge-joint. In the construction shown in said Figs. 10 and 11 the opening movement of the cover, 70 instead of being limited by engaging shoulders on the hinge-members, is limited by the engagement of the lower edge of the cover with the body of the box.

With the construction above described, as 75 will be seen, the spring which operates to throw the cover to its open or to its closed position is arranged close to the wall of the body of the box and so as not to materially lessen the capacity thereof. It will be fur- 80 ther seen that there is no projecting free end of the spring, but that instead the end of the spring is housed within the notch of the hinge-member and covered and protected by said member. 85

While it is preferred to make the notch in the hinge-member V-shaped, said notch may be of any other desired shape, as for example rectangular or of other form.

What I claim as my invention and desire 90 to secure by Letters Patent is:

In a device of the character described, the combination, with the body-member, of a cover hinged thereto, said body-member and cover being each provided with a hinge- 95 member having a shoulder and a hinge-member of said cover being provided with a notch, and a flat spring connected to said body-member and arranged to enter the notch in said hinge-member, said notch open- 100 ing substantially in line with said spring.

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Witnesses:

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