Atlante di Artobolewsky

<u>Gruppo 3.</u> Meccanismi con membri mobili (n>3)
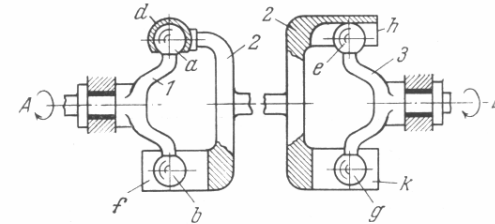<u>*Sottogruppo 1.*</u> *Meccanismi con 4 membri per uso generico*
<u>Parte Terza</u>

Link *1*, rotating about fixed axis *A*, is connected by a two-motion kinematic pair to link *2*. This pair consists of two spherical surfaces *a* and *b* which contact spherical socket *d*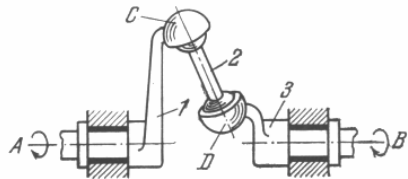 and flat surface *f* of link *2*. Link *3*, rotating about fixed axis *B*, is connected by a two-motion kinematic pair to link *2*. This pair consists of two spherical surfaces *e* and *g* which contact internal cylindrical surface *h* and flat surface *k* of link *2*. The mechanism transmits rotation between any two arbitrarily located axes *A* and *B*.
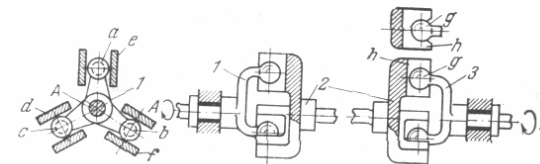

Link *1*, rotating about fixed axis *A*, is connected by spherical pair *C* to link *2*. Link *2* is connected by spherical pair *D* to link *3* which rotates about fixed axis *B*. The mechanism transmits rotation between any two arbitrarily located axes *A* and *B*.
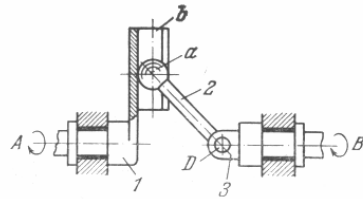

Link *1*, rotating about fixed axis *A*, is connected by a three-motion kinematic pair to link *2*. This pair consists of three spherical surfaces *a*, *b* and *c* of link *1* which contact three flat surfaces *e*, *f* and *d* of link *2*. Link *2* is connected by a two-motion kinematic pair to link *3*. This pair consists of three spherical surfaces *g* of link *3* which contact two flat surfaces and one cylindrical groove *h* of link *2*. Link *3* rotates about fixed axis *B* and its spherical surface *g* slides along cylindrical groove *h* of link *2*. The mechanism transmits rotation between any two arbitrarily located axes *A* and *B*.
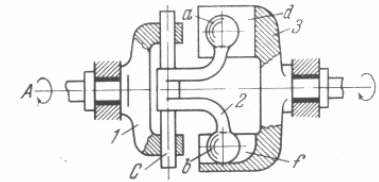
1

Link *1*, rotating about fixed axis *A*, is connected by a four-motion kinematic pair to link *2*. This pair consists of spherical surface *a* of link *2* which contacts internal cylindrical surface *b* of link *1*. Link *2* is connected by turning pair *D* to link *3* which rotates about fixed axis *B*. The mechanism transmits rotation between any two arbitrarily located axes *A* and *B*.
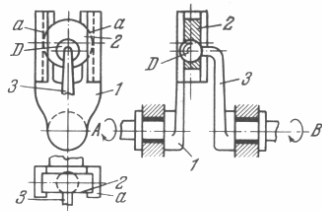
Link *1*, rotating about fixed axis *A*, is connected by cylindrical turning and sliding pair *C* to link *2*. Link *2* is connected by a three-motion kinematic pair to link *3*. This pair consists of two spherical surfaces *a* and *b* which contact flat surface *d* and cylindrical groove *f* of link *3*. Link *3* rotates about fixed axis *B*. The mechanism transmits rotation between any two arbitrarily located axes *A* and *B*.
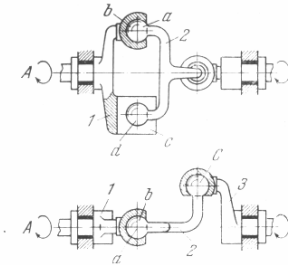
Link *1*, rotating about fixed axis *A*, is connected by a two-motion kinematic pair to link *2* which has the form of a round roller contacting guides *a* of link *1*. Link *2* is connected by spherical pair *D* to link *3* which rotates about fixed axis *B*. The mechanism transmits rotation between any two arbitrarily located axes *A* and *B*.

Link *1*, rotating about fixed axis *A*, is connected by a two-motion kinematic pair to link *2*. This pair consists of two spherical surfaces *a* and *d* which contact spherical socket *b* and flat surface *c*. Link·*3*, rotating about fixed axis *B*, is connected by spherical pair *C* to link *2*. The mechanism transmits rotation between any two arbitrarily located axes *A* and *B*.

Link *1*, rotating about fixed axis *A*, is connected by a cylindrical turning and sliding pair to link *2*. This pair consists of two spherical surfaces *a* and *b* of link *2* which contact internal cylindrical surface *d* of link *1*. Link *2* is connected by spherical pair *C* to link *3* which rotates about fixed axis *B*. The mechanism transmits rotation between any two arbitrarily located axes *A* and *B*.
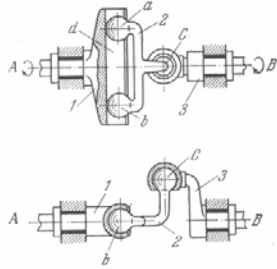
Link *1*, rotating about fixed axis *A*, is connected by a two-motion kinematic pair to link *2* which has the form of a round roller with rim flanges. Link *2* turns and slides along guides *b* of link *1*. Link *3*, rotating about fixed axis *B*, is connected by spherical pair *D* to link *2*. The mechanism transmits rotation between any two arbitrarily located axes *A* and *B*.
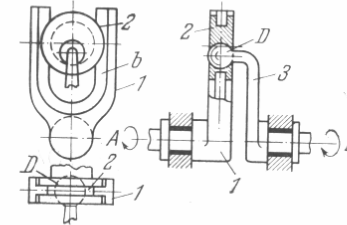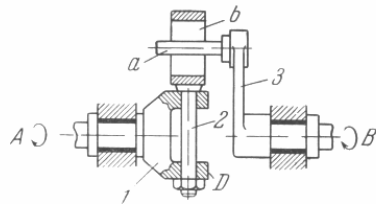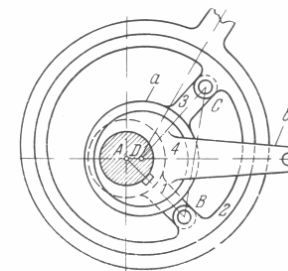
Link *1*, rotating about fixed axis *A*, is connected by turning pair *D* to link *2*. Link *2* is connected by a four-motion kinematic pair to link *3*. This pair consists of flat surface *b* of link *2* and cylindrical pin *a* of link *3*. Link *3* rotates about fixed axis *B*. The mechanism transmits rotation between any two arbitrarily located axes *A* and *B*.

Four-bar linkage *ABCD* consists of links *1*, *2*, *3* and *4*. Of these link *3* carries collar *a* which encircles fixed eccentric *4* having its centre at point *D*. The dimension *AD* can be varied by turning handle *b* of eccentric *4*.

FOUR-BAR MECHANISM WITH AN OSCILLATING DISK

LW
4L

Rocker arm 2 of four-bar linkage *ABCD* is designed in the form of a disk connected by a turning pair to the fixed collar of link *3*. Upon rotation of crank *1*, disk *2*, encircled by fixed collar *3*, oscillates about axis *D*.

FOUR-BAR ECCENTRIC MECHANISM

LW
4L

Connecting rod *2* is designed in the form of collar *a* encircling eccentric *1* which rotates about fixed axis *A*. This mechanism is equivalent to four-bar linkage *ABCD* in which the crank length is $\overline{AB}$. Point *E* of connecting rod *2* describes a connecting-rod curve used for transmitting the required motion to link *4*.

FOUR-BAR MECHANISM WITH AN ARC-SHAPED GUIDE BLOCK

LW
4L

Rocker arm *1* oscillates about fixed axis *D*. Connecting rod *3* is connected by turning pairs *B* and *C* to link *2* and rocker arm *1*. Link *2* has arc-shaped slot *a* which slides along arc-shaped guide block *b* whose radius equals $\overline{AD}$. Upon oscillation of rocker arm *1*, arc-shaped slotted link *2*, having its centre at point *A*, slides along the fixed guide block. This mechanism is equivalent to four-bar double-swing linkage *ABCD*.