

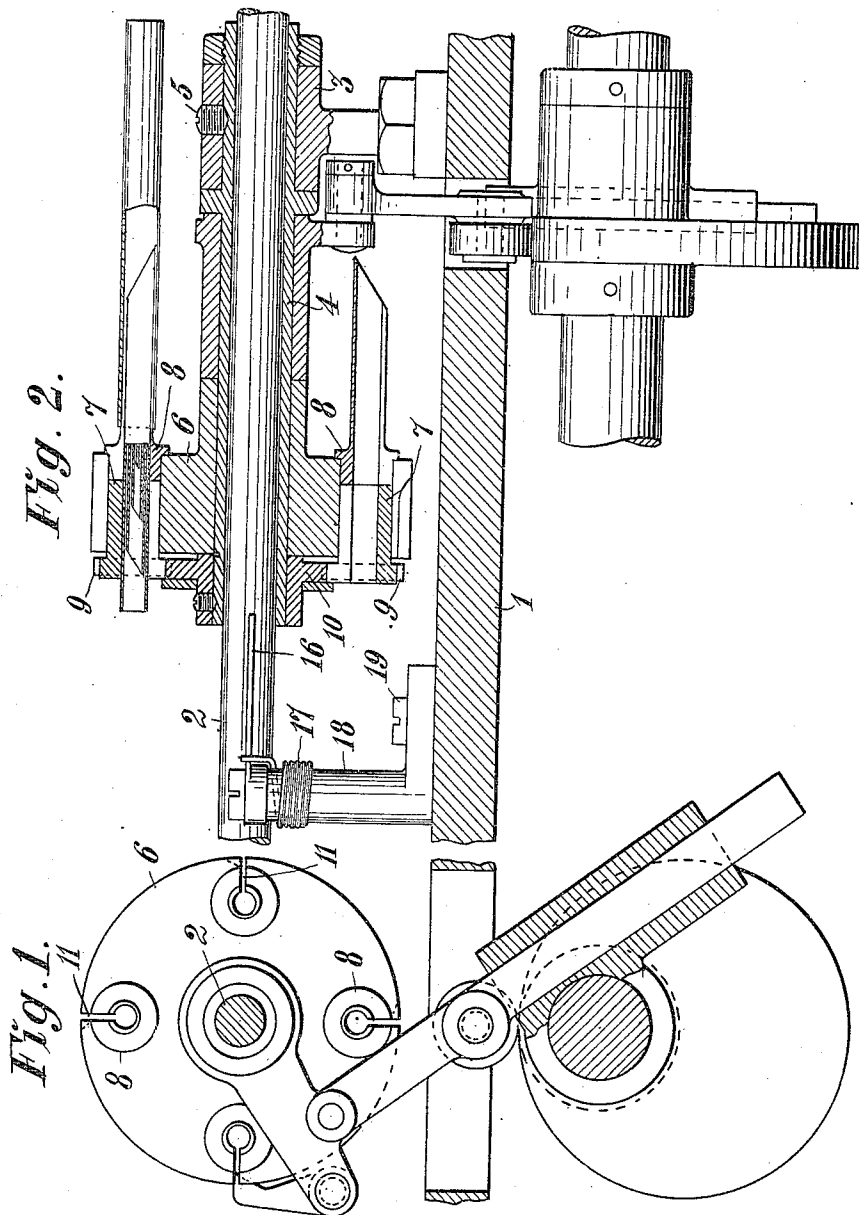
L. LINDELÖF.
MACHINE FOR APPLYING SPIRALLY WOUND MOUTHPIECES TO WRAPPERS OR SHELLS FOR
CIGARETTES.

APPLICATION FILED NOV. 30, 1908.

964,663.

Patented July 19, 1910.

3 SHEETS—SHEET 1.



Witnesses

Fredr. Norrby
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Inventor

Leonard Lindelöf

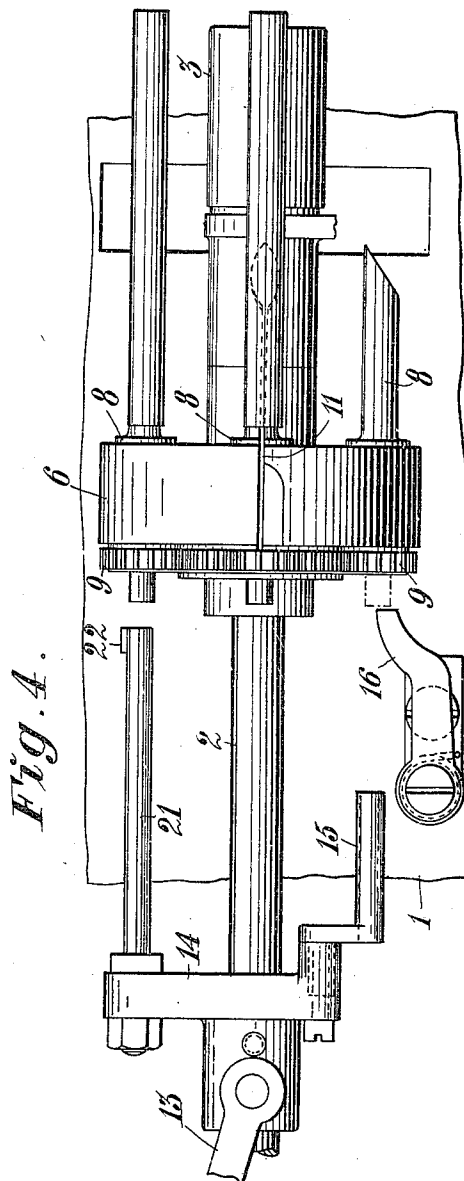
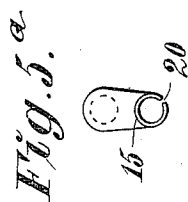
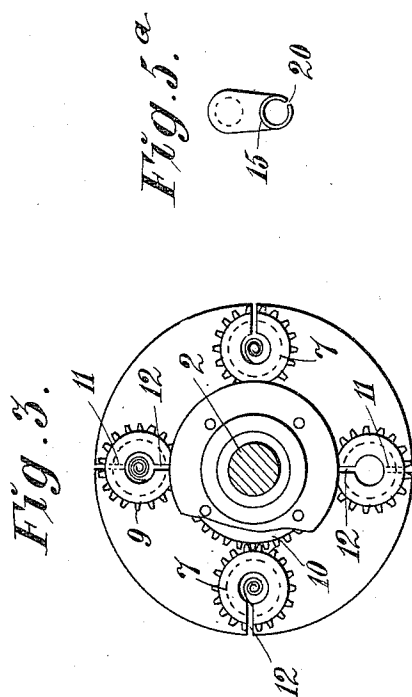
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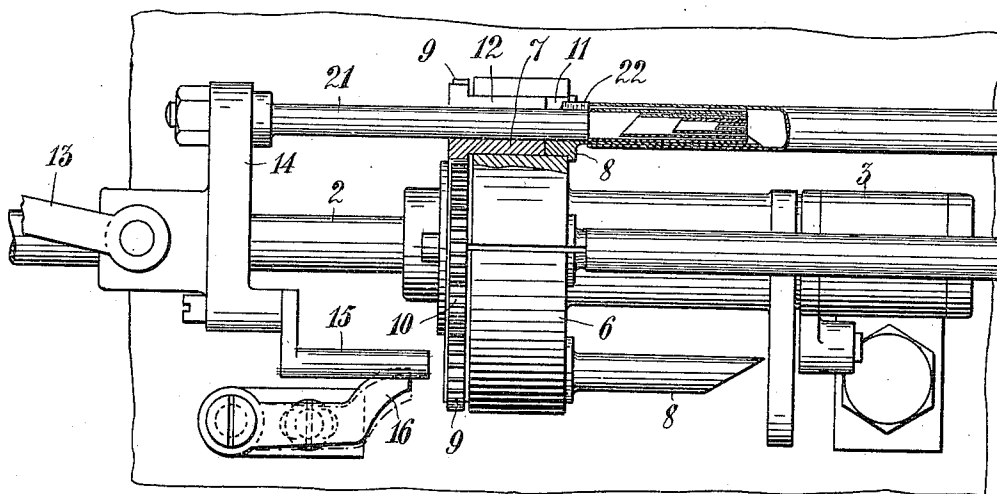
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3 SHEETS—SHEET 3.

Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

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MACHINE FOR APPLYING SPIRALLY-WOUND MOUTHPIECES TO WRAPPERS OR SHELLS
FOR CIGARETTES.

964,663.

Specification of Letters Patent. Patented July 19, 1910.

Application filed November 30, 1908. Serial No. 465,209.

To all whom it may concern:

Be it known that I, LEONARD LINDELÖF, a subject of the Emperor of Russia, residing at Helsingfors, in the Grand Duchy of Finland, have invented a new and useful Machine for Applying Spirally-Wound Mouthpieces to Wrappers or Shells for Cigarettes, of which the following is a specification, reference being had to the drawings accompanying and forming a part hereof.

This invention relates to machines for applying spirally-wound mouthpieces to wrappers or shells for cigarettes.

The object of the invention is to provide a machine by which it is possible to produce cigarette shells or tubes of the said kind which fulfill the requirement, made upon finer qualities of cigarettes, that the outer edge of the spirally-wound mouthpiece shall be in accurate alinement with the seam of the shell or wrapper so that the said seam covers the outer edge of the mouthpiece.

The invention consists, chiefly, in the combination of a pair of tubes placed co-axially in relation to each other, means for inserting a spiral mouthpiece into the said tubes in such a position that the said mouthpiece is partly within each of the said tubes, means for turning one of the said tubes in relation to the other, an abutment within one of the tubes in position to meet the outer edge of the spiral mouthpiece, and means for removing the mouthpiece and the cigarette shell placed on the one tube. By this arrangement the outer edge of the spiral mouthpiece will earlier or later meet the abutment during one revolution of the one tube in relation to the other by which the said edge of the mouthpiece will always be caused to take up a certain position in relation to the tubes. Since it is easy to make provisions causing the seam of the cigarette shell to take up a certain desired position when the spiral mouthpiece is to be inserted into the shell, it is obvious that the arrangement hereinbefore set forth will solve the problem.

The invention further consists in the construction and combination of parts herein-after more particularly described.

In the drawings, I have shown, by way of example, a machine of the kind hereinbefore referred to embodying my invention.

Figure 1 is an end view of the said machine. Fig. 2 is a longitudinal section thereof. Fig. 3 is an end-view of the machine

viewed from the end opposite to that shown in Fig. 1. Fig. 4 is a plan view of the same machine. Fig. 5 is a plan view, partly in section, of the machine with the parts in a position showing the cigarette shell when the mouthpiece has been inserted therein. Fig. 5^a is a view of a detail.

Referring to the drawings, 1 is a base-plate carrying a shaft 2 or the like journaled in bearings 3 (only one shown) in such a manner as to be able to move in its longitudinal direction, whereas it is prevented, in any suitable manner, from turning. Placed around the shaft 2 is a stationary sleeve 4 secured to the bearing 3 by means of the screw 5. Journaled on the sleeve 4 is a revolving drum 6 which is intermittently turned in one and the same direction by any suitable means, such as the reciprocating hook shown in Fig. 1.

In the embodiment illustrated the revolving drum 6 carries four pairs of tubes 7, 8 (Fig. 2) placed in holes in the drum in such a manner that one tube of each pair forms a prolongation of the other. The joint between the tubes is within the revolving drum 6, whereas the outer parts of the tubes 7 and 8 extend partly outside the said drum. In the embodiment shown the tubes 8 are attached to the drum 6, whereas the tubes 7 are rotatably journaled therein. The tubes 7 are provided with cog rings 9 engaging a stationary cog wheel 10 attached to the sleeve 4, said cog wheel having twice as many cogs as each of the cog rings 9. When the drum 6 is turned, the tubes 7 thus, on account of their engagement with the cog wheel 10, make one revolution for each half revolution of the drum 6. Each of the tubes 8 is extended outside the drum 6 and obliquely cut at its outer end in order to facilitate the reception of the wrapper or shell of the cigarette. Extending through each of the tubes 8 and 7 are slots 11, 12 respectively. These slots coincide with each other twice during each revolution of the drum 6, viz. in the two positions at the left and right hand side of Figs. 1 and 3.

The introduction of the paper spirals or mouthpieces into the tubes 7 and 8 is performed by a cross-piece 14 carrying a sleeve 15, said cross-piece being attached to the shaft 2, which is reciprocated by any suitable device, for instance a connecting rod 13. The mouthpiece blank is wound within

the sleeve 15 by a suitable device, not forming part of the invention, and pushed into the tubes 7 and 8 which are at the right hand side of Fig. 3. In order to prevent the mouthpiece from moving back with the sleeve 15, when the latter recedes, an arm 16 actuated by a spring 17 enters into the path of the reciprocating sleeve 15. The arm 16 is carried by a standard 18 adjustably attached to the base plate 1 by means of a screw 19. The screw 19 to this end passes through an oblong slot in the horizontal part of the standard. When the sleeve 15 moves toward the drum 6, the arm 16, which enters a slot 20 in the sleeve 15, is turned aside by the mouthpiece lying in the said sleeve, and when the latter recedes, the arm 16, on account of the action of the spring 17, enters into the sleeve behind the mouthpiece and thus retains the latter in the tubes 7 and 8. By adjusting the standard 18 the depth to which the mouthpiece is inserted into the tubes 7 and 8 may be regulated, whereby the ratio of friction hereinbefore referred to may be varied. Attached to the cross-piece 14 is an arm 21 having a lug or projection 22 serving to push the mouthpieces out of the tubes into the cigarette shells or wrappers placed about the tubes 8 and thus remove the ready cigarette shells with the mouthpieces applied thereto from the tubes 8.

The drum and the parts connected thereto work in the following manner: When a spirally-wound mouthpiece has been pushed by the sleeve 15 into the tubes 7 and 8 and the sleeve 15 has receded, the drum 6 is turned a quarter of a revolution. Then the sleeve 15 pushes a new spiral mouthpiece into the following tubes 7 and 8, whereupon the drum is again turned a quarter of a revolution. When the drum 6 has in this manner turned, in two movements, half a revolution, the tube 7 into which the first spiral mouthpiece was introduced has made a whole revolution during which the spiral mouthpiece has been caused to take up the desired position. On account of the friction, the spiral mouthpiece partakes in the revolution of the tube 7 until the outer edge of the mouthpiece, which always projects slightly laterally, meets the slot 11 in the tube 8 into which, as before mentioned, a part of the spiral mouthpiece projects. Hereby the further turning of the mouthpiece is prevented and when a pair of tubes 7, 8 reach the left hand position of Fig. 3, the spiral mouthpiece always has the desired position, viz. with its outer edge projecting into the slots 11 and 12, which in this position are in alinement with each other. Consequently, when the arm 21 enters into the tubes 7 and 8, the lug or projection 22 will move in the slots 11 and 12 and the spiral mouthpiece is pushed through the

outer part of the tube 8, into the cigarette shell, as shown at the top of Fig. 5. Inasmuch as the cigarette shell or wrapper is pushed, by devices not forming part of the invention and, therefore, not shown or described, on the outer part of the tube 8 in such a manner that the seam of the shell is always just outside the slot 11, the outer edge of the spiral mouthpiece will obviously always be covered by the seam of the cigarette shell, the object of the invention being thus attained. In order that the edge of the spiral mouthpiece shall not project through the slot 11, when the mouthpiece is pushed into the tube 8, and thereby render it difficult or impossible to push the spiral mouthpiece into the cigarette shell, the walls of the tube 8 may, suitably, be somewhat thickened at both sides of the slot 11, as shown in Fig. 2.

The machine may, obviously, be modified in several ways without departing from the spirit and scope of the invention. Thus, for instance, the tube 8 may be provided with a shoulder, instead of with the slot 11. When a slot is used, it may be arranged in such a manner that the edge thereof against which the outer edge of the spiral mouthpiece is to stop projects somewhat longer into the tube than the opposite edge of the slot does, by which the function will be more reliable and independent of whether the edge of the spiral projects more or less laterally.

I claim:

1. In a machine for applying spiral mouthpieces to cigarette shells the combination of a pair of tubes placed co-axially in relation to each other, means for inserting a spiral mouthpiece into the said tubes in such a position that the said mouthpiece is partly within each of the said tubes, means for turning one of the said tubes in relation to the other, an abutment within one of the tubes in position to meet the outer edge of the spiral mouthpiece, and means for removing the mouthpiece and the cigarette shell placed on the one tube, substantially as and for the purpose set forth.
2. In a machine for applying spiral mouthpieces to cigarette shells the combination of a pair of tubes placed co-axially in relation to each other, means for inserting a spiral mouthpiece into the said tubes in such a position that the said mouthpiece is partly within each of the said tubes, means for turning one of said tubes in relation to the other, said tubes having longitudinal slots, one edge of one of the slots forming an abutment in position to meet the outer edge of the spiral mouthpiece, and means moving in the said slots for removing the mouthpiece and the cigarette shell placed on the one tube, substantially as and for the purpose set forth.

3. In a machine for applying spiral mouthpieces to cigarette shells the combination of a series of tubes, a second series of tubes, each tube of one series forming a prolongation of one tube of the other series, means for feeding the two series of tubes into different positions, means for inserting a spiral mouthpiece into two co-axial tubes, when in a certain position, so that the said mouthpiece is partly in one tube and partly in the other, means for turning each tube of the one series in relation to the tube co-axial therewith, an abutment within each tube of the one series in position to meet the outer edge of the spiral mouthpiece, and means for removing the mouthpiece and the cigarette shell placed on one of the two co-axial tubes, when in another position, substantially as and for the purpose set forth.

4. In a machine for applying spiral mouthpieces to cigarette shells the combina-

tion of a rotary drum, means for rotating the said drum, tubes journaled in the said drum, means for turning the said tubes about their geometrical axes, tubes carried by the drum, each of the latter tubes forming a prolongation of one of the former, means for inserting a spiral mouthpiece into two co-axial tubes, when in a certain position, so that the said mouthpiece is partly in one tube and partly in the other, an abutment in one of each pair of co-axial tubes in position to meet the outer edge of the spiral mouthpiece, and means for removing the mouthpiece and the cigarette shell placed on one of the two co-axial tubes, when in another position, substantially as and for the purpose set forth.

LEONARD LINDELÖF.

Witnesses:

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