W. B. COULTER.

MATCH-BOX.

No. 186,115. Patented Jan. 9, 1877.

Fig. 1.

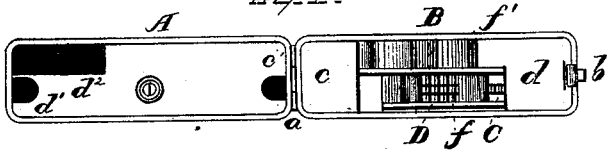


Fig. 2.

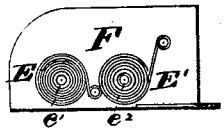


Fig. 3.

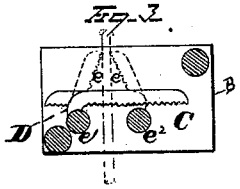


Fig. 4.

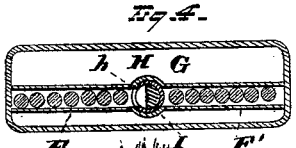


Fig. 5.

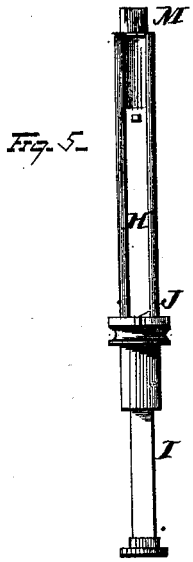


Fig. 6.

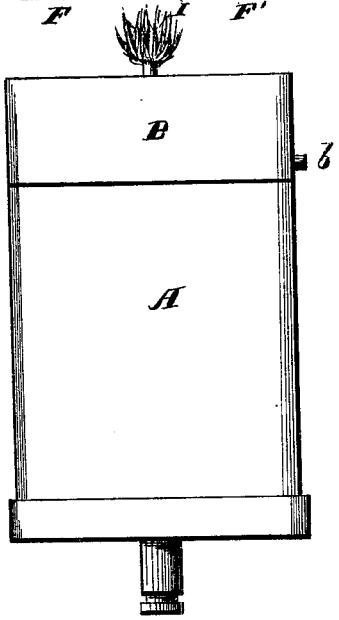
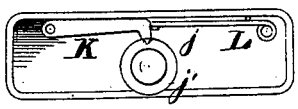


Fig. 7.



WITNESSES
Ed. F. Hollinghaus
Albert H. Bright

INVENTOR
William B. Coulter.
By H. A. Seymour,
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM B. COULTER, OF BURLINGTON, CONNECTICUT.

IMPROVEMENT IN MATCH-BOXES.

Specification forming part of Letters Patent No. **186,115**, dated January 9, 1877; application filed June 12, 1876.

To all whom it may concern:

Be it known that I, WILLIAM B. COULTER, of Burlington, in the county of Hartford and State of Connecticut, 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to certain improvements in self-igniting match-safes.

Figure 1 represents the match-safe as open, showing the igniting mechanism and the match-reservoirs. Fig. 2 is a side elevation of the igniting mechanism detached from its case. Fig. 3 shows the jaws or match-holders. Fig. 4 is a cross-section of the match-reservoir. Fig. 5 represents the plunger for forcing the matches from either reservoir. Fig. 6 represents the device holding an ignited match. Fig. 7 shows the pawl engaging with the revolving trough.

My invention consists, first, in the combination of a double and single igniting holders or jaws, the same being formed with notched or serrated faces, and secured to or formed with bearings which are journaled in the plates of the device; second, in the combination, with the jaws or holders, of springs secured to the bearings, and serving to impart the necessary tension to the holders; third, the match-chamber, provided with independent feeding-troughs and a match-receptacle; fourth, the combination, with feeding-troughs located adjacent to each other, of an intermediate revolving trough and a plunger arranged to reciprocate therein; fifth, the combination, with the revolving feeding-trough, of a plunger formed of a half-cylinder, whereby the same, when depressed, prevents the entrance of matches to the igniting mechanism; sixth, in certain details of construction, as hereinafter specified and claimed.

In the accompanying drawings, wherein like letters designate like parts, A represents the match-receptacle, and B the casing or receptacle for the igniting mechanism, the two sections being hinged at *a*, whereby the igniting mechanism can be readily inspected, when desired, by depressing the spring-catch *b* and throwing open the parts to full view. The receptacle B is formed with a ledge or part cover, *c*, to cover the match-opening *c'* of the receptacle A, and also a plate, *d*, is secured across the end of the plates inclosing the igniting mechanism, whereby the openings d^1 d^2, leading to the match-receptacles, are effectually closed when the cover is secured, thus preventing any possible ignition of the matches within their several cases or receptacles. C and D are jaws or holders, each of which has notched or serrated edges *e*. These jaws are secured to shafts e^1 e^2, which project through the plate E, and to the outer ends of said shafts are secured the inner ends of springs E E', the opposite ends of which are secured to studs or any fixed object on the plate E. The springs E E' act in opposite directions to force the jaws toward each other, the single jaw C interlocking between the arms *f f'* of the jaw D. As the head of the match is forced between the jaws C D the serrated edges of the same operate to ignite the fulminate on the match, and the spring-pressed jaws securely hold the stock of the match while it is lighted.

I do not confine myself to the exact construction and arrangement of igniting mechanism herein shown and described, as it is evident the same may be modified without departing from the spirit of my invention. For instance, it is obvious that instead of using jaws or holders of the form described, I might use cam or eccentric holders; and also, instead of using two movable jaws, a single spring-pressed jaw, having a serrated face, might be employed in conjunction with a straight or an inclined rigid face, whereby the same effect could be accomplished.

The match-receptacle A is subdivided into three receptacles, F, F', and G, the first two constituting feeding troughs or channels of sufficient width to receive a single tier or layer of matches, which are inserted therein through openings *c' d*^{1}, while the larger receptacle G is used to store matches, to refill the feeding-channels when emptied, and access is had to the latter through opening d^2. Intermediate between the feeding troughs or chambers F F' is formed a tubular passage, having a rectangular slot in each side lead-

ing to the feeding-troughs, and through which slots the matches are fed from either chamber to a revolving trough, H, which is open on one side at *h*, for the reception of a single match. A semi-cylindrical plunger, I, works freely within the trough H, and serves to expel matches from the tube, as they successively fall within the trough. One end of trough H is formed with a tubular guide, M, to direct the match into the igniting mechanism, while the other end is provided with a guide-box, formed with a semi-cylindrical bearing to retain the plunger in proper position. A ring or disk, J, notched on opposite sides at *j j'*, is secured to the revolving trough, and engaging with said notches in a pawl or detent, K, depressed by a spring, L.

The operation of the device is as follows: The feeding-chambers F F', having been properly charged with parlor-matches, the plunger when depressed will prevent their escape, but when the plunger is raised a match will fall into the trough, and by depressing the plunger the match is forced through the guide M, and the fulminate on the match, strikes the serrated faces of jaws or holders C D. A slight blow on the plunger will drive the match through the jaws, the friction created by the pressure of the jaws on the fulminate of the match operating to light the same when it is thrust forward in an ignited condition, while the stock of the match is securely held between the jaws C D. When the match is consumed, it may be readily removed from the jaws, and another match ignited in the same manner. After exhausting the charge in one feeding-trough or chamber, the revolving trough is rotated until the pawl K catches in the opposite notch *j*, when the open side of the trough registers with the opposite feeding-trough, and the matches therein contained may be lighted as heretofore described.

A match-box constructed as heretofore described is of compact form, may be carried in the vest-pocket, and, while all danger from the accidental ignition of matches is avoided, by a simple manipulation of the device, a match may be lighted under the most adverse circumstances.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a match-safe, the combination, with a double serrated jaw, of a single serrated jaw or holder, the same constructed and arranged to oscillate on their bearings, substantially as and for the purpose set forth.

2. In a match-safe, the combination, with the double and single serrated jaws, of springs attached to the bearings to impart the necessary tension, substantially as and for the purpose described.

3. In a match-safe, the match-chamber A, formed with independent feeding-troughs F F', and match-receptacle G, substantially as and for the purpose set forth.

4. In a match-safe, the combination, with the independent feeding-troughs F F', of an intermediate revolving trough, and a plunger constructed to reciprocate therein, substantially as and for the purpose specified.

5. In a match-safe, the combination, with the revolving feeding-trough, of a semi-cylindrical plunger, substantially as and for the purpose specified.

6. In a match-safe, the combination, with the revolving trough H, of the notched ring or disk J, pawl K, and spring L, substantially as and for the purpose specified.

In testimony that I claim the foregoing, I have hereunto set my hand and seal this 8th day of June, 1876.

WILLIAM B. COULTER. [L. S.]

Witnesses:
JULIUS B. SMITH,
H. BECKWITH.