

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Utility Patent Application (Provisional)

TITLE: NOVEL POSITIONING AND APPLICATION DEVICE FOR THE
PLACEMENT OF ADHESIVE TAPES AND THE LIKE

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FIELD OF THE INVENTION

[0001] The present invention relates to novel adhesive tape placement devices and apparatuses for positioning and applying adhesive tape to an adherend. More particularly, the invention relates to a placement device that is capable of positioning and applying adhesive tapes of various sizes along curved and straight surfaces found on vehicles and the like.

BACKGROUND

[0002] Vehicle customization has been a fast growing area of interest for many automobile and motorbike enthusiasts. This customization may include the application of stripes of various sizes and colors along desired areas of the vehicle. These stripes are often referred to as pinstripes and have traditionally required a steady hand to apply and paint the pinstripes in a uniform manner.

[0003] Recently, the development of adhesive tapes in various colors and sizes have been adapted to take the place of painted pinstripes. Adhesive tape pinstriping offers several advantages over painted pinstripes including ease of application and

removal. However, adhesive tape application also requires a skilled hand in order to ensure that the pinstripe is applied in a uniform manner and spacing along the vehicle surfaces.

[0004] Certain dispensers have been developed for the application of adhesive tape along various surfaces. The devices are configured to remove the nonadhesive backing as the adhesive tape is deployed and pressed onto a surface.

[0005] However, these dispensers suffer many drawbacks that hinder the application of the tape. These dispensers are typically only able to apply tape in one direction which results in awkward positioning or necessitating removal of wheels and panels in order to apply the tape correctly. Also, adhesive tapes are offered in a variety of widths, while these dispensers are only configured to accept tapes in one width size. This results in the need for multiple dispensers to accommodate tapes with various width sizes.

[0006] Another drawback is that the dispensers have only one area that can be used as a guide for the placement and positioning of the tape. This guide is configured to contact a portion of the surface to which the tape will be applied, and therefore, functions to guide the motion of the user's hand during application. Since vehicle surfaces vary in shape and size, the sole guide is unable to accommodate every surface resulting in the need to free hand the tape application over a variety of vehicle surfaces. All of these disadvantages work together to increase the difficulty in applying uniform and correctly placed adhesive tape pinstriping.

[0007] Therefore, a need exists in the field for novel adhesive tape placement devices and apparatuses capable of positioning the application of adhesive tapes in any

direction along an adherend which is important for ease of installation depending on whether the installer is left or right handed, and whether obstructions, such as a motorcycle rear wheel swingarm, dictate where the device must be held during installation. A further need exists for an adhesive tape placement device that is able to accommodate tapes of different widths. Finally, there is also a need for the adhesive tape placement device to be configured with a guide that is able to conform the movement of the device to the various surface shapes frequently encountered on vehicles and the like.

BRIEF SUMMARY OF THE INVENTION

[0008] The present invention comprises a novel adhesive tape placement device generally consisting of at least one bumper that is adjustable for depth and height, which is capable of conforming the motion of the device to the contours of the adherent. Interchangeable spools of various widths may be positioned substantially adjacent to the one or more bumpers and are configured to accept adhesive tape spools of various widths. The spools may be bounded by a pair of spool retainers which are configured to maintain the rotational axis of the inserted adhesive tape. In preferred embodiments, the various elements of the adhesive tape placement device are each configured with a threaded or unthreaded aperture that is able to receive a threaded spindle which is able to adjustably maintain the position of the elements relative to each other and to the adherent.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] Some embodiments of the present invention are illustrated as an example and are not limited by the figures of the accompanying drawings, in which like references may indicate similar elements and in which:

[00010] FIG. 1 - Figure 1 depicts an exploded perspective view of one example of an adhesive tape placement device according to various embodiments of the present invention.

[00011] FIG. 2 - Figure 2 illustrates a perspective view of one example of an adhesive tape placement device according to various embodiments described herein.

[00012] FIG. 3 - Figure 3 shows a view of two side profiles of an example of an adhesive tape placement device positioned directly above an adherend according to various embodiments described herein.

[00013] FIG. 4 - Figure 4 depicts an example of a side profile view of an adhesive tape placement device and three exemplary placement spools according to various embodiments described herein.

DETAILED DESCRIPTION OF THE INVENTION

[00014] The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the invention. As used herein, the term "and/or" includes any and all combinations of one or more of the associated listed items. As used herein, the singular forms "a," "an," and "the" are intended to include the plural forms as well as the singular forms, unless the context clearly indicates otherwise. It will be further understood that the terms "comprises" and/or "comprising," when used

in this specification, specify the presence of stated features, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, steps, operations, elements, components, and/or groups thereof.

[00015] Unless otherwise defined, all terms (including technical and scientific terms) used herein have the same meaning as commonly understood by one having ordinary skill in the art to which this invention belongs. It will be further understood that terms, such as those defined in commonly used dictionaries, should be interpreted as having a meaning that is consistent with their meaning in the context of the relevant art and the present disclosure and will not be interpreted in an idealized or overly formal sense unless expressly so defined herein.

[00016] In describing the invention, it will be understood that a number of techniques and steps are disclosed. Each of these has individual benefit and each can also be used in conjunction with one or more, or in some cases all, of the other disclosed techniques. Accordingly, for the sake of clarity, this description will refrain from repeating every possible combination of the individual steps in an unnecessary fashion. Nevertheless, the specification and claims should be read with the understanding that such combinations are entirely within the scope of the invention and the claims.

[00017] New adhesive tape placement devices, apparatuses, and methods for positioning adhesive tapes along straight and contoured adherends are discussed herein. In the following description, for purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of the present invention. It will be evident, however, to one skilled in the art that the present invention may be practiced without these specific details.

[00018] The present disclosure is to be considered as an exemplification of the invention, and is not intended to limit the invention to the specific embodiments illustrated by the figures or description below.

[00019] The present invention will now be described by referencing the appended figures representing preferred embodiments. FIG. 1 depicts an exploded perspective view of the elements that may comprise an adhesive tape placement device (the “device”) according to various embodiments of the present invention. In preferred embodiments, each of the elements of the device are configured with at least one fastener aperture 11, which is configured to accept a threaded spindle 12. Fastener apertures 11 may be threaded or unthreaded. Unthreaded fastener apertures 11 allow the multiple components of the device (the “elements”) to slide freely along the length of the threaded spindle 12. The threaded spindle 12 may be a bolt type, screw type, stud type, or any other suitable threaded fastener. Therefore, each element may be positioned along the length of the threaded spindle 12, in addition to being able to rotate around the axis provided by the threaded spindle 12.

[00020] An indexing bumper 13 may be configured with three indexing bumper guide arms 13A, which are capable of contacting desired adherends. In some embodiments, the indexing bumper 13 may be configured with between one and eight indexing bumper guide arms 13A. The indexing bumper guide arms 13A are preferably of assorted lengths. By rotating the indexing bumper 13 around the threaded spindle 12, a desired indexing bumper guide arm 13A may be selected to contact the adherend and guide the motion of the adhesive tape positioning device in order to follow the contours of the adherend. The entire indexing bumper 13 or portions of the indexing bumper

guide arms 13A may be made from Polytetrafluoroethylene (PTFE), Polyoxymethylene (POM), Ultra High Molecular Weight) polyethylene, or other similar or suitable materials which may produce a suitable low friction surface.

[00021] In preferred embodiments, the adhesive tape is separated from the backing material and guided and looped 180 degrees around spool 14 (FIG. 1, 2, and 4) which may be surrounded by a female spool retainer 15 and a male spool retainer 16. The spools 14 may be surrounded by felt, foam, Polytetrafluoroethylene (PTFE), Polyoxymethylene (POM), Ultra High Molecular Weight) polyethylene, or other similar or suitable materials which produce a suitable low friction surface. In some embodiments, the spools are interchangeable spools of various widths and diameters which may be positioned on the threaded spindle 12 allowing the device to accommodate adhesive tapes with different widths and lengths. The male spool retainer 16 may be configured with one or more male members such as tabs 16A which are configured to insert into one or more slots 15A in the female spool retainer 15. One or more hex locknuts 17 or other similar fasteners may be placed adjacent to the male spool retainer 16, the female spool retainer 15, and the indexing bumper 13 in order to maintain the positioning of the elements along the threaded spindle 12. In some embodiments, one or more of the tabs 16A may facilitate the removal of the nonadhesive backing from the adhesive tape as the device is moved over the adherend.

[00022] In preferred embodiments, a thumbscrew locknut 18, with a threaded fastener aperture 11, is configured to maintain the position of an offset bumper 19 on the threaded spindle 12. The thumbscrew locknut 18 may be made from aluminum, metal alloy, hard plastic, or other suitable material. In preferred embodiments, the offset

bumper 19 comprises a fastener aperture 11 which is threaded. The offset bumper 19 may also be configured with three guide arms 19A, which are capable of contacting desired adherends. In some embodiments, the offset bumper 19 may be configured with between one and eight offset bumper guide arms 19A. The offset bumper guide arms 19A are preferably of assorted lengths. By rotating the offset bumper 19 around the threaded spindle 12, a desired offset bumper guide arm 19A may be selected to contact the adherend and guide the motion of the adhesive tape positioning device in order to follow the contours of the adherend. The entire offset bumper 19 or portions of the offset bumper guide arms 19A may be made from Polytetrafluoroethylene (PTFE), Polyoxymethylene (POM), Ultra High Molecular Weight) polyethylene, or other similar materials which produce a suitable low friction surface.

[00023] As perhaps best shown in FIG. 2, the elements of the device are configured to be positioned along the threaded spindle 12 at distances from each other that allow the indexing bumper 13 or the offset bumper 19 to contact the desired portion of the adherend. The user can then guide the device while using the interface of the adherend and either the indexing bumper 13 or offset bumper 19 to conform the movement of the device to the contours of the adherend while the adhesive tape is being applied. At the same time, the adhesive tape is being applied and pressed onto the adherend by the interchangeable spool 14, resulting in uniform positioning of the adhesive tape relative to the contours of the adherend.

[00024] Referring now to FIG. 3, rotating the indexing bumper 13 and the offset bumper 19 allow the device to be capable of deploying adhesive tape by both right handed and left handed individuals and in both a forwards and backwards motion relative

to the adherend 200. In both FIG. 3A and FIG. 3B, the device is shown in profile and positioned above an adherend 200 which may be a vehicle wheel, fender, body panel, helmet or other surface to which adhesive tape is desired to be applied to. FIG. 3A depicts an example of an embodiment of an adhesive tape positioning device in which one of the offset bumper guide arms 19A (FIG. 1) is configured to contact the adherend 200. In this example, the indexing bumper 13 is rotated so that it does not come in contact with the adherend 200. By rotating the offset bumper 19 and the indexing bumper 13, the indexing bumper guide arms 13A (FIG.1) can be used as a guide by contacting the adherend 200 as shown in FIG. 3B.

[00025] FIG. 4 illustrates a side profile view of an example of some of the components which make up an adhesive tape positioning device according to the present invention. In this example, an indexing bumper 13 (FIGS. 1, 2, and 3) is not positioned on the threaded spindle 12, so that only the offset bumper 19 is configured to guide the device. In other embodiments, the offset bumper 19 is not positioned on the threaded spindle 12, while an indexing bumper 13 is positioned on the threaded spindle and acts as the guide for the device. In this embodiment shown, four interchangeable spools 14, with one positioned on the threaded spindle 12 are provided. In preferred embodiments, the device may be reconfigured with one or more interchangeable spools 14 of assorted widths and diameters. The offset bumper guide arms 19A may be configured with low friction material.

[00026] While preferred materials for elements have been described, the device is not limited by these materials. Wood, plastics, rubber, foam, metal alloys, aluminum,

and other materials may comprise some or all of the elements of the adhesive tape positioning devices and apparatuses in various embodiments of the present invention.

[00027] Although the present invention has been illustrated and described herein with reference to preferred embodiments and specific examples thereof, it will be readily apparent to those of ordinary skill in the art that other embodiments and examples may perform similar functions and/or achieve like results. All such equivalent embodiments and examples are within the spirit and scope of the present invention, are contemplated thereby, and are intended to be covered by the following claims.

CLAIMS

What is claimed is:

1. A adhesive tape positioning device for applying pinstriping adhesive tape to a vehicle, motorbike, wheel, rim, or other suitable surface the device comprising:
 - a. a threaded spindle;
 - b. at least one interchangeable spool configured to hold adhesive tape; and
 - c. an indexing bumper.

2. The adhesive tape positioning device of claim 1 further comprising an offset bumper.

ABSTRACT:

[00028] The present invention comprises a novel adhesive tape placement device generally consisting of at least one bumper that is adjustable for depth and height, which is capable of conforming the motion of the device to the contours of the adherent. Interchangeable spools of various widths may be positioned substantially adjacent to the one or more bumpers and are configured to accept adhesive tape spools of various widths. The spools may be bounded by a pair of spool retainers which are configured to maintain the rotational axis of the inserted adhesive tape. In preferred embodiments, the various elements of the adhesive tape placement device are each configured with a threaded or unthreaded aperture that is able to receive a threaded spindle which is able to adjustably maintain the position of the elements relative to each other and to the adherent.

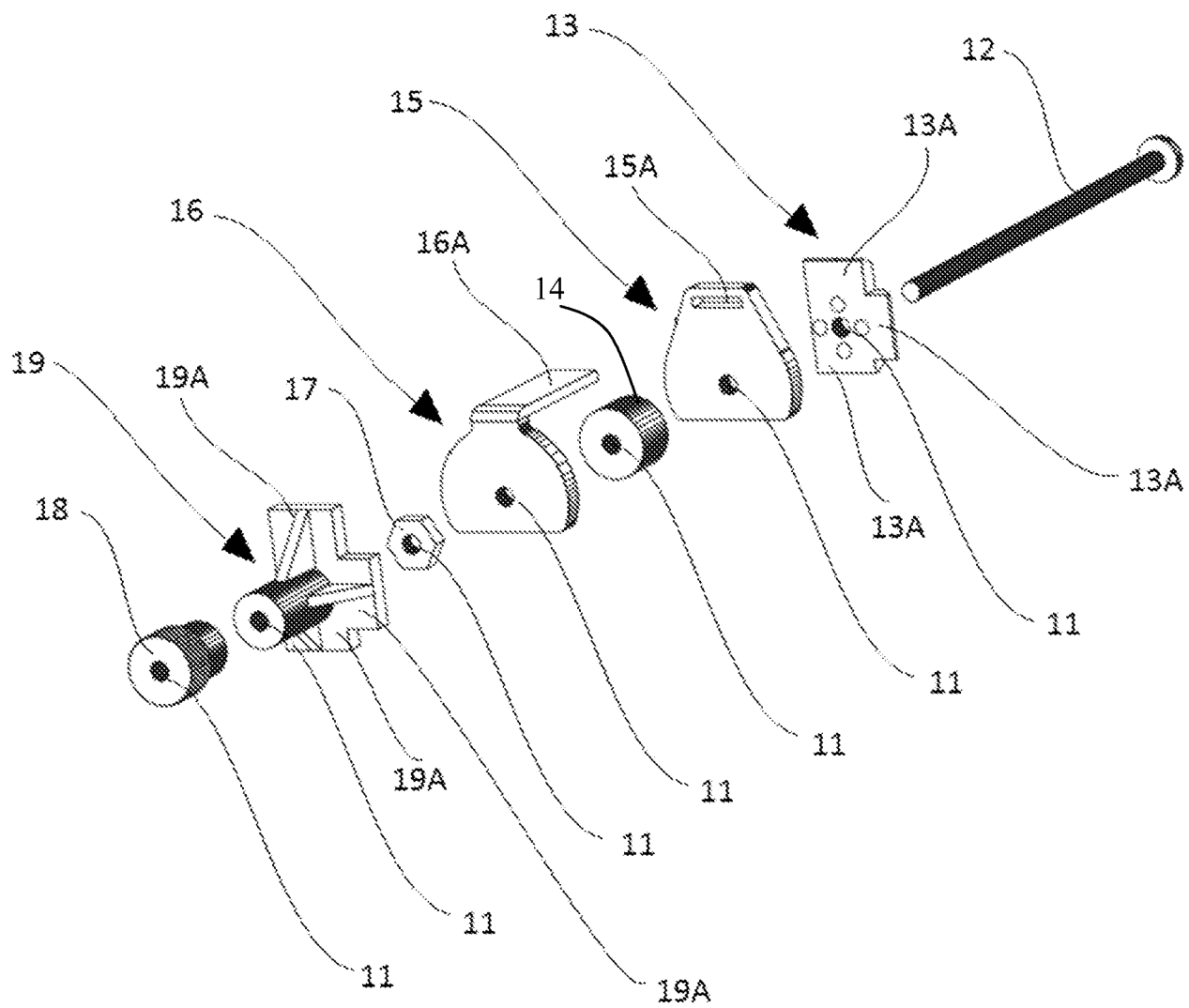


Fig. 1

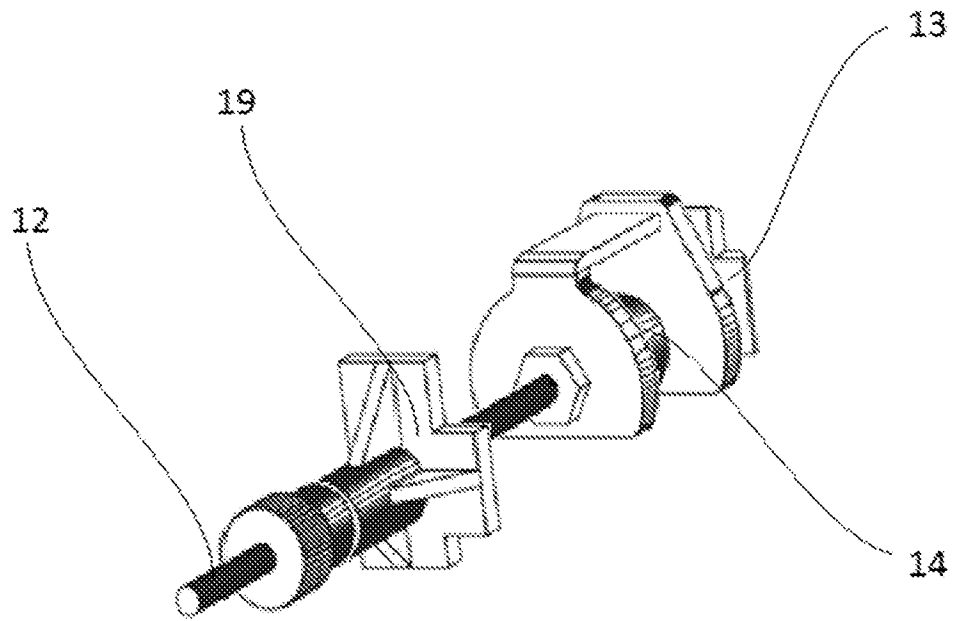


FIG. 2

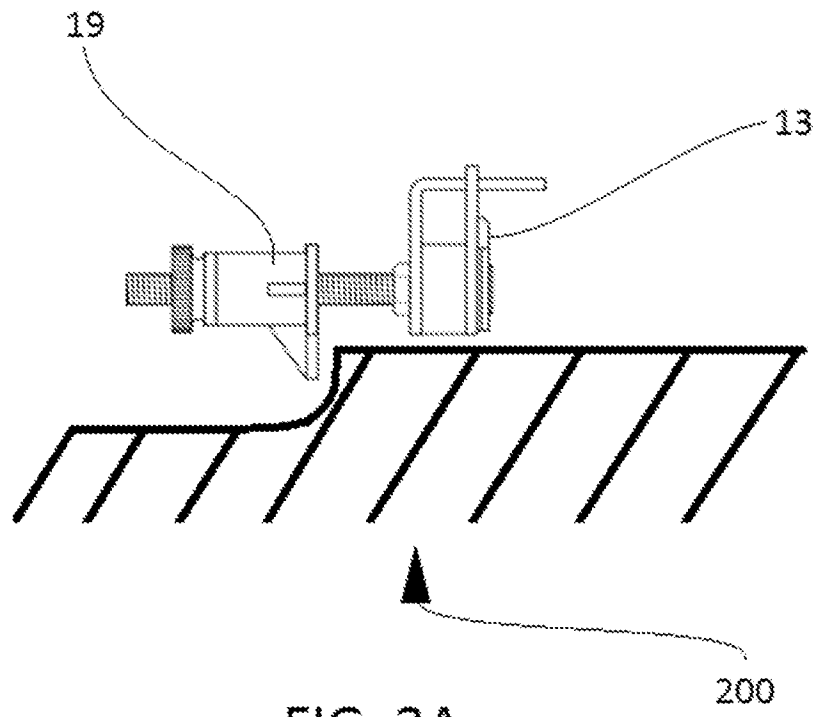


FIG. 3A

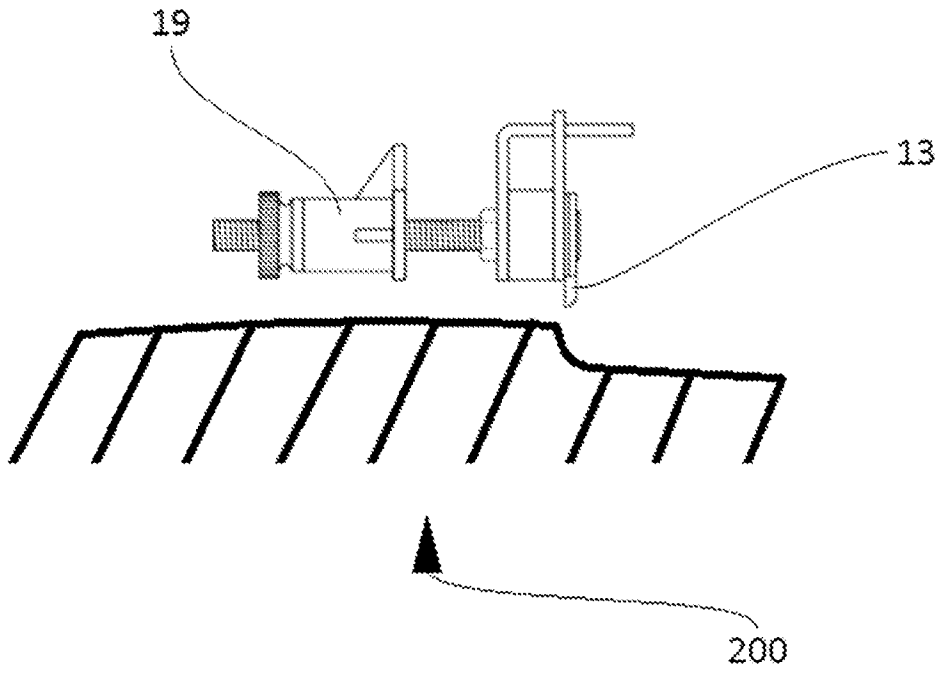


FIG. 3B

FIG. 3

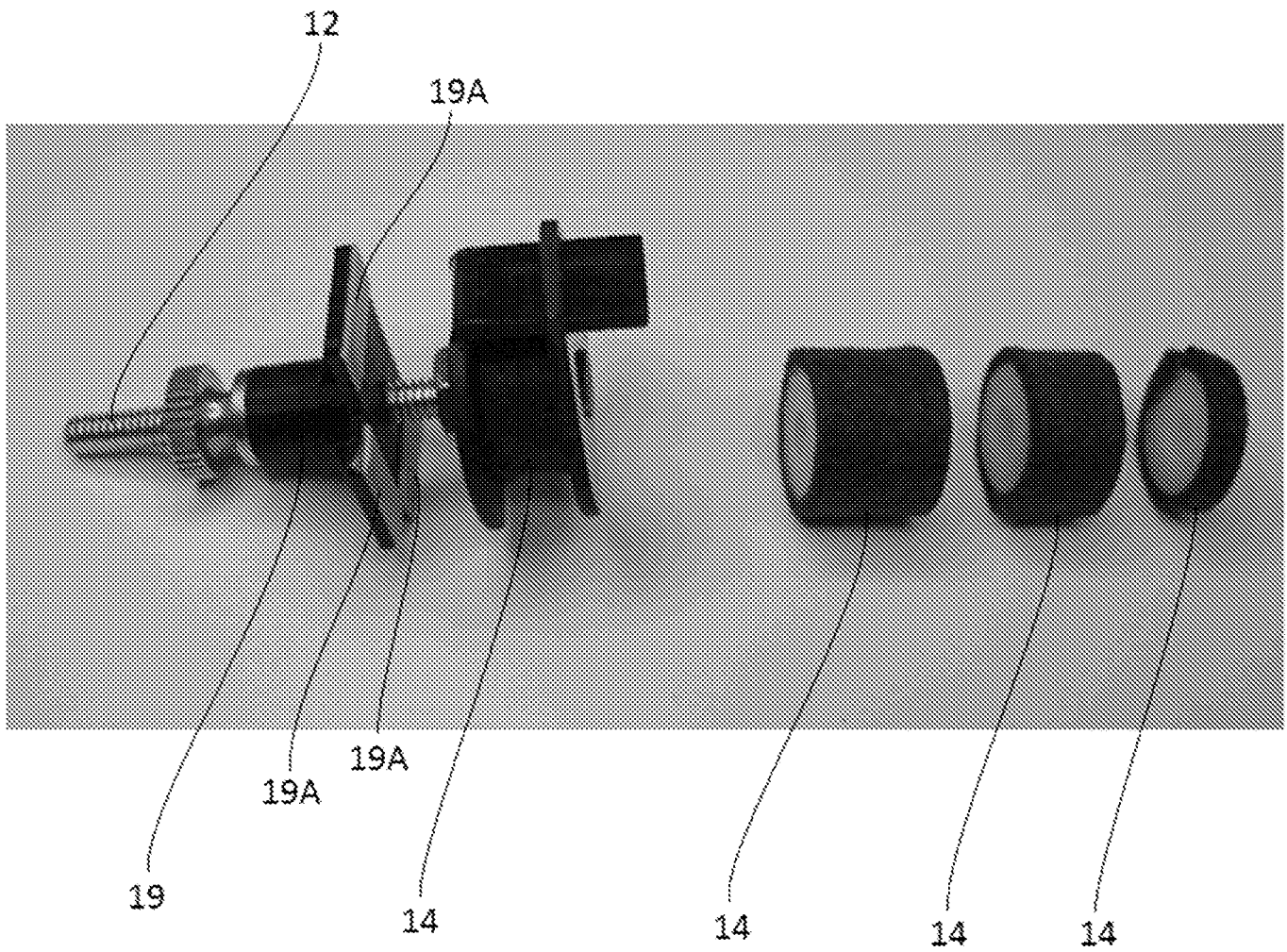


FIG. 4