being located on each side of the dovetail slot, there remaining a non-contacting region between the blade dovetail and the dovetail slot; and

a reinforcing shim disposed between the blade dovetail and the rotor dovetail slot, the shim including means for inhibiting fretting wear of the titanium dovetail and the titanium rotor in the contacting region of the dovetail slot, a strengthening doubler disposed in the non-contacting region and means for joining the doubler to the fretting-inhibiting means in the non-contacting region.

11. The assembly of claim **10**, wherein the means for inhibiting includes an anti-fretting layer interposed between the blade dovetail and the rotor dovetail slot over the contacting regions.

12. The assembly of claim **10**, wherein the means for inhibiting includes a high friction, soft coating on the shim adjacent to the respective adjacent titanium pieces.

13. A multilayer shim configured for placement between a dovetail slot of a titanium rotor and a titanium blade dovetail, the rotor dovetail slot in the circumference of the rotor including at least a pair of sidewalls diverging in a direction from the circumference toward an inward portion of the rotor, and terminating at a bottom, and the blade dovetail sized to fit into the rotor dovetail slot and contact the rotor along a pair of contacting regions on the inwardly diverging sidewalls of the rotor dovetail slot, one contacting region on each side of the rotor dovetail slot, there remaining a non-contacting region between the blade dovetail and the rotor dovetail slot bottom the shim comprising:

at least two material layers;

means for inhibiting fretting wear of the titanium dovetail and the titanium rotor in the contacting region of the dovetail slot;

a high strength doubler; and

a joint int the non-contacting region joining the doubler to at least one of the material layers.

14. A multilayer shim configured for placement between a dovetail slot of a titanium rotor and a titanium blade dovetail, the rotor dovetail slot being located in the circumference of the rotor including inwardly inclined sidewalls and a bottom, and the titanium blade dovetail sized to fit into the rotor dovetail slot and contact the rotor along a pair of contacting regions on the inwardly inclined sidewalls of the rotor dovetail slot, one contacting region on each side of the rotor dovetail slot, there remaining a non-contacting region between the blade dovetail and the rotor dovetail slot bottom, the shim comprising:

(a) an anti-fretting layer interposed between the blade dovetail and the rotor dovetail slot over both the contacting regions and the non-contacting region, the anti-fretting layer being formed of a material that does not exhibit fretting when rubbed against titanium,

(b) a doubler having higher strength than the anti-fretting layer and overlying only that portion of the anti-fretting layer that is disposed over the non-contacting region and affixed to at least a part of the anti-fretting layer; and

(c) a joint located in the non-contacting region joining together the anti-fretting layer and the doubler.

15. A multilayer shim configured for placement between a dovetail slot of a titanium rotor and a titanium blade dovetail, the rotor dovetail slot in the circumference of the rotor including at least a pair of sidewalls diverging in a direction from the circumference toward an inward portion of the rotor, and terminating at a bottom, and the titanium blade dovetail sized to fit into the dovetail slot and contact the rotor along a pair of contacting regions on the inwardly diverging sidewalls of the rotor dovetail slot, one contacting region on each side of the rotor dovetail slot, the shim comprising:

a first layer adjacent the dovetail slot, the first layer having a slip-inhibiting material on an outer surface lying adjacent the contacting regions of the dovetail slot, and a slip-promoting material on an inner surface oppositely disposed from the outer surface,

a second layer adjacent the dovetail, the second layer having a slip-inhibiting material on an inner surface lying adjacent the contacting regions of the dovetail, and a slip-promoting material on an outer surface oppositely disposed from the inner surface, the slip-inhibiting material of each layer being in contact with the adjacent titanium piece and acting to inhibit sliding movement between the shim and the titanium piece;

the slip-promoting material of the first layer being in contact with the slip-promoting material of the second layer such that relative movement between the dovetail and the dovetail slot is accommodated by sliding of the slip-promoting materials over each other;

a high strength doubler adjacent the outer surface of the first layer between the first layer and the dovetail slot bottom in a non-contacting region; and

a joint in the non-contacting region joining the high strength doubler to the first layer.

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