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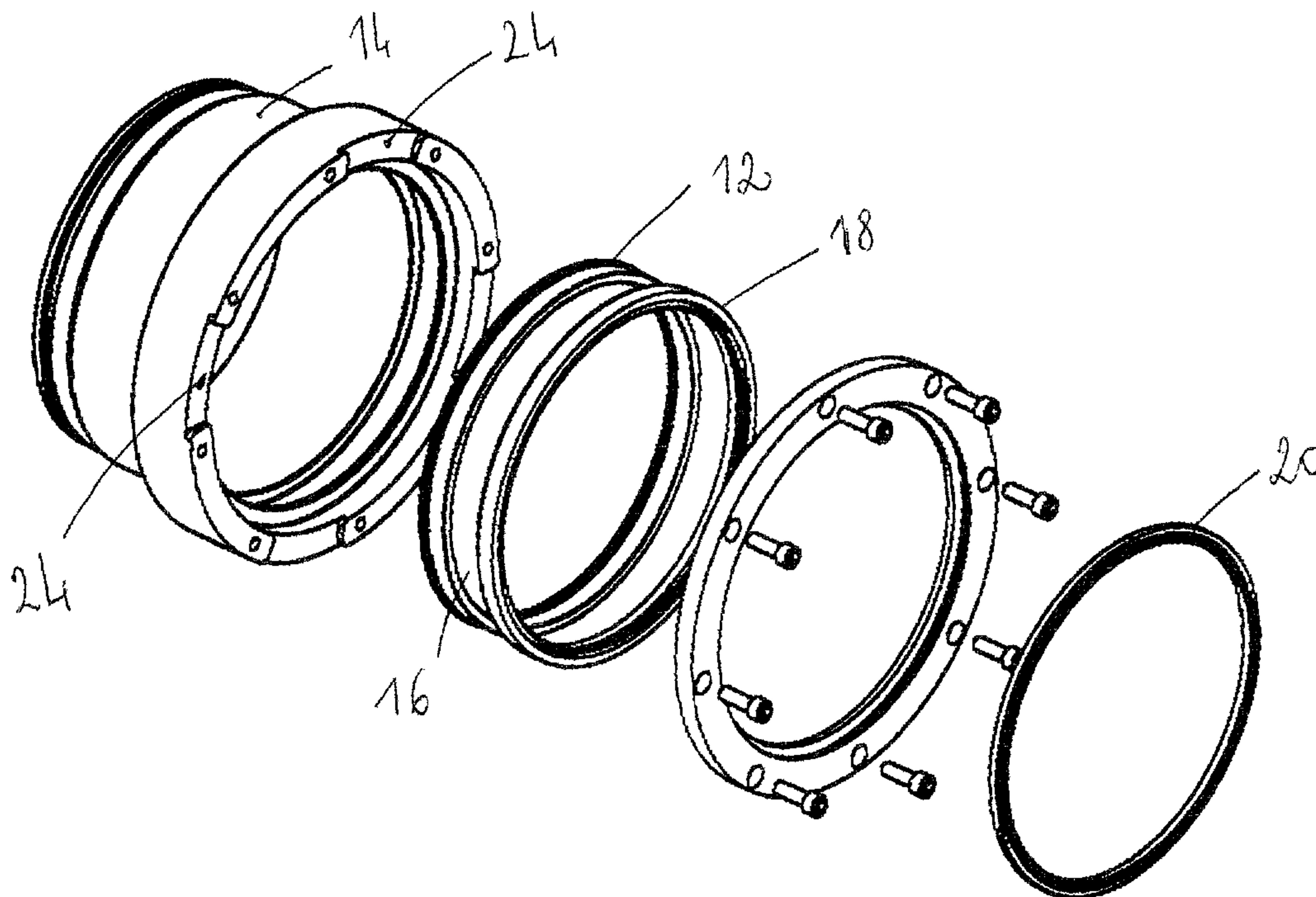
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(54) Titre : ENSEMBLE D'ETANCHEITE POUR TETE DE VERIN

(54) Title: SEALING ASSEMBLY FOR A CYLINDER HEAD



(57) Abrégé/Abstract:

A sealing assembly for a cylinder head, which combines selected sealing elements and a smooth surface finish, which, while reducing a number of adhesions sites available for contaminants, also results in a limited lubricating capacity of the surface

ABSTRACT OF THE DISCLOSURE

A sealing assembly for a cylinder head, which combines selected sealing elements and a smooth surface finish, which, while reducing a number of adhesions sites available for contaminants, also results in a limited lubricating capacity of the surface

TITLE OF THE INVENTION

Sealing assembly for a cylinder head.

FIELD OF THE INVENTION

[0001] The present invention relates to cylinders. More specifically, the present invention is concerned with a sealing assembly for a cylinder head.

BACKGROUND OF THE INVENTION

[0002] Telescopic cylinders consist of a series of telescopically arranged tubular sections with a cap closing a first end of each section. A second end of each section is mounted with a two-piece cylinder head while an innermost tubular section has a plunger pin eye which threads into the tube section. The cylinder heads are threadedly mounted to an outer wall at the second end of each section; they are provided with dynamic and static seal means for sealing and with scraper means for removing debris from a surface along which the dynamic seal means slidably contacts.

[0003] Industrial telescoping cylinders may be exposed to a wide range of contaminants, especially when provided on refuse collection trucks for example. In refuse collection trucks, organic substances tend to adhere and accumulate on exposed surfaces of the vehicles, including cylinder heads of the telescoping cylinders, under the action of heat. Such organic substances are not removed by scrapers of the cylinder heads and cause damages in sealing joints, which may result in spills and leaks.

[0004] Therefore, there is a need in the art for an improved sealing assembly for a cylinder head.

OBJECTS OF THE INVENTION

[0005] An object of the present invention is therefore to provide an improved cylinder head.

[0006] Other objects, advantages and features of the present invention will become more apparent upon reading of the following non-restrictive description of embodiments thereof, given by way of example only with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] In the appended drawings:

[0008] Figure 1 is a cross-sectional view of an sealing assembly in accordance with the present invention;

[0009] Figure 2 is an exploded view of the sealing assembly of Figure 1; and

[0010] Figure 3 is a detailed view of sealing assembly of Figure 1.

DESCRIPTION OF EMBODIMENTS OF THE INVENTION:

[0011] Generally stated, the present invention provides a cylinder head intended for use in contaminated structures.

[0012] More precisely, the sealing assembly for a cylinder head of the present invention combines selected sealing elements and a smooth

surface finish, which, while reducing a number of adhesions sites available for contaminants, also results in a limited lubricating capacity of the surface.

[0013] In an embodiment of the present invention illustrated in Figures 1 to 3, the cylinder head 10 comprises a sealing joint 12 between an outer tube section 14 and an inner tube section 16, a pipe wiper 18, and a scraper ring 20.

[0014] The scraper ring 20 and the pipe wiper 18 are positioned in series. The scraper ring 20 is made in a coated steel with a hard coating and auto-lubricating and anti-adhesive properties, such as D.L.C (Diamond Like Carbon). DLC are known to have a small coefficient of friction and an excellent surface smoothness; the degree of hardness of the DLC coating is 3,500 to 4,000 HV, and the abrasion resistance is excellent. DLC coatings are known for combining wear resistance, linked to hardness, and self-lubricating capacity. Other hard coatings or surface finish may be contemplated.

[0015] Such a scraper ring 20 keeps a sharp cutting edge and slides on an outer surface 22 of the piston of the cylinder, thereby scraping contamination such as organic material off without allowing them to accumulate on the cutting edge.

[0016] The pipe wiper 18, thus protected by this very strong scraper ring 20 performs a finish work by scraping any remaining contamination away outside of the cylinder, through discharge apertures 24 located on a periphery of the cylinder head. Alternatively, in case when there are no such discharge apertures, the scraped contamination remains in a space between the pipe wiper 18 and the scraper ring 20.

[0017] The scraper ring 20 proves to be very efficient in systematically cleaning away organic contamination from the surface of the cylinder.

[0018] It may be contemplated to provide a plurality of successive scraper ring 20 to even increase the scraping efficiency of the assembly.

[0019] Alternatively, in a further embodiment of the present invention, the cylinder head 10 may comprise a sealing joint or a series of two sealing joints between the outer tube section and the inner tube section and a pipe wiper 18.

[0020] The pipe wiper may be made in urethane and the sealing joint of P.T.F.E (polytetrafluoroethylene) and bronze, or the pipe wiper in P.T.F.E-bronze and the sealing joint of P.T.F.E and carbon fibres for example. Pipe wipers and sealing joints in hydrogenated nitrile (HNBR) may also be used.

[0021] It is found that such sealing structure allows a protection against contamination by allowing a smooth surface finish of the tubes, thereby a degree of attachment of contaminants, without disadvantages due to a correspondingly reduced lubrication capacity of this surface.

[0022] Although the present invention has been described hereinabove by way of embodiments thereof, it can be modified, without departing from the spirit and nature of the subject invention as defined herein.

figure 1

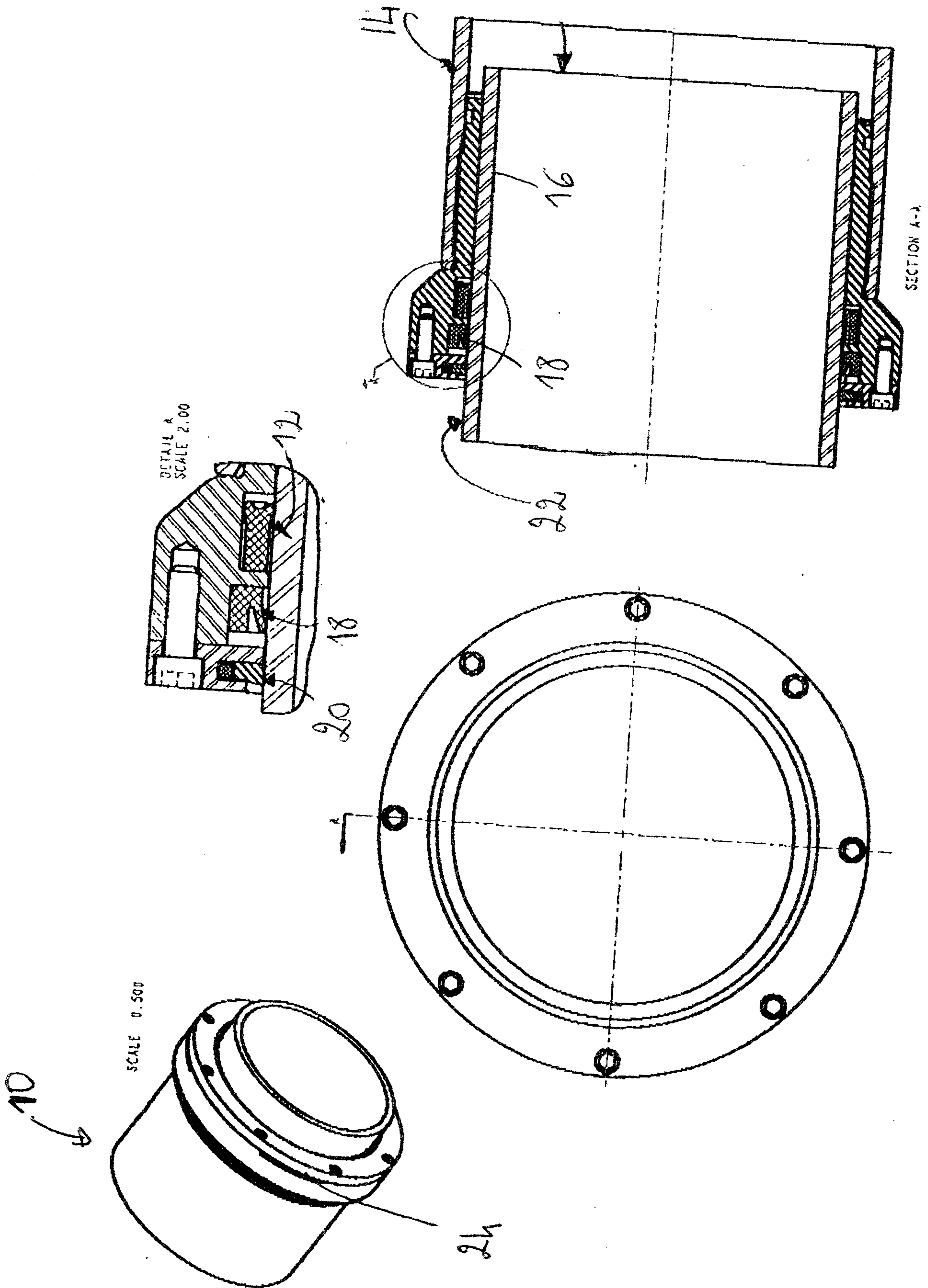


Figure 2

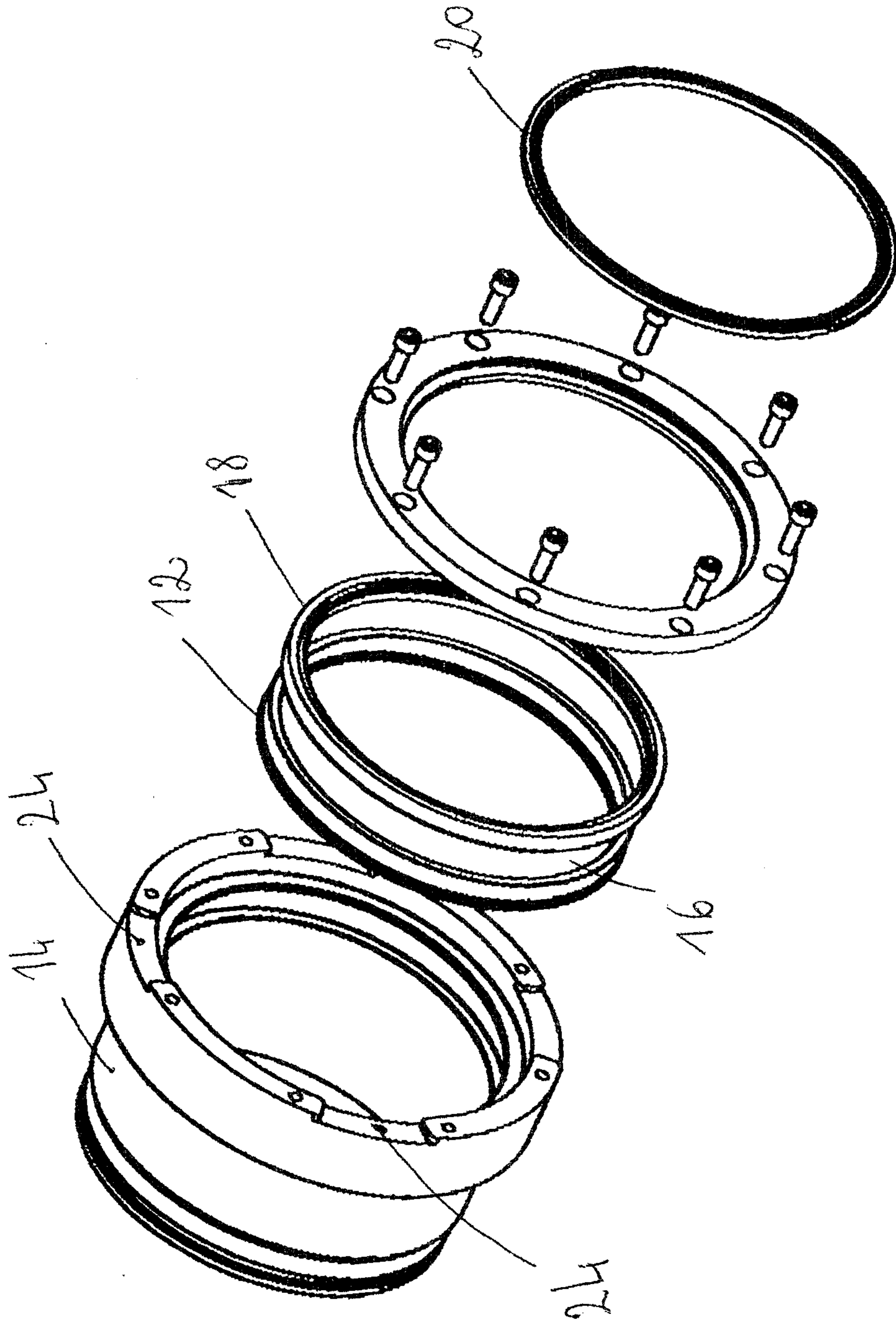


Figure 3

