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The invention relates to the processes and devices for friction welding and may be used in different branches of mechanical engineering for welding of small-sized parts of cylindrical form.
The process for friction welding is based on the use of several parts for simultaneous welding, wherein the parts are pressed to each other and are set in motion. The cylindrical parts for welding placed one above another are set in opposite rotary around its own axis motion by the same drive and are pressed to each other with a progressive growth of axial pressure.
The device for friction welding includes a cylindrical body 1, two elements for welding parts fixation and a drive 9. The cylindrical elements for welding parts fixation are made in the form of two drums placed concentrically one above another. The upper drum 2, consisting of upper and lower disks, between which round the circumference are fixed in pairs guide and drive rollers 3, is rigidly fixed onto the driven shaft 10 of the drive 9 and freely placed into the body 1. Between the inner wall of the body 1 and the guide and drive rollers 3 of the upper drum 2 there are placed the upper welding parts 13, the upper end of which comes in contact with the lower part, made contoured, of the annular cam 11 rigidly fixed into the body 1. The lower drum 5, consisting of two rings, between which there are pair wise fixed round the circumference guide and drive rollers 6, is freely mounted onto the cylindrical part of the base 8, wherein it is fixed the drive 9. Between the lateral surface of the cylindrical part of the base 8 and the guide and drive rollers 6 of the lower drum 5 there are placed the lower welding parts 14, the upper end of which comes in contact with the lower end of the upper welding parts 13, and the lower disk of the upper drum 2 is fixed by driving cops 4 to the rings of the lower drum 5. The device is additionally provided with a bin for welding parts feeding, fixed onto the body 1 in the zone of the lower idle stroke of the cam 11 contour and with a bin for finished parts collection 16, fixed to the base in the zone of the upper idle stroke of the cam 11 contour.

Claims: 2
Fig.: 5