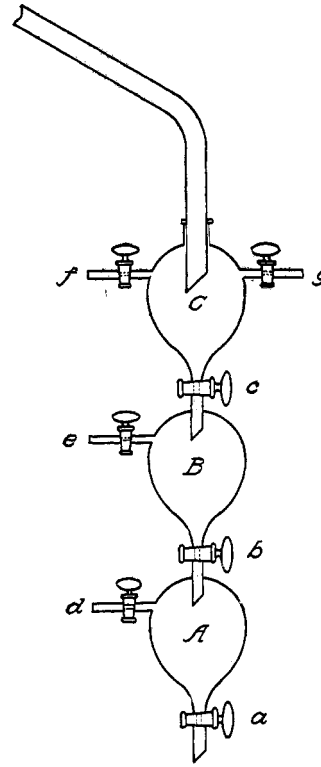
regularly distilled in this way, and each fraction is made sharp and exact, as there is no disturbance of the vacuum.



With bulbs of smaller capacity, *e. g.*, 250 cc. each, it is unnecessary to employ more than one pump, since the vacuum will not appreciably diminish in the short time necessary to close *g*, disconnect the pump, attach it to *d*, and reestablish the vacuum in this bulb. A makeshift apparatus, embodying the principles of the one shown in the sketch, can be made in any well-equipped laboratory by connecting three separatory funnels by means of two-holed rubber stoppers, the other holes being occupied by bent glass tubes provided with stop-cocks or even rubber tubing and pinch-cocks.

For continued use the apparatus with the bulbs sealed together is to be recommended; the one described has been used almost daily by the writer and was made according to his designs by E. Greiner, No. 62 Centre Street, New York.

LUCIEN FOGETTI.

OBITUARY.

Hon. Nathaniel Peter Hill, of Denver, Colorado, scientific metallurgist, sometime professor of chemistry in Brown University, and later United States Senator from Colorado, was born in Montgomery, N. Y., February 18, 1832; he died in Denver, Colorado, May 22, 1900.

His father and mother were notable people in Orange County, N. Y. The father, a well-to-do and substantial farmer, had been lieutenant of cavalry in the war of 1812 and subsequently he held many offices of trust in his county where he was

respected as a man of superior abilities and high character.

When Senator Hill entered Brown University in the year 1853 he was a bright and promising young man, matured and developed by the responsibility which had come upon him, while yet little more than a boy, of managing the farm after his father's death. His interest in scientific agriculture led him to devote his chief attention to chemistry, and his progress in the subject was so rapid and so substantial that he was soon made an instructor, and in 1859, he was appointed professor of chemistry. He soon set about the securing of funds for a new chemical laboratory for the university, and he accomplished the work of its construction in 1862.

A little later his attention was directed to the freshly opened gold-bearing districts in Colorado. The field appeared so promising that in 1864 he resigned his professor's chair and turned his attention to practical metallurgy. He was early impressed with the necessity of *smelting* rather than *milling* the Colorado ores of Gilpin County, and he proceeded to make a careful study of the whole subject at the metallurgical works of Freiberg, in Saxony, and Swansea, in Wales. As a result, he formed a business connection with the noted house of Vivian & Sons in Swansea. In 1867 he organized the Boston and Colorado Smelting Co., a concern which has operated successfully for over 30 years and of which up to the time of his death he was the general manager. Professor Hill is acknowledged as the chief agent in the creation of that great industry which was necessary to the development of the mineral resources of his adopted State.

Space does not permit a full statement here of his achievements, but a partial enumeration of his official and business positions speaks volumes. He was mayor of Black Hawk, Colorado, in 1871; member of the Colorado Territorial Council, 1872–3; United States Senator from Colorado, 1879–1885; member of the International Monetary Commission, 1891; president of the United Oil Company, working in the Florence district; president of the Colorado Smelting and Mining Company, operating on an extensive scale in Montana; president of the Denargo Land

Company, engaged in developing real estate in the vicinity of Denver; principal owner of the *Denver Republican*.

As a chemist and scientific man Professor Hill was characterized by clear insight, great grasp of his subject, and sound judgment. His scientific work related chiefly to applied chemistry. During his professorship in Brown University he continually acted as expert and adviser in connection with chemical manufacturing establishments in and near Providence. But his life-work was in metallurgy, and the complex operations of his refining establishments near Denver are a monument to his power in the scientific treatment of metallic ores. As a university professor he was highly valued; he was not only recognized as a master of his subject and as a clear thinker, but more, he was loved by his pupils as a true gentleman. He was a remarkably able business man, having far-sightedness, wisdom, and courage. As a legislator he secured—as he merited it—a reputation for ability, dignity, and integrity.

Professor Hill married Miss Alice Hale, of Providence, R. I., a member of a remarkably able New England family, and a woman of superior powers and great sweetness of character. She survives him with three children: Crawford Hill (A. B., Brown University, 1885), Miss Isabel Hill, and Mrs. Gertrude (Hill) Berger. J. H. APPLETON.

NEW BOOKS.

ANALYSE ÉLECTROCHIMIQUE. PAR EDGAR F. SMITH, Professeur de Chimie a l'Université de Pennsylvanie. Traduction par Joseph Rosset, Ingénieur civil des Mines. Paris: Gauthier-Villars. 1900.

The hearty favor with which this excellent little work was received on its first appearance by English-speaking chemists, and its translation into the two languages that can boast of more voluminous electrochemical literatures than the English, are doubtless sources of much gratification to its author. This French version, like the German that preceded it, is a clear and faithful translation of the second American edition of 1894. It contains a few changes and additions such as the separation of some of the platinum metals, analytical results, and some useful tables, yet these are hardly of sufficient importance to justify the