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

(11) **EP 4 170 092 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
26.04.2023 Bulletin 2023/17

(21) Application number: **22382843.5**

(22) Date of filing: **12.09.2022**

(51) International Patent Classification (IPC):
E01H 1/12 *(2006.01)*

(52) Cooperative Patent Classification (CPC):
E01H 1/1206; E01H 2001/1293

(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
Designated Validation States:
KH MA MD TN

(30) Priority: **22.10.2021 ES 202132073 U**

(71) Applicant: **Moreno Morera, Dionisio**
37188 Carbajosa de la sagrada (ES)

(72) Inventor: **Moreno Morera, Dionisio**
37188 Carbajosa de la sagrada (ES)

(74) Representative: **García Limorti, Elena**
Calle Manzanares N° 4
28005 Madrid (ES)

(54) **EXTENDABLE ARM**

(57) Extendable arm, consisting of a housing (1) with a mechanical structure (2), a holding element (3), a clamping element (4), a gripping element (5), an activating element (6) and a closing element, all of which are duly designed and coupled in order to obtain a practical, functional tool to cleanly collect and isolate excrement in a bag at its lower end. When the excrement is collected, it is deposited inside the bag and with a simple movement, the mechanism of the extendable arm is activated to close the bag with a rubber band to be disposed of in the corresponding container.

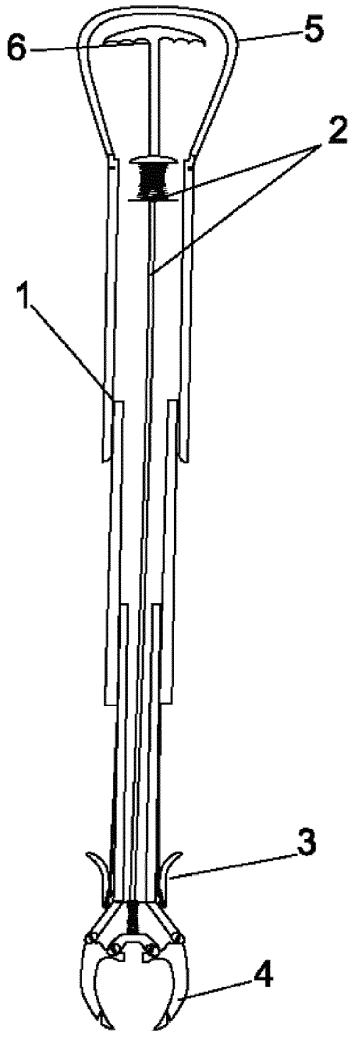

FIG. 1

EP 4 170 092 A1

Description

OBJECT OF THE INVENTION

[0001] This innovative extendable arm offers advantages hitherto unknown with current techniques.

TECHNICAL SECTOR

[0002] This invention is applicable to the street cleaning hand tools manufacturing sector.

STATE OF THE ART

[0003] There are tools to collect animal excrement in the streets, used especially by pet lovers when they take their pets out for a walk, but most of these devices do not have a bag closing system, so they end up dropping the excrement back on the ground and the user has to bend down again to pick it up, which is complicated for the elderly or people with a physical condition that makes it difficult for them to perform this movement.

[0004] So it would be desirable to have a tool that allows both actions to be carried out, i.e. collecting pet excrement and closing the bag in which it has been collected, for subsequent disposal in the corresponding rubbish bin.

[0005] To this end, this invention has an extendable arm, which facilitates the task of picking up pet excrement without having to bend down, ideal and specially designed for people of an age or condition that does not allow them to bend down, or simply for pet lovers who wish to perform this task in a quick and safe practical way, making it very useful for people who live with several animals.

[0006] The invention, known as the extendable arm, is an effective and functional tool, created from a device with an excrement collection drive, which has tweezers at its lower end where a bag is incorporated, and a small rubber tip at the end of the arm. Once the excrement has been collected, it remains inside the bag, which with a simple and easy movement, activates the mechanism of the extendable arm to close the bag with the rubber, which is all duly deposited in the bag ready to be disposed of in the corresponding container.

[0007] The aim of this invention is to create an extendable arm with the above characteristics. Although several models of extendable arms for excrement collection are available on the market, no other extendable arm with the same or similar technical, structural and constitutive characteristics to those described in this descriptive report is currently known to exist, as described below.

EXPLANATION OF THE INVENTION

[0008] The object of this invention is the creation of an extendable arm that provides a notable innovation in the current state of the art. The characteristic details that make it possible are described in the claims at the end of this description.

[0009] The invention is an extendable arm, formed from a casing with a mechanical structure, a clamping element, a tightening element, a gripping element, an activating element and a closing element, all of which are duly designed and coordinated to obtain an effective and functional tool. The excrement collection action is achieved by incorporating a bag at its lower end so that once the excrement is collected, it remains inside the bag, which is closed with a simple and easy movement of the extendable arm that seals the bag with a rubber band so that it is ready to be disposed of in the corresponding container.

[0010] This makes it easier for those of an age or condition that does not allow them to bend down, or simply for pet lovers who wish to do this task in a practical, quick and safe way.

[0011] This is why the extendable arm is a remarkable innovation compared to current techniques.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] In order to complete the description and better understand the characteristics of the invention, this descriptive report is accompanied, as an integral part of the same, by diagrams in which, by way of illustration and not limitation, the following are represented.

Figure 1 shows a descriptive view of the extendable arm.

Figures 2, correspond to a view of the extendable arm in open position, to collect the excrement.

Figures 3, correspond to a view of the extendable arm in closed position, to remove the bag for subsequent disposal.

KEY CHARACTERISTICS OF THE INVENTION

[0013] The object of this invention is an extendable arm, which provides a notable innovation within its field of application. The characteristic details that make it possible are included in the description.

[0014] The extendable arm is made up of a casing (1), a mechanical structure (2), a clamping element (3), a clamping element (4), a gripping element (5), an actuating element (6) and a closing element (7), all of which are duly designed and coupled to obtain an effective and functional tool for excrement collection. This is achieved by incorporating a bag at its lower end and once the excrement has been collected, it is deposited inside the bag. A simple movement activates the mechanism of the extendable arm to close the bag with a rubber band.

[0015] This makes it easy for people of an age or condition that does not allow them to bend down, or simply for pet lovers who wish to do this task in a practical, quick

and safe way.

[0016] Characteristics: the housing (1) contains a mechanical structure (2), articulated by means of a mechanical system connected to the activation element (6), which is located in the upper part of the housing (1), coinciding with the gripping element (5).

[0017] The holding element (3) and the clamping element (4) are located at the lower end of the housing (1), with profiles that fit one on top of the other, and coupled to the mechanical structure (2) so that the user may close or open them according to their requirement.

[0018] The gripping element (3) can receive, hold and release the bag (A) or similar and is activated by the mechanical system (2). The gripping element (3) is a 4-pointed polygonal star with a pincer action so it may be closed and opened according to the user's requirement.

[0019] Generally, the clamping element (4) is intended to install the bag (A), collect excrement, close and release the bag (A) or similar and is activated by the mechanical system of the device (2).

[0020] The clamping element (4) is a hexagram with six prongs that may be closed and opened according to the user's requirement. The prongs have sharp ends (C) to hold matter when closed (7).

[0021] The bag is closed (7), with a rubber band or tape or similar.

[0022] The device is shaped like a light walking stick.

Claims

1. Extendable arm, with housing (1), mechanical structure (2), holding element (3), clamping element (4), gripping element (5), activating element (6) and locking element (7).

2. Extendable arm, according to claim 1, **characterized in that** the casing (1) houses a mechanical structure (2), articulated by means of a mechanical system through the activation of the actuating element (6), which is located in the upper part of the casing (1), coinciding with the gripping element (5).

3. Extendable arm, according to claim 1, **characterized in that** the clamping element (3) and the clamping element (4) are arranged at the lower end of the housing (1), with a profile that can be fitted one on top of the other, and coupled to the mechanical structure (2), capable of closing or opening depending on the user's action.

4. Extendable arm, according to claims 1 and 3, **characterized in that** the clamping element (3) is capable of receiving, holding and releasing a bag (A) or similar and is activated by the mechanical system of the mechanical structure (2).

5. Extendable arm, according to claims 1, 3 and 4, **characterized in that** the clamping element (3) has the shape of a 4-pointed star-shaped polygon with a clamp-type action, capable of closing and opening according to the user's requirements.

6. Extendable arm, according to the previous claims, **characterized in that** the clamping element (4) can be activated by the mechanical system of the mechanical structure (2).

7. Extendable arm, according to the previous claims, **characterized in that** the clamping element (4) is a hexagram, with six tips that can be closed and opened according to the user's requirements. The tips are pointed (C) so that they can hold matter when closed (7).

8. Extendable arm, according to claims 1 and 7, **characterized in that** the bag is sealed (7) with a rubber band, tape or similar.

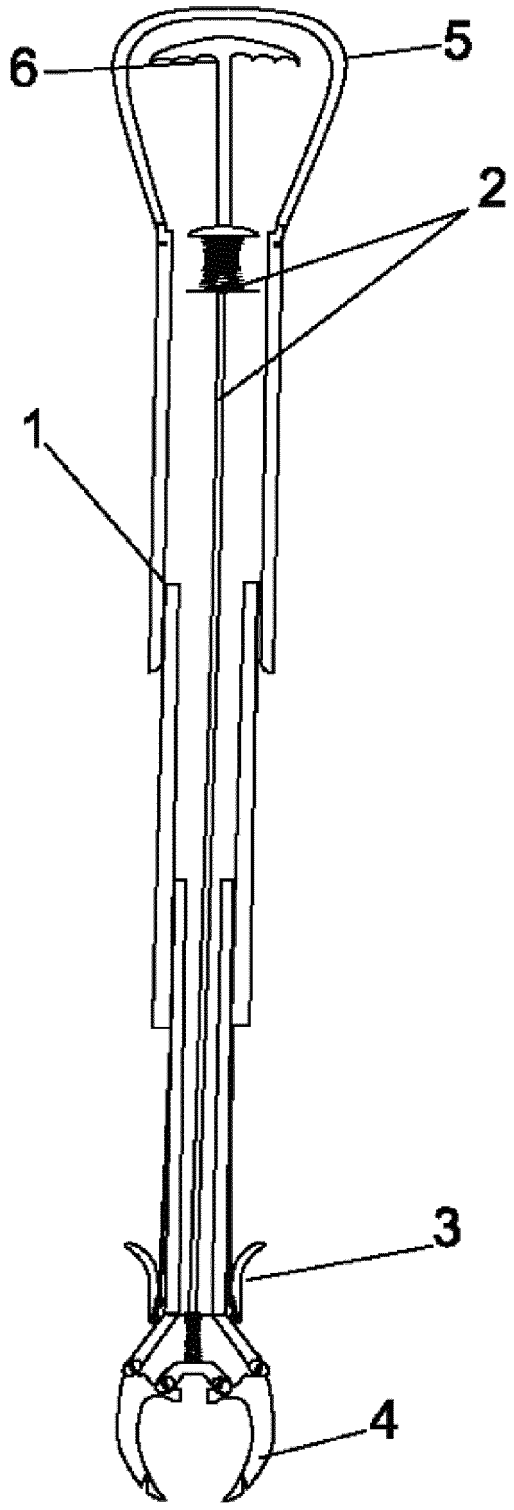

FIG. 1

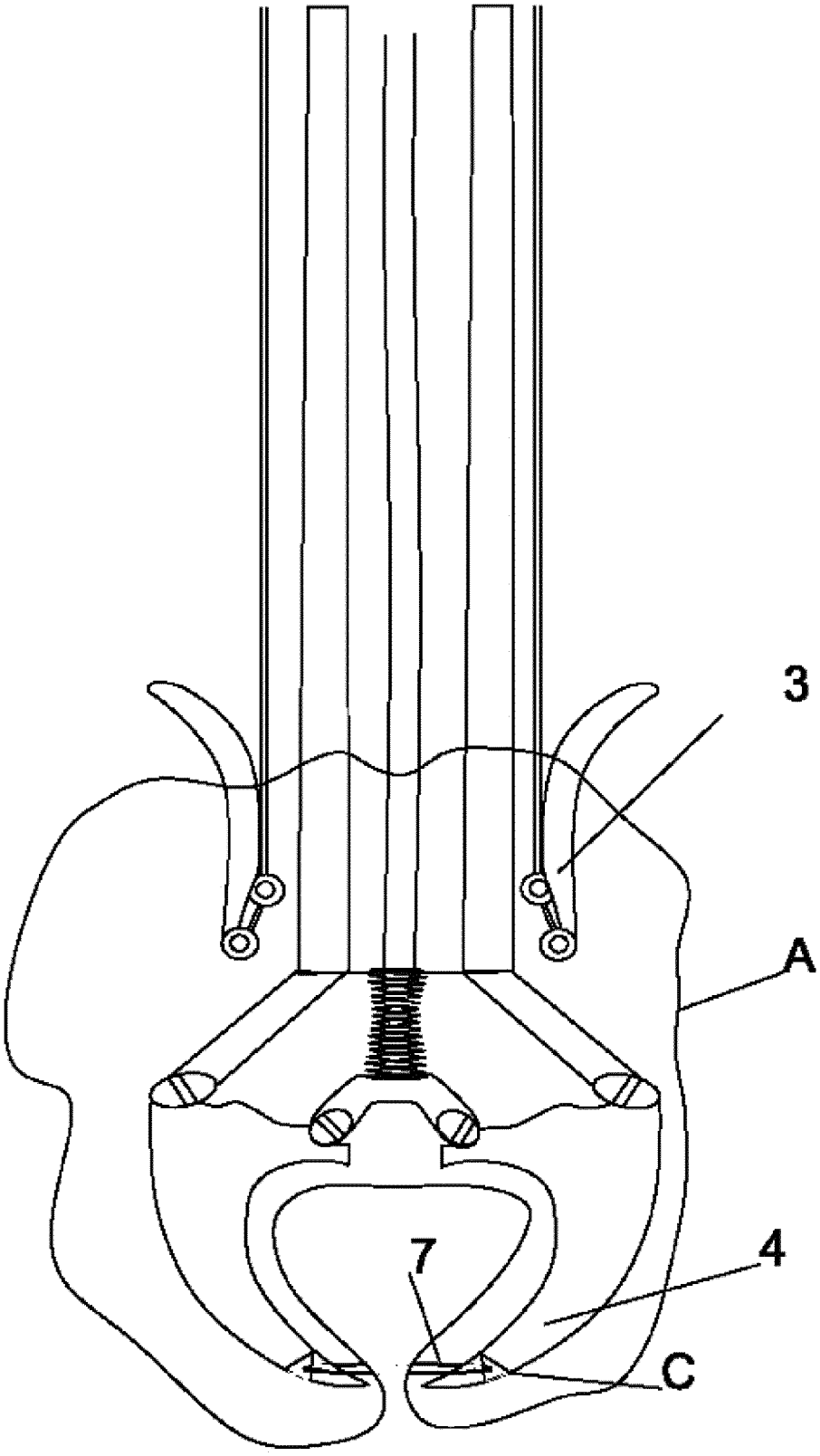

FIG.2

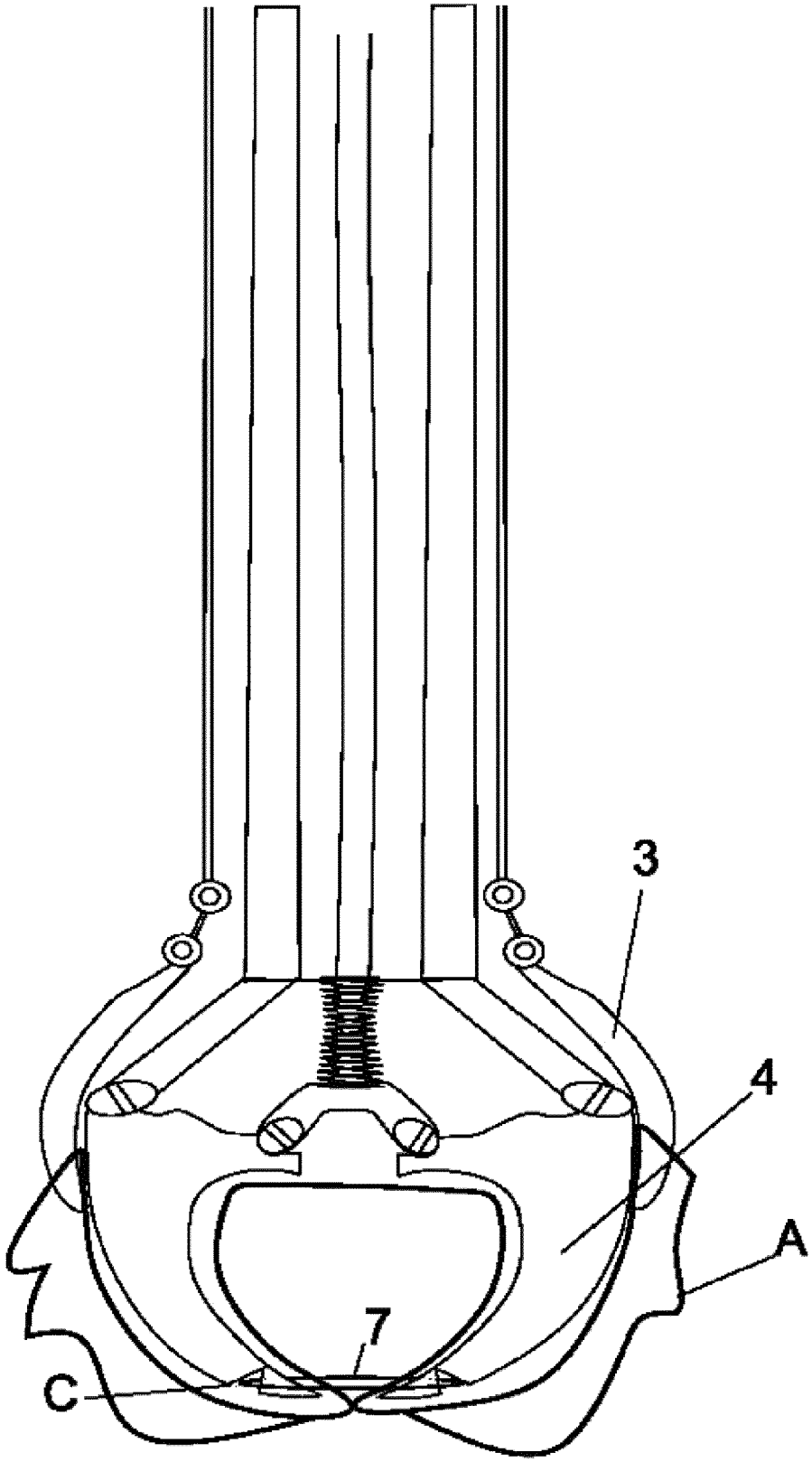

FIG.3

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 22 38 2843

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 Y A	US 9 469 951 B1 (QI LAI [US]) 18 October 2016 (2016-10-18) * column 4, line 28 - column 5, line 18 * * column 6, lines 15-47 * * column 6, lines 54-61 * * figures 1,2,6A-6D,8A * -----	1,2 3,4,6-8 5	INV. E01H1/12
Y	DE 20 2007 004766 U1 (BECK ERHARD [DE]) 14 June 2007 (2007-06-14) * paragraph [0022]; figures 1,2 * -----	3,4,6	
Y	FR 2 544 354 A1 (JOCEL [FR]) 19 October 1984 (1984-10-19) * page 2, line 34 - page 3, line 11 * * figure 1 * -----	7	
Y	US 9 832 980 B2 (KOVARIK CARTER J [US]; KOVARIK JOSEPH E [US]) 5 December 2017 (2017-12-05) * column 4, line 61 - column 5, line 23 * * column 25, lines 37-46 * * figure 18B * -----	7,8	
			TECHNICAL FIELDS SEARCHED (IPC) E01H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	16 February 2023	Kremsler, Stefan

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 22 38 2843

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.

16-02-2023

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 9469951 B1	18-10-2016	US 9469951 B1	18-10-2016
		WO 2017152194 A1	08-09-2017
DE 202007004766 U1	14-06-2007	NONE	
FR 2544354 A1	19-10-1984	NONE	
US 9832980 B2	05-12-2017	NONE	

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