

## **Micro weighing balance (Bullion scale)**

Innovator: Master. Rajkumar Soni

### **1. The context of use**

The innovator, a student, belongs to a family dealing with precious stones and metals for many generations and have used standard weighing balances for measuring the small amount of weights used in making jewellery.

Being not satisfied with size or precision of existing weighing balance, and having the need to have a portable micro weighing balance that can be carried at will, the innovator came up with this miniaturized microbalance.

### **2. Working principle**

It is a micro mechanical balance made of silver, which uses the regular fulcrum tipped weighing principle for measuring precious stones and metals.

### **3. Innovation highlights**

It is smallest/compact/lightest/cheapest mechanical balance, which can weigh objects in the range of 0.20-2000 mg. It is very light in weight at 8.2 gms and compact in size and can easily be carried in the trouser or shirt pocket.

### **4. Compare innovation to competing products by efficiency, cost and utility**

Micro weighing balances having capacity of 5 -5000 mg with least count of 0.0001-0.01 mg is available in market but these are digital which give exact readings but are costlier (Rs 2000 to 15,000)

This product has a range of 20 to 2000 milligrams and is cheaper, costs about 50 Rs, and is made entirely of silver.

### **5. List the current and proposed applications of innovation**

While it is developed for weighing precious metals, it could also be used wherever precise measurement is required such as chemical, dye units etc.

### **6 Brief description of construction mentioning major parts**

It is mechanical balance made entirely of silver and totally weighs only 8.2 gm, it is one of the smallest in the world if not the smallest with dimensions: 24.4mm width and 38.1 mm height.

### **7. Current design shortcomings and further work planned**

### **8. List of accessories if any and their functions**

### **9. What is the need/benefit of this product for local community?**

Is useful to measure small units of weight accurately, in the range of milligrams, which is currently not possible, and also as a light portable unit that can be carried along.

### **10. Any special highlights of the innovation or additional information**

Prototype has been made, tested and is being used by the innovator and his relatives in their business.