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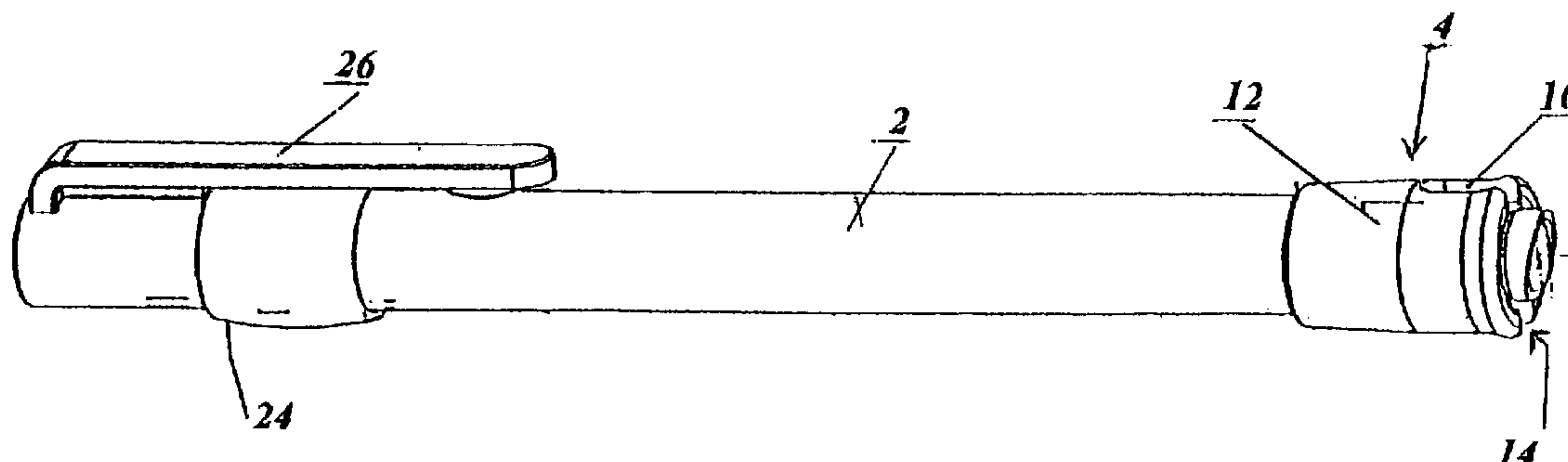
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(54) Titre : DISPOSITIF DE BOURRAGE PERMETTANT A UN UTILISATEUR DE FABRIQUER SES PROPRES
CIGARETTES

(54) Title: STUFFING DEVICE FOR ROLLING UP CIGARETTES



(57) Abrégé/Abstract:

The invention relates to a stuffing device for rolling up cigarettes by transferring a strand-shaped tobacco insert from a tubular fine-cut unit pack from non-smokable material into a cigarette paper wrap. The inventive device consists of a tubular sleeve with a coupling end to be placed on the free end of the tubular fine-cut unit pack and an ejection plunger that can be axially displaced relative to said tubular sleeve. The device is further characterized in that a) the coupling end (4) of the tubular sleeve (2) is configured as a cylindrical connecting sleeve (6) whose outer diameter is slightly smaller than the inner diameter of the tubular fine-cut unit pack and that, after 0.5 to 1.0 cm merges into an annular ring (8) whose outer diameter is slightly larger than the outer diameter of the tubular fine-cut unit pack; b) on the coupling end (4) a tubular collar (12) from a rubber-elastic material is provided at an axial distance of approximately 1 to 5 mm to the opening of the cylindrical connecting sleeve (6) that extends beyond the annular ring (8). The inner diameter of said tubular collar is slightly larger than the outer diameter of the tubular fine-cut partial packing and is dimensioned to form an annular gap (14) that receives the free end of the tubular fine-cut unit pack. The inventive device is further characterized in that c) the tubular sleeve (2) has an axially extending guide slot (18) at a distance to its both ends and d) in that the axially displaceable ejection plunger (20) is disposed inside the tubular sleeve (2). At the rear end of the ejection plunger a bracket-shaped cam (22) whose end is configured as an actuator handle (24) that glides on the tubular sleeve (2) extends through the guide slot (18) of the tubular sleeve (2).

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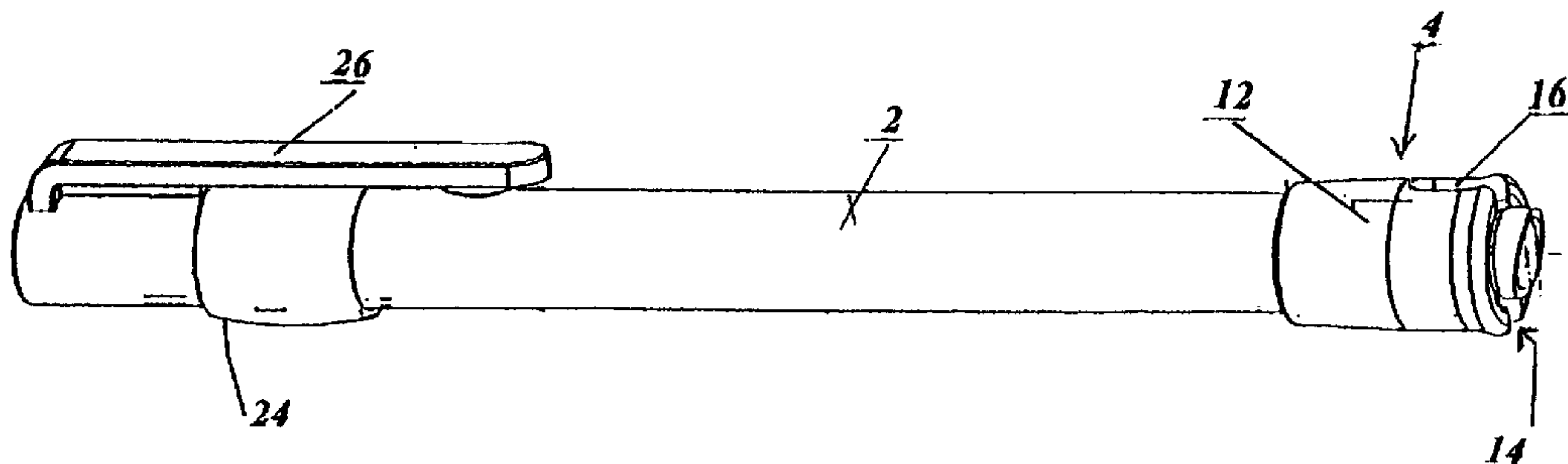
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(54) Title: STUFFING DEVICE FOR ROLLING UP CIGARETTES

(54) Bezeichnung: STOPFVORRICHTUNG ZUR SELBSTFERTIGUNG VON CIGARETTEN



(57) **Abstract:** The invention relates to a stuffing device for rolling up cigarettes by transferring a strand-shaped tobacco insert from a tubular fine-cut unit pack from non-smokable material into a cigarette paper wrap. The inventive device consists of a tubular sleeve with a coupling end to be placed on the free end of the tubular fine-cut unit pack and an ejection plunger that can be axially displaced relative to said tubular sleeve. The device is further characterized in that a) the coupling end (4) of the tubular sleeve (2) is configured as a cylindrical connecting sleeve (6) whose outer diameter is slightly smaller than the inner diameter of the tubular fine-cut unit pack and that, after 0.5 to 1.0 cm merges into an annular ring (8) whose outer diameter is slightly larger than the outer diameter of the tubular fine-cut unit pack; b) on the coupling end (4) a tubular collar (12) from a rubber-elastic material is provided at an axial distance of approximately 1 to 5 mm to the opening of the cylindrical connecting sleeve (6) that extends beyond the annular ring (8). The inner diameter of said tubular collar is slightly larger than the outer diameter of the tubular fine-cut partial packing and is dimensioned to form an annular gap (14) that receives the free end of the tubular fine-cut unit pack. The inventive device is further characterized in that c) the tubular sleeve (2) has an axially extending guide slot (18) at a distance to its both ends and d) in that the axially displaceable ejection plunger (20) is disposed inside the tubular sleeve (2). At the rear end of the ejection plunger a bracket-shaped cam (22) whose end is configured as an actuator handle (24) that glides on the tubular sleeve (2) extends through the guide slot (18) of the tubular sleeve (2).

(57) **Zusammenfassung:** Die Erfindung betrifft eine Stopfvorrichtung zur Selbstfertigung von Cigaretten durch Überführen einer strangförmigen Tabakeinlage aus einer rohrförmigen Feinschnitt-Teilmengenverpackung aus nicht abrauchbarem Werkstoff in eine Cigarettenpapierhülse, bestehend aus einer rohrförmigen Hülse mit einem Kopplungsende zum Aufschieben

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Zur Erklärung der Zweibuchstaben-Codes und der anderen Abkürzungen wird auf die Erklärungen ("Guidance Notes on Codes and Abbreviations") am Anfang jeder regulären Ausgabe der PCT-Gazette verwiesen.

des freien Endbereiches der rohrförmigen Feinschnitt-Teilmengenverpackung und einem zu dieser rohrförmigen Hülse axial verschiebbaren Ausstosskolben, welche dadurch gekennzeichnet, dass: a) das Kopplungsende (4) der rohrförmigen Hülse (2) als zylindrischer Rohrstutzen (6) ausgebildet ist, dessen Aussendurchmesser geringfügig kleiner als der Innendurchmesser der rohrförmigen Feinschnitt-Teilmengenverpackung ist, und der nach 0,5 bis 1,0 cm in einen Ringwulst (8) übergeht, dessen Aussendurchmesser geringfügig grösser als der Aussendurchmesser der rohrförmigen Feinschnitt-Teilmengenverpackung ist, b) am Kopplungsende (4) mit einem axialen Abstand von etwa 1 bis 5 mm zu der Öffnung des zylindrischen Rohrstutzens (6) bis mindestens über den Ringwulst (8) hinaus eine rohrförmige Manschette (12) aus gummi-elastischem Werkstoff vorgesehen ist, deren Innendurchmesser geringfügig grösser ist als der Aussendurchmesser der rohrförmigen Feinschnitt-Teilmengenverpackung und derart bemessen ist, dass sich ein Ringspalt (14) zur Aufnahme des freien Endbereiches der rohrförmigen Feinschnitt-Teilmengenverpackung ergibt, c) die rohrförmige Hülse (2) mit Abstand zu ihren beiden Enden einen axial verlaufenden Führungsschlitz (18) aufweist, und dass: d) in der rohrförmigen Hülse (2) der axial bewegbarer Ausstosskolben (20) angeordnet ist, der am hinteren Ende einen durch den Führungsschlitz (18) der rohrförmigen Hülse (2) greifenden stegförmigen Nocken (22) aufweist, dessen Ende als ein auf der rohrförmigen Hülse (2) gleitender Betätigungsgriff (24) ausgebildet ist.

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Stuffing device for rolling up cigarettes

The invention relates to a stuffing device for rolling up cigarettes by transferring a strand-shaped tobacco insert from a tubular fine-cut unit pack of non-smokable material into a cigarette paper sleeve, comprising a tubular sleeve with a coupling end for pushing on the free end region of the tubular fine-cut unit pack, and an ejection plunger which can be displaced axially with respect to said tubular sleeve.

It is known from DE 83 09 186 U to transfer strand-shaped tobacco inserts from a tubular fine-cut unit pack of non-smokable material, such as aluminum or polyester foil, into a cigarette paper sleeve using a rod-shaped introducing plunger which can be handled in a hands-free manner. The general procedure in this case is for one end of the tubular unit pack to be pushed into the empty cigarette paper sleeve while the introducing plunger is fitted to the other end of the tubular unit pack in order to push the tobacco strand into the cigarette paper sleeve.

For better transfer of the strand-shaped tobacco inserts, EU 0 140 129 has proposed a stuffing device which comprises a tubular sleeve with a coupling end for fitting or pushing on the free end region of the tubular fine-cut unit pack, and an ejection plunger which can be displaced axially with respect to this tubular sleeve. The tubular sleeve provided in this case is designed as a sliding sleeve and has a conically shaped coupling end for receiving the exposed end of the tubular fine-cut unit pack.

However, this stuffing device has the disadvantage that, firstly, the exposed end of this tubular fine-cut unit pack is not placed with a precise fit, and sometimes also with a damaged cigarette paper sleeve edge, onto the outlet opening of the tubular sleeve

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and, secondly, that this process is carried out, for example, on building sites with the person using the device sometimes having dirty fingers, which is unpleasant for the actual smoker. Finally, the user of the device is tempted to displace the sliding sleeve, which is generally held in the left hand with the unit pack already placed on it, and not the ejection plunger, which is generally held in the right hand, in the axial direction, which can impair the fit of the unit pack which is already placed on it and can make uniform stuffing more difficult.

The object of the present invention is to propose a stuffing device according to the precharacterizing clause of the main claim, with which the transfer of a strand-shaped tobacco insert from a tubular fine-cut unit pack into a cigarette paper sleeve can be carried out in a simpler, more uniform and hygienically satisfactory manner.

Although, in principle, the tubular fine-cut unit packs described at the beginning are used, use may also be made of unit packs in which the portion of tobacco is stuffed somewhat more loosely than in a conventional cigarette, or in which, at least in that end region of the unit pack which enters into engagement with the ejection plunger - and which is also referred to below as the "free end region" - the tobacco is stuffed in a less tightly packed manner. This facilitates the transfer of the portion of tobacco into the cigarette paper sleeve and, in the latter case, also facilitates the fitting on of the introducing plunger at the beginning of the stuffing process. It is also possible to design the free end region of the tubular unit pack in a manner such that it is free of tobacco to a depth of some millimeters, which likewise facilitates the fitting on or introduction of the plunger.

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To achieve this object, a stuffing device is therefore proposed which is characterized in that

- 5 a) the coupling end of the tubular sleeve is designed as a cylindrical connecting branch, the outside diameter of which is slightly smaller than the inside diameter of the tubular fine-cut unit pack, and which merges after 0.5 to 1.0 cm behind the outlet opening into an annular bead, the outside diameter of which is slightly larger than the
10 outside diameter of the tubular fine-cut unit pack,
- b) at the at the coupling end, a tubular collar of rubber-elastic material is provided at an axial distance of approximately 1 to 5 mm from the
15 opening of the cylindrical connecting branch to at least beyond the annular bead, the inside diameter of which collar is slightly larger than the outside diameter of the tubular fine-cut unit pack and is dimensioned in such a manner that an
20 annular gap for holding the free end region of the tubular fine-cut unit pack is produced,
- c) the tubular sleeve has an axially extending guide slot at a distance from both of its ends, and in that
- 25 d) the axially moveable ejection plunger is arranged in the tubular sleeve and has, at the rear end, a ridge-shaped extension which reaches through the guide slot of the tubular sleeve and the end of which is designed as an actuating handle which
30 slides on the tubular sleeve.

The effect achieved by the feature a) is that the free end of the tubular fine-cut unit pack can be placed onto the tubular sleeve with a precise fit and, because
35 of the annular bead which serves as a stop, at a predetermined depth.

The effect achieved by the feature b) is that the user does not hold the freely protruding remainder of the

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tubular fine-cut unit pack with his possibly dirty fingers, but rather indirectly and uniformly via the rubber collar in order then to actuate the ejection plunger, if appropriate also compressing the looser
5 portion of tobacco in the attachment region of the ejection plunger, and thereby to obtain a uniformly stuffed cigarette.

The features c) and d) provide a technically elegant
10 solution of being able to axially displace the plunger in the tubular sleeve, which is held firmly by one hand and has the fine-cut unit pack already placed on it, in which case the ejection plunger is actuated with the other hand.

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In the stuffing device, the opening of the cylindrical connecting branch is preferably slightly beveled, making it easier to introduce the open end of the tubular fine-cut unit pack.

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Furthermore, it is advantageous if an annular groove is provided following the annular bead, which serves as a stop, on the side facing away from the opening of the connecting branch, said groove merging into the tubular
25 sleeve and also being covered by the tubular collar. This serves to better fix the collar in place and produces a better transition to the tubular sleeve which is somewhat larger in diameter.

30 In order to better fix the tubular collar in place, in particular against rotation, it is advantageous if at least one axially extending channel is provided in the annular bead and at least one inwardly directed protrusion which is provided on the inside of the
35 rubber collar correspondingly engages in it with a press fit. The width of the channel is preferably approximately 1.45 mm and that of the protrusion is approximately 1.5 mm.

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In a preferred embodiment, the tubular collar has two opposite, slot-shaped cutouts in its front region, this contributing, firstly, to better elasticity when pressing on the free end of the tubular pack or securing the same on the cylindrical connecting branch of the coupling end. Secondly, the slot-shaped cutouts serve as viewing windows in the stop region of the annular bead, enabling the user to check the precisely fitting insertion of the free region of the unit pack.

10

Finally, it is advantageous if a conically tapering, cup-shaped depression is provided at the head end of the stuffing device and its base surface has a diameter which is slightly smaller than the outside diameter of the unit pack. This enables the user to slightly "sharpen" the other end of the unit pack so that it can be inserted more easily into the cigarette paper sleeve.

20 The invention will be explained below with reference to a preferred exemplary embodiment; in the drawing:
figure 1 shows a perspective view of a stuffing unit,
figure 2 shows a longitudinal section through the stuffing unit according to fig. 1,
25 figure 3 shows a side view of the tubular sleeve without the collar.

The stuffing unit comprises a tubular sleeve 2 which is approximately 15 cm long and the one end of which is closed and is provided with a fastening clip 26 while the other end serves as the coupling end 4. The latter has a cylindrical connecting branch 6 for receiving the free end of the fine-cut unit pack and is slightly beveled in the opening region for easier introduction and can have a small annular thickening. The outside diameter of the cylindrical connecting branch 6 is slightly smaller than the inside diameter of the tubular fine-cut unit pack. The cylindrical connecting branch 6, which is approximately 0.5 to 1.0 cm long, is

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adjoined by an annular bead 8 which is approximately 5 mm wider, serves as a stop, limits the insertion depth of the free end of the unit pack and, together with the annular thickening on the opening, ensures that the unit pack is securely fitted on the coupling end. An annular groove 10 which is approximately 5 mm wide is provided behind the annular bead 8 further toward the closed end of the tubular sleeve and merges into the main part of the tubular sleeve 2.

10

The coupling end 4 is surrounded by an annular collar 12 which is approximately 15 mm long, consists of rubber-elastic material and, firstly, sits on the annular bead 8 and, secondly, extends over the region of the annular groove 10 as far as the beginning of the actual tubular sleeve 2. The groove 10 prevents the rubber collar from being displaced in the axial direction. The opening region of the cylindrical connecting branch 6 remains free for approximately 1 to 2 mm in the axial direction in order to make it possible for the free region of the unit pack to be placed on it. Said unit pack is then pushed over the small annular thickening of the opening of the cylindrical connecting branch 6 into the annular gap 14 below the annular collar 12, the inside diameter of which is slightly larger than the outside diameter of the unit pack. On the side facing the opening of the cylindrical connecting branch 6, the annular collar 12 also has two slot-shaped cutouts 16 which extend axially, are approximately 7 mm long, lie opposite each other in a 180° arrangement and increase the elasticity of the collar and, when the latter is compressed, securely hold the free region of the unit pack that is inserted into the annular gap 14, and furthermore are used by the user as viewing windows for checking the insertion depth of the free end of the unit pack until it stops against the annular bead 8.

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Moreover, at least one channel 9 which is approximately 1.45 wide and extends axially is provided in the annular bead 8, or on the upper side thereof, and an inwardly directed protrusion 13 which is approximately 1.5 mm wide and is provided on the inside of the rubber collar 12 engages in it with a press fit, which serves to better fix the rubber collar 12 in place. It is also possible for a plurality of axially extending channels 9 to be provided, for example in a 180° arrangement, in order to prevent rotation of the collar 12.

An ejection plunger 20 is arranged in an axially moveable manner in the tubular sleeve 2, said plunger having, at the rear end, a ridge-shaped extension 22 which reaches through a guide slot 18 running in the longitudinal direction in the tubular sleeve 2 and is designed as an annular actuating handle 24 preferably all the way around the tubular sleeve 2. The plunger can be chamfered for better guidance in the tubular sleeve, to which end said sleeve has inwardly directed guide lugs.

A conically tapering, cup-shaped depression 28, the base surface of which has a diameter which is somewhat smaller than the outside diameter of the unit pack is provided, as shown in Fig. 2, on the head side of the stuffing device. By this means, the user can virtually sharpen that end of the unit pack which lies opposite the free end of this pack, in order to make it easier to pull the cigarette paper sleeve onto the unit pack or in order to insert the tubular unit pack into the cigarette paper sleeve.

In order to roll up cigarettes, the tubular fine-cut unit pack is inserted into a conventional cigarette paper sleeve, preferably into one with a filter mouth-piece, this process being facilitated by a "sharpening" of the one end of this pack in the cup-shaped depression 28 at the end of the stuffing device. The

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other "free" end of the unit pack is then pushed onto the cylindrical connecting branch 6 and into the annular gap 14 until it stops against the annular bead 8 and below the collar 12. It is also possible to first
5 place the free end of the unit pack onto the cylindrical connecting branch 6 and then to push the cigarette paper sleeve over the unit pack which is preferably "sharpened" at this end. The free end of the unit pack is then held firmly on the cylindrical
10 connecting branch 6 by pressing thumb and index finger on the collar 12, and the ejection plunger is pushed in the direction of the unit pack. This causes the portion of tobacco in the unit pack to pass out of the latter into the cigarette paper sleeve; the user pushes or
15 separates the uniformly filling cigarette paper sleeve from the unit pack. The rolled up cigarette then drops down and the empty unit pack is detached virtually automatically from the coupling end and can be thrown away.

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The stuffing device, i.e. the tubular sleeve forming a unit and the ejection plunger situated in the latter, can be manufactured from plastic approximately in the size of a pencil and can be put together with the
25 rubber collar in an economical manner.

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2. The stuffing device as claimed in claim 1, characterized in that the opening of the cylindrical connecting branch (6) is slightly beveled.
3. The stuffing device as claimed in claims 1 to 2, characterized in that an annular groove (10) is provided following the annular bead (8) on the side facing away from the opening of the connecting branch, said groove merging into the tubular sleeve (2) and also being covered by the tubular collar (12).
4. The stuffing device as claimed in claims 1 to 3, characterized in that the tubular collar (12) has two opposite, slot-shaped cutouts (16) in its front region.
5. The stuffing device as claimed in claims 1 to 4, characterized in that a flexible fastening clip (26) which extends in the axial direction is fitted to the rear end of the tubular sleeve (2).
6. The stuffing device as claimed in claims 1 to 5, characterized in that at least one channel (9) which extends axially is provided in the annular bead (8) and an inwardly directed protrusion (13) which is provided on the inside of the tubular collar (12) engages in it with a press fit.
7. The stuffing device as claimed in claim 6, characterized in that the width of the channel (9) is approximately 1.45 mm and that of the protrusion (13) is approximately 1.5 mm.
8. The stuffing device as claimed in claims 1 to 7, characterized in that a conically tapering, cup-shaped depression (28) is provided at the head end

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of the stuffing device and its base surface has a diameter which is slightly smaller than the outside diameter of the unit pack.

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