CLAIMS

What is claimed is:

1. A forceps comprising:

a frame; and

a motion transfer assembly coupled to the frame, the motion transfer assembly including:

a body having a passageway extending through the body;

a drive shaft extending through the passageway, wherein the body and the drive shaft are slidable with respect to the frame, and wherein the body is rotationally fixed to the drive shaft with a clip to transfer a rotational input received from a first actuator into a rotational motion of the drive shaft relative to the frame; and

a drive link operably coupled to the frame and the body, wherein the drive link is configured to transfer a force received from a second actuator into a linear motion of the body and the drive shaft relative to the frame.

2. The forceps of claim 1, further comprising a biasing element coupled to the body, wherein the drive link transferring a force to the body that exceeds a preload of the biasing element causes the body to move linearly relative to the drive shaft.

3. The forceps of claim 2, further comprising: a clip fixed to the drive shaft and slidably coupled to the body.

4. The forceps of claim 3, wherein the clip is slidably coupled to the body along a track in the body.

5. The forceps of any of claims 1 or 2, ~~further comprising: a~~ wherein the clip ~~fixed to the drive shaft and~~ is slidably coupled to the body~~, wherein~~ and the rotational motion is delivered from the body through the clip to the drive

shaft, and wherein the linear motion is delivered from the body indirectly through the biasing element to the clip and from the clip to the drive shaft to translate the drive shaft.

~~6. A motion transfer assembly for a forceps, the assembly comprising:~~

~~a body having a collar and a passageway extending through the body;~~

~~a drive shaft extending through the passageway, wherein the drive shaft is slidable with respect to the body;~~

~~a clip fixed to the drive shaft, the clip having a first surface and a second surface opposite the first surface; and~~

~~a biasing element coupled to the body, the biasing element extending from a first end portion to a second end portion,~~

~~wherein the collar is configured to receive a first force from the first end portion of the biasing element, and the clip is configured to receive a second force from the second end portion of the biasing element, and~~

~~wherein the body includes a clip support surface configured to transmit the first force to the second surface of the clip.~~

~~7. The forceps of claim 6, wherein the body includes a clip support surface, and wherein the biasing element under a preload drives the clip against a clip support in the body.~~

~~8. The forceps of any of claims 6-7, further comprising a frame and a drive link, wherein the drive link is operably coupled to the frame and the body, wherein the drive link is configured to transfer a force received from a first actuator into a linear motion of the body and the drive shaft relative to the frame.~~

~~9. The forceps of any of claims 6-8, wherein the body is rotationally fixed to the drive shaft to transfer a rotational input received from a rotatable actuator into a rotational motion of the drive shaft.~~

~~10. The forceps of any of claims 6–9, wherein the clip is slidably coupled to the body along a track in the body.~~

~~11. The forceps of any of claims 6–10, further comprising:~~

~~a drive link operably coupled to the body,~~

~~wherein the drive link is configured to transfer an input force received from a first actuator into linear motion of the body and the drive shaft.~~

~~12. The forceps of claim 11, wherein the input force exceeding a preload of the biasing element causes the body to move linearly relative to the clip and the drive shaft.~~

~~13. A medical device comprising:~~

~~a housing;~~

~~an actuator;~~

~~a body including a passageway extending through the body;~~

~~a drive shaft extending through the passageway; and~~

~~a clip coupled to the body and the drive shaft to rotationally fix the body relative to the drive shaft,~~

~~wherein the body is configured to transfer a rotational input received from the actuator into a rotational motion of the clip,~~

~~wherein the clip is configured to transfer the rotational motion of the clip into a rotational motion of the drive shaft.~~

~~14. The medical device of claim 13, wherein the medical device is a forceps comprising jaws coupled to a distal portion of the drive shaft, and wherein the rotational motion of the drive shaft causes the jaws to rotate.~~

~~15. The medical device of any of claims 13 or 14, further comprising a hub located around at least a portion of the body and the drive shaft, wherein the rotational motion received from the actuator is received by the hub, transferred from the hub to the body, transferred from the body to the clip, and transferred from the clip to the drive shaft.~~

~~16. The medical device of any of claims 14–15, further comprising an outer shaft around the drive shaft, and wherein a hub is rotationally fixed to the outer shaft.~~

~~17. The medical device of any of claims 14–16, further comprising a hub and an outer shaft, wherein the hub is located around at least a portion of the body and the drive shaft, and wherein the hub is configured to transfer rotational motion from the hub to the outer shaft.~~

~~18. The medical device of any of claims 14–17, further comprising a hub and an outer shaft, wherein the hub is located around at least a portion of the body and the drive shaft, and wherein the rotational input received from the actuator is transferred to the drive shaft via the hub to rotate the drive shaft and is transferred to the outer shaft via the hub to rotate the outer shaft.~~

~~19. A motion transfer assembly for a forceps, the assembly comprising:~~

~~a body having a first slot and including a passageway extending through the body;~~

~~a drive shaft having a second slot and extending through the passageway;~~

~~a biasing element positioned around the body; and~~

~~a clip applying a compression force to the biasing element,~~

~~wherein the clip is misaligned with the first slot, and~~

~~wherein the clip is aligned with the second slot.~~

~~20. The assembly of claim 19, wherein the clip is fixed to the second slot.~~

~~21. The assembly of any of claims 19 or 20, wherein the clip is movable relative to the body along a longitudinal axis of the drive shaft.~~

6. The forceps of claim 1, wherein, the body comprises an anchor portion with a distal spring seat and the clip provides a proximal spring seat, the

biasing element being arranged between the distal spring seat and the proximal spring seat.

7. The forceps of claim 6, wherein the anchor portion further comprises a rotational keying slot.

8. The forceps of claim 7, wherein the keying slot extends parallel to a longitudinal axis of the drive shaft.

9. The forceps of claim 1, wherein the body comprises a neck portion and a collar adapted for contact by the drive link.

10. The forceps of claim 9, wherein the drive link comprises legs that fit around the neck portion and push against a drive surface of the collar.

11. The forceps of claim 1, further comprising jaws coupled to a distal portion of the drive shaft, and wherein the rotational motion of the drive shaft causes the jaws to rotate.

12. The forceps of claims 2, further comprising a hub located around at least a portion of the body and the drive shaft, wherein the rotational motion received from the first actuator is received by the hub, transferred from the hub to the body, transferred from the body to the clip, and transferred from the clip to the drive shaft.

13. The forceps of claim 12, further comprising an outer shaft around the drive shaft, and wherein the hub is rotationally fixed to the outer shaft.

14. The forceps of claim 1, wherein the body includes a clip support surface and a biasing element under a preload drives the clip against the clip support surface.

15. The forceps of claim 1, wherein the drive shaft extends fully through the body via the passageway.

16. The forceps of claim 1, wherein the clip being slidably disposed on the body and configured to transfer the rotational input received from the first actuator into the rotational motion of the drive shaft relative to the frame.

17. The forceps of claim 16, wherein the linear motion of the body is transferred to the drive shaft via the clip.