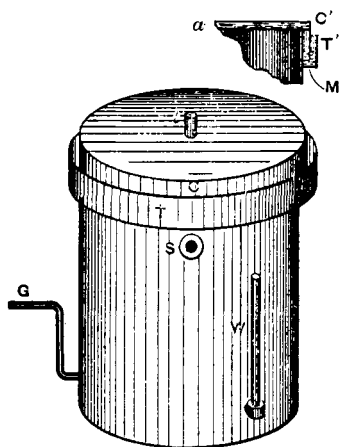


A DRYING OVEN FOR DRYING IN HYDROGEN AT THE TEMPERATURE OF BOILING WATER.

BY F. W. MORSE.

Received September 28, 1893.

THE following described oven has been in use in the laboratory of the New Hampshire Experiment Station for over a year, and proves to be efficient for drying substances in an atmosphere of hydrogen at the temperature of boiling water. It consists of a cylindrical copper box with double bottom and



wall. The inside of the oven is seven inches in diameter and nine inches in depth. The space between the walls is one inch. It is fitted with a water-gauge, W, and a steam outlet, S. This outlet is a screw-nipple, and may be coupled to a condenser if desired. The hydrogen enters the oven by means of a brass tube, G, which is coiled in the space between the bottom and wall and enters the inner oven near the top. The gas is thus thoroughly heated before entering the drying compartment. The gas

passes out of the oven near the bottom by an outlet not shown in the cut. The oven is made gas-tight by a mercury seal. A copper trough, T T' is fitted around the top of the oven a little below the rim. The trough is one and one-fourth inches in depth and one-half inch in width, and is made with brass joints and coated on the inside with lacquer. The cover, C C', fits loosely in the trough, and the mercury, M, makes a perfectly tight joint. Drying is hastened by placing an acid dish containing concentrated sulphuric acid on the bottom of the oven. A rack rests upon the acid dish to receive the watch glasses or drying flasks.

In addition to heating the gas, the oven is made more efficient by blackening the inner walls to increase radiation, and

lining the under side of the cover with a thick sheet of asbestos. The outside of the cover is plated with nickel which diminishes radiation outward. Repeated trials with a standard thermometer inserted in the oven at t , and between the walls at S , have shown a difference of only two-tenths of a degree between the boiling water and the drying compartment. Trials with several ordinary chemical thermometers have shown a variation from 99° C. to 101° C. in the oven.

The oven was made for the Experiment Station by Richards & Co., of New York.

NEW HAMPSHIRE EXPERIMENT STATION,
DURHAM, N. H.

AN IMPROVED GOOCH CRUCIBLE.

BY W. A. PUCKNER.

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SOMETIME ago I adopted a slight improvement in the use of the Gooch crucibles with which I am so well pleased that I wish to call attention to it.

It is an occasional, if not frequent, occurrence, that while pouring a precipitate on the asbestos, this becomes loose, and floats in the liquid, thus allowing the precipitate to pass through the perforations.

Another objection, which is sometimes urged against this method of filtration, is that the asbestos becomes mixed with the precipitate making an examination regarding purity difficult.

My modification consists in placing a perforated platinum plate, such as are used in the Gooch crucibles made of porcelain, and which may be obtained separately, on the layer of asbestos. This layer need be but very thin as there is now not the least danger of disarranging it while pouring on the liquid. After drying or ignition the precipitate can be obtained perfectly clean and with the loss of but a few milligrams.

HEIDELBERG UNIVERSITY.