and also with respect to a seated patient. The torque for the internal and external shoulder rotation is delivered by the third drive **29**. The connecting rail **18** thus turns with the elbow joint, which is then turned by the third drive **32** for flexion and extension of the elbow. With the wrist cuff **8** which is provided in the area of the arm joint and which is connected to the elbow via the forearm rotation module **20/21** and the forearm connecting rail **19**, the forearm retained by the cuff **9** is prepared for pronation/supination of the forearm, which can be effected by the drive **35** as a relative movement of the cuffs **8** and **9** with respect to one another. The forearm rotation module **20/21** is advantageously slightly smaller and lighter than but otherwise identical to the upper arm rotation module **16/17**, such that the description regarding FIGS. **5** to **7** also applies to the forearm rotation module **20/21**.

[0033] The object depicted in FIG. **3** is shown from the opposite side in FIG. **4**, thus very clearly illustrating the laterally open rotation modules **16/17**, **20/21** and **22/23** in the rest position. It will be clear that, even if the patient **4** has limited mobility, he or she can still easily introduce the arm sideways into the system.

[0034] FIG. **5** now shows an exploded view of the upper arm module. The forearm rotation module can be realized in the same way, only the dimensions are advantageously slightly smaller and, instead of rails **18** or supporting connection eyelets **39**, is now provided with the rail **19** and the receiver for the rails **18**. A simple rotation movement of the elbow about its axis is also permitted via a direct drive **32**.

[0035] As has been stated, the upper arm rotation module is composed of an outer half-cylinder **16** and of an inner half-cylinder **17**. The outer half-cylinder **16** is composed of a central retaining wall **42** on which two eyelets **39** are provided for securing the lower supporting connection **15**. The retaining wall **42** positions the outer walls **41** and **43** of the upper arm rotation module that are each placed laterally on the wall **42**. The motor-side outer wall of the upper arm rotation module is provided with an opening **38** for the shaft of the drive **29**, which drives the cables, of which there are in this case three **45**, **46** and **47**, via the cable drive flange **44**. The cable drive flange can, for example, be an aluminum pin roughened by sandblasting. The drive cables **45**, **46** and **47** transmit the rotation movement of the cable drive flange **44** to the inner half-cylinder **17** of the upper arm rotation module.

[0036] The pretensioning of the cable can be regulated by a setting screw (not shown here). To achieve the greatest possible step-down ratio, several cables are used, in this case three. In this way, the load is distributed among these three cables, and it is possible to use thinner cables **45**, **46** and **47** with smaller bending radii. A greater step-down ratio can thus be achieved, which is calculated from the ratio between the external diameter of the inner half-cylinder **17** of the upper arm rotation module and the external diameter of the cable drive flange **44**. On the motor side, that is to say on the left in FIG. **5**, the inner half-cylinder **17** of the upper arm rotation module engages in the ball bearing, as can be seen more clearly from FIG. **7**. The distal side of the inner half-cylinder **17** of the upper arm rotation module is provided with openings for receiving said connecting rail **18** from the upper arm to the elbow. It is clear that, instead of the rod-guiding connecting rail **18**, a half hollow-cylindrical solid material can also be used, which can also be a continuation of the cylinder of the upper arm rotation module open on one side.

[0037] Instead of the cables **45**, **46**, **47** shown here and secured on the outer surface of the inner cylinder **17**, they can also each be secured on the inside wall of the outer cylinder **16**. The cable drive flange **44** is then secured on a drive that is secured on the inner hollow-cylinder part **17**.

[0038] In another embodiment, it is also possible to have two pairs of cables lying opposite one another (in other words two halves **46**), in which case, when the flange **44** is turned in one direction, one cable is wound up and the diametrally opposite cable unwound; the flange **44** then works as a roller. The module shown in the illustrative embodiments has the advantage, however, that the wire can be more easily guided in the small space between the hollow-cylinder parts **16** and **17** and does not have to be wound up on the flange **44**.

[0039] In another embodiment not shown in the drawings, the cables **45** to **47** can also be replaced by a V-belt. The V-belt is secured in the area of the ends of the hollow cylinder **17**. The V-belt has knobs and is guided round the drive flange, which also has knobs and ensures a clearance-free contact with the belt.

[0040] Finally, it is also possible in principle to provide a curved toothed rod, which is arranged on the cylinder and into which a suitably driven toothed wheel or spindle engages.

[0041] FIG. **6** shows the upper arm rotation module from the open side. It can clearly be seen that the cuff **10** is secured on the inner cylinder **17**, which is held laterally by the motor-side outer wall **41** and the distal outer wall **42**.

[0042] The devices shown here are each provided for training the right arm of a user **4**. If the opening of the cuff **8** of the upper arm rotation module is directed downward, it is necessary simply to switch the elbow drive and the forearm rotation module and change the handle to a left hand. If the cuff **8** of the upper arm rotation module has a lateral opening, it is also possible alternatively for the upper arm rotation module to be rotated through 180 degrees along the axis of the upper arm.

[0043] FIG. **7** now shows, in a partially dismantled perspective view of the upper arm rotation module, a more exact representation of the drive of the inner half-cylinder. FIG. **8**, finally, shows a perspective bottom view of the upper arm rotation module. The first, second and third drive cables **45**, **46** and **47** are clamped at respective anchor points **51**. A similar anchoring is provided at the opposite end of the inner half-cylinder **17**. The cables **45**, **46** and **47** then run over and around the cable drive flange **44** to said second attachment. The cable drive flange **44** protrudes through a bearing in the distal outer wall. **43** of the upper arm rotation module and is driven from the opposite side.

[0044] The schematic view shows some of the ten inner ball bearings **48** and some of the ten outer ball bearings **49**. There are also twelve lateral ball bearings **50**. The lateral ball bearings **50** are in contact with the polished outer edge of the inner half-cylinder **17**. In this way they guide the half-cylinder **17**. Depending on the position of the inner half-cylinder **17**, four or five ball bearings have contact. The ball bearings **48** and **49** lie on the outer end of steel pins, while the other end is inserted and fixed into the respective outer wall **41**, **43** of the upper arm rotation module. The ball bearings **50** are likewise held by steel pins. The ball bearings lie in the center of the steel pins which, at both ends, are connected to the respective outer wall **41**, **42** of the upper arm rotation module by means of screws that lie perpendicular to the steel pin. The steel pins thus come to lie parallel to the outer wall. Cuttings are formed in the outer wall to allow the ball bearings to turn freely. These ball bearings **50** are held by steel pins that are fixed on the inside face of the respective outer wall **41**, **43** of the upper arm rotation module.