The machine for machining parts includes a frame, first and second shafts connected by a double spatial joint in the form of two forks and a working container fixed between them on diametrically mutually perpendicular geometric axes. The second shaft is kinematically connected to the rocker arm, which is movably mounted in the frame with the possibility of oscillatory movement in the horizontal plane. A drive with an electric motor and drive shaft is installed in the frame. Additionally, it is equipped with a crank, which is kinematically connected to the first shaft and rigidly connected to the drive shaft, an additional drive containing an electric motor and a drive shaft, and a Hook joint. The Hook joint includes a driving and a driven fork. The driving fork of the Hook joint is rigidly connected to the drive shaft of the additional drive. The driven fork of the Hook joint is rigidly connected to the second shaft.