CLAIMS

1. A testing head (20) with vertical probes for the functionality testing of an electronic device, said testing head (20) comprising at least one couple of plate-like supports (22, 23) separated from each other by a suitable gap (29) and provided with respective guide holes (24; 25A, 25B) in order to slidably house a plurality of contact probes (21), each contact probe (21) comprising a rod-like body (21') extending along a preset longitudinal axis (HH) between a first and a second end (26, 27), said first end being a contact tip (26) adapted to abut onto a contact pad (28A) of a device under test (28) and said second end being a contact head (27) adapted to abut onto a contact pad (31A) of a space transformer (31), characterized in that at least one of said supports (23) comprises at least one couple of guides (23A, 23B), parallel to each other and apt to improve the sliding of said contact probes (21) within respective guide holes (25A, 25B), said couple of guides (23A, 23B) being separated by an additional gap (29') and being provided with said corresponding guide holes (25A, 25B) and in that each contact probe (21) comprises at least one protruding element or stopper (30) protruding from one of its lateral walls (32d, 32s) and being apt to abut onto an undercut wall (33A, 33B) of said guides (23A, 23B) under which it is positioned, said lateral wall (32d, 32s) being apt to contact one wall (35d, 35s, 36d, 36s) of at least one of said guide holes (25A, 25B) of said guides (23A, 23B), said contact head (27) having a diameter greater than a diameter of said guide holes (25A, 25B) of said guides (23A, 23B) and preventing said contact head (27) from passing through said guide holes (25A, 25B).

2. The testing head (20) according to claim 1, wherein said stopper (30) is realized near said at least one support (23), between said at least one support (23) and said further support (22).

3. The testing head (20) according to claim 1, wherein said stopper (30) is realized between said guides (23A, 23B) of said at least one support (23), in said additional gap (29').

4. The testing head (20) according to any preceding claim, wherein said contact probe (21) comprises a further stopper (30A) protruding from the same wall (32d, 32s) from which protrudes said at least one stopper (30).

5. The testing head (20) according to any claim 1 to 3, wherein said contact probe (21) comprises a further stopper (30A) protruding from an opposing wall (32s, 32d) with respect to said wall (32d, 32s) from which protrudes said at least one stopper (30).

6. The testing head (20) according to any claim 1 to 3, wherein said contact probe (21) comprises at least further three stoppers (30A, 30B, 30C), said four stoppers being protruding in couples from said walls (32d, 32s) of said contact probe (21) and being arranged symmetrically to said longitudinal axis (HH), the first and third stoppers (30, 30B) being arranged between said at least one support (23) and said further support (22) and the second and fourth stoppers (30A, 30C) being arranged between said guides (23A, 23B) of said at least one support (23).

7. The testing head (20) according to any preceding claim, wherein said contact probe (21) further comprises a notch (40) realized in a wall (32s) of said contact probe (21) opposite to said wall (32d) from which protrudes said at least one stopper (30).

8. The testing head (20) according to claim 7, wherein said notch (40) realizes a recess in said rod-like body (21') of said contact probe (21) having dimensions comparable to a lateral protrusion of said at least one stopper (30).

9. The testing head (20) according to any preceding claim, wherein said at least one stopper (30) has a lateral protrusion having dimensions comparable to a diameter of said contact probe (21) and it is preferably between 5 and 40 μm.

10. The testing head (20) according to any preceding claim, wherein said at least one stopper (30) is arranged at a distance (D) from said at least one support (23) less than the sum of a length (Lp) of said contact tip (26) protruding from said further support (22) outside of said testing head (20) and a thickness (Sp) of said further support (22).

11. The testing head (20) according to any preceding claim, wherein said at least one stopper (30) comprises at least one undercut wall (30sq) having a rounded shape.

12. The testing head (20) according to claim 11, wherein said undercut wall (30sq) has a radius of curvature (rc) between 0.001 μm and 0.1 μm.

13. A method for assembling a testing head (20) according to any preceding claim, said method comprising at least the steps of:

- providing an upper support (23) comprising first and second guides (23A, 23B) which are parallel to each other and apt to improve the sliding of contact probes (21);

- overlapping a lower support (22) and said first and second guides (23A, 23B) of said upper support (23) having said respective guide holes (24, 25A, 25B) concentric to each other;

- inserting said contact probes (21) in said respective aligned guide holes (24, 25A, 25B);

- a first relative movement of said upper support (23), and particularly of said guides (23A, 23B) together, with respect to said lower support (22) along a first direction (S1), perpendicular to said supports, passing said stopper (30) through said corresponding guide holes (25A, 25B) of said upper support (23); and

- a second relative movement of said upper support (23), and particularly of said guides (23A, 23B) together, with respect to said lower support (22) along a second direction (S2), parallel to said supports.

14. The method according to claim 13, further comprising a third step of relative movement of said first and second guides (23A, 23B) of said upper support (23) with respect to each other along a third direction (S3), parallel to said guides.