CLAIMS

1) A cartridge for a stereolithography machine, comprising:

a container delimited by an annular wall and provided with an access opening and with a transparent bottom apposite said access opening;

a reservoir for containing a liquid or pasty base material; and

valve means connecting said reservoir to said container for the passage of said base material;

wherein said valve means are configured to open when the difference between a pressure present in said reservoir and a pressure present in said container is at least equal to a predefined value and to spontaneously close when said pressure difference is lower than said predefined value, said reservoir being unremovably associated with said container and comprising connection means for connection to an external air feeding device.

2) The cartridge according to claim 1, wherein said valve means comprise a first membrane provided with a hole that is normally closed and configured to open elastically due to the effect of said pressure difference at least equal to said predefined value.

3) The cartridge according to claim 1 or 2, wherein said connection means comprise a second membrane belonging to a wall of said reservoir and adapted to be perforated by a needle-shaped element while at the same time maintaining its connection when said needle-shaped element is arranged so that it passes through said second membrane.

4) The cartridge according to any one of claims 1 to 3, wherein said reservoir is provided with said annular wall that delimits said container perimetrically.

5) The cartridge according to claim 4, wherein said annular wall comprises two mutually facing sections with semi-circular profile.

6) The cartridge according to claim 4 or 5, wherein said transparent bottom is perimetrically delimited by an outer edge, said outer edge being housed in a cavity belonging to said reservoir in such a way as to remain within the overall dimensions of said reservoir.

7) The cartridge according to any one of claims 1 to 6, wherein said reservoir is internally delimited by an inclined wall that forms, together with said transparent bottom, an angle that is larger than 90° and smaller than 180°, said valve means being arranged at the level of the edge of said inclined wall that is nearest to said container.

8) A stereolithography machine comprising a supporting structure and a housing associated with said supporting structure, configured to removably house in a stable operating position the cartridge according to any one of claims 1 to 6, wherein said stereolithography machine comprises an air feeding device provided with a feed duct adapted to be connected to said connection means of said cartridge when said cartridge is arranged in said housing, said air feeding device adapted to be operated in such a way as to modify the pressure present in said reservoir.

9) The stereolithography machine according to claim 8, wherein said cartridge is in accordance with claim 3, said feed duct comprising a needle-shaped end to be arranged through said second membrane when said cartridge is arranged in said operating position.

10) The stereolithography machine according to claim 8 or 9, wherein said housing comprises stop means configured to maintain said cartridge in said operating position, said stop means adapted to be released in such a way as to disconnect said cartridge from said housing.

11) The stereolithography machine according to claim 10, wherein said housing comprises a supporting base to support said cartridge on a side corresponding to said transparent bottom, said supporting base defining a supporting surface delimited by a containment edge projecting from said supporting surface and suited to be arranged in contact with said cartridge so as to prevent the sliding movement of said cartridge on said supporting surface, said stop means comprising a cover facing said supporting surface so that it can be arranged in contact with said cartridge on the opposite side with respect to said supporting surface.

12) The stereolithography machine according to claim 11, wherein said cover has a first edge revolvingly associated with said supporting base, snap-fitting means being provided in order to releasably connect to said supporting base a second edge of said cover opposite to said first edge.

13) The stereolithography machine according to claim 12, wherein said containment edge comprises a manoeuvring wall provided with a first end and with a second end mutually opposing each other, said first end being revolvingly associated with said supporting base in such a way as to define for said manoeuvring wall:

a stop position, in which said second end is arranged against said cover when said cover is arranged in contact with said cartridge, in such a way as to prevent the rotation of said cover; and

a release position, in which said second end is arranged in such a way as to allow the rotation of said cover in a direction corresponding to opening of said cover with respect to said supporting base.

14) The stereolithography machine according to claim 13, wherein said second end is provided with a stop surface to limit said rotation of said cover.

15) The stereolithography machine according to claim 14, wherein said stop surface defines a concave portion facing said second edge of said cover, said second edge being configured so as to be arranged inside said concave portion in such a way as to limit the rotation of said manoeuvring wall.

16) The stereolithography machine according to any one of claims 13 to 15, further comprising first elastic means adapted to force the return of said manoeuvring wall from said release position towards said stop position.

17) The stereolithography machine according to any one of claims 13 to 16, wherein said manoeuvring wall comprises a through opening suited to slidingly house said cartridge.

18) The stereolithography machine according to claim 17, wherein said through opening comprises an edge that is raised with respect to said supporting surface and maintains said cartridge inclined with respect to said supporting surface in such a way that said transparent bottom remains lifted from said supporting surface.

19) The stereolithography machine according to any one of claims 12 to 18, wherein said first edge of said cover is provided with at least one tab removably inserted in a corresponding opening belonging to said supporting base, said at least one tab and said opening being configured in such a way as to allow the rotation of said cover with respect to said supporting base and the removal of said cover from said supporting base.

20) The stereolithography machine according to any one of claims 12 to 19, further comprising second elastic means adapted to farce the rotation of said cover in the opening direction with respect to said supporting base.

21) The stereolithography machine according to any one of claims 8 to 20, wherein said housing is removably associated with said supporting structure according to a direction of movement that is parallel to the plane defined by said access opening, said feed duct being deformable.

22) The stereolithography machine according to any one of claims 8 to 21, wherein said feed duct is configured to be removably connected to said connection means.

23) A method for using the cartridge according to claim 3, said method comprising the following steps:

preparing a stereolithography machine comprising a feed duct operatively connected to an air feeding device and provided with a needle-shaped end adapted to perforate said second membrane of said cartridge;

inserting said needle-shaped end through said second membrane; and

operating said air feeding device in such a way as to generate a difference higher than said predefined value between the pressure present in said reservoir and the pressure present in said container.