to drive member **314**. In one embodiment (not shown) the myosin-coated surface **316** of the first disc **311** opposes, and is sufficiently close to, the actin-coated surface of the second disc **313** such that the myosin and actin interact to rotate the second disc **313** relative to the first disc **311**.

[0144] In another embodiment, at least one freely rotating intermediate disc **315** is disposed between the first disc **311** and the second disc **313**. The intermediate disc **315** includes a first planar surface that is coated with myosin **316** and an obverse second planar surface that is coated with actin **317**. The first disc **311**, intermediate disc(s) **315**, and second disc **313** are arranged such that each myosincoated surface **316** is positioned adjacent to, or opposes, an actin-coated surface **317**. The myosin-coated surfaces **316** and the actin-coated surfaces **317** are sufficiently close to each other so that the myosin and actin interact to rotate the intermediate disc(s) **315** relative to each other and the first disc **311**. The intermediate disc **315** located adjacent to the second disc **313** rotates the second disc **313**. Although the first disc **311** is depicted in **FIG. 10** as the only disc directly affixed to a drive member, the intermediate disc(s) **315** could also be directly coupled to a drive member or power take-off. For example a drive belt (not shown) could be coupled to the peripheral edge of the intermediate disc(s) **315** or the peripheral edge of the intermediate disc(s) **315** could define a series of gear teeth (not shown). Another feature of multiple stacked discs is that the discs could be configured to multiply the rotational speed of the second disc **313** in a manner analogous to the embodiment shown in **FIG. 6**. In other words, the difference between the rotational velocity of the second disc **313** and the rotational velocity of the intermediate disc **315** located the farthest distance from the second disc **313** is directly proportional to the number of stacked discs.

[0145] During operation, a liquid containing a sufficient concentration of ATP is introduced between the respective planar surfaces of the discs. The myosin coated on the disc surface(s) **316** undergoes a conformation change to attach to, and move, an adjacent actin-coated disc surface(s) **317**. Movement of the actin-coated disc surface(s) **317** moves any drive member(s) coupled to such discs.

[0146] An optional outer cylinder (not shown) encompassing the discs may assist in directing the ATP-containing liquid to the appropriate location. The outer cylinder may optionally include perforations for introducing the ATP-containing liquid into the cylinder's interior. Alternatively, the ATP-containing liquid could be introduced via openings (not shown) provided in the central support rod **319**. The discs may be constructed to facilitate the flow of the ATP-containing liquid.

[0147] For example, **FIG. 12A** shows a representative disc embodiment **350** that includes voids or perforations **354** arranged circumferentially around the disc orifice **352**. The voids **354** may be designed such that they have a wide opening at the peripheral edge of the disc **350** tapering down to a closed end at the edge of the disc orifice **352**. Such a design results in propeller-shaped disc blades **351** arranged circumferentially around the disc orifice **352**. Each propeller-shaped disc blade may have a leading edge **355** that is swept back or arcuate in a direction corresponding to the rotation direction of the disc **350**. Actin may be directionally applied to a surface of the disc blades **351** as represented by arrows **353**. Of course, myosin may be coated on the surface rather than actin. As the disc **350** rotates clockwise, the ATP-containing liquid ("ATP" in **FIGS. 12A and 12B**) is swept in along the leading edges **355** of the disc blades **351** so that it contacts the actin-coated surfaces. The ATP-containing liquid would be drawn towards the center of the disc **350**. The support rod **319** could be provided with openings (not shown) for receiving the waste ATP liquid and discharging it from the motor. Adjacent discs **350** with the propeller configuration should be designed so that there is overlap at all operating times between at least a portion of the adjacent disc blade **351** surfaces and, thus, contact between the motor proteins. For example, the voids **354** could be smaller than the disc blades **351** or the voids **354** could have a different geometric shape relative to the geometric shape of the disc blades **351**.

[0148] **FIG. 12B** shows another representative disc embodiment **370** that includes grooves or indentations **371** formed on a surface of the disc **370** that is coated with myosin molecules **373**. The grooves **371** could extend from the peripheral edge of the disc **370** to the edge of the disc orifice **372**. The grooves **371** are swept back or arcuate to facilitate flow of the ATP-containing liquid across the surface of the disc **370** and towards the center of the disc **370** as the disc **370** rotates clockwise. The support rod **319** could be provided with openings (not shown) for receiving the waste ATP liquid and discharging it from the motor. The grooves **371** are shown in **FIG. 12B** as continuous grooves but could be discontinuous grooves.

[0149] As mentioned above, the discs depicted in **FIG. 10** could be replaced by rings as illustrated in **FIG. 13**. At least two concentric rings **410** lie in a common plane around a central orifice **412** to form a ring layer **413**. The rings **410** may be rigid or flexible. A stationary central support rod **426** is received within the central orifice **412**. Each ring layer **413** includes a central ring **427** that defines an annular inner surface **428** that is fixedly secured to the surface of the central support rod **426**. The central support rod **426** and the central rings **427** may form an integral member. One end of the central support rod **426** is fixedly secured to a base **416**. The common plane of each ring layer **413** is transverse to a longitudinal axis **425**. The ring layers **413** are located axially adjacent each other along the longitudinal axis **425**. With reference to **FIG. 13**, "axially" or "axial" denotes a direction parallel to the longitudinal axis **425** and "radially" or "radial" denotes a direction transverse to the longitudinal axis **425**. A first planar surface **414** of the ring **410** is coated with a motor protein such as, for example, myosin. An obverse second planar surface **415** of the ring **410** is coated with a complementary motor protein such as, for example, actin. A gap **411** is provided between adjacent rings **410**. The support rod **426** and concentric ring arrangement assist in maintaining the radial alignment of the rings **410**. Each ring **410** (except central rings **427**) is free to rotate relative to any other ring **410** and relative to the stationary support rod **426**.

[0150] At least two, more particularly at least three, ring layers **413** are disposed adjacent to each other, for example, in a stacked configuration, such that the myosin-coated surfaces **414** oppose the actin-coated surfaces **415**. A base **416** defining a surface **417** is provided adjacent to a bottom ring layer. Ball bearings or similar friction reducing materials may be provided on the surface **417**. Drive member(s)