SOME PRACTICAL USES IN DENTAL PRACTICE FOR TUNGSTEN AND MOLYBDENUM.

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Tungsten is twice as elastic as steel.

Tungsten is about twice the melting point of platinum.

Tungsten is six times as stiff as 30 per cent. of iridium with platinum.

Does not anneal or lose its stiffness or elasticity when heated to the melting point of gold.

Tungsten has a hardness so great that a specially prepared phonographic needle point made from it will outwear two hundred hardened steel points; will draw into a finer wire than any known metal, has a tensile strength thirty times that of gold and ten times that of iron; is not affected by ordinary acids or alkalies, except hydrogen dioxide in which it is soluble. Its melting point is over 3,000 degrees C. or 5,400 degrees F.

Molybdenum has a melting point a little lower than tungsten, namely, 2,500 degrees C. (Note.—Gold is 1063 degrees C. and platinum 175 degrees C.) and it has a tensile strength five and one half times that of iron. Molybdenum has many properties similar to tungsten its chief difference being its lack of elasticity which makes it particularly desirable for those forms of orthodontic appliances where we require a very tough slightly elastic piece. When hard drawn it is not annealed at temperatures up to the melting point of gold and its elastic content is a little greater than annealed gold clasp metal. When once annealed at high temperatures it does not recover its elasticity originally put in by hard drawing but has enough elasticity for certain uses in orthodontia work.

This metal, like the tungsten, will be furnished with gold or gold and palladium coating, the latter having the color of platinum. The cost of molybdenum is about two thirds that of tungsten.

The present price for gold, or gold and palladium coated tungsten is about one-fifth that of platinum or one sixth that of iridio-platinum. The present price of molybdenum, gold or gold and palladium coated, is about one eighth that of platinum or one ninth that of iridio-platinum. Since the strength of tungsten is approximately six to seven times that of iridio platinum, we can reduce the size to about one half by weight and still have a larger factor of safety. This reduces the relative cost of tungsten to about one twelfth that of iridio-platinum for a given case.