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(54) **ARRANGEMENT FOR PRODUCING FILTER CIGARETTES**

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(57) **ABSTRACT**

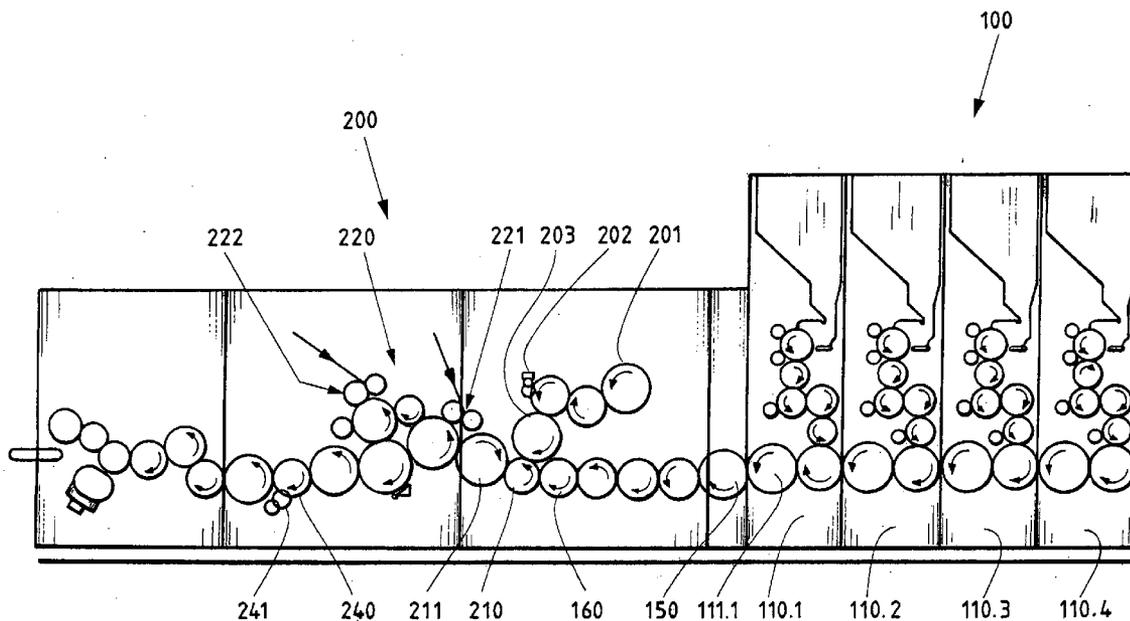
Arrangement and process for producing filter cigarettes. The arrangement includes a rod formation device structured and arranged to form a tobacco rod, a filter tipping device structured and arranged to apply filter plugs to at least a portion of the tobacco rod, and an assembly device structured and arranged to assemble multi-segment filter plugs from at least three filter segments. The instant abstract is neither intended to define the invention disclosed in this specification nor intended to limit the scope of the invention in any way.

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(22) Filed: **May 18, 2006**

**Related U.S. Application Data**

(63) Continuation of application No. PCT/EP04/11369, filed on Oct. 12, 2004.



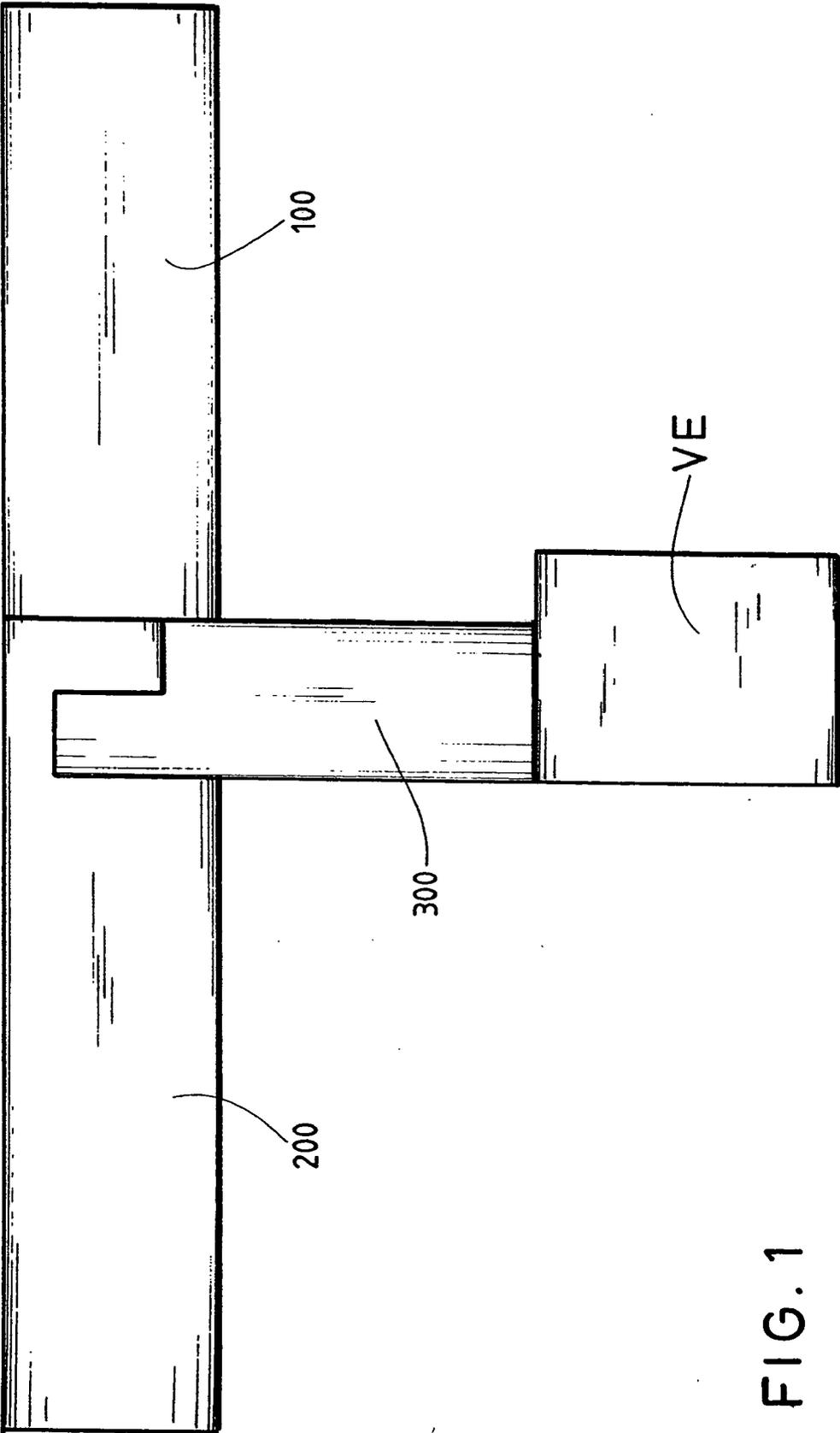


FIG. 1

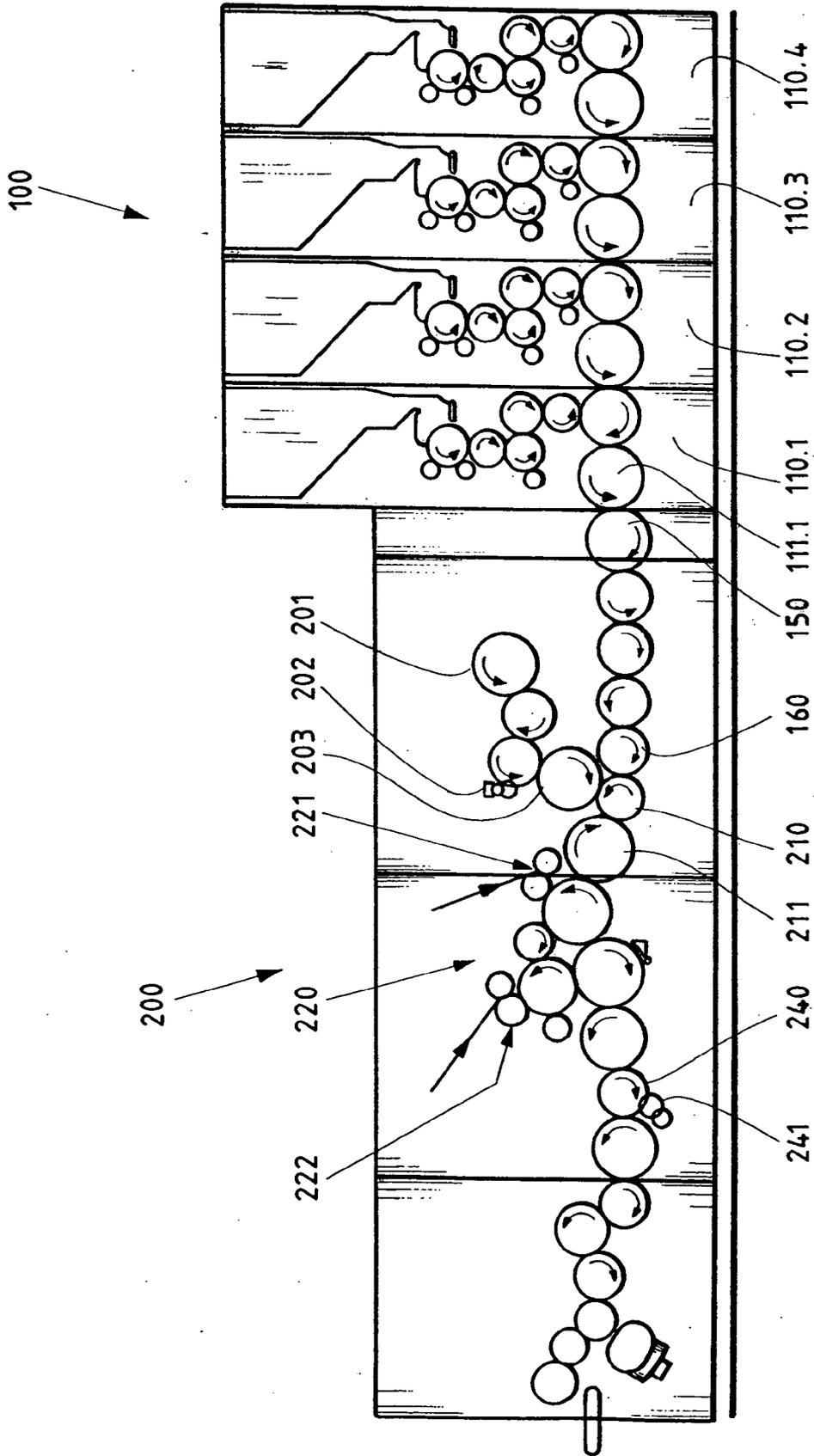


FIG. 2

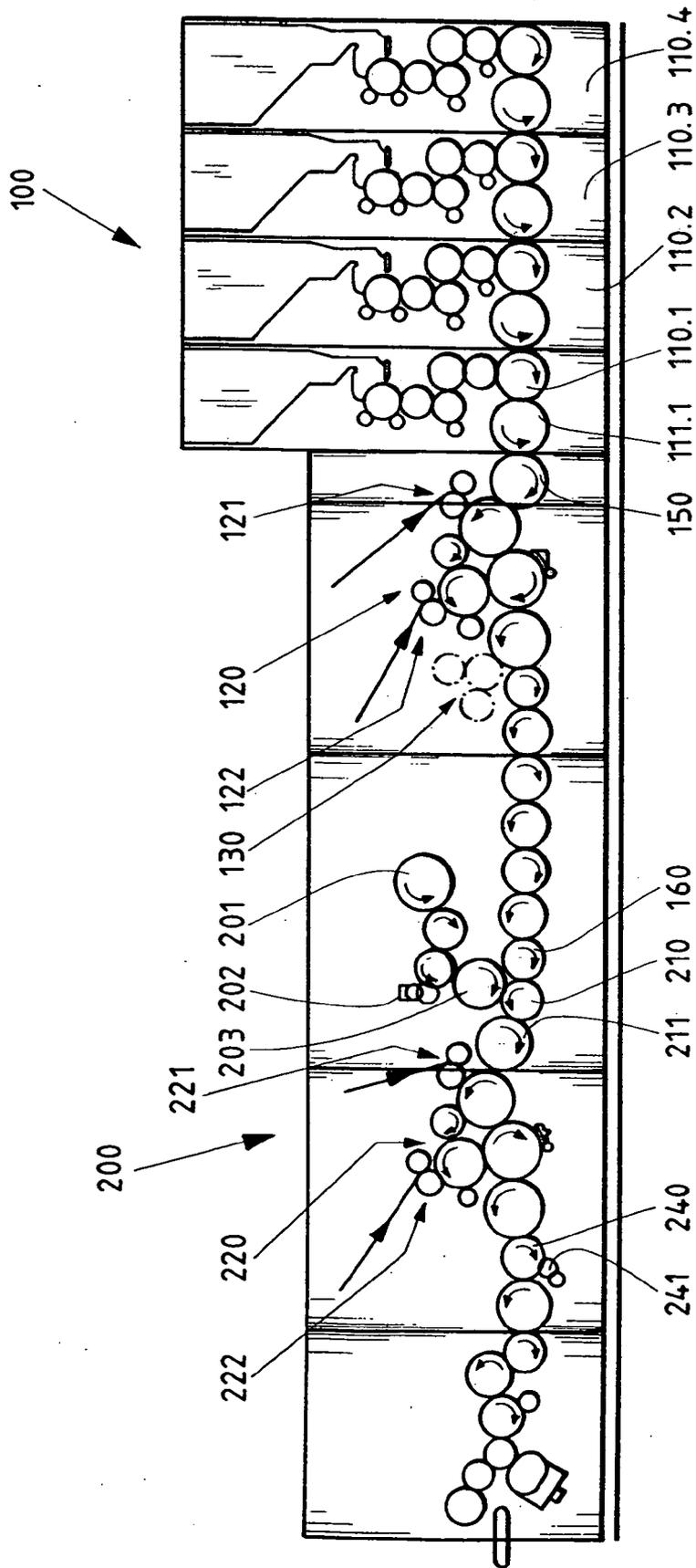


FIG. 3

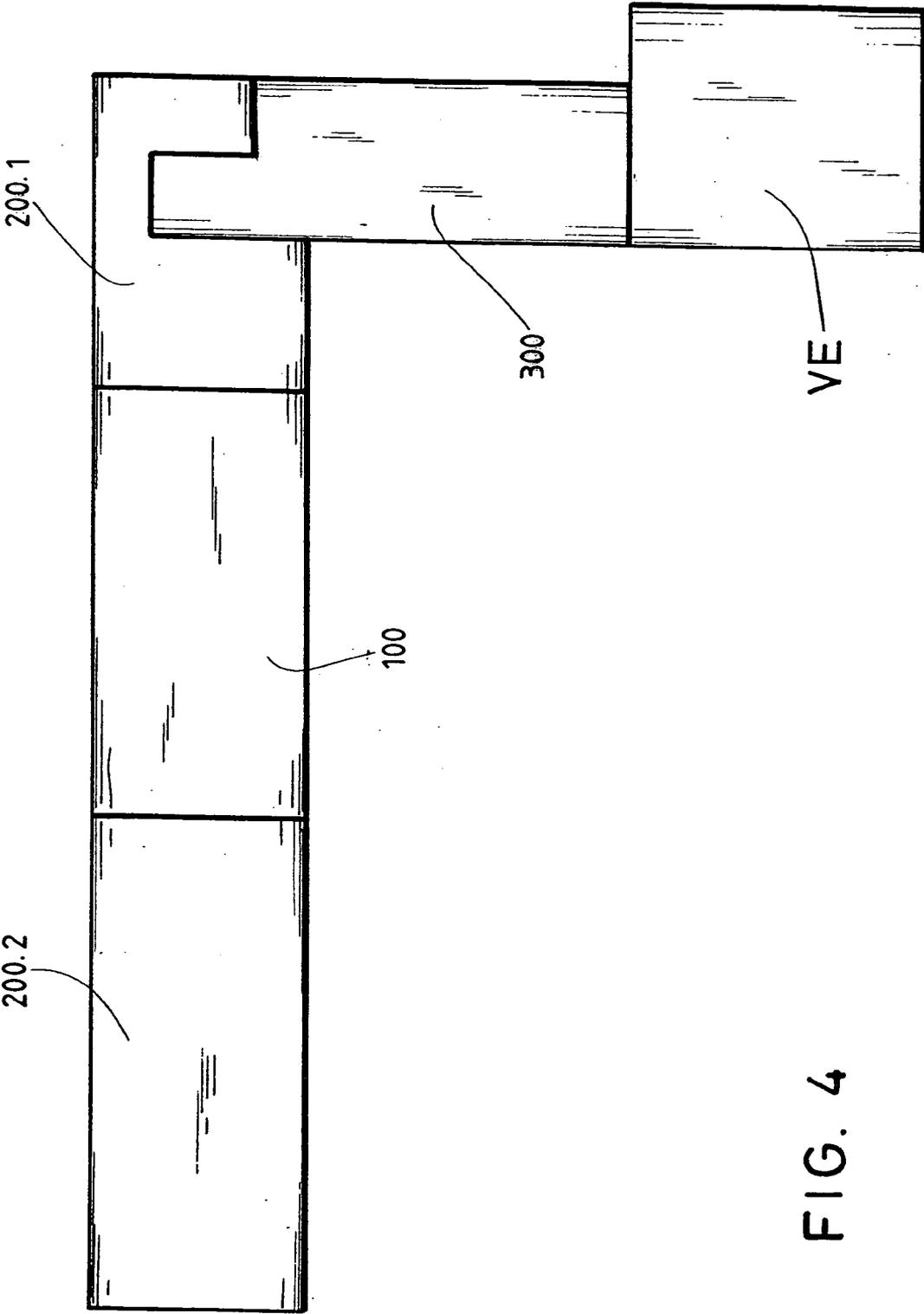


FIG. 4

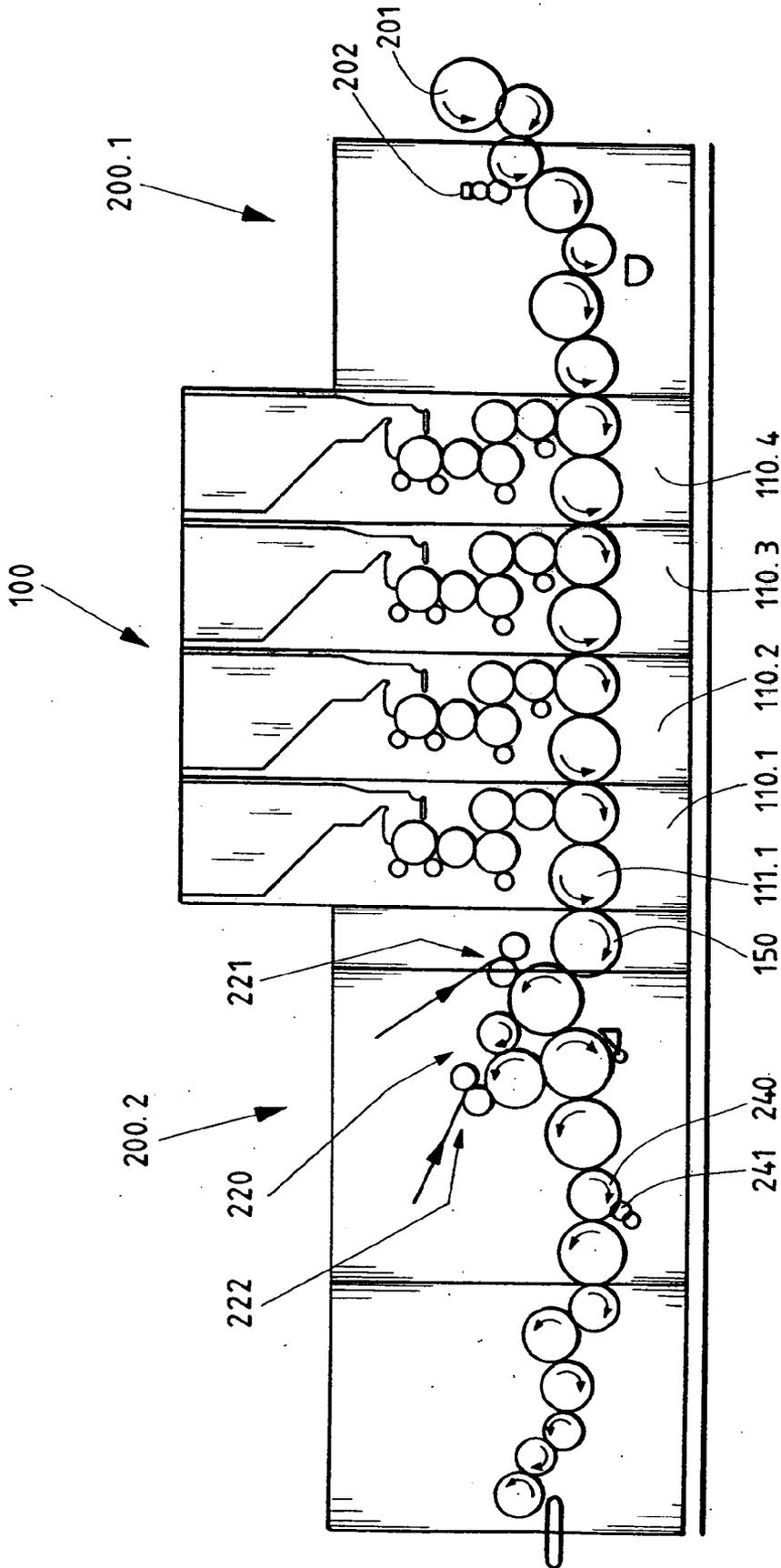


FIG. 5

## ARRANGEMENT FOR PRODUCING FILTER CIGARETTES

### CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application is a Continuation of International Patent Application No. PCT/EP2004/011369 filed Oct. 12, 2004, and claims priority under 35 U.S.C. §119 of German Patent Application No. DE 103 54 135.7, filed on Nov. 19, 2003. Moreover, the disclosure of International Patent Application No. PCT/EP2004/011369 is expressly incorporated by reference herein in its entirety.

### BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The invention relates to an arrangement for producing filter cigarettes. In this manner, a rod formation device for forming a tobacco rod and a filter tipping device for applying filter plugs to cut tobacco rods cut from the tobacco rod are provided.

[0004] 2. Discussion of Background Information

[0005] To produce filter cigarettes, cut tobacco is prepared in a distributor and processed to form at least one tobacco rod and transferred to a rod unit, by which the at least one tobacco rod is wrapped with paper and cut into double-length cut tobacco rods. Subsequently, the double-length cut tobacco rods are transferred from the rod unit to a filter tipper and cut into cut tobacco rods of single length. In this way, double-length filter rods are applied to the cut tobacco rods, wrapped by a tipping paper and cut into filter cigarettes of single unit length.

[0006] Endless rod makers by the assignee of the instant application are known under the name "PROTOS." The instant assignee's filter tipping machines have the label "MAX."

[0007] Moreover, it is known that filter rods of multiple unit length, which are cut into double-length filter plugs, are sent by a filter rod sender to a receiving station in the filter tipping machine so that filter rods can be removed from a filter rod magazine and cut into filter plugs.

[0008] Moreover, it is desirable in the tobacco-processing industry to produce multi-segment filters that are composed of different segments or filter pieces, e.g., of different materials. These materials are, e.g., cellulose acetate, paper, web, granulate, sifted elements, hollow cylinders or hollow chambers and capsules and the like. Such multi-segment filters, which also cover the term "multiple filter" within the scope of this invention, after the formation of groups of filter segments, e.g., in a continuous process are wrapped with wrapping material, such as, e.g., paper, and then divided into filter rods of two-fold, four-fold or six-fold length to be further processed.

[0009] A rod formation device for filter rods is known from DE-OS 24 52 749 in which in a group formation device operating transversely groups of filter segments or groups of filter rods are formed and then transferred to the rod formation device such that the groups of filter rods are wrapped with wrapping material in a longitudinally axial manner. The group formation device is here a device that is to be

completely replaced in the event of a change of the filter segments or of the sequence of the filter segments.

[0010] The machine KDF-2E of the instant assignee is a filter rod formation device, and the instant assignee's machine GC E is a typical group formation device. Both devices are known in the trade and are marketed together as machines of the MULFI type.

[0011] Moreover, a device for wrapping groups of filter segments with a wrapping material to produce multi-segment filters of the tobacco-processing industry and a multi-segment filter production device are known from International Publication No. WO 03/037113.

[0012] German Patent Application No. DE-T-695 28 549 (and U.S. patent family member U.S. Pat. No. 5,984,851) discloses a separating device for the production of filters for cigarettes in which a filter plug feed device has two magazines from which multiple-length filter rods are removed and cut so that after multiple cutting, staggering and pushing processes at the same time on the same conveyor drum double-length dual filters are formed out of the cut filter rods. These dual filters are subsequently inserted between pairs of cut tobacco rods spaced apart in a longitudinally axial manner.

[0013] A method and a device for producing filter cigarettes with dual filters are known from European Patent Application No. EP-A-1 016 350. Filter components of different unit length are hereby inserted one after the other between the cut tobacco rods. To this end the filter rods are respectively removed from two magazines and cut into filter components, whereby the conveyor paths of the filter components from the two magazines are embodied separately from one another.

### SUMMARY OF THE INVENTION

[0014] The present invention simplifies the production of filter cigarettes, such that it is possible to produce and process filter cigarettes with multi-segment filters.

[0015] Accordingly, the present invention provides an arrangement for producing filter cigarettes that includes a rod formation device for forming a tobacco rod, a filter tipping machine for applying filter plugs to cut tobacco rods cut from the tobacco rod, and a device for assembling multi-segment filter plugs from at least three filter segment pieces.

[0016] Within the scope of the invention, a multi-segment filter means in particular a filter of at least three different filter segment pieces. The filter segment pieces comprise different materials or are produced in a different way. To form a multi-segment filter, the filter segment pieces are conveyed to a production flow for the multi-segment filter.

[0017] The invention utilizes the concept of coupling a filter segment group assembly device, as is known, e.g., from International Publication No. WO 03/037113, directly to a filter tipping machine. By the present invention, filter segment pieces are assembled to form a multi-segment filter plug, in particular of double unit length, so that the filter plug with or without wrapping is applied to a cut tobacco rod. A higher processing speed in the filter tipping machine is thus achieved.

[0018] In the filter tipping machine only those multi-segment filter plugs are processed which are formed in the device according to the invention and provided to the filter tipping machine for further processing. Longer transport paths for the filter plugs to be processed are thus also dispensed with. Overall a gentle filter processing is rendered possible, since it is no longer necessary to form a mass flow of finished filter rods. Moreover, the instant assignee's filter rod manufacturing machine known under the label "KDF" can be replaced by the device according to the invention for assembling multi-segment filter plugs. Improved logistics result because the corresponding components of a filter cigarette, cut tobacco rods and filter plugs, are produced at the same time and next to one another in a joint arrangement.

[0019] According to the invention it is provided that a mass flow with double-length cut tobacco rods and a mass flow with assembled, preferably double-length, multi-segment filter plugs are conveyed to the filter tipping machine and processed at this machine. It is not necessary to wrap the assembled multi-segment filter plugs with a web, such that not wrapped multi-segment filter plugs, comprising several filter segment pieces, can also be applied to the cut tobacco rods. Not until a further step are the multi-segment filter plugs and the cut tobacco rods wrapped with a connecting sheet or a tipping paper web and, after a severing cut through the double-length filter plug, cut into filter cigarettes.

[0020] In contrast to the prior art according to German Patent Application No. DE-T-695 28 549 or European Patent Application No. EP-A-1 016 359, the device according to the invention makes it possible to produce multi-segment filter plugs with more than two filter segment pieces. The filter segment pieces are hereby fed individually to a production flow for the multi-segment filter plug. A production flow of a multi-segment filter plug is understood to be the mass flow along which the manufacture of a multi-segment filter plug is produced by the addition of further individual filter segment pieces. At the end of the production flow, a complete, in particular double-length, preferably symmetrically constructed multi-segment filter plug is formed, which is joined to cut tobacco rods and finished to form individual filter cigarettes in following processing steps.

[0021] According to the invention, the manufacturing of a multi-segment filter is performed in a spatially separated manner from other processing at a filter tipping device. In this way, the device for assembling a multi-segment filter and the filter tipping device can be arranged in a modular and variable manner whereby the devices are easily accessible for the operators.

[0022] Moreover, according to a further development it is provided that the device for assembling multi-segment filter plugs has at least one tipping device for the multi-segment filter plugs so that the multi-segment filter plugs are fed to the filter tipping machine as wrapped filter plugs.

[0023] In a preferred embodiment, the device for assembling multi-segment filter plugs has at least one test element and/or one processing element for the multi-segment filter plugs. For example, individual filter segment pieces are processed or perforated by a laser, so that the perforation of the filter piece is tested at a test device. Furthermore, it helps increase quality or quality control, if another processing device is provided following the test device so that, e.g., an inadequately perforated filter segment piece is processed again.

[0024] It is particularly advantageous if the device for assembling multi-segment filter plugs can be divided into independent functional units. A high degree of variability in multi-segment filter production is given if the assembly device can be subdivided into a plurality of independent functional units. In order to produce different multi-segment filters, a rapid and cost-effective adjustment is possible in which, if applicable, the independent functional units need only be rearranged and adapted or only a few modules or functional units have to be added. Within the framework of this invention, the term "functional unit" also includes the term "module."

[0025] A particularly space-saving device can be realized if one functional unit is provided for respectively one filter segment piece.

[0026] A filter segment group assembly device with individual functional units for filter segment pieces is known from International Publication No. WO 03/037113, the disclosure of which is expressly incorporated by reference herein in its entirety.

[0027] A special embodiment of the arrangement is given if the rod formation device, the filter tipping device and the device for assembling multi-segment filter plugs are arranged in a T-shaped manner.

[0028] In an alternative embodiment, the rod formation device, the filter tipping device and the device for assembling multi-segment filter plugs are arranged in an L-shaped manner.

[0029] In both of the above-noted embodiments, i.e., T-shaped and L-shaped arrangements, a compact construction is achieved, whereby each independent unit of the arrangement is very easily accessible. Depending on the spatial or space conditions and production requirement, it is possible to choose between the L-shaped or T-shaped arrangement. A high degree of variability of the arrangement is thus achieved. The choice of the arrangement according to the invention of the different modules or independent units itself has no impact on the quality of the filter cigarettes produced.

[0030] In particular, at least one tipping device is provided for the multi-segment filter plug/cut tobacco rod groups so that the applied filter plugs are joined to the cut tobacco rods.

[0031] In a preferred further development, at least one test element and/or one processing element is provided for multi-segment filter plug/cut tobacco rod groups so that permanently filter cigarettes with a high constant quality are produced when the filter plugs are processed and the filter cigarettes are tested.

[0032] Preferably, the device for assembling multi-segment filter plugs is integrated into the filter tipping device.

[0033] The present invention is directed to an arrangement for producing filter cigarettes. The arrangement includes a rod formation device structured and arranged to form a tobacco rod, a filter tipping device structured and arranged to apply filter plugs to at least a portion of the tobacco rod, and an assembly device structured and arranged to assemble multi-segment filter plugs from at least three filter segments.

[0034] According to a feature of the invention, the filter plugs can be applied to cut tobacco rods cut from the tobacco rod.

[0035] The arrangement can also include a cutting device structured and arranged to divide the tobacco rod into cut tobacco rods, so that the filter plugs can be applied to the cut tobacco rods.

[0036] In accordance with the present invention, the assembly device may include at least one tipping device for multi-segment filter plugs.

[0037] Further, the assembly device can include at least one of at least one test unit and a processing unit for multi-segment filter plugs.

[0038] According to the instant invention, the assembly device may include a plurality of independent functional units. Moreover, each of the plurality of functional units can respectively provide one filter segment piece.

[0039] In accordance with another feature of the present invention, the rod formation device, the filter tipping device and the assembly device can be arranged in a T-shaped manner. Alternatively, the rod formation device, the filter tipping device and the assembly device may be arranged in an L-shaped manner.

[0040] According to a further feature of the invention, at least one tipping device can be structured and arranged to wrap multi-segment filter plug/cut tobacco rod groups.

[0041] In accordance with a still further feature of the invention, the arrangement may also include at least one of at least one test unit and a processing unit for multi-segment filter plug/cut tobacco rod groups.

[0042] Still further, the assembly device can be arranged in the filter tipping device.

[0043] The present invention is directed to a process for producing filter cigarettes. The process can include forming a tobacco rod, forming a multi-segment filter plug, and applying the multi-segment filter plug to at least a portion of the tobacco rod.

[0044] According to a feature of the invention, the multi-segment filter plug may include at least three filter segment pieces.

[0045] In accordance with a feature of the invention, the process can also include cutting the tobacco rod and separating adjacent ends of the cut tobacco rods. Moreover, the applying the multi-segment filter plug can include inserting the multi-segment filter plug between the separated ends of the cut tobacco rods. Further, the multi-segment filter plug may not be wrapped when it is inserted between the separated ends of the cut tobacco rods. Alternatively, the process may further include wrapping the multi-segment filter plug before it is inserted between the separated ends of the cut tobacco rods. Further still, the process may also include processing the wrapped multi-segment filter plug with a laser.

[0046] According to another feature of the invention, the process may also include supplying each filter segment piece of the multi-segment filter plug from a respective functional unit of a multi-segment filter plug assembly device.

[0047] In accordance with still yet another feature of the present invention, the process may include wrapping a cut tobacco rod/multi-segment filter plug/cut tobacco rod group, and dividing the cut tobacco rod/multi-segment filter plug/cut tobacco rod group.

[0048] Other exemplary embodiments and advantages of the present invention may be ascertained by reviewing the present disclosure and the accompanying drawing.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0049] The present invention is further described in the detailed description which follows, in reference to the noted plurality of drawings by way of non-limiting examples of exemplary embodiments of the present invention, in which like reference numerals represent similar parts throughout the several views of the drawings, and wherein:

[0050] **FIG. 1** schematically illustrates an arrangement according to the invention for producing filter cigarettes;

[0051] **FIG. 2** illustrates a sectional side view of the arrangement of the invention depicted in **FIG. 1**;

[0052] **FIG. 3** illustrates sectional side view of an alternative arrangement of the invention depicted in **FIG. 1**;

[0053] **FIG. 4** illustrates an other embodiment of the invention for producing filter cigarettes; and

[0054] **FIG. 5** illustrates a sectional side view of the arrangement of the invention depicted in **FIG. 4**.

[0055] In the drawings the same or same types of elements and/or parts are provided with the same reference numbers so that a repeated introduction of them is omitted accordingly.

#### DETAILED DESCRIPTION OF THE PRESENT INVENTION

[0056] The particulars shown herein are by way of example and for purposes of illustrative discussion of the embodiments of the present invention only and are presented in the cause of providing what is believed to be the most useful and readily understood description of the principles and conceptual aspects of the present invention. In this regard, no attempt is made to show structural details of the present invention in more detail than is necessary for the fundamental understanding of the present invention, the description taken with the drawings making apparent to those skilled in the art how the several forms of the present invention may be embodied in practice.

[0057] **FIG. 1** shows an arrangement according to the invention for producing filter cigarettes in a schematic representation. The arrangement shown in **FIG. 1** is embodied in a T-shaped manner, whereby at least one tobacco rod is produced by a rod unit **300** and cut into cut tobacco rods that are transferred to a filter tipping unit **200**. Rod unit **300** can also be operated in a double-rod process so that two tobacco rods are produced. A distributor unit **VE** is connected ahead of rod unit **300** to prepare and process the cut tobacco to form at least one tobacco rod, e.g., one or two rods, to be transferred to rod unit **300**. Rod unit **300** wraps the tobacco rods with paper and cuts them into double-length cut tobacco rods.

[0058] Moreover, a filter segment assembly device **100** is arranged in a straight-line continuation of filter tipping unit **200**, e.g., as continuation as it were of the T-bar (cross) of the T-shaped arrangement. Filter segment assembly device **100** assembles multi-segment filter plugs from filter segment

pieces. The assembled filter plugs preferably have a double unit length or a multiple of the double unit length.

[0059] FIG. 2 shows a diagrammatic side view of a drum arrangement of a filter segment assembly device 100 and a filter tipping unit 200, as they are arranged in FIG. 1. Filter segment assembly device 100 and filter tipping device 200 are arranged in a straight line or plane. The double-length cut tobacco rods processed by rod unit 300 (FIG. 1) are received by a receiver drum 201 and transported further to a cutting knife 202 to divide the double-length cut tobacco rods into cut tobacco rods of single length. Subsequently the cut tobacco rods of single length are spread apart in a longitudinally axial manner on a pusher drum 203.

[0060] At the same time as the transfer of the cut tobacco rods, filter segments from independent functional units 110.1 to 110.4 are assembled to form multi-segment filter plugs of several filter segments on filter segment assembly device 100.

[0061] For further details of functional units 110.1 to 110.4, reference is made to the disclosure of incorporated document International Publication No. WO 03/037113, in which a multi-segment filter manufacturing device with several functional units is described in detail.

[0062] After the assembly of the individual filter segments, the assembled multi-segment filter plugs of double length are transferred from a transfer drum 111.1 of the last functional unit 110.1 in the conveyor direction of the filter segments to a wobble drum 150 on which the assembled multi-segment filter plugs are pushed together. Subsequently the double-length multi-segment filter plugs are conveyed via further conveyor drums to a loading drum 160 that transfers the multi-segment filter plugs to an assembly drum 210. After the transfer of the multi-segment filter plugs to assembly drum 210, the single-length cut tobacco rods spaced apart in a longitudinally axial manner are transferred from pusher drum 203 to assembly drum 210 so that cut tobacco rod/filter plug/cut tobacco rod groups are arranged on assembly drum 210 and subsequently transferred to a conveyor drum 211 that is preferably embodied as a pusher drum.

[0063] Subsequently the assembled cut tobacco rod/filter plug/cut tobacco rod groups are transported to a tipping device 220 with two tipping apparatuses 221 and 222, so that the groups of smokers' products are provided with a tipping paper web. A tipping device of this type is described in detail in the instant assignee's European Patent Application No. 03 008 450.3, the disclosure of which is expressly incorporated by reference herein in its entirety.

[0064] After the joining of the cut tobacco rod/filter plug/cut tobacco rod groups, the double-length joined groups are cut on a cutting drum 240 by a cutting knife 241 into filter cigarettes of single unit length.

[0065] The single-unit length filter cigarettes formed are subsequently transported via further conveyor units to a packing machine of the tobacco-processing industry.

[0066] According to the embodiment or arrangement shown in FIG. 2, double-unit length multi-segment filter plugs that are not joined, i.e., not provided with a connecting sheet, are conveyed to loading drum 160.

[0067] FIG. 3 shows an embodiment in which the assembled multi-segment filter plugs are provided with a connecting sheet by a tipping device 120, which has two tipping apparatuses 121 and 122. A tipping device of this type is described in detail in the above-noted European Patent Application No. 03 008 450.3.

[0068] After the wrapping of the multi-segment filter plugs, the filter plugs can be additionally processed by a laser unit 130 on their transport path to loading drum 160. Laser unit 130 is indicated by broken lines, since the processing of the wrapped filter plugs can be carried out optionally.

[0069] Furthermore, a test unit can be provided for the filter plugs on the transport path of the filter plugs to loading drum 160. A further processing station can be optionally provided after the test unit for reworking so that high-quality multi-segment filter plugs are transferred from loading drum 160 to assembly drum 210.

[0070] FIGS. 4 and 5 show another arrangement according to the invention for producing filter cigarettes, whereby the arrangement is embodied in the shape of an L. The cut tobacco rods are hereby transferred to a transfer module 200.1 of a filter tipping device. The manufacture of the filter cigarettes takes place in a manufacturing module 200.2, in which cut tobacco rod/multi-segment filter plug/cut tobacco rod groups are joined with tipping paper webs by tipping device 220. A filter segment assembly device 100 for producing multi-segment filter plugs is arranged between transfer module 200.1 and manufacturing module 200.2.

[0071] After the double-length cut tobacco rods have been received on receiver drum 201, the cut tobacco rods are cut by cutting knife 202 and, in a following step, spaced apart in a longitudinally axial manner before the cut tobacco rods spaced apart in a longitudinally axial manner reach the filter segment assembly device 100 and are conveyed by the conveyor drums of functional units 110.1 to 110.4 to manufacturing module 200.2.

[0072] At each functional unit 110.1 to 110.4, filter pieces are inserted between the cut tobacco rods, which are spaced apart in a longitudinally axial manner, and transported further to the next functional unit. The last filter segment piece is inserted at functional unit 110.1, so that multi-segment filter plugs in double unit length are present on the transfer drum 111.1 between the cut tobacco rods spaced apart in a longitudinally axial manner.

[0073] Subsequently the cut tobacco rod/filter plug/cut tobacco rod groups are pushed together in a longitudinally axial manner on wobble drum 150 and fed to tipping device 220 so that the cut tobacco rod/filter plug/cut tobacco rod groups are joined and wrapped with a tipping paper web. Subsequently, the joined cut tobacco rod/filter plug/cut tobacco rod groups are cut on cutting drum 240 by cutting knife 241 into filter cigarettes of single unit length.

[0074] Moreover, further optional processing can be performed, e.g., by a laser unit, and/or tests of the cigarette properties can be performed a test unit.

[0075] By the arrangement according to the invention, a direct coupling between a multi-segment assembly device and a filter tipping device can be achieved, such that multi-segment filter plugs are assembled in the filter segment assembly device.

[0076] After the assembly of the multi-segment filter plugs, the filter plugs are transferred to the filter tipping unit which simultaneously receives cut tobacco rods from a rod machine, cuts them and spreads them apart in a longitudinally axial manner.

[0077] Optionally, the multi-segment filter plugs can be rolled with a wrapping paper before the assembly with the cut tobacco rods.

[0078] It is noted that the foregoing examples have been provided merely for the purpose of explanation and are in no way to be construed as limiting of the present invention. While the present invention has been described with reference to an exemplary embodiment, it is understood that the words which have been used herein are words of description and illustration, rather than words of limitation. Changes may be made, within the purview of the appended claims, as presently stated and as amended, without departing from the scope and spirit of the present invention in its aspects. Although the present invention has been described herein with reference to particular means, materials and embodiments, the present invention is not intended to be limited to the particulars disclosed herein; rather, the present invention extends to all functionally equivalent structures, methods and uses, such as are within the scope of the appended claims.

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List of Reference Numbers

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100	Filter segment assembly device
110.1-110.4	Functional unit
111.1	Transfer drum
120	Tipping device
121	Tipping apparatus
122	Tipping apparatus
130	Laser unit
150	Wobble drum
160	Loading drum
200	Filter tipping device
200.1	Transfer module
200.2	Manufacturing module
201	Receiver drum
202	Cutting knife
203	Pusher drum
210	Assembly drum
211	Conveyor drum
220	Tipping device
221	Tipping apparatus
222	Tipping apparatus
240	Cutting drum
241	Cutting knife
300	Rod unit
VE	Distributor unit

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What is claimed is:

1. An arrangement for producing filter cigarettes, comprising:

a rod formation device structured and arranged to form a tobacco rod;

a filter tipping device structured and arranged to apply filter plugs to at least a portion of the tobacco rod; and

an assembly device structured and arranged to assemble multi-segment filter plugs from at least three filter segments.

2. The arrangement in accordance with claim 1, wherein the filter plugs are applied to cut tobacco rods cut from the tobacco rod.

3. The arrangement in accordance with claim 1, further comprising a cutting device structured and arranged to divide the tobacco rod into cut tobacco rods,

wherein the filter plugs are applied to the cut tobacco rods.

4. The arrangement in accordance with claim 1, wherein the assembly device comprises at least one tipping device for multi-segment filter plugs.

5. The arrangement in accordance with claim 1, wherein the assembly device comprises at least one of at least one test unit and a processing unit for multi-segment filter plugs.

6. The arrangement in accordance with claim 1, wherein the assembly device comprises a plurality of independent functional units.

7. The arrangement in accordance with claim 6, wherein each of the plurality of functional units respectively provides one filter segment piece.

8. The arrangement in accordance with claim 1, wherein the rod formation device, the filter tipping device and the assembly device are arranged in a T-shaped manner.

9. The arrangement in accordance with claim 1, wherein the rod formation device, the filter tipping device and the assembly device are arranged in an L-shaped manner.

10. The arrangement in accordance with claim 2, further comprising at least one tipping device structured and arranged to wrap multi-segment filter plug/cut tobacco rod groups.

11. The arrangement in accordance with claim 2, further comprising at least one of at least one test unit and a processing unit for multi-segment filter plug/cut tobacco rod groups.

12. The arrangement in accordance with claim 1, wherein the assembly device is arranged in the filter tipping device.

13. A process for producing filter cigarettes, the process comprising:

forming a tobacco rod;

forming a multi-segment filter plug;

applying the multi-segment filter plug to at least a portion of the tobacco rod.

14. The process in accordance with claim 13, wherein the multi-segment filter plug comprises at least three filter segment pieces.

15. The process in accordance with claim 13, further comprising:

cutting the tobacco rod;

separating adjacent ends of the cut tobacco rods,

wherein the applying the multi-segment filter plug comprises inserting the multi-segment filter plug between the separated ends of the cut tobacco rods.

16. The process in accordance with claim 15, wherein the multi-segment filter plug is not wrapped when it is inserted between the separated ends of the cut tobacco rods.

17. The process in accordance with claim 15, further comprising wrapping the multi-segment filter plug before it is inserted between the separated ends of the cut tobacco rods.

18. The process in accordance with claim 17, further comprising processing the wrapped multi-segment filter plug with a laser.

19. The process in accordance with claim 13, further comprising:

supplying each filter segment piece of the multi-segment filter plug from a respective functional unit of a multi-segment filter plug assembly device.

20. The process in accordance with claim 13, further comprising:

wrapping a cut tobacco rod/multi-segment filter plug/cut tobacco rod group; and

dividing the cut tobacco rod/multi-segment filter plug/cut tobacco rod group.

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