

Gold Scales by John Shannon

Many of us have at some time or other visited an antique show or shop and noticed a wooden-cased balance prominently displayed with the label "GOLD SCALE" affixed to it. And we have wondered whether or not it truly was a "gold scale." Perhaps the following explanation will help in that determination.

First, a weighing device with two pans or dishes is properly called a balance. As many as four types of balances were used in the fire-assay laboratory: some type of rough scale or balance for weighing ore samples, a flux balance, a pulp balance, and a button or assay balance (the terms button balance and assay balance are used synonymously). In large laboratories, one could usually find bullion and chemical balances as well. The problem with identifying any of the above as being used only for "flux" or "pulp" is that those balances (except for the assay balance) were also used in many different kinds of stores and laboratories. They cannot be positively identified as having been used in any assay lab. However, the opposite is true for the assay or button balance. It was made for only one purpose and that was to weigh the button (a small pellet of the metal of interest) which was the final result of a gold or silver assay. It is therefore the only balance of all the above which can properly and reliably be referred to as a "gold scale."

The construction of an assay balance includes a wooden or metal frame with glass on all the sides as well as the top. An analytical balance has the same basic construction. The best method to tell the difference between the two is the size of the pans. The pans of an assay balance vary from 1/4" to 5/8" in diameter while the pans of any analytical balance are 2" in diameter or larger. At the time of their use, the assay balance was the most sensitive of all the balances and therefore the manufacturers made every effort to reduce the mass of the parts of the balances. An assay balance has small thin hangers and stirrups, and also smaller and lighter beams. The stirrup is the part that attaches to the beam and holds the hanger while the hanger is the part that extends downward from the beam and holds the pan. Although an assay balance always has smaller and lighter beams, stirrups, and hangers, the primary method of identification is the small size of the pans. Illustrated on the next page are an assay balance and an analytical balance from the 1920 Mine and Smelter Supply catalog. Note the size difference between the hangers and the pans.

U.S. makers of assay balances were:

William Ainsworth (which later became **Ainsworth & Sons**)
Smith & Thompson (which later became **Thompson Balance Co.**)
Denver Balance Co.
Keller Balance Co.
Heusser Balance Co. (which later became **Heusser Instrument Co.**)
Troemmner Balance Co.

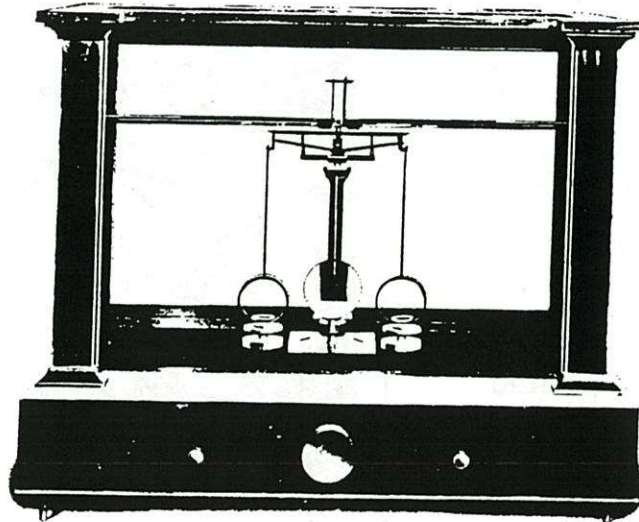
Becker & Sons (which later became Becker Brothers, Christian Becker, and finally was absorbed by the Torsion Balance Co.)

Voland & Van Zelm (which later became Voland & Sons)

Herman Kohlbusch, Sr. (which later became Seederer-Kohlbusch and then SEKO)

Many of the chemical supply houses sold assay balances with their company name affixed, but in reality, they were made by one of the above companies.

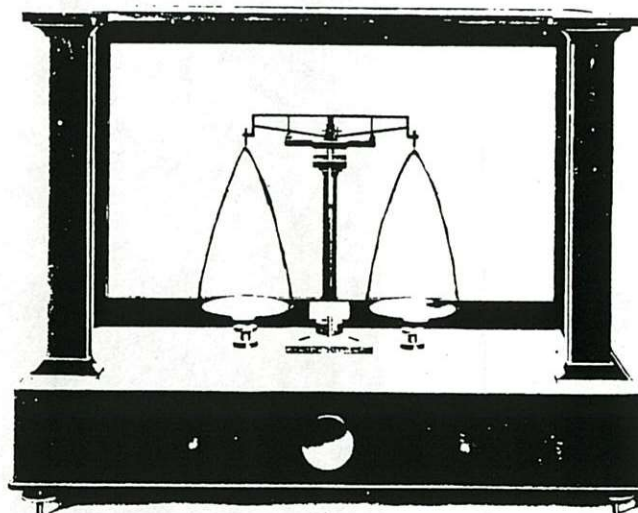
THOMPSON'S



No. 4040A

BUTTON BALANCE, STYLE No. 19

THOMPSON'S



No. 4049A

PULP BALANCE, STYLE No. 33