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COMBINED CIGARETTE ROLLER AND TOBACCO BOX.

APPLICATION FILED OCT. 28, 1909.

978,170. Patented Dec. 13, 1910.

Fig. 1

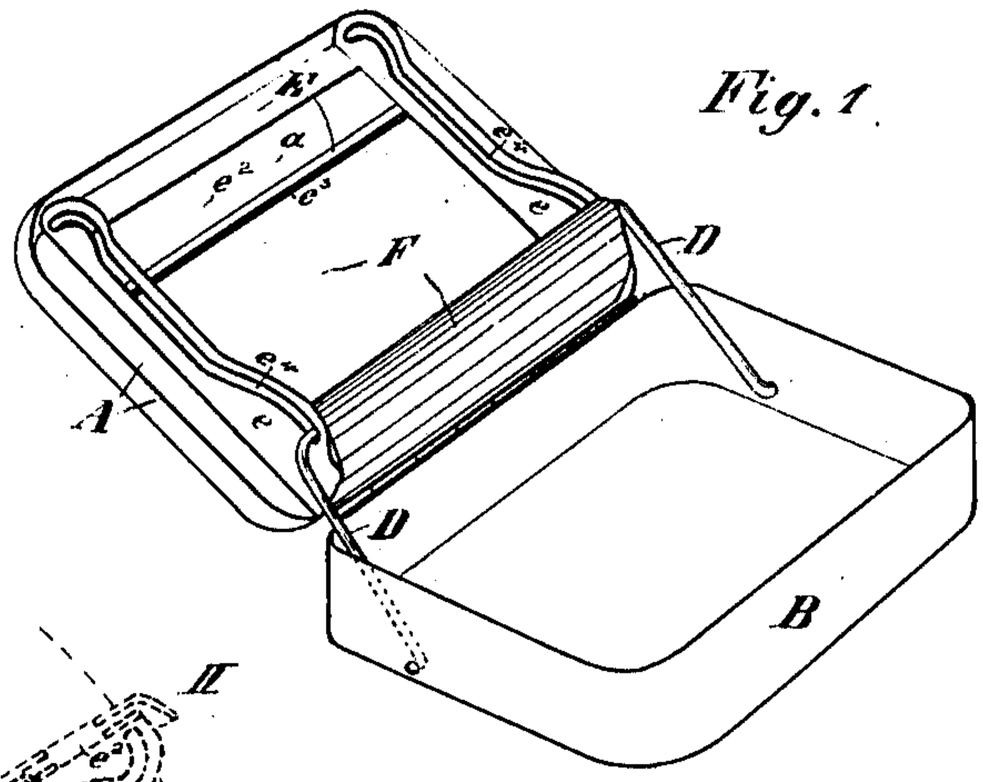


Fig. 2

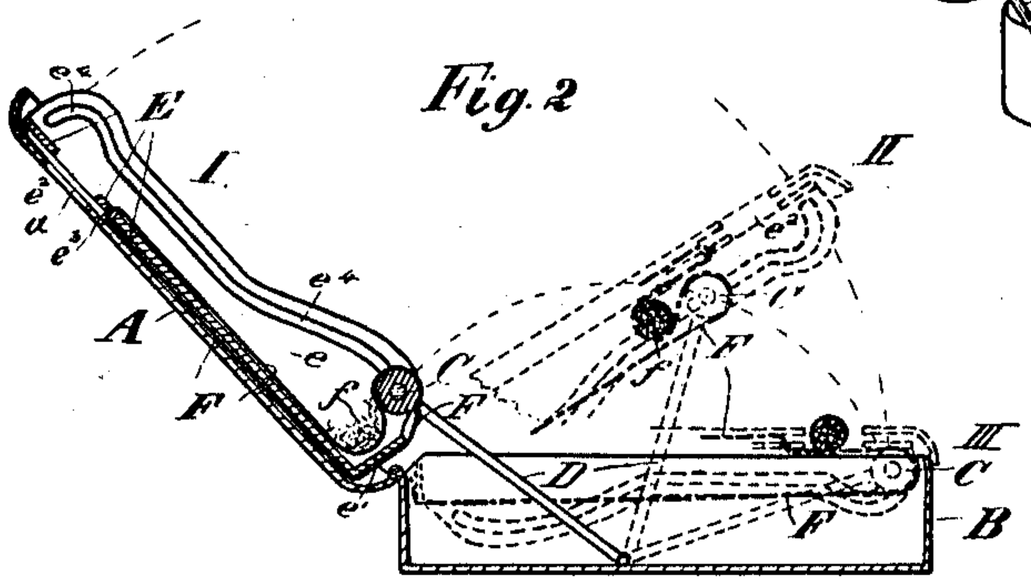


Fig. 3

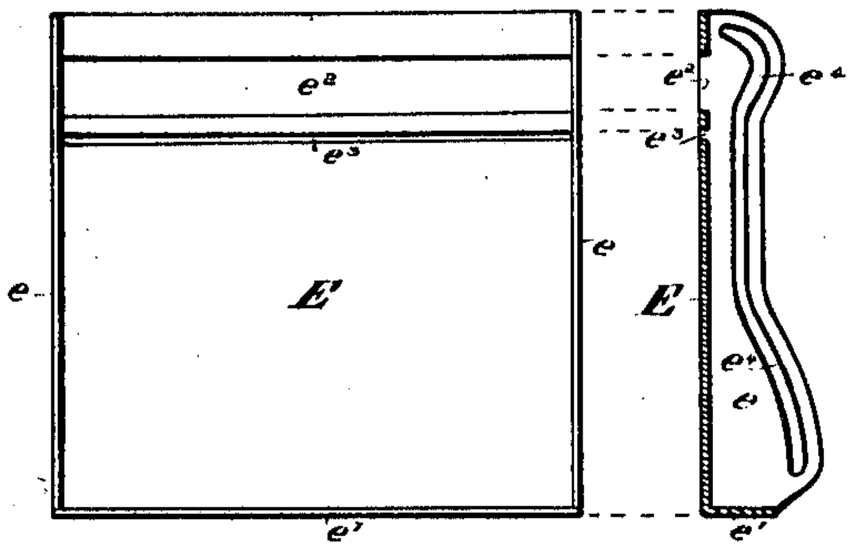
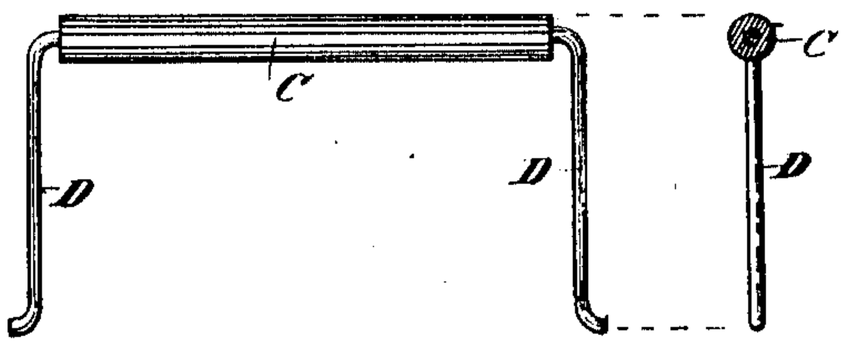


Fig. 4



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UNITED STATES PATENT OFFICE.

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COMBINED CIGARETTE-ROLLER AND TOBACCO-BOX.

978,170. Specification of Letters Patent. **Patented Dec. 13, 1910.**

Application filed October 28, 1909. Serial No. 525,181.

To all whom it may concern:

Be it known that I, MAX KRONAUER, a citizen of the Republic of Switzerland, residing at Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in a Combined Cigarette-Roller and Tobacco-Box, of which the following is a specification, reference being had therein to the accompanying drawing.

The object of my invention is to provide a pocket tobacco box combined with an improved automatic cigarette rolling device; and to attain this end my invention first consists of a suitable box with hinged lid; second in a rolling device attached or fastened to the inside of the box and lid for rolling and forming cigarettes automatically by the closing of the lid of the box, and also for delivering the same through an opening in the lid; and third in details of construction and arrangement of rolling device which show or expose on the outside of the box no parts of the same except one opening in lid, and of other new and desirable features, as set forth.

My invention will be hereinafter, fully described in detail as illustrated in the accompanying drawings, in which—

Figure —1— is a perspective view of the entire combination with the lid of the box open. Fig. —2— is a transverse section of box and roller arrangement, showing the lid in position —1— entirely opened; in position —2— gradually closing and forming a cigarette; and in position —3— closed and the cigarette delivered. Fig. —3— shows view and transverse section of roller plate and its parts as hereinafter described. Fig. —4— shows roller with bent wire inserted into the same.

—A— is the lid hinged to box B.

a is a slot or longitudinal opening in lid —A—.

The roller —C— is to be formed of paper or other light and pliable material, and revolves around a wire —D— which is bent and shaped as shown in Fig. —4—. The extreme ends of the wire —D— are bent in an outward direction and parallel to the middle portion of the same, and are inserted into eyelet rivets secured or fastened in the side walls of box —B—, as illustrated in Figs. —1—, —2—, and —4—. This allows the roller —C— to revolve around the middle portion of the wire —D— and also to rotate around the extreme ends of the latter. The rolling plate —E— is provided with the lateral guide flanges *e* and one longitudinal rear flange e^1, which are bent upward or inward, and are vertical to plane of plate —E—.

e^2 is a longitudinal slot in rolling plate —E—, of sufficient length and width to allow the parallel passage of a cigarette, and coinciding with slot *a* in lid —A—. Another slot e^3 in rolling plate —E— is running parallel with slot e^2 and is of sufficient width to allow the insertion of ribbon —F—, which passes from slot e^3 over roller —C—, thence over rear flange e^1, thence between rolling plate —E— and inside of lid —A— back to slot e^3. Ribbon —F— is endless and is to consist preferably of silk or other textile fabric. The guide flanges *e* are provided with guide slots e^4 in which the wire —D— travels when lid —A— is opened or closed.

To manipulate the cigarette rolling device for forming a cigarette, the lid —A— is opened as shown in Fig. —1— and Fig. —2—. The wire —D— resting against end of guide slots e^4 holds the lid —A— in position —I— Fig. —2—. The ribbon —F— is then pressed downward between roller —C— and lid —A— to form an open fold or pocket *f*. A cigarette paper is then moistened along one longitudinal edge and laid against the ribbon —F—, so that the moistened edge is placed near and about parallel to slot e^3, while the corresponding lower edge rests in bottom of pocket *f*, formed by ribbon —F— as described. Sufficient tobacco to form a cigarette is then placed into said pocket *f* and is evenly distributed and packed down below middle of roller —C—. The lid —A— is then gradually closed and the wire —D— which passes through guide slots e^4 is forced forward and will travel along the varying direction of the same. The roller —C—, revolving around the wire —D— carries the ribbon —F— along in a forward direction and the latter imparts a revolving motion to the tobacco and the paper in fold *f*, and thus forms a cigarette as shown in Fig. —2—. When the roller —C— passes opposite slot e^2 the pocket *f*

commences to unfold, and the stretching of the ribbon causes the cigarette to be delivered through slot e^2 as shown by Fig. —2—.

In order to accomplish gradual compression and rolling of the tobacco without the application of flexible rolling plates or springs, I provide the above described rolling device with guide slots e^4, which follow a carefully designed combination of curved and straight lines. When the closing of lid —A— is started from position —I— Fig. —2—, the roller —C— begins to travel along the downward curve of guide slots e^4, and tends to close up the mouth of pocket *f*. The tobacco is thus gradually compressed, the pocket *f* is forced behind the roller —C—, and the increasing distance between roller —C— and rear flange e^1 requires the ribbon portion behind slot e^3 and pocket *f* to travel around the tobacco and over the roller —C—. The ribbon —F— thus imparts a rolling motion to the tobacco and the paper by friction, and as the roller —C— approaches the straight portion of the guide slots e^4 the direct distance between roller —C— and rolling plate —E— decreases, and the increasing pressure reduces the diameter of the cylindrical tobacco body and thus increases the rolling velocity as the ribbon —F— has to travel a shorter way around the forming cigarette. When the roller —C— finally travels along the straight portion of the guide slots e^4, the diameter of the cigarette remains the same, while the rolling motion completes the rolling up of the paper. Instead of continuing the straight portion of the guide slots to the extreme forward end of the same, I provide for another curve in convexity to the former direction in order to relieve the pressure and to prevent the crushing of the cigarette when it is being delivered over the edge of slot e^2. I also provide for contact between rolling plate —E— and that portion of the ribbon —F— which extends from slot e^3 across slot e^2 to the roller —C— by bringing the extreme end of the guide slots e^4 near the foot of the guide flanges *e*, so that the ribbon —F— is stretched and tightly seals slot e^2 when the lid is closed. The rear flange e^1 I provide for the purpose of raising the ribbon portion back of the roller —C— sufficiently high to prevent the interference of said ribbon portion with the free formation and traveling of pocket *f*.

It is evident that the ribbon —F— could be entered between rolling plate —E— and lid —A— at the edge of slot e^2. As, however, the ribbon portion available for forming pocket *f* amounts to double the distance from said entrance to the center of the roller —C— when the lid —A— is closed, I prefer to provide slot e^3 and thus gain double the distance from slot e^3 to near edge of slot e^2 for pocket circumference.

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

1. In a cigarette rolling device, the combination of a box, with hinged lid having an elongated slot through which a cigarette may be delivered, a cigarette rolling and delivering device operatively secured, and concealed from view, within said box when the same is closed, and means for automatically covering said slot from within, after the delivery of a cigarette through the same, substantially as set forth.

2. In a cigarette rolling device, the combination of a box body having a lid hinged thereto, with a cigarette rolling and delivering device carried by and between said box and consisting of two detachable parts, namely, a roller-plate carrying an endless ribbon and a roller mounted to rotate upon a carrying device forming an axis therefor, substantially as set forth.

3. In a cigarette rolling device the combination with a tobacco box having a hinged lid, of a rolling plate having two opposite guide flanges provided with cam slots, and a rear flange, an endless ribbon held by said plate, a roller support and a roller mounted to rotate thereon, substantially as set forth.

4. In a cigarette rolling device the combination with a box of a plate having two opposite guide flanges provided with cam slots, a roller support passing through said cam slots and forming an axis for a roller and a roller adapted to rotate on said axis substantially as set forth.

5. In a cigarette rolling device the combination with a box of a roller plate having two opposite flanges provided with cam slots, an endless ribbon held by said plate, a vertical flange on the rear end of said plate to control said ribbon, a roller adapted to rotate upon its axis and such an axis adapted to be moved in and guided by said cam slots substantially as set forth.

6. In a cigarette rolling device, the combination with a tobacco box, of a roller plate provided with a longitudinal slot, and a rear vertical flange, an endless ribbon passed through said slot and around said plate over the rear flange thereof, and over a roller, so as to form a pocket of the slack of the ribbon between said plate and roller, such a roller suitably mounted to revolve on and rotate with its pivotally supported axis device, side flanges on said roller-plate provided with cam slots adapted to receive the axis of said roller and guide it in its predetermined course, and longitudinal openings in said guide plate and box cover in front of said ribbon slot, substantially as set forth and for the purposes specified.

7. A tobacco box, provided with a hinged lid having an elongated opening adapted to permit the passage of a cigarette there-

through, in combination with means, entirely within said box, adapted to act automatically, upon the lowering of the box-lid, to successively roll tobacco into a cylindrical form, wrap paper around said cylindrically formed tobacco, deliver the cigarette thus formed from the interior of the box through said opening in the box-lid, and to close the said opening on the inside of the lid, after the delivery of the cigarette, as aforesaid, substantially as set forth.

8. A tobacco box, provided with a hinged lid having an elongated opening adapted to permit the passage of a cigarette therethrough, in combination with a roller-plate secured to the interior of the lid, said roller-plate having vertical rear and side flanges, a longitudinal slot registering with the elongated opening in the lid, a ribbon-slot parallel with and adjacent to the first mentioned slot in said roller-plate, and guide-slots in the side flanges of said roller-plate, said guide-slots varying, throughout their length, in distance from the plane of said roller-plate, in combination with a substantially inverted U-shaped roller-carrying-member adapted to pass through said guide-slots and pivotally connected at its extremities within the box body, a roller preferably of light and pliable material mounted to revolve on said member, between the side flanges of roller-plate, and an endless ribbon passing through said ribbon-slot, in the roller-plate, over said roller, thence over the rear vertical flange of the roller-plate, then between the roller-plate and the inside of the lid to said ribbon-slot, and of such a length as to permit the slack to be carried by the roller to the front portion of the interior of the lid, and over and beyond the parallel openings in the roller-plate and lid, when the box is closed, substantially as set forth.

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

MAX KRONAUER.

Witnesses:
JOHN F. KERR,
JENNETTE PEAL.