CLAIMS

1. Piston for a die-casting machine, in particular of the cold chamber type, where the machine comprises a press with a sleeve in which the piston is slidably housed, the piston comprising: - a stem that extends between a proximal end and a distal end along a piston axis; - a piston head connected in a removable manner to the distal end of the stem and that is provided with at least one sealing ring housed in a respective ring seat formed in a lateral wall of the head to create the sleeve on the wall of the press sleeve, the sealing ring being interrupted longitudinally by a longitudinal split which allows radial expansion of the sealing ring; and - a lubrication circuit suitable to facilitate the sliding of the piston in the sleeve and comprising: - at least one first lubrication duct formed in the stem and terminating in correspondence of the distal end of the stem, and - at least a second duct formed in the piston head, fluidically communicating with the first duct and opening into the ring seat, below the sealing ring, the second duct being covered by the sealing ring, in such a way that the lubricant leaks from the piston 23 head through interstices between the sealing ring and the piston head and/or through the longitudinal split, wherein each first lubrication duct is sealingly and fluidically connected to the respective second lubrication duct by means of a tubular connection element having a proximal portion sealingly inserted in a terminal portion of the first lubrication duct and a distal portion sealingly inserted in the second lubrication duct and extending axially up to the vicinity of the ring seat, in each of the tubular connection elements being sealingly housed a non-return valve suitable to stop the passage of liquid metal coming from the ring seat.

2. Piston according to claim 1, wherein the nonreturn valve is positioned in, or in proximity of, the proximal portion of the tubular connection element.

3. Piston according to claim 1, wherein the nonreturn valve is positioned in proximity of the distal end of the tubular connection element.

4. Piston according to any of the preceding claims, wherein the interstices comprise at least an interstice between the sealing ring and a rear rim of the ring seat that posteriorly delimits the ring seat.

5. Piston according to any of the preceding claims, 24 wherein a bottom of the ring seat is

connected with a front surface of the piston head through connection channels or holes for an inflow of metal under the sealing ring.

6. Piston according to the preceding claim, wherein between outlet apertures of the connection channels or holes in the bottom of the ring seat and the rear rim of the seat, the sealing ring and the ring seat have interlocking coupling portions suitable to stop the passage of the liquid metal that penetrated under the sealing ring.

7. Piston according to any one of claims 4-6, wherein the second lubrication duct opens into a rear portion of the ring seat between the interlocking coupling portions and the rear rim of the ring seat.

8. Piston according to any one of the preceding claims, wherein the first lubrication ducts comprise a feed duct that extends longitudinally from an entrance hole of the lubricant and that forms at least one distribution duct that extends parallel to the piston axis in a distal portion of the stem, each second lubrication duct being in continuation of the distribution duct.

9. Piston according to any of the preceding claims, wherein each second duct has a first section parallel to the piston axis and at least a second radial section opening into the ring seat.

10. Piston according to the preceding claim, wherein a distal portion of the tubular connection element extends until in proximity of the second radial section.

11. Piston according to any of the preceding claims, wherein the piston head is made of steel and delimits a front seat open at least frontally, in which a copper alloy insert is inserted.

12. Piston according to the preceding claim, wherein the piston head comprises a hollow outer body fitted with absence of play on an axial support pin, and wherein the copper insert rests against the distal end of the axial support pin.

13. Piston according to claim 11 or 12, wherein, in a front wall of the piston head, is formed an undercut in which it axially engages an annular relief formed in a rear part of

the copper insert.

14. Piston according to any of claims 12 or 13, wherein the piston head and the stem are fixed to the axial support pin by means of radial blocks.

15. Piston according to any one of claims 5 to 14, wherein the connection channels or holes open into an annular peripheral portion of a front surface of the 26 front wall of the piston head, the annular peripheral portion of the front surface being inclined with respect to a frontal plane orthogonal to the piston axis (X) in such a way as to be facing the piston axis (X), the inclination forming an angle (α) comprised between 10° and 55°, preferably between 20° and 30°, even more preferably equal to 25°.

16. Piston according to the preceding claim, wherein the annular peripheral portion delimits a central portion of the front surface of the piston head, the central portion being convex.

17. Piston according to any of the preceding claims, wherein, in the stem and the piston head is formed a cooling circuit suitable to circulate a cooling fluid inside the piston head.

18. Piston according to the preceding claim, wherein the stem and the axial support pin have an axial cooling hole in which is inserted a delivery tube of a cooling fluid opening on to a front surface of the axial support pin of the head, the front surface being in fluidic communication with a plurality of annular cooling channels formed in an outer lateral surface of the axial support pin.