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Dachs, II et al.

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(54) **MOTOR INTERFACE FOR PARALLEL DRIVE SHAFTS WITHIN AN INDEPENDENTLY ROTATING MEMBER**

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A61B 19/00 (2006.01)

(52) **U.S. Cl.**
USPC **173/164**; 173/213; 173/216

(58) **Field of Classification Search**
USPC 173/164, 213, 216
See application file for complete search history.

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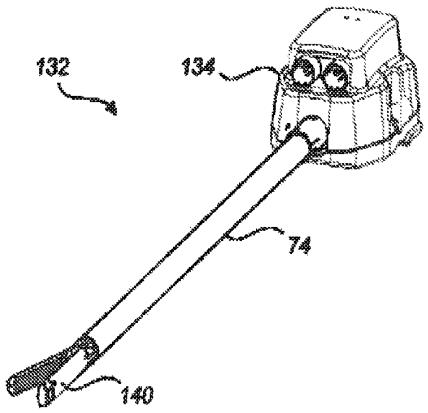
(57) **ABSTRACT**

Mechanisms, assemblies, systems, tools, and methods incorporating the use of an offset drive shaft within an independently rotating member are provided. An example mechanism includes a base and a main shaft mounted to rotate relative to the base, a first drive shaft mounted inside the main shaft, and a first drive feature engaged with the first drive shaft. The main shaft includes a proximal end, a distal end, and a main shaft rotational axis defined therebetween. The first drive shaft is offset from the main shaft rotational axis. A first drive feature rotational axis is defined for the first drive feature and is fixed relative to the base as the main shaft rotates. The first drive feature rotates the first drive shaft.

15 Claims, 18 Drawing Sheets



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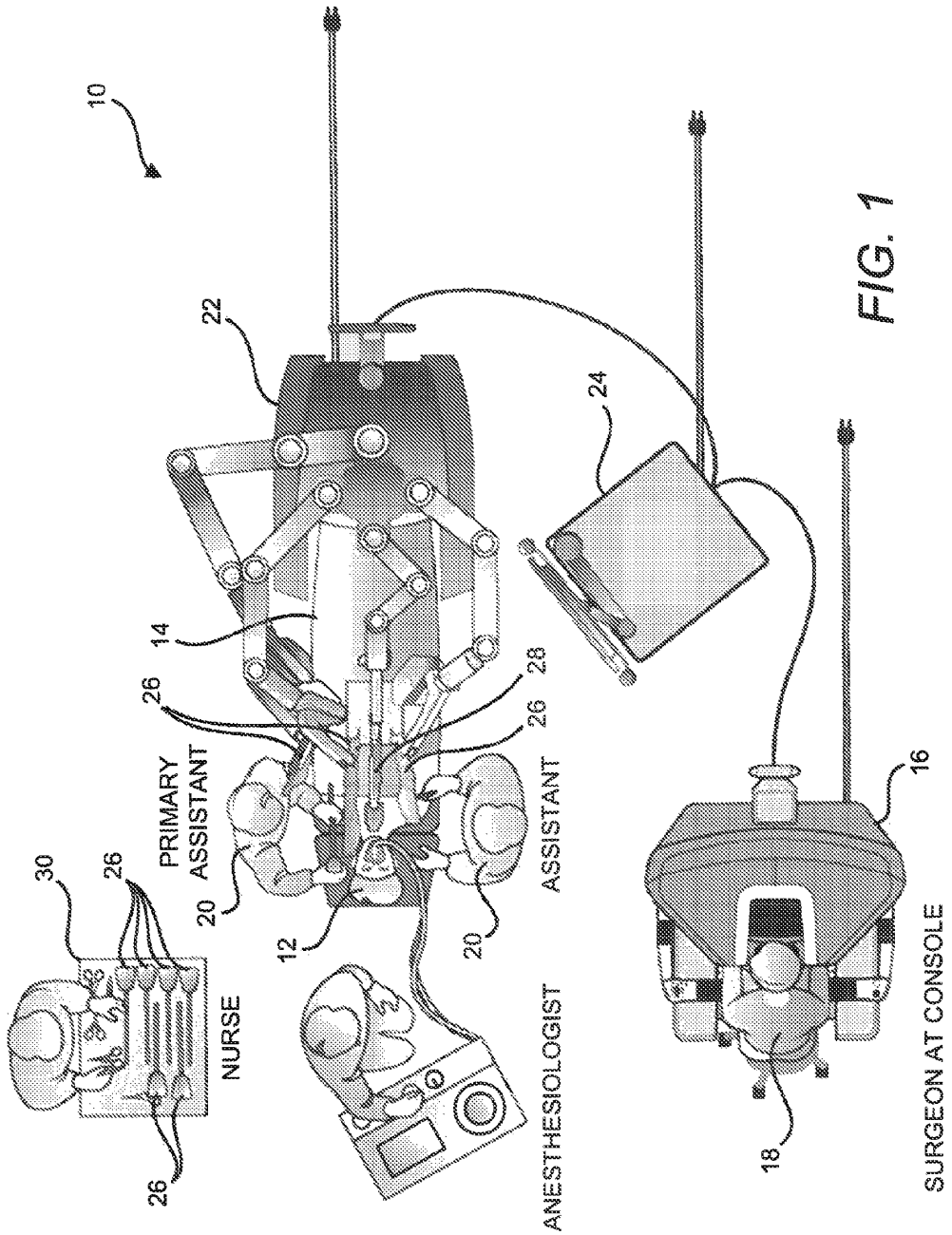

FIG. 1

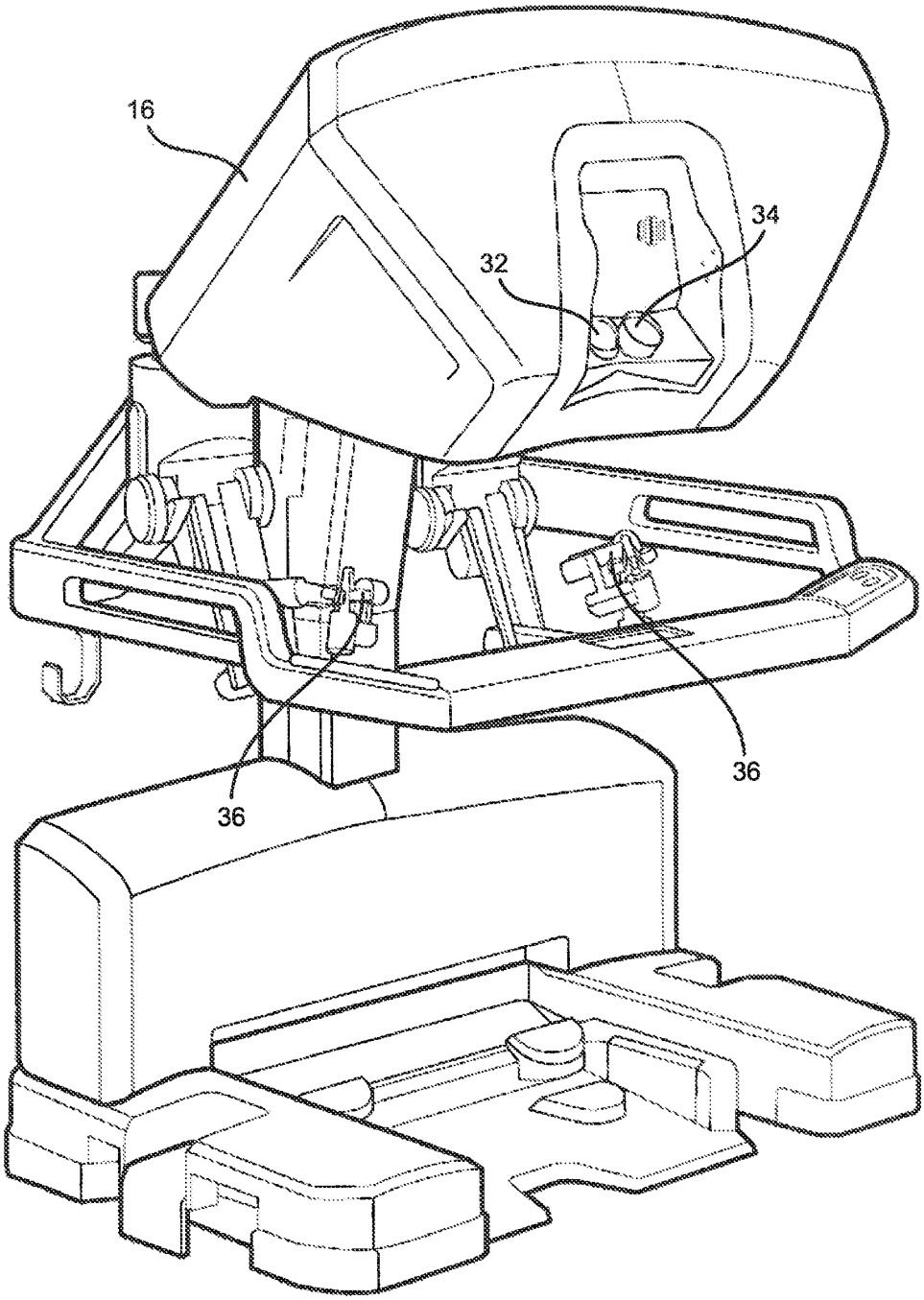

FIG. 2

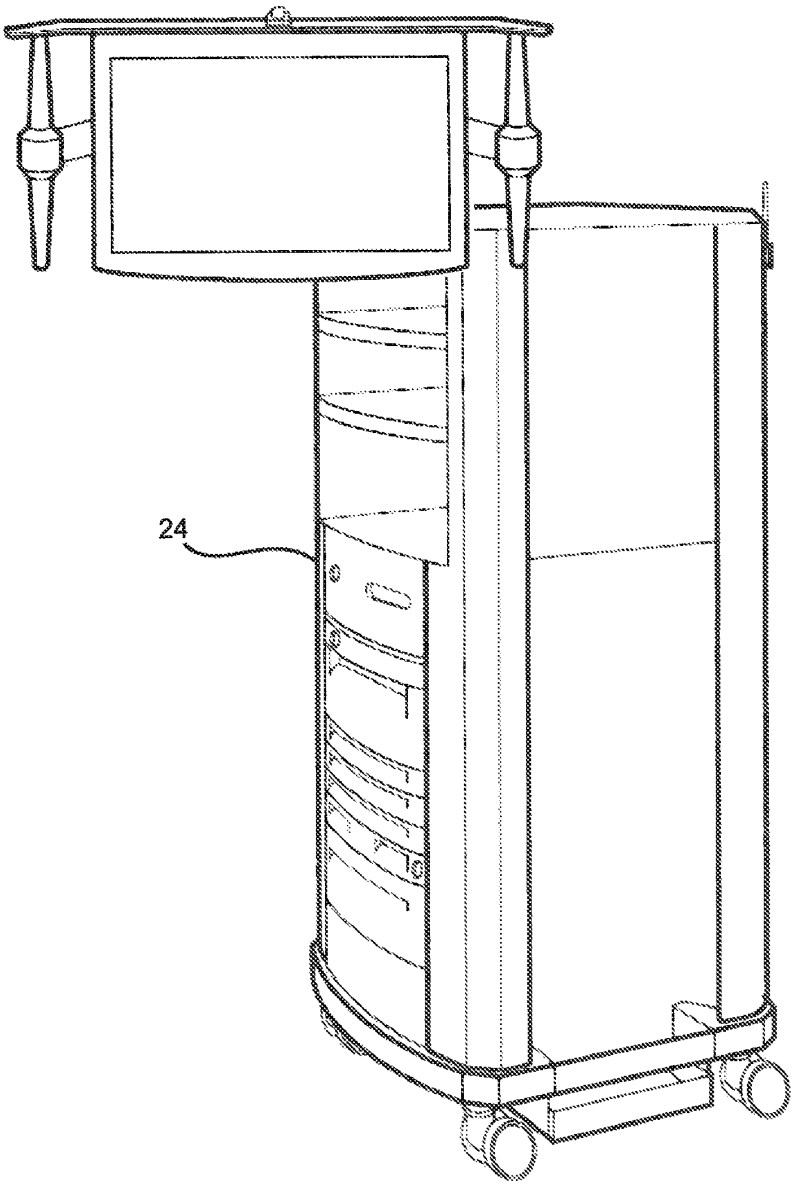

FIG. 3

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