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HALOGEN LAMP WITH LIGHT EXIT SHIELD

The invention pertains to a halogen lamp according to the introductory clause of Claim 1.

Lamps which have a removable light exit shield with a permanently installed shield disk, that is, a clear or matte disk of glass, plastic, or the like, at the light exit opening of its housing, are known. Light exit shields with permanently installed shield grids are also known.

A lamp which can be provided with any desired type of light source and which has a flip-up light exit shield with a permanently installed lens or shield disk and a second permanently installed shield disk is known from US 5,349,510. No provisions are made for the possible removal of the lens and/or the shield disks, and any attempt at such removal would be associated with considerable effort.

A halogen lamp in which two shield disks and a shield grid are laid loosely between two retaining rings in the light exit opening of the housing is known from CH 680,664. The front or outer retaining ring can be removed from the housing, whereupon the shield disks and the shield grid are freed and can fall out of the light exit opening.

The goal of the invention is to create a halogen lamp in which it is pos-

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sible to install, in removable fashion, one or two of the same or different shield disks and a shield grid in a light exit shield which can be removed from the lamp housing. It is also to be possible to handle the light exit shield as a closed functional unit, regardless of the number of parts which have been inserted into it.

This task is accomplished in accordance with the invention in a halogen lamp of the type described above by the characterizing features of Claim 1. The light exit shield designed according to the invention can therefore be handled as a closed functional unit comprising any desired set of shield disks and/or shield grids and can be removed with all of its parts held loosely in it from the housing and possibly reinstalled after certain of the individual parts have been replaced.

The first O-ring, or, in the case of the solution according to Claim 2, both O-rings are held in their grooves regardless of whether or not they are resting against shield disks. As desired, one or two shield disks can be inserted at the locations provided for them in front of the first O-ring or between the two O-rings. The shield grid, which is also removable, is held in any desired manner, i.e., either in a positive form-locking or in a friction-locking manner, at the inner end of the support ring.

The other subclaims are directed toward advantageous embodiments of the invention. Claim 3 provides specifically for a spacer ring, which serves, first, to provide support against the halogen bulb mounted in the housing and, second, according to Claim 5, to support the loose retaining ring of the shield grid. The designs according to Claims 4 and 6 serve to hold the spacer ring or the retaining ring itself on the housing.

A preferred exemplary embodiment of the invention is explained in greater

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detail below on the basis of the figures:

- Figure 1 shows a side view of the overall halogen lamp;
- Figure 2 shows an enlarged and partially cut-away side view of the lamp housing; and
- Figure 3 shows a partial cross section, enlarged again with respect to Figure 2.

The halogen lamp shown in the figures has a linkage of rods 10 and an external housing 11, supported adjustably on said linkage of rods 10. A light exit shield, designated overall by reference number 16, is installed in light exit opening 14, which is located at the forward end of external housing 11. Light exit shield 16 has a support ring 18, which is screwed by thread 20 onto the forward end of the actual housing 12, which is installed inside external housing 11.

A first ring-shaped groove 24 and a second ring-shaped groove 26 are provided on the inside surface of the forward end of support ring 18, i.e., the end facing away from halogen bulb 40. A first elastic O-ring 28 and a second elastic O-ring 30 are inserted into these grooves. Near the forward end of support ring 18, a ring land 32 projects inward from the inside surface of the ring. The rear surface of this land rests against a first shield disk 34. The rear surface of first shield disk 34 is held by first O-ring 28, whereas a second shield disk 36, which is parallel to first shield disk 34, rests against the rear surface of first O-ring 28. The second disk is held in turn at its rear surface by second O-ring 30. The forward edge of a spacer ring 38, the rear-facing edge of which is supported against halogen bulb 40 mounted in housing 12, is also in contact with the rear surface of second shield disk 36.



A shield grid 44 fills the space between a forward-facing, ring-shaped shoulder 42 on the inside surface of spacer ring 38 and the rear surface of second shield disk 36. The forward edge of spacer ring 38 is provided with an [radially -- Tr. Ed.] outward-directed bead 46, which grips second O-ring 30 slightly from underneath and thus ensures that spacer ring 38 is held firmly in light exit shield 16, consisting of support ring 18, shield disks 34, 36, spacer ring 38, and shield grid 44. Light exit shield 16 can therefore be handled as a single functional unit and can be removed as a complete subassembly from, and set back into position on, housing 12. In the removed state, spacer ring 38, shield grid 44, and one or both shield disks 34, 36 can be easily removed or replaced as desired, whereupon light exit shield 16 can be placed back on the housing. Thus, any desired modification can be made to light exit shield 16, or individual parts can be replaced by others with a different function or a different shape.

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CLAIM(S)

1. Halogen lamp with a housing (10) [sic; (12)? -- Tr. Ed.], a halogen bulb (40) installed in the housing, and a light exit shield (16), mounted in the light exit opening (14) of the housing (10) [(12)? -- Tr. Ed.], where the light exit shield (16) is removably attached to the housing (12) and has a support ring (18) with a radially inward-projecting, ring land (32), characterized in that the support ring (18) has, on its inside radial surface, a first ring-shaped groove (24), into which a first O-ring (28) is inserted; in that the ring land (32) is in front of the forward side of the first O-ring (28), i.e., the side facing away from the halogen bulb (40); in that a first shield disk (34) rests against the rear surface of the ring land (32); and in that a shield grid (44) is held in removable fashion in the support ring (18).

2. Halogen lamp according to Claim 1, characterized in that a second shield disk (36) is inserted between the shield grid (44) and the first shield disk (34), the front surface of the second disk resting on the first O-ring (28), whereas the rear surface rests against a second O-ring (30), located in a second ring-shaped groove (26).

3. Halogen lamp according to Claim 2, characterized in that the forward edge of a spacer ring (38) rests against the rear surface of the second shield disk (36); in that, after the support ring (18) has been removed from the housing (12), the spacer ring is held against the second O-ring (30); and in that, when the support ring (18) is attached to the housing (12), the spacer ring is supported by its rear edge against the halogen bulb (40).

4. Halogen lamp according to Claim 3, characterized in that the spacer ring (38) is held against the second O-ring (30) by a bead (46), which engages with the second O-ring (30).





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5. Halogen lamp according to Claim 3 or Claim 4, characterized in that the shield grid (44) fills the area between the rear surface of the second shield disk (36) and a shoulder (42) on the spacer ring (38).

6. Halogen lamp according to one of the preceding claims, characterized in that the support (18) can be attached to the housing (12) by means of a thread (20) or a bayonet joint.



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