(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 2 749 186 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
02.07.2014 Bulletin 2014/27

(51) Int Cl.:
A45D 26/00 *(2006.01)*

(21) Application number: **12382421.1**

(22) Date of filing: **31.10.2012**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(71) Applicant: **Cosmewax S.A.**
11408 Jerezde la Fra (ES)

(72) Inventors:
- **Dobado Berrios, David**
  11408 JEREZ (ES)
- **Gómez Real, Manuel**
  11408 Jerez de la Fra (ES)

(54) Depilatory strip meter-system with double cutting wegdes

(57) Depilatory strip meter-system with double cutting wedges for depilatory wax strip manufacturing equipment, with a combination of **profile protection and pneumatic actuators to separate the depilatory strips according to the packing amount, and place them on a conveyor belt at the end of the assembly line.**

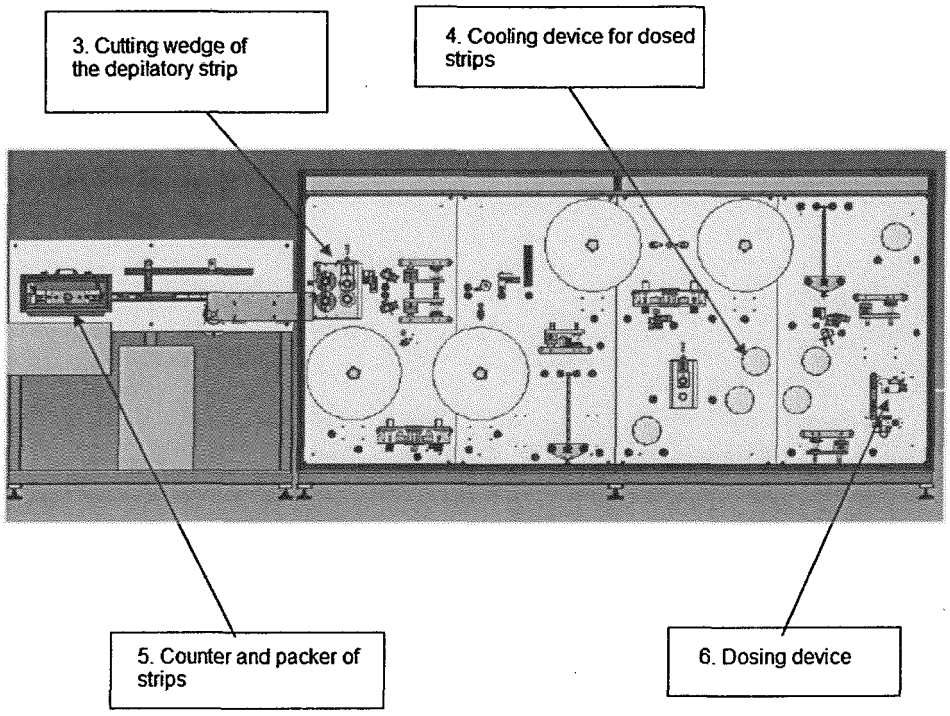

Image 1. Manufacturing device for wax strips

EP 2 749 186 A1

Description

INVENTION PURPOSE

[0001] This invention alludes to the functioning of depilatory strip manufacturing equipment and to the meter module dedicated to counting and stacking the produced depilatory strips.

TECNICAL STATE

[0002] Generally, manufacturing equipment for double depilatory wax strips consist of **a support coil reel, a wax-dosage system, a system for guiding, cutting and clustering the strips before introducing them in flow-packs** and monitoring equipment.

[0003] The electrical mechanization system provides movement to the transmission to drag the film. Dragging is done by drive shafts and cylinder drags.

[0004] The prime strip-material derives from a set of wind shafts, which consist of an unwinding coil reel comprising the reel in use. Once the reel in use has been used completely, the machine will stop in order to load and thread the next one.

[0005] To maintain the ideal material temperature, the system has been provided with a **cooling system of water cooled cylinders for the wax and depilatory strips.**

[0006] In order to provide the depilatory strips with wax, the equipment includes a wax-dosage system for dose regulation, consisting of a gear pump, a lamination bypass block, and system to open and close the wax system using a pneumatic cylinder commanded by solenoid. The results of this set create a limited ability for dosage.

[0007] The waxed strips are covered with the other strip and then stacked with the strip aligners. The cutting device consists of a rotating system of blades and dollies without any constant velocity, regulated by non-centric mechanics.

[0008] Once the strips leave the cutter in several groups, they are conveyed to the metering system through a tape. The capacity of this system limits the speed of the other sets and the **overall production of the machine.**

[0009] The integration of all systems in the one depilatory wax strip manufacturing machine improves the limited production capacity, and helped define the bottleneck identified in the counter module.

INVENTION DEFINITION

[0010] This invention seeks to resolve or reduce one or more of the aforementioned drawbacks through a depilatory strip meter-system with double cutting wedges as claimed in claim 1. Development of the invention is established in subordinate claims.

[0011] One of the aims of this invention is to provide a high performance strip meter to depilatory strip manufacturing equipment, in which the cutting wedge has been split (in order to reduce the movement by half) and the systems operating time remains the same when changing (doubling) the speed of the machine.

[0012] Another aim of this invention is to provide a machine with an unwinding module consisting of two coil reels, one loaded with the reel in use and the other with the next to be used. A reel-end detector will automatically activate a mechanism to switch the unwounded coil, joining the end of the first reel with the beginning of the next, subsequently establishing the automatic rejection of the junction area.

IMAGE DESCRIPTION

[0013] The devices embodying the invention will now be described, by way of example only, with reference to the accompanying drawings, wherein:

[0014] Image 1 shows the location of the meter module (S) in the depilatory wax strip manufacturing equipment, in accordance with the invention.

INVENTION DESCRIPTION

[0015] Relative to image 1, the basic aim in the manufacturing process in which this type of machine is used, is to obtain depilatory wax strips. To accomplish the aforementioned labor, the machine runs from film coil reels 1, 2 and the depilatory wax from 6.

[0016] The reel arrives in unwinding coils, with a continuously controlled tension. There are two double-width coil reels, one with the film on which the wax will be applied and a film that will be placed on the film where the wax is applied.

[0017] The wax is applied 6 to the desired length and centering, performed by a lamination system with negative closure.

[0018] Another film strip is placed over the applied strip to cover the wax. In order for the wax to stay in place, the set is cooled in 4.

[0019] The two strip assembly lines are longitudinally spaced and the film overlay system **covers only the strips on that one line; then the paper is cut to the desired length.**

[0020] The cutting module 3 consists of two parallel axes. One of them with two cutting blades **at 180º and the other with two dollies at 180 which rotate completely synchronized by** spur gears, the actual cut of the part is produced by contact between the blade and the dolly.

[0021] The movement is **performed by a reductive servomotor, eliminating the non-centric mechanical group of current machines, performing the acceleration and deceleration maneuver twice in the same turn, until a suitable cutting speed is acquired.**

[0022] The strips convey to the meter S where the desired number of strips per bag are counted and stacked, and eventually passed to the flow-pack bagger.

Claims

1. Strip meter system in manufacturer equipment for depilatory wax strips S;
defined by its double wedge cutter 7 which reduces the movement of this element by half, allowing to increase the production speed of the machine

2. System according to claim 1; defined by the synchronized delivery of the depilatory strip packages by the upper double wedge to the lower double wedge, which is the one that will accumulated desired strip packages.

3. System according to claim 2; defined by the lower wedge, which is able to deliver the strip packages to a bucket line for transport to the flow-pack bagger.

4. System according to claim 3; defined by the fact that the depilatory strip machine operates continuously and synchronized with 15 the bagger, which also works continuously, and that each of the machines' systems operates at different speeds depending on the number of strips per package, but always synchronized.

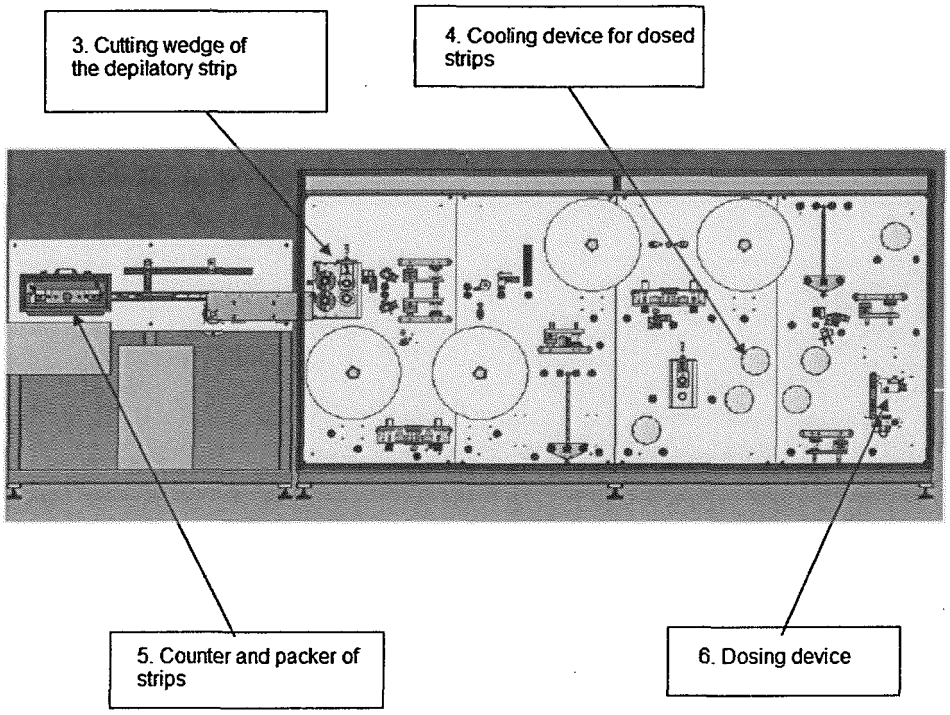

Image 1. Manufacturing device for wax strips

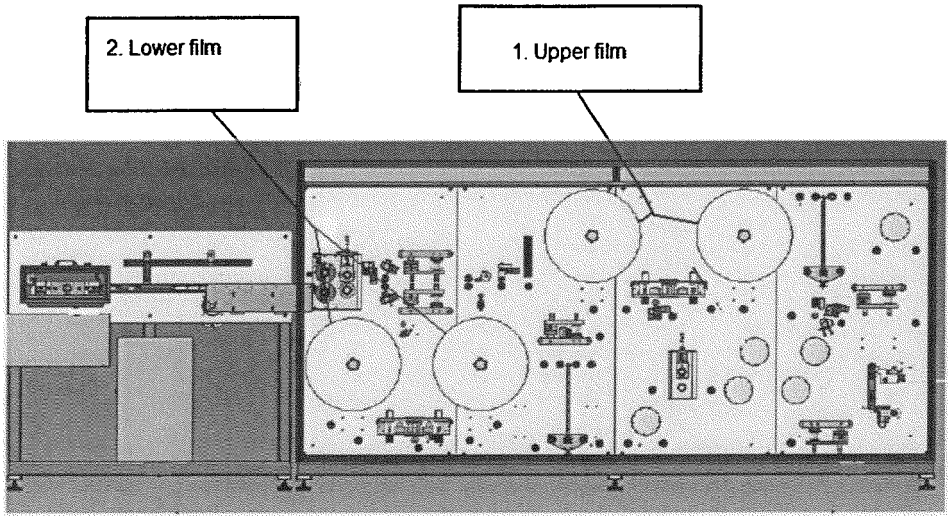

Image 2. Films Coils

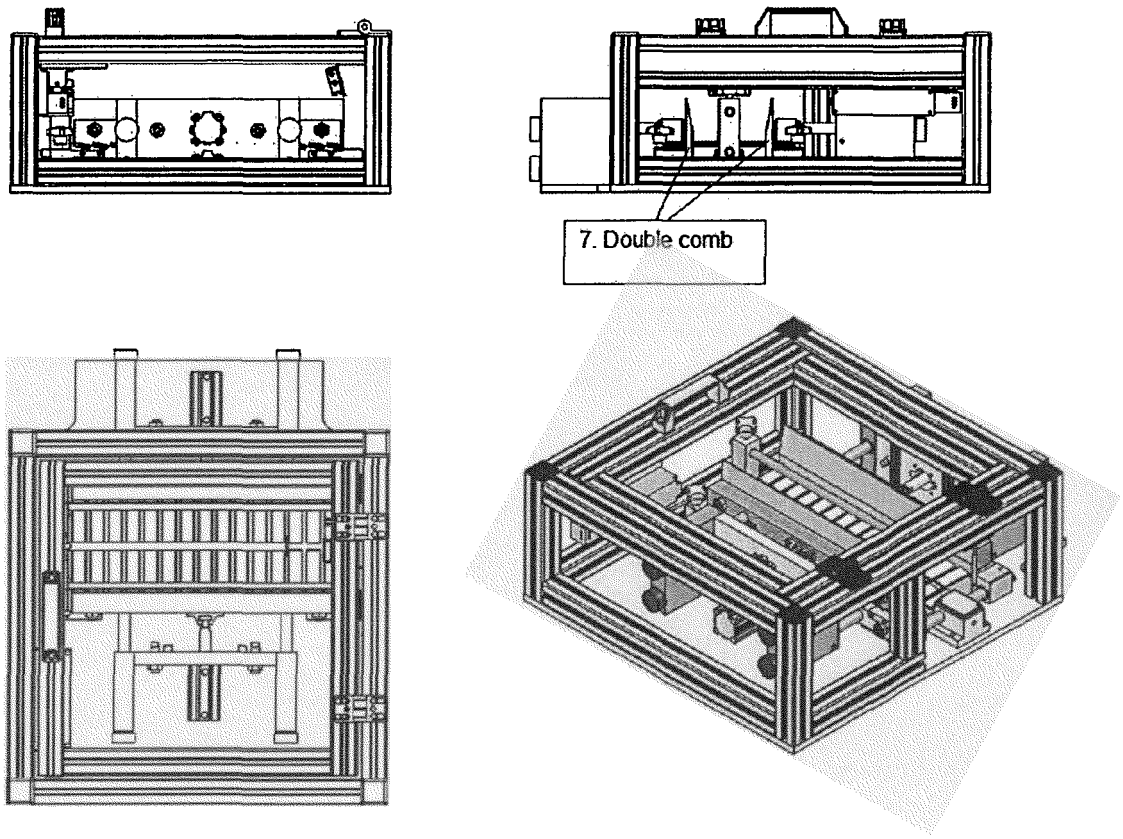

Image 3. Strip meter module

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 12 38 2421

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 1 611 813 A1 (LINGECO SARL [FR]) 4 January 2006 (2006-01-04) * abstract; figures * * paragraph [0026] - paragraph [0028] * -----	1	INV. A45D26/00
			TECHNICAL FIELDS SEARCHED (IPC)
			A45D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	22 May 2014	Lanaspeze, Jean

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 12 38 2421

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

22-05-2014

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1611813 A1	04-01-2006	AT 371389 T	15-09-2007
		DE 602005002193 T2	21-05-2008
		EP 1611813 A1	04-01-2006
		ES 2293430 T3	16-03-2008
		FR 2872004 A1	30-12-2005

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82