

slightly waterworn shapes. Colombia and Alaska are other important placer sources.

Platinum is an extremely rare metal, occurring as only 0.003 ppb in the Earth's crust, and is 30 times rarer than gold. It is sometimes mistaken for silver (Ag) but platinum is whiter in appearance.

Platinum is often found chemically uncombined as native platinum and alloyed with iridium as platinumiridium. Most often the native platinum is found in secondary deposits, platinum is combined with the other platinum group metals in alluvial deposits. The alluvial deposits used by pre-Columbian people in the Chocó Department, Colombia are still a source for platinum group metals. Another large alluvial deposit was found in the Ural mountains, Russia, which is still mined.

The largest known primary reserves are in the Bushveld complex in South Africa, the large coppernickel deposits near Norilsk in Russia, and the Sudbury Basin, Canada with its large ore deposits are the two other large deposits. In the Sudbury Basin the huge quantities of nickel ore processed makes up for the fact that platinum is present as only 0.5 ppm in the ore. Smaller reserves can be found in the United States, for example the and in the Absaroka Range in Montana. This is also shown in the production of 2005. In 2005, South Africa was the top producer of platinum with an almost 80% share followed by Russia and Canada.

Applications

Platinum is used as an alloying agent for various metal products, including fine wires, noncorrosive laboratory containers, medical instruments, jewelry, dental equipment, electrical contacts, and thermocouples. Platinum-cobalt, an alloy comprised of roughly 3 parts platinum and 1 part cobalt, is used to make extremely strong permanent magnets. Platinum-based anodes are used in ships, pipelines, and steel piers.

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a bed on which the panel is mounted.

The machine can be driven by hand or motor power, though most rely on electric motors today. The rotating axle is mounted on springs so it can respond to the action of the feeler pin against the template profile, driving the template back and forth as it rotates. By having several templates mounted side by side as shown, a variety of patterns can be cut on the same machine.

Machine Engraving

We are all are familiar with objects like those shown in figure above the results of a device incorrectly called a pantograph. A pantograph is a mechanical device through which an existing pattern can be duplicated. By altering the points of pivot, the pattern can be enlarged or reduced in perfect proportion as shown. When a pantograph arm is connected to a miniature milling tool mounted in a small powerful motor called a pantograph engraving machine.

Because the actual cutting is done with a rotating bur the cut is very different from an engraved line, a distinction that is clear to goldsmiths but perhaps less obvious to others. The advantage of the machine is its great regularity. No particular hand skills or experience are required to use the machine. A worker secures the piece into position and guides the feeler along a template. This in turn passes the rotating bur against the metal where a line is cut.

The advantage is that the Letter or image is cut identically every time;

Disadvantage is that there is no room for subtlety or nuance.

A pantograph engraving machine is like a typewriter in this way, efficient but visually boring.

