

CLAIMS

1. Covering system (5) for a solid particle packing (3), **characterized in that** it comprises a hinged structure (11) and an annular casing (13) which covers the hinged structure (11), the annular casing (13) being formed by metal plates (16, 17) sealingly mounted so as to be movable relative to one another, the hinged structure (11) comprising metal skirts (31) which form hinged concentric circles (33) for supporting the metal plates (16, 17) of the annular casing (13) and for adapting to the deformations of the packing (3), and metal elements (35) which form hinged spacers (37) for maintaining a spacing between the hinged concentric circles (33) and for adapting to the deformations of the packing (3).
2. System (5) according to the preceding claim, wherein the hinged structure (11) comprises between 3 and 6 hinged concentric circles (33).
3. System (5) according to either claim 1 or claim 2, wherein each hinged concentric circle (33) comprises between 3 and 10 metal skirts (31) that are movable relative to one 15 another.
4. System (5) according to any of the preceding claims, wherein the hinged structure (11) comprises between 3 and 8 hinged spacers (37).
5. System (5) according to any of the preceding claims, wherein each hinged spacer (37) comprises between 2 and 5 metal elements (35) which are movable relative to one 20 another.
6. System (5) according to any of the preceding claims, wherein the annular casing (13) comprises between 7 and 27 metal plates (16, 17).
7. System (5) according to any of the preceding claims, wherein the metal plates (16, 17) form ring segments.
8. System (5) according to any of the preceding claims, wherein the metal plates (16, 17) are sealingly mounted so as to be movable relative to one another by means of ceramic fiber cords (19).

9. System (5) according to any of the preceding claims, wherein the hinged structure (11) comprises a cross piece (41) at each intersection between the hinged concentric circles (33) and the spacers (37).

10. System (5) according to claim 9, wherein each cross piece (41) has four free ends, with each end pivotally mounted to one of said metal skirts (31) or one of said metal elements (35).

11. Chemical reactor (1) comprising a chamber provided with an internal peripheral scalloped portion (7), a central pipe (9) and a compartment comprising a solid particle packing (3), **characterized in that** the chemical reactor (1) comprises a covering system (5) according to any of the preceding claims mounted between the internal peripheral scalloped portion (7) and a cover (15) which covers the pipe (9).

12. Chemical reactor (1) according to claim 11, wherein the covering system (5) is sealingly mounted against the cover (15) by sealing means (39).

13. Chemical reactor (1) according to either claim 11 or claim 12, wherein the covering system (5) further comprises a partition (45) mounted on a peripheral portion of the annular casing (13) which faces the internal peripheral scalloped portion (7) so as to form a gap between the partition (45) and the internal peripheral scalloped portion (7) which is arranged to receive inert beads (47).