Claims

1. Mounting frame for displacing and fixing in a shaft, comprising

– a main frame (30),
– a support component (44) having a support surface (54) for supporting the mounting frame (24) via the support surface (54) against a first shaft wall (18) of the shaft (16) when the mounting frame (24) is displaced in a displacement direction (27),
– a primary fixing component (46) having a fixing surface (74) for supporting the mounting frame (24) via the fixing surface (74) against the first shaft wall (18) when the mounting frame (24) is fixed in the shaft (16), and
– a secondary fixing component (56) having a contact part (64) for supporting the mounting frame (24) via the contact part (64) against a second shaft wall (20) of the shaft (16), which second wall is opposite the first shaft wall (18) in a fixing direction (40), when the mounting frame (24) is fixed in the shaft (16),

– the support component (44) and the primary fixing component (46) being arranged on a first side (45) of the main frame (30), and
– the secondary fixing component (56) being arranged on a second side (47) of the main frame (30), which second side is opposite the first side (45) in the fixing direction (40),

characterized in that

– the primary fixing component (46) is arranged on the main frame (30) so as to be immovable relative to the main frame (30),
– the contact part (64) of the secondary fixing component (56) is arranged on the main frame (30) so as to be movable in the fixing direction (40) relative to the main frame (30) and can assume a fixing position and a displacement position, the contact part (64) being spaced further outward in the fixing direction (40) from the main frame (30) in the fixing position than in the displacement position, and
– the support component (44) is arranged on the main frame (30) so as to be at least partially movable in the fixing direction (40) relative to the main frame (30) and can assume a fixing position and a displacement position, with no part of the support surface (54) being spaced further outward in the fixing direction (40) from the main frame (30) in the fixing position than the fixing surface (74) of the primary fixing component (46), and the support surface (54) being spaced further outward in the fixing direction (40) from the main frame (30) in the displacement position than the fixing surface (74).

2. Mounting frame according to claim 1,

characterized by comprising

an energy store (52) which is designed and arranged in such a way that it pushes the support component (44) toward the displacement position.

3. Mounting frame according to either claim 1 or claim 2,

characterized in that

the main frame (30) is multi-part and two parts (36a, 38a; 36b, 38b) of the main frame (30) are designed to be movable relative to one another in the fixing direction (40).

4. Mounting frame according to claim 1, claim 2, or claim 3,

characterized in that

a suspension device (13) for suspending the mounting device (24) on a carrier means (22) is arranged on the main frame (30) and the suspension device (13) is designed to be movable in the fixing direction (40).

5. Mounting frame according to any of claims 1 to 4,

characterized in that

the mounting frame (24) has two support components (44) and two primary fixing components (46), which are each arranged spaced apart from one another in the displacement direction (27), the primary fixing components (46) being arranged on the outside in the displacement direction (27) relative to the support components (44).

6. Mounting frame according to any of claims 1 to 5,

characterized in that

a stabilizing element (6) is arranged on the first side (45) of the main frame (30), by means of which stabilizing element the main frame (30) can be supported against the first shaft wall (18) at least in the fixing position of the support component (44).

7. Mounting frame according to claim 6,

characterized in that

the main frame (30) has a longitudinal beam (42) extending in the displacement direction (27) and the stabilizing element (6) is arranged on the longitudinal beam (42).

8. Mounting frame according to either claim 6 or claim 7,

characterized in that

the stabilizing element (6) has:

- a roller (7) which is pushed away from the main frame (30) toward the first shaft wall (18) by means of an energy store (8), and
- a controllable fixing element (9) by means of which the roller (7) can be fixed in a position relative to the main frame (30).

9. Mounting frame according to any of claims 1 to 8,
characterized in that
the contact part (64) of the secondary fixing component (56) has a shape that is elongate in the displacement direction (27).

10. Mounting frame according to claim 9,
characterized in that
the contact part (64) of the secondary fixing component (56) is multi-part.

11. Mounting frame according to any of claims 1 to 10,
characterized in that
the secondary fixing component (56) has an actuator (60) by means of which the contact part (64) can be moved from the fixing position to the displacement position and vice versa, and
the secondary fixing component (56) is designed such that a spacing between the contact part (64) and the main frame (30) in the fixing direction (40) can also be changed independently of the actuator (60) of the secondary fixing component (56).

12. Mounting device for carrying out automated mounting steps in a shaft, comprising
a mounting frame (24) according to any of claims 1 to 11 and
a mechatronic installation component (28).

13. Mounting system for carrying out automated mounting steps in a shaft, comprising
a mounting device (26) according to claim 12 and
a displacement component (12) for displacing the mounting device (26) in the shaft (16).