

FIG. 1A

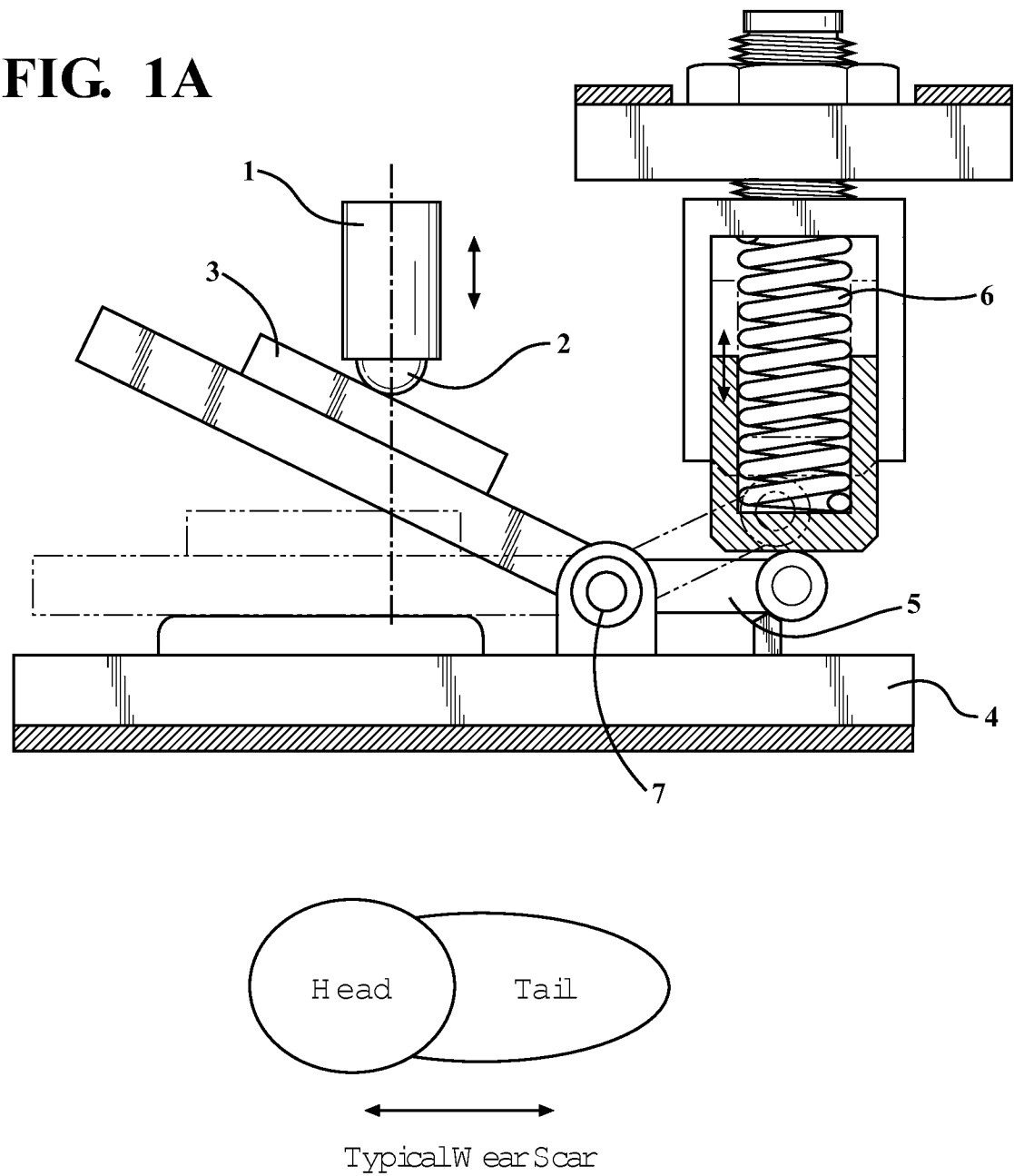


FIG. 1B

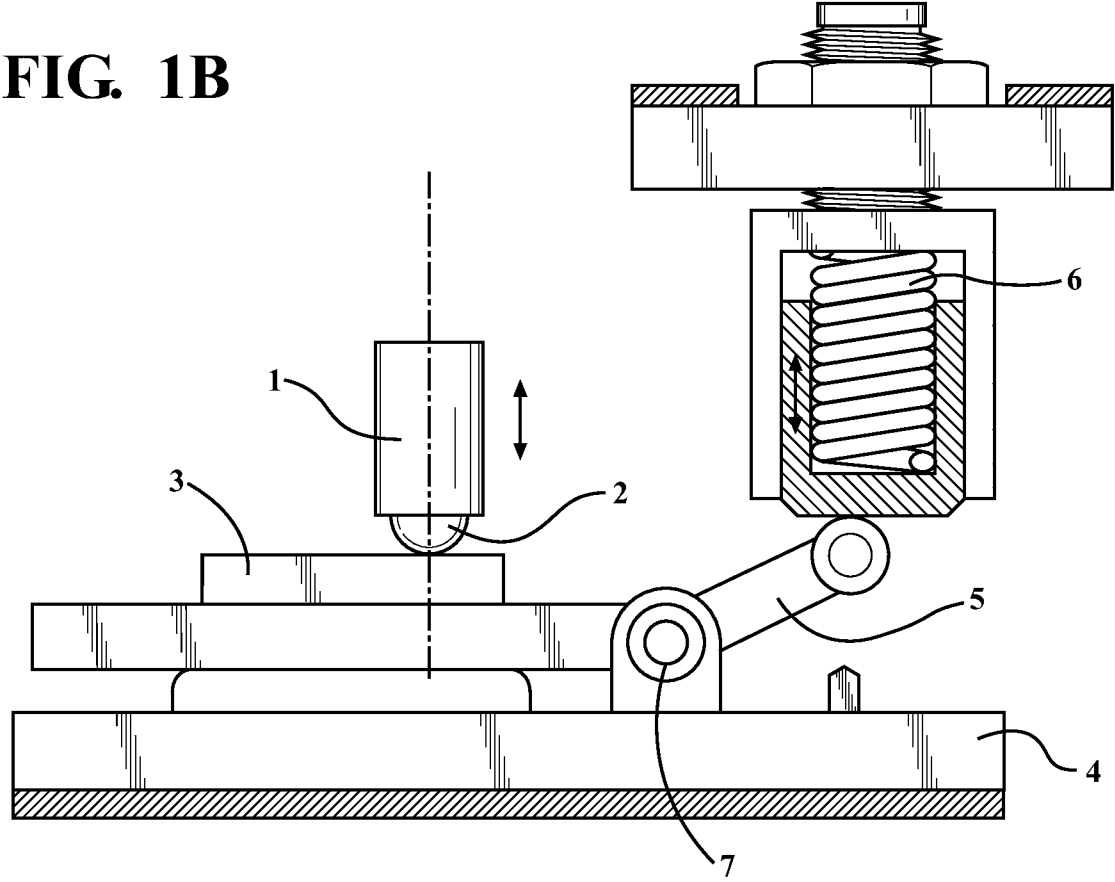
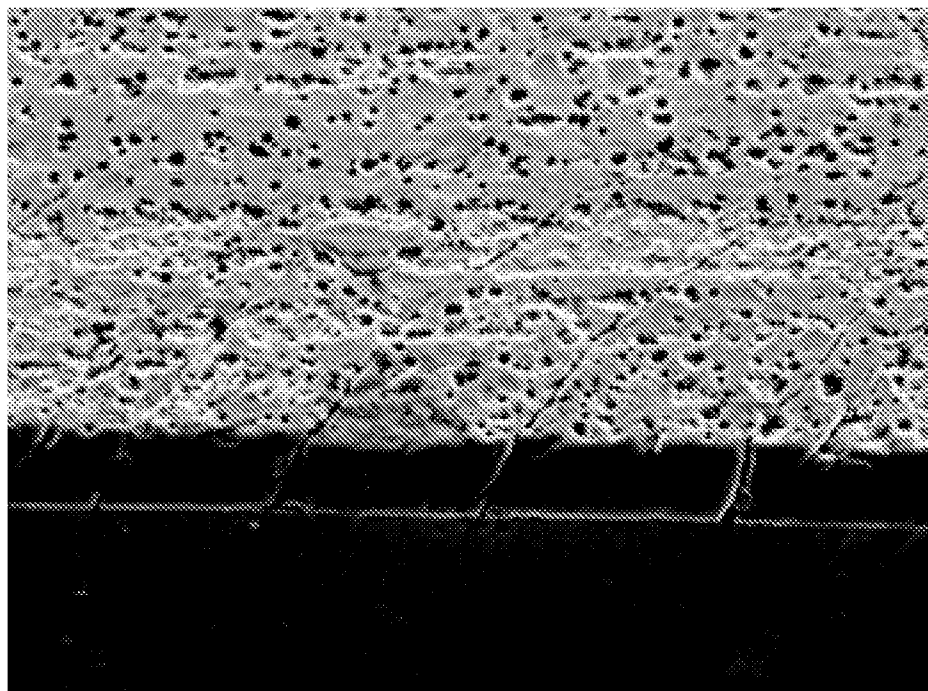
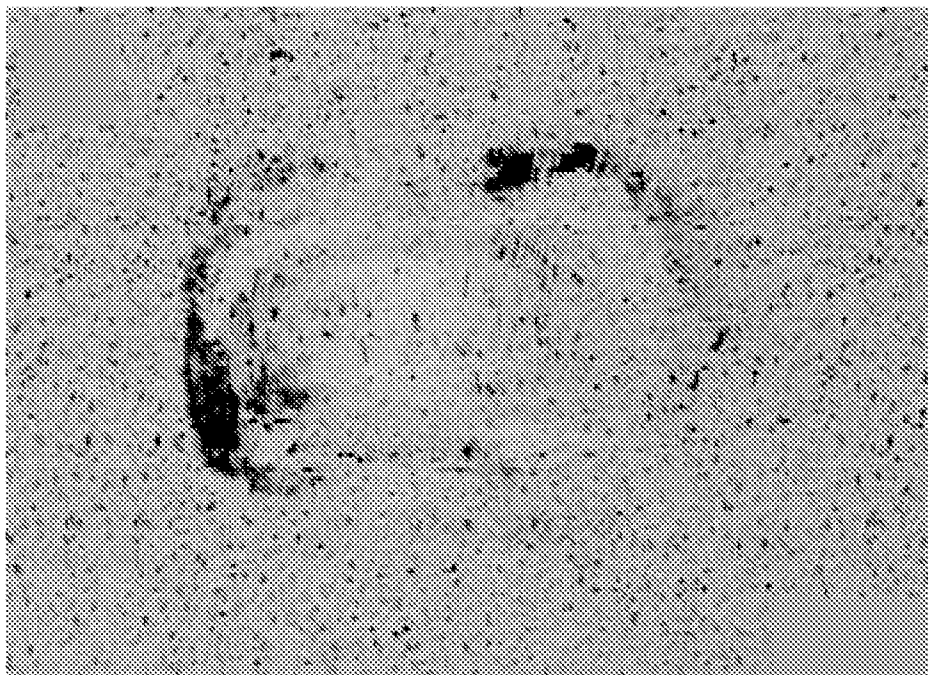
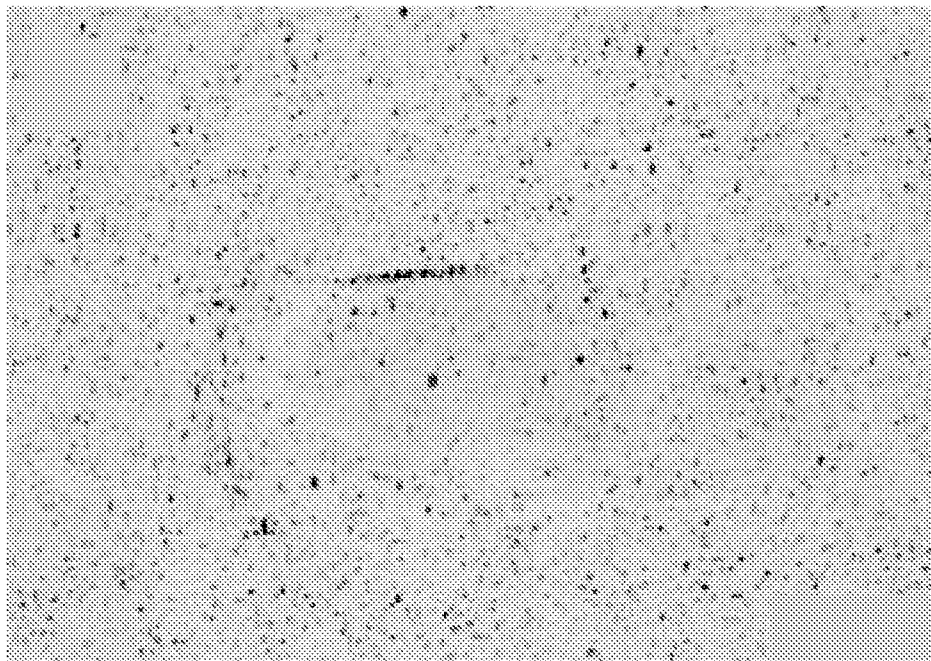


FIG. 2

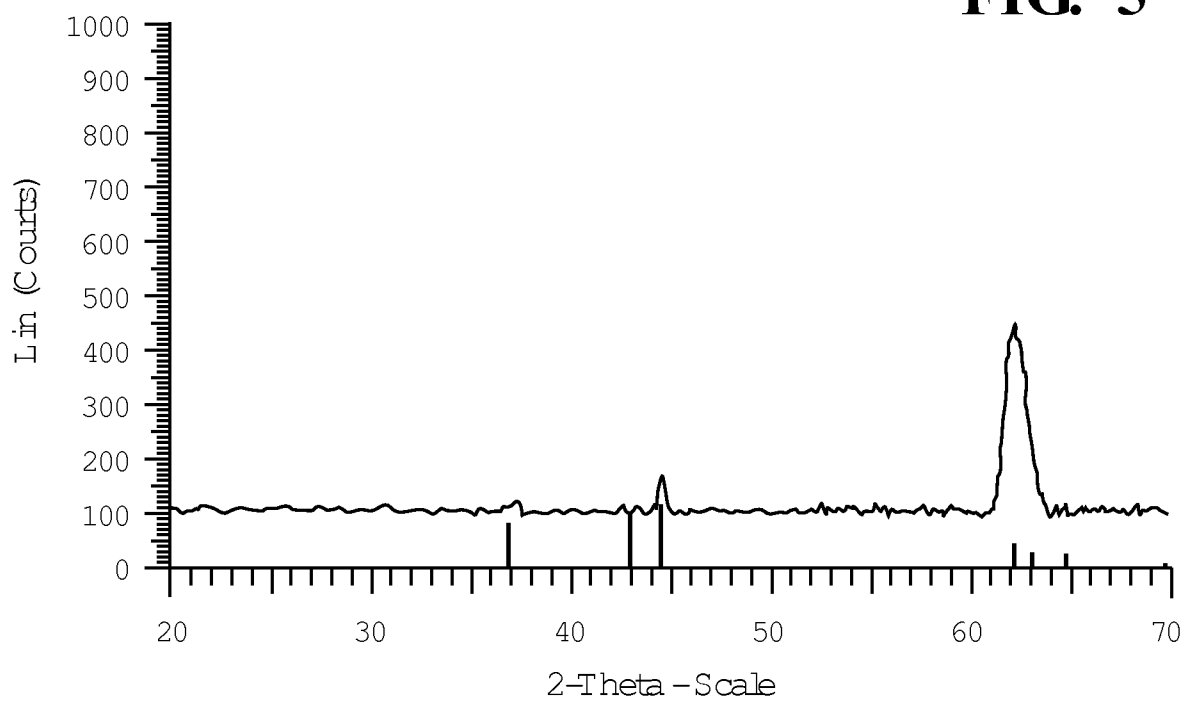
CrN @ 1500 Cycles

FIG. 3

CrN (200 N -400 N)
Fatigue Cracks Beginning to Show in Coating

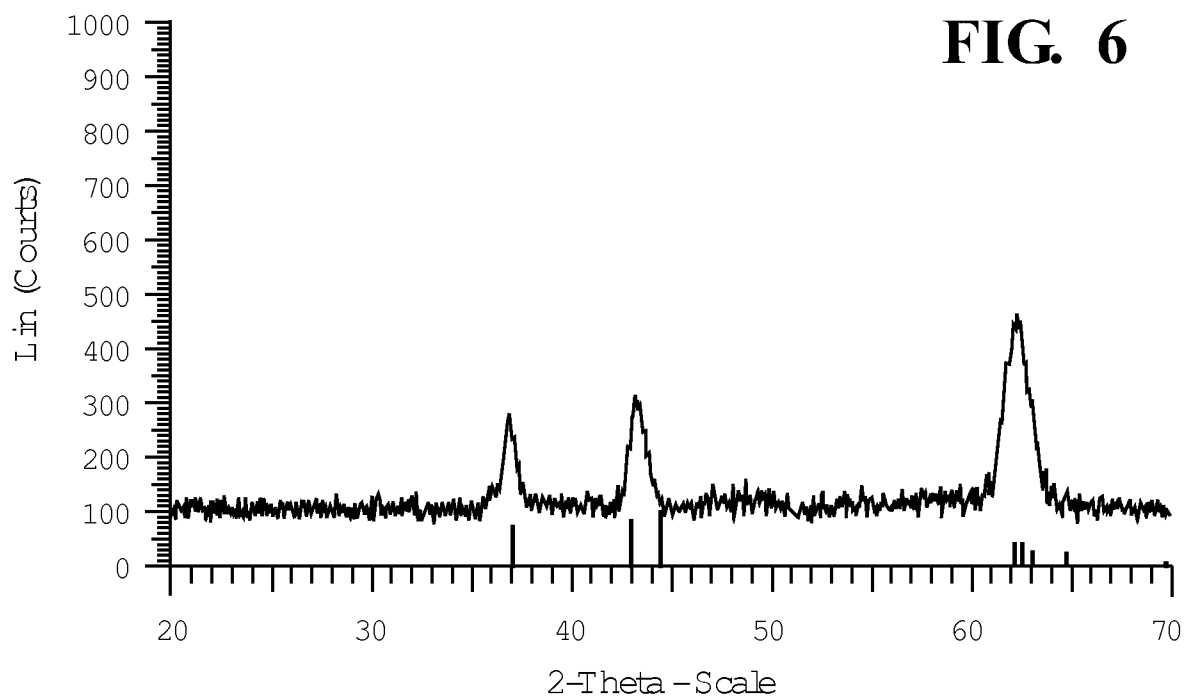
FIG. 4

C r N (200 N -400 N)
N o C r a c k s i n C o a t i n g

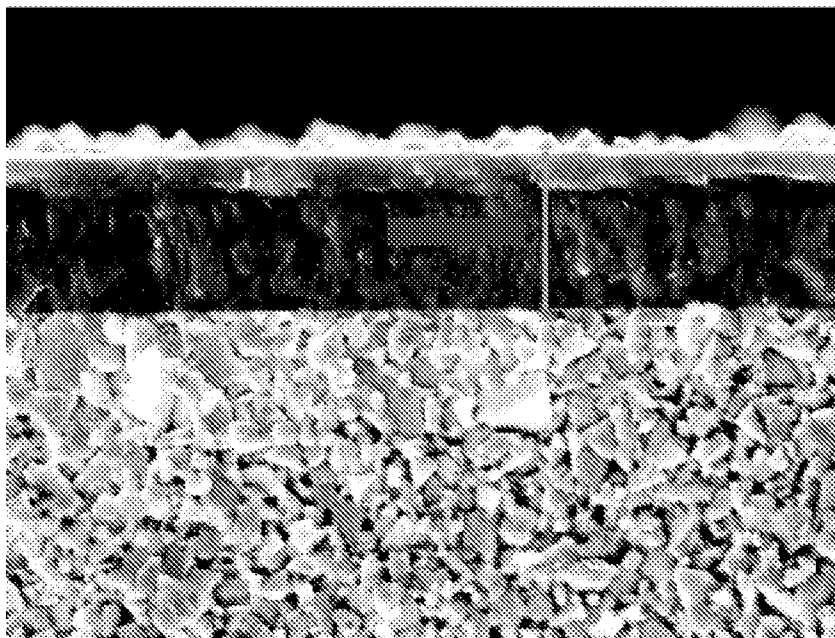
FIG. 5

C r N : (220) O r i e n t a t i o n

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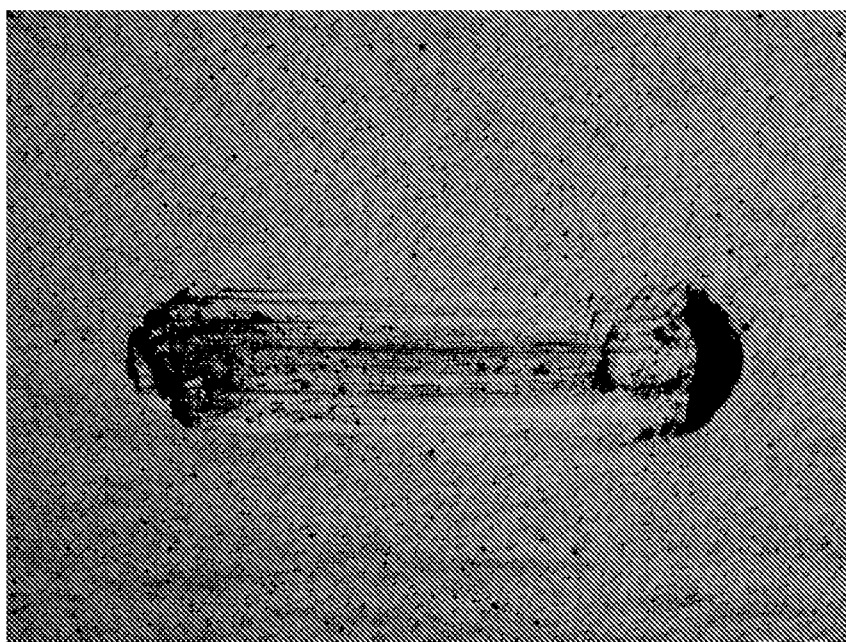


CrW N : (220), (111), (200) O rientation



CrW N -TiCN -PanelV 2 -V 3 Recipe

FIG. 7



400 N Impact load
and
400 N Sliding load

No Wear Through the TiCN Layer.
Cracking Evident at Impact Site Related to Base Material Overload.

FIG. 8