

Señores
DIVISIÓN DE NUEVAS CREACIONES
Superintendencia de Industria y Comercio
Aten. Dr. José Luis Salazar López
Director

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



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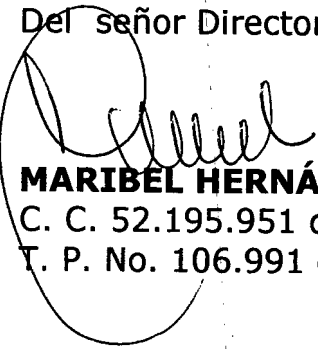
EXPEDIENTE No.:
SOLICITUD INTERNACIONAL:
SOLICITANTE:

09 135636
PCT/ES2007/070171
JESUS PEREZ SANTAFE

MARIBEL HERNÁNDEZ QUINTERO, mayor de edad, domiciliada y
residenciada en la ciudad de Bogotá D. C., identificada con la cédula de
ciudadanía No. 52.195.951 de Bogotá y tarjeta profesional No. 106.991
del Consejo Superior de la Judicatura, en mi calidad de apoderada del
señor **JESUS PEREZ SANTAFE**, mediante este memorial allego al
expediente decisión de concesión de la solicitud PCT de la referencia de
la Oficina Europea de Patentes en 5 folios y de la Oficina Rusa de
Patentes en 16 folios.

Con estos documentos apoyamos la de la existencia de actividad
inventiva de la solicitud de patente PCT/ES2007/070171.

Del señor Director,



MARIBEL HERNÁNDEZ QUINTERO

C. C. 52.195.951 de Bogotá
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Demande n° 07 823 065.3 - 2316	Réf. JESUS PÉREZ SAN	Date 20.06.2012
Demandeur Pérez Santafé, Jesús		

Notification selon la règle 71(3) CBE

1. Intention de délivrance d'un brevet européen

Nous vous informons que la division d'examen envisage de délivrer un brevet européen sur la base de la demande de brevet européen susmentionnée, dans le texte et avec les dessins suivants, ainsi qu' avec les données bibliographiques pertinentes suivantes.

Une copie des documents pertinents est jointe en annexe.

1.1

Dans la version pour les Etats contractants :

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

Description, Pages

1-20 reçue(s) le 25-08-2011 avec lettre du 19-08-2011

Revendications, No.

1-27 reçue(s) le 02-05-2012 avec lettre du 18-04-2012

Dessins, Feuilles

1/25-6/25, 8/25-25/25 reçue(s) le 27-10-2009 avec lettre du 22-10-2009

7/25 reçue(s) le 02-05-2012 avec lettre du 18-04-2012

Les documents mentionnés ci-dessus présentent les modifications suivantes proposées par la division

Revendications, No. 1, 8, 18, 22 *

Lettre recommandée

OEB Form 2004C 04.12TR1

Observations

* Corrections d'orthographe

1.2 Données bibliographiques

Le titre de l'invention dans les trois langues officielles de l'Office européen des brevets, la classification internationale des brevets, les Etats contractants désignés, le (les) nom(s) du (des) demandeur(s) tel qu'il(s) a (ont) été enregistré(s) et les données bibliographiques sont indiqués sur le **formulaire OEB 2056 ci-joint**.

2. Invitation

Vous êtes invité à accomplir les actes suivants **dans un délai non reconductible de quatre mois** à compter de la signification de la présente notification:

2.1 **SOIT donner votre accord sur le texte notifié ci-dessus et vérifier les données bibliographiques (r. 71(5) CBE)**

(1) en produisant la traduction de la/des revendication(s) dans les deux autres langues officielles de l'OEB

	Code de taxe	EUR
(2a) en acquittant la taxe de délivrance, y compris la taxe de publication: Montant déjà acquitté à déduire (r. 71bis(5) CBE):	007	875.00 0.00
	Montant total:	875.00
(3) en acquittant la/les taxe(s) de revendication (r. 71(4) CBE); nombre de taxe(s) de revendication dues : 0 Montant déjà acquitté à déduire (r. 71bis(5) CBE):	016	0.00 0.00
	Montant total:	0.00

Noté 1: Voir "Notes importantes concernant le paiement des taxes" ci-dessous.
Noté 2: Tout montant excédentaire sous la rubrique "Montant déjà acquitté à déduire" sera remboursé lorsque la décision de délivrance d'un brevet sera émise (OEB Form 2006A).

2.2 **SOIT, en cas de désaccord, présenter une requête motivée en modification ou en correction d'erreurs concernant le texte notifié ci-dessus ou requérir le maintien de la dernière version du texte que vous aviez soumis (r. 71(6) CBE).**

Dans ce cas, la traduction des revendications, ainsi que le paiement des taxes, tels que mentionnés au point 2.1, **ne** sont **pas** exigibles.

Les termes "modifications" et "corrections" s'appliquent uniquement aux modifications ou corrections des documents de la demande de brevet, et non aux modifications ou corrections d'autres documents, telles que des données bibliographiques, de la désignation de l'inventeur, etc..

Si vous produisez des modifications, vous êtes tenu de les identifier et d'indiquer leur base dans la demande telle qu'elle a été déposée. S'il n'est pas satisfait à l'une de ces deux exigences, la division d'examen peut émettre une notification vous demandant de remédier à cette irrégularité (r. 137(4) CBE).

2.3 Données bibliographiques

Si le déposant présente une requête en modification ou en correction d'erreurs concernant les données bibliographiques en réponse à la notification selon la règle 71(3) CBE, une deuxième notification selon la règle 71(3) CBE **ne sera pas** transmise. Le déposant doit acquitter les taxes et fournir la traduction des revendications en réponse à la notification selon la règle 71(3) CBE tel qu'indiqué au point 2.1 ci-dessus, sauf s'il présente également une requête motivée en modification ou en correction d'erreurs concernant le texte notifié en réponse à la notification selon la règle 71(3) CBE, tel qu'indiqué au point 2.2 ci-dessus.

3. Perte de droit

Si l'un ou les deux actes comme mentionnés au point 2.1 ou 2.2 n'est (ne sont) pas accompli(s) dans les délais, la demande de brevet européen est réputée retirée (r. 71(7) CBE).

4. Procédure ultérieure

4.1 Dans le cas du point 2.1 ci-dessus

- 4.1.1 La décision de délivrance du brevet européen sera émise et la **mention de la délivrance** du brevet publiée au Bulletin européen des brevets, dès que la traduction des revendications et le paiement de toutes les taxes auront été reçus et s'il y a accord sur le texte envisagé pour la délivrance du brevet européen (r. 71bis(1) CBE).

Avis relatif au paiement de la taxes annuelle:

Si une taxe annuelle vient à échéance après la signification de la présente notification et avant la date proposée pour la publication de la mention de la délivrance du brevet européen, cette mention n'est publiée que lorsque la taxe annuelle et, le cas échéant, la surtaxe ont été acquittées (r. 71bis(4) CBE).

Conformément à l'article 86(2) CBE, aucune taxe annuelle n'est due à l'Office européen des brevets après le paiement de celle qui doit être acquittée au titre de l'année au cours de laquelle la mention de la délivrance du brevet européen est publiée.

Avis relatif au paiement de la(s) taxe(s) de désignation:

Si la (les) taxe(s) de désignation vient (viennent) à échéance après la notification visée à la règle 71(3) CBE, la mention de la délivrance du brevet européen ne sera publiée que lorsque la (les) taxe(s) de désignation aura (auront) été acquittée(s) (r. 71bis(3) CBE).

- 4.1.2 Après publication, le fascicule du brevet européen peut être téléchargé gratuitement à partir du serveur de publication de l'OEB à l'adresse <https://data.epo.org/publication-server> ou commandé auprès de l'agence de Vienne, moyennant paiement d'une taxe (JO OEB 2005, 126).

Sur demande écrite, chaque titulaire reçoit le certificat de brevet européen accompagné d'une copie du fascicule du brevet, à condition que cette demande soit présentée dans le délai prévu à la règle 71(3) CBE. Si ladite demande a été présentée précédemment, elle doit être confirmée dans le délai visé à la règle 71(3) CBE. La copie demandée est gratuite. Si la demande est présentée après expiration du délai fixé à la règle 71(3) CBE, le certificat est délivré sans copie du fascicule du brevet (r. 74 CBE, Décision de la Présidente de l'Office européen des brevets, Edition Spéciale, No. 3, JO OEB 2007, D.2).

4.1.3 Dépôt de traductions dans les Etats contractants

En ce qui concerne les exigences en matière de traduction dans les Etats contractants en vertu de l'article 65(1) CBE, veuillez consulter le site Internet de l'Office européen des brevets

www.epo.org → Informations juridiques → Tous les textes juridiques → Droit national relatif à la CBE

www.epo.org → Informations juridiques → Tous les textes juridiques → Accord de Londres

Dans le cas d'une extension valable

En ce qui concerne les exigences en matière de traduction dans les Etats autorisant l'extension, veuillez consulter le site Internet de l'Office européen des brevets

www.epo.org → Informations juridiques → Tous les textes juridiques → Droit national relatif à la CBE

Si une traduction requise n'est pas fournie aux Etats contractants ou aux Etats autorisant l'extension, le brevet peut dès l'origine être réputé sans effet dans l'Etat concerné (article 65(3) CBE).

4.2 Dans le cas du point 2.2 ci-dessus

Si la présente notification se fonde sur une requête subsidiaire et si vous répondez dans le délai imparti que vous maintenez la requête principale ou une requête d'un rang supérieur qui n'est pas admissible, la demande sera rejetée (art. 97(2) CBE).

Si la division d'examen approuve les modifications ou corrections demandées, elle émet une nouvelle notification selon la règle 71(3) CBE; dans le cas contraire, elle reprend la procédure d'examen (r. 71(6) CBE).

5. Dépôt d'une demande divisionnaire

Conformément à l'article 76(1) et à la règle 36(2) CBE, les demandes divisionnaires relatives à la présente demande de brevet européen doivent être déposées directement auprès de l'Office européen des brevets à Munich, La Haye ou Berlin et elles doivent être rédigées dans la langue de la procédure de la demande antérieure. De telles demandes divisionnaires ne peuvent être déposées que si cette demande est encore en instance et si le délai pour le dépôt de demandes divisionnaires est respecté (r. 36(1) CBE; Directives A-IV, 1.1.1).

6. Notes importantes concernant le paiement des taxes

6.1 Pour tous les paiements, il est demandé d'indiquer le(s) **code(s) de la/des taxe(s)** correspondant(s).

6.2 Procédure de prélèvement automatique

La taxe de délivrance, y compris la taxe de publication ainsi que toute taxe de revendication due en vertu de la règle 71(4) CBE, seront prélevées automatiquement à la date à laquelle la traduction des revendications est produite, ou le dernier jour du délai imparti dans cette notification. Cependant, si la (les) taxe(s) de désignation vient (viennent) à échéance conformément à la règle 71bis(3) CBE et/ou qu'une taxe annuelle vient à échéance conformément à la règle 71bis(4) CBE, elles doivent être acquittées séparément par un autre mode de paiement autorisé, afin de ne pas retarder la publication de la mention de la délivrance du brevet. Il en va de même pour le paiement des taxes d'extension. Pour plus d'informations, se reporter à la réglementation relative à la procédure de prélèvement automatique (RPA) et à l'avis complémentaire de l'OEB concernant la procédure de prélèvement automatique (Annexes A.1 et A.2 à la réglementation applicable aux comptes courants (RCC), figurant dans le supplément du JO OEB 3/2009).

6.3 Montants des taxes

Il se pourrait que suite à une modification du règlement relatif aux taxes le(s) montant(s) indiqué(s) dans cette notification ne correspond(ent) plus au(x) montant(s) **en vigueur à la date de paiement**. La version actuelle du barème des taxes et redevances publiée en tant qu'annexe au Journal officiel figure également sur le site Internet de l'OEB (www.epo.org) et est accessible à l'adresse www.epo.org/schedule-of-fees. A cette adresse il est possible de visualiser, télécharger et rechercher le montant des taxes actuel ou passé.

- 6.4 **Les paiements par chèque** remis ou envoyé directement à l'OEB ne sont plus acceptés depuis le 1er avril 2008 (voir JO OEB 2007, 626).

Division d'Examen:

Président : Ferrien, Yann
2ème examinateur : Masset, Markus
1er examinateur : Redelsperger, C



Hoogland, Jaap
Pour la division d'examen
No. de tél. : +49 89 2399 - 2087

Pièces jointes: 52 copies des documents
OEB Form 2056

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**FEDERAL SERVICE FOR INTELLECTUAL PROPERTY, PATENTS AND
TRADEMARKS
(ROSPATENT)**

30-1, Berezhkovskaya nab., 123995, Moscow. Phone (8-499) 240-60-15. Fax (8-495) 234-30-58

Your ref.: 203/55RU of -

Our ref.: 2009140153/02(056976)

[190000,
Saint Petersburg,
Malaya MOorskaya St., 15, office5, BOX 1125,
"PATENTICA"
M.I. Nilova
]

27 APR 2012

**DECISION TO GRANT
A PATENT FOR AN INVENTION**

(21) Application No. 2009140153/02(056976)

(22) Filing date **08.10.2007**

As a result of the examination in essence of the application for an invention it has
been established that

[] claimed invention

[] claimed set of inventions

relates to the objects of patent rights and is patentable in accordance with the Civil Code
of the Russian Federation, and therefore the decision to grant a patent for this invention
has been issued.

The Examiner's report is enclosed.

Enclosures: 15 sheets, 1 copy

Director

B.P.Simonov

EXAMINATION REPORT

- (21) Application No. 2009140153/02(056976)
- (22) Filing date 08.10.2007
- (24) Starting date of the period of validity of the patent 08.10.2007
- ☐ (85) National phase entry date of the international application 27.11.2009

THE PRIORITY HAS BEEN ESTABLISHED ACCORDING TO THE DATE

- ☐ (22) of filing date
- ☐ (23) of receipt the additional materials of
for earlier application # of
- ☐ (62) ☐ of priority of the invention claimed for initial application # of
whereof the present application is divisional
☐ of filing the initial application # of
whereof the present application is divisional
- ☐ (66) of filing earlier application #
- ☐ (30) of filing a primary application in a country-party to the Paris Convention

(31) No. of an earlier application	(32) Filing date of an earlier application	(33) Country code
1. P200701259	27.04.2007	ES

- ☐ (86) Application No. PCT/ES2007/070171 of 08.10.2007
- ☐ (96) Application No. EA
- ☐ (87) Publication number and publication date of PCT application WO2008/132253 of 06.11.2008

(72) Inventor(s): PÉREZ SANTAFÉ Jesús, ES

(73) Patentee(s): PÉREZ SANTAFÉ Jesús, ES

(54) Title: GRINDING CONTAINER FOR THE SELECTIVE COLLECTION OF SOLID URBAN WASTE AND VARIOUS SPECIAL ADAPTATIONS FOR EACH TYPE OF WASTE, INCLUDING A DOMESTIC GRINDING CONTAINER

Address for correspondence with the patentee or its representative to be published



☒ is indicated on the right side of the decision

Address for mailing the patent



☒ is indicated on the right side of the decision

☐ is indicated in the above column "Address for correspondence with the patentee..."

As a result of the substantive examination of the claims corrected by the Applicant it has been established that the claimed set of inventions is patentable in accordance with Articles 1349 and 1350 of the Civil Code of the Russian Federation.

The claim of the invention is enclosed on pages 3-14.

(21) 2009140153/02

(51) IPC

B02C 18/00 (2006.01)

(57)

1. Grinding container for selective collection of solid waste, particularly a domestic grinding container for all types of waste, comprising a rectangular frame arranged in the upper part of the container's tank, two lateral toothed drums rotably arranged on the right and left lateral walls of the container for rotation on their own shafts fixed in the frame, a lid having toothed racks arranged on the left and on the right at the bottom of the lid so as to engage the upper teeth of each of the drums, upper shafts having upper blades to feed waste and lower shafts having lower blades to grind waste, toothed wheels arranged inside the drums, the wheels being fixed at the ends of each of the shafts so as to engage with the teeth of the drums, and a mechanism for opening the lid.

2. Grinding container for selective collection of solid waste according to claim 1, characterized in that the two lateral toothed drums are arranged so as to be engaged in a motion when opening the lid of the container, the shafts of the upper blades are arranged and formed so as to enable transformation of the horizontal movement of the upper sliding lid of the container towards the rear side thereof into the rotary motion of the lateral drums arranged at the rear portion of the right and left walls of the container through continuous contact of the walls with a pair of the lateral toothed racks arranged at the lower part of left and right lateral walls of said lid for rotation of each lateral drum together with the rim on the shaft, wherein said mechanism for opening the lid activates lower toothed racks arranged to the right and to the left of the bottom side of the lid, the racks activating upper teeth of each of the drums arranged on different shafts

so as to allow rotation of the lateral drums arranged on their own shafts being different from the shafts to which the sliding lid is attached.

3. Grinding container for selective collection of solid waste according to claim 1, characterized in that a horizontal foot lever is provided on the lower part of the front side thereof, said foot lever being arranged so as to supply additional power to a manual mechanism for opening the upper lid by means of one lever, one rack, several toothed wheels, and one chain, wherein, in case of downward movement of said foot lever arranged both on the right and on the left side of the container with the lateral ends of a horizontal beam attached thereto, all lateral levers are moved downward sideways, wherein the toothed racks arranged on the other end of said lateral levers fixed on the shaft in the middle of the lever, said toothed racks can rotate smaller toothed wheels mounted concentrically on other larger toothed wheels which are also arranged on the inner part of the each lateral wall of the container so as to enable chain winding resulting from rotation of the wheels, wherein, from one end, the chain engages each one of the larger toothed wheels engaging the smaller wheels, while, from the other end, the chain is directly attached to each one of rear corners – right or left – of the lid, thus enabling opening the lid during downward motion of the chain wound around the toothed wheels arranged at the bottom of the container, wherein downward pressure at both rear corners of the tank is determined by intermediate toothed wheel arranged at each one of the rear corners thereof so as to match a stroke end of the inner toothed rack of the lid.

4. Grinding container for selective collection of solid waste according to claim 1, characterized in that said container two lateral drums arranged at the upper right and left parts thereof, wherein inner and outer cylindrical walls of said container comprise own toothed racks, while the area of the rear wall is perforated for passing four shafts used to attach the blades, the shafts crossing the drum, wherein an external shaft is arranged at the center of each drum for attaching to the frame.

5. Grinding container for selective collection of solid waste according to claim 1, characterized in that the frame is a rectangular box of low height having no bottom and no lid, wherein said box is attached to the container's tank through a hinge set located in the upper part of the lower wall of the container so as to be open and be arranged at an angle in case of turnover of the container to let the waste out of the tank, wherein said frame is made of the material having sufficient resistance to torque of the lateral drums and the shafts of the blades arranged on bearings both to the left and right walls of the frame and functioning as a latch, wherein the frame is an independent construction separate from the tank to which said frame is attached.

6. Grinding container for selective collection of solid waste according to claim 1, characterized in that said container comprises shafts to which the blades are attached, wherein smaller toothed wheels are provided on the periphery thereof, wherein said blades are activated through said smaller toothed wheels engaging the lateral drums, wherein said smaller toothed wheels are located inside of each of the lateral drums; wherein the shafts for blade attachment and the lateral drums are mounted on the right and on the left edge of the frame, wherein synchronized rotation of all the drums and the smaller toothed wheels located inside of each lateral drum and 360°-rotation of all the shafts of the blades is achieved through fastening the left ends of shafts of the blades to the inner toothed wheels and fastening the right ends of the shafts of the blades to one of the four toothed wheels located in the right drum.

7. Grinding container for selective collection of solid waste according to claim 1, characterized in that fastening of blades to the shaft moves during rotation and said blade is located around the shaft, wherein stop and deceleration of each blade is achieved through an elastic inner spring (45) located around the blade's shaft providing the tolerance sufficient for grinding solid materials; wherein during incremental compression of the spring the top compression point located adjacent to the inner lever disables deceleration of the blade and the

complete compression of the spring provides the knife with torque to effectively grind different types of waste; wherein the compression stroke of the spring is influenced by the length of the spring which can be adjusted by a screw arranged in a round spring seat.

8. Grinding container for selective collection of solid waste according to claim 1, characterized in that the container comprises the grinding system comprising a blade fastening device activated by rotation in an opposite direction, thus enabling an oblique displacement of the blade with respect to the plane perpendicular to the shaft of said blade, wherein said device is provided with a hinge mechanism being a spherical basis on which a shaft for blade attachment is arranged; wherein said mechanism serves to solve problems with chopping, cutting, grinding, and pounding in the working area between the blades through use of disks of various forms for each waste type, wherein a unit of small hammers is used for storage, wherein the grinding system comprises a decoupling device comprising transverse spring, located around the shaft and between the blades, thus enabling the blades to move out from a coaxial position and return back thereto, thus providing a sufficient gap for non-grindable excessively solid waste and large-sized waste portions which block rotation of the shafts of the grinding container.

9. Grinding container for selective collection of solid waste according to claim 8, characterized in that the grinding system comprises firm and dull blades (52, 53) for grinding metallic packaging with the help of six cams provided on the blades on upper shafts and four cams provided on the blades on lower shafts.

10. Grinding container for selective collection of solid waste according to claim 8, characterized in that the grinding system comprises blades (54, 55) for grinding plastic packaging, the blades comprising twelve cutting cams attached to the blades on upper shafts and four cams attached to the blades on lower shafts.

11. Grinding container for selective collection of solid waste according to claim 8, characterized in that the grinding system comprises blades for grinding tetra-brick packaging with denting and edges which are cuttable and comprise twelve cams attached to the blades on the upper shafts and four cams attached to the blades on the lower shafts.

12. Grinding container for selective collection of solid waste according to claim 8, characterized in that the grinding system comprises blades for grinding paper and cardboard, wherein the blades (58, 59) are arranged with a larger distance between each other and are intended for cutting waste in burr stripes and have common saw teeth.

13. Grinding container for selective collection of solid waste according to claim 8, characterized in that the grinding system comprises blades (60, 61) for grinding organic materials, wherein said blades have significant width, and smaller teeth are placed on their edges; wherein rubber disks (63) are provided between the blades to compress the organic materials in accordance with the density of intermediate rubber disks of the blades attached to each shaft.

14. Grinding container for selective collection of solid waste according to claim 8, characterized in that the grinding system comprises disk blades (67) used for grinding glass and consequently embedded into each other, said blades comprising hammers (64-67), wherein a set of the hammers is attached to every disk and is attached to the disk through hinge levers; and for various hammers there are stepped round areas which form each of the disks (66), formed as a spiral stairs or a spiral and activating hammer mechanism which processes all the working area in the middle of container and uses at least two hammers for each of the two disk rollers for the whole zone intended for smashing glass; wherein the mechanism is provided with two hammers arranged in the rectangular sectors of each disk, wherein counter rotation of two disk rollers activates four hammers at each working point.

15. Grinding container for selective collection of solid waste according to claim 8, characterized in that the grinding system comprises lower blades for grinding discarded waste, wherein the blades are a combined unit for the following types of waste: tin, plastic packaging, tetra-brick packaging, paper and cardboard; wherein said blades each having a cutting edge are arranged into units containing four blades alternating with following four blades, thus allowing, at constant 360° rotations, any grinding method from the four mentioned methods, and the arrangement of the blades is not circular, but having an oval or egg shape, thus providing eccentric and simultaneous rotations with respect to the axis located adjacently, the oval blade which constantly engages the previous blade despite of the blade's oval shape identical to the shape of the previous blade and said engagement results from eccentric displacement of the second blade on 180° with respect to the first blade.

16. Grinding container for selective collection of solid waste according to claim 8, characterized in that the grinding system comprises rotation bearings for the shafts for attachments of the blades and said rotation bearings are provided on the frame and smaller toothed wheels are arranged in the bearings, the wheels are provided on the ends of shafts of grinding container blades, the bearings function as a latch, thus providing rotation only in the direction of continuous waste feed into the tank until the tank is filled completely and blocking the rotation in the opposite direction, and the kinetic energy resulting from the motion of the drive drum is supplied to every shaft of the blades in case if the drum and smaller toothed wheels thereof rotate the shafts in the direction of waste feed into the central tank area, wherein the latch when lowered provides disengagement of toothed wheels from the shafts of the blades and maintains the motion direction, while the maintained motion direction allows a stepwise filling of the tank and a high compression density of waste up to the level, when the mechanism for blocking the lateral drums activates, said drums are moving downwards upon activation of the lifting mechanism of the front

hatch of the frame, activated by the push in a vertical direction, resulting from overfilling of the tank with waste, wherein said tank is arranged on fixed joints provided on lateral sides of said frame and blocks motion of the sliding lid.

17. Grinding container for selective collection of solid waste according to claim 8, characterized in that the grinding system comprises a drive from the mechanism used for closing the sliding lid (1) and activated only upon closing said lid or upon a frontward movement of said lid and rotating the drums, wherein said lid further comprises a flag lid (2) hanging vertically as a cup arranged vertically with respect to the plane of the front side of the closed lid (1), wherein said flag lid (2) is arranged so as to serve as a protective lid when the sliding lid (1) is fully opened, wherein dumping of the waste is performed with the opened upper protective lid and after the dumping is completed, the grinding area is covered with the protective lid and the grinding mechanism activates upon dropping the lid with a rim connected to the sliding lid of the container, wherein the opening for waste feed is closed.

18. Grinding container for selective collection of solid waste according to claim 8, characterized in that the grinding system comprises at least one "tolerance system" comprising a box with two springs provided perpendicularly to said shaft, wherein said springs lock the edge of the lower shaft of the grinding container with respect to the barrier for the grinding blades during waste feed, wherein width of said blades exceeds the distance between the lower shafts of the grinding container and the allowable gap of the spring units in the blades and the influence of bending rotation of the blade on the shaft, in the present construction the mentioned system of gaps is designated, which system allows to overcome the resistance of the locked fastening of lower shafts of the frame of grinding container through sliding springs provided on one of the ends or on both ends perpendicular to the shaft, said springs are arranged at boxes arranged on the sides of the frame and the ends of the lower shafts are inserted into the springs in order to control rotation of the edges of the lower shafts

inside the drum through winding protective metallic chain bringing toothed wheels of fourth diameter and third diameter into engagement.

19. Grinding container for selective collection of solid waste according to claim 8, characterized in that the grinding system comprises a metal scrub functioning continuously and cleaning the shafts for attachment of the blades, said scrub being arranged under every shaft, wherein said scrub is arranged on the frame and has teeth rotating around the shaft and cleaning the mechanism and removing waste from the gaps between said shafts of the blades and cleaning the lower shafts, when the mentioned shafts are shifted to the right by the allowed gap value and the scrubs of lower shafts are fixed through a plug coupler hanged directly on the mentioned lower shafts parallel to the shaft of the scrubs.

20. Grinding container for selective collection of solid waste according to claim 8, characterized in that the grinding system comprises locking bent hooks (108) for opening and closing the tank of the container to remove waste from it, said hooks being arranged on the upper part of the front side of the frame and being protruding outside of the opened frame and being inserted in the special enclosure of the upper edge of the front side of the container tank by means of pressing springs (106) contacting latches (109), wherein compression of the hooks by said springs is balanced out by pressure of the shaft of the scrub provided on the bracket of the unloading device of the garbage truck, in this case when increasing the pressure of the scrub shaft on said lower enclosure containing said hooks, the hooks are disengaged from the closed tank, thus releasing it from the pressure of the shaft of scrubbing mechanism (110) tooth.

21. Grinding container for selective collection of solid waste according to claim 1, characterized in that the container comprises scales with an electronic weight display device, the scales being arranged between the bottom tray and the bottom of the container, wherein the electrical power for the scales can be supplied from a common battery or a dynamo which is charged when rotating

and is provided on the edges of the shafts of the blades on the shafts of the lateral drums, wherein the electronic weight display device can be arranged in any observable point of the container such that common memory storage devices show the weight of each fed waste portion.

22. Grinding container for selective collection of solid waste according to claim 1, characterized in that the container comprises a notification of the control center for collection of data on the final weight of the filled container, through switching in the electric circuit the device for sending short messages (SMS), comprising a cellular phone operating on basis of an individual electric power supply battery or a dynamo unit, the device activated upon lifting the front side of the frame when the container is overfilled, which front side close the circuit, the operation of the feed interruption device is achieved through including into the SMS-message the information on the weight of the waste arranged into the opening, this information arrives to the control center in the online mode and allows to control the loading process of containers, wherein said system plots economically viable circular routes for the container trucks using the device program for determination of the geographical position.

23. Grinding container for selective collection of solid waste according to claim 8, characterized in that the drive in the grinding system is an electric motor (95) arranged separately from a tank in the frame of the container, wherein the device is connected to the power grid, external power supply grid, or a movable power supply battery which is a part of the container, and in the container with electrical drive for the drum drive the motor arranged on the frame is used, wherein the shaft of the drive is located inside or adjacent to one or both the lateral drums, wherein the driving system comprises toothed wheels rotating the drum.

24. Grinding container for selective collection of solid waste according to claim 1, characterized in that the container comprises a grinding system driven by an electrical drive, wherein the motor is provided along the bottom of the

container in the central area of its basis, and the edges of shaft, protruding beyond the lateral walls of the container in the lower central part rotate both the lateral drums with the drive by means of a cone-shaped toothed transmission shaft and a belt pulley or a chain for toothed wheels, wherein said chains are provided separately from the waste tank and are protected with a lateral independent casing which opens through an external lid arranged on the hinges, for maintenance and service, wherein the belts and chains are used on the upper external part of the tank and under cover, wherein the arrangement comprises a system for exchanging star gears, which allows to thread said pulley belts and chains of the lateral transmission through the star gear on the shaft of the drum to the other identical toothed wheel, locate adjacently to the star gear of the drum parallel to the shaft of the star gear, allowing to flip the chain from the star gear of the drum to the parallel one by means of the external lever upon activating the shifting system, the lateral drums and the frame disengage transmission chains, thus allowing free movement of the frame from the common position and removal of waste from the tank when the lateral drums are engaged with their driving chains, provided that for flipping of the driving chain by means of the system for switching toothed wheels, it comprises the gap adjusted by an additional straining pulley arranged along the vertical part of the belt/chain.

25. Grinding container for selective collection of solid waste according to claim 1, characterized in that the container is designed as a domestic grinding container having smaller dimensions than a public container operated manually or electrically, or having the combined manual-electrical operation and a movable container on wheels, including immovable grinding container, having smaller dimensions, wherein said container is arranged at the section of the case, and all the blade types arranged at the main set, are provided in the arrangement thereof.

26. Grinding container for selective collection of solid waste according to claim 1, characterized in that the container comprises a protective grid locking the drive of the grinding container for safe operation during the movement of the blades with opened lid regardless of the fact, whether the mechanical or hydraulic drive is used, and with opened lid the protective grid is provided between the lid and blades and sorts out large portions of waste and prevent engagement and jamming of user body parts, additionally, outside on the upper part of the container adjacent to the opening for loading waste a switch is provided, which allows the user to stop the motor and activate reversing of the container with electrical drive, and for the container with a manual drive the hand-brake lever is provided, which allows to stop rotation of the blades shafts by means of the brake shaft, provided under the wheel R-2 (90) before the engagement area of the drive with a inner wheel of the drum rotating unit, rotating two lower blades shafts.

27. Grinding container for selective collection of solid waste according to claim 1, comprising double-acting grinding blades, when the work, done by the mechanism for opening the lid is insufficient for grinding certain type of waste, and also when it is efficient that every shaft should rotate one more time during each time when opening the lid an intermediate toothed wheel with a double number of teeth between the lateral chains is arranged at the drive, touching the lower right and left side of the lid and movable belts of the right and left drum, and the driving toothed wheel, engaged with the lid, simultaneously rotates the other concentric toothed wheel having at least a double number of teeth, serving as a drive for all movable belts of all lateral drums.

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SU 1678450A1, 23.09.1991;
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US 6390321B1, 21.05.2002.

The patent will be published with the description corrected by the applicant, with drawings corrected by the applicant and with abstract corrected by the Examiner.

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(54) GRINDING CONTAINER FOR THE SELECTIVE COLLECTION OF SOLID URBAN WASTE AND VARIOUS SPECIAL ADAPTATIONS FOR EACH TYPE OF WASTE, INCLUDING A DOMESTIC GRINDING CONTAINER

Abstract

(57) The grinding container comprises a rectangular frame 14 arranged in the upper part the container's tank, two lateral toothed drums 10 rotably arranged on the right and left lateral walls of the container for rotation on their own shafts, a lid 16 having toothed racks 9 arranged on the left and on the right at the bottom of the lid 16, upper shafts having upper blades to feed waste and lower shafts having lower blades to grind the waste, a mechanism for opening the lid. Toothed wheels are arranged inside the drums, the wheels being fixed at the ends of each of the shafts so as to engage the teeth of the drums. The mechanism for opening the lid comprises toothed wheels 8, 9 drivable in a manual version by a pedal 12. The drive system allows rotating the lid having the toothed racks which engage the upper teeth of each drum 10 to rotate the drums. The toothed drums 10 are arranged to drive the toothed wheels located inside the lateral drums which rotate the blade shafts. Each type of the waste is processed by different types of the blades and hammers. The grinding container can be driven electrically. The waste processing allows preventing the transformation of more natural resources and reducing the abuse of more scarce natural resources.

26 dependent claims, 25 figures