

A B S T R A C T

A substantially maintenance-free drive shaft (55) with direct-mounted sprockets is arranged in a chain drive unit (14) which drives a conveyor (13) of a filtration apparatus. The drive shaft (55) with direct-mounted sprockets includes a shaft body (60), a pair of metal plate sprockets (61, 62), and first padding portions (71) and second padding portions (72) formed of weld beads. The first padding portions (71) are formed at the respective corner portions defined by side surfaces (61b, 61c) of the first metal plate sprocket (61) and the shaft body (60). Further, the first padding portions (71) are formed such that their positions are changed to alternate with each other in a circumferential direction of the shaft body (60). The second padding portions (72) are formed at the respective corner portions defined by side surfaces (62b, 62c) of the second metal plate sprocket (62) and the shaft body (60). Further, the second padding portions (72) are formed such that their positions are changed to alternate with each other in the circumferential direction of the shaft body (60). A torque input to the shaft body (60) is transmitted to the metal plate sprockets (61, 62) via the padding portions (71, 72).