CLAIMS

1. A diaphragm bellows, comprising: a plurality of diaphragms with outer edges and inner edges, said diaphragms follow one another in a direction of a central longitudinal axis of the diaphragm bellows and are welded together alternately in a region of said inner edges and in a region of said outer edges; at least one sliding-guidance device adapted for sliding guidance on a tube surrounding the diaphragm bellows at least along a part of a longitudinal extent thereof, said sliding-guidance device including at least two ring parts which each extend through at most 180° in a circumferential direction about the longitudinal axis of the diaphragm bellows, said at least two ring parts each have; a guide portion and a holding portion protruding from the guide portion in a direction of the longitudinal axis; said holding portion projecting into an intermediate space located between two adjacent ones of the diaphragms, said guide portion extends radially outside of the two adjacent ones of the diaphragms between which the holding portion projects and has a guide face, directed away from the longitudinal axis of the diaphragm bellows, adapted for sliding guidance on an inner surface of the tube surrounding the diaphragm bellows at least along a part of the longitudinal extent thereof, and

wherein the holding portion has a depression at least on one side with regard to a direction of the longitudinal axis, said depression cooperating with an elevation of the diaphragm adjoining the holding portion on said one side, or has an elevation at least on one side with regard to the direction of the longitudinal axis, and said elevation cooperates with a depression of the diaphragm adjoining the holding portion on said one side.

2. The diaphragm bellows according to claim 1, wherein, in a position of the diaphragm bellows in which no external force acts on the diaphragm bellows, the holding portions of the ring parts of the sliding-guidance device are held in a form-fitting manner in the intermediate space between the two adjacent ones of the diaphragms against pulling out from the intermediate space in a radial direction.

3. The diaphragm bellows according to claim 1, wherein the holding portion has on one side a depression which cooperates with an elevation of the diaphragm adjoining the holding

portion on said side, and on an other side an elevation which cooperates with a depression of the diaphragm adjoining the holding portion on said other side.

4. The diaphragm bellows according to claim 1, wherein a thickness of the holding portion measured in the direction of the longitudinal axis of the diaphragm bellows decreases in a radial direction toward the longitudinal axis of the diaphragm bellows.

5. The diaphragm bellows according to claim 1, wherein the diaphragms of the diaphragm bellows are with corrugations as seen in longitudinal central section through the diaphragm bellows, and the corrugations of the diaphragms form elevations and depressions on both side faces of the respective diaphragm with regard to the direction of the longitudinal axis of the diaphragm bellows.

6. The diaphragm bellows according to claim 1, wherein the ring parts are configured in a T-shaped manner as seen in longitudinal central section through the diaphragm bellows.

7. The diaphragm bellows according to claim 1, wherein the guide portions of the at least two ring parts of the sliding-guidance device extend through more than 180° in total in a circumferential direction about the longitudinal axis of the diaphragm bellows, and the holding portions of said at least two ring parts are plugged into a same intermediate space between the two adjacent ones of the diaphragms.

8. The diaphragm bellows according to claim 7, wherein the sliding-guidance device is formed by the two ring parts which each extend through 180° in the circumferential direction about the longitudinal axis of the diaphragm bellows.

9. The diaphragm bellows according to claim 1, wherein guide faces of the guide portions of the ring parts are formed in a curved manner in a direction away from the longitudinal axis of the diaphragm bellows.