THE CALIGRAPH DROP CABINET DESK.

The old style of stand or table that was formerly used with all type writers was objectionable for several reasons, one of the chief being that in a great many offices the room could not well be spared, and when one of the firm uses the type writer it is a great convenience to have it on the desk, provided it can be readily removed when not in use.

We illustrate herewith a new drop cabinet desk, which the American Writing Machine Co., of Hartford, Conn., have had made for the caligraph. The cut shows the lid thrown back and the caligraph ready for use. The lid is finished on both sides alike, and as when open it projects over the side of the desk several inches, it gives almost as much space on top of the desk as when the desk is closed.

When closed the desk is dust-proof, and by means of

THE CALIGRAPH DROP CABINET DESK.

a spring at the side the caligraph can be held in desired position and at a height that is best adapted to rapid and easy manipulation. There are no chains, weights, springs, or pulleys to get out of order, and the ingenious mechanism, of which we show a sectional view, is so simple that any one can understand it.

These cabinets are finished with or without rail, in any kind of wood desired, and should go with all the caligraphs. Full illustrated circulars will be mailed upon application.

A NEW SYSTEM OF TEACHING GEOGRAPHY.

In the ordinary method of teaching geography in the schools, maps or charts are employed, either complete with colored subdivisions or in outline; but these maps do not always convey a sufficiently clear impression. The maps are all made, and there is nothing to firmly impress upon the pupil the proper idea of the geographical divisions. Willie M. Bours, of Stockton, Cal., has applied for a patent on a map or chart for teaching purposes, in which the general outline of the whole State or country is made, and within this exterior outline are dots or points so placed that lines drawn through these points will give a general outline of the subdivisions of the country or its configuration, and from these general outlines the more exact indications of the configuration may be drawn. The pupil can, therefore, draw the various lines indicating the general shape of the subdivisions, and may afterward make the more exact contour lines therefrom, thus gaining knowledge of the size, proportion, and general appearance, which it is impossible to obtain from completed maps.

Mr. Bours calls this a "lineal system." The objects are to assist the pupil to grasp the territorial relations of the divisions of a country, and to aid the pupil in the practice of this knowledge by giving directions for its application. The use of the system may be exemplified in a study of the geography of the United States. An outline engraving of the United States is shown on this page, with the dots or points indicating the corners or extremities of boundary lines of the States and Territories.

The general outline only follows the more prominent irregularities of the coast or boundary. The dots are placed in such position that lines drawn from these points or dots will show the general contour of the internal subdivisions of the State. By the aid of these dots the pupil will soon learn to construct all the subdivisions of the country. First, in general outline by drawing approximate straight lines through the dots, and afterward the more minute irregularities of contour may be indicated by dotted lines. For instance, the line drawn from E to F would indicate the southern border of Washington Territory (or northern boundary of Oregon) in an approximate manner, while the dotted line, *e*, would show the more minute contour. The line, M, would indicate the general contour of the coast of Texas, while the dotted line, *m*, would show the features more in detail.

These outline maps or charts may be permanently drawn or indicated upon a slate or blackboard, or they may be drawn on silica slate, where the general outlines and dots may be permanent. Connecting outlines or contours may be drawn with pencil or other marking implement while the lesson is in progress, and afterward erased so as to leave only the permanent outline and dots.

THE LINEAL SYSTEM OF TEACHING GEOGRAPHY.

Ammonia in Distilled Waters.

Professor Schlagdenhauffen, of the Nancy College of Pharmacy, while examining some fenugreek seed water of his own make, for its volatile principles, was surprised to observe the characteristic reaction of ammonia and its compounds when adding to the distilled product an alkaline solution of iodohydrargyrate of potassium. On repeating the operation with great care, not only was the same effect reproduced, but it was equally evident with the water distilled over various other substances. Moreover, upon evaporating the distillates, acidulated with muriatic acid, crystallized ammonium chloride could easily be separated. Fifteen different plants were thus tried, such as pyrethrum tops, mustard seed, angelica seeds, pease, beans, orris root, star anise seeds, etc., and afforded a proportion of chloride varying between the minimum and maximum of 0·03 to 1·10 per thousand. Without attaching too much importance to the facts, in the present stage of his experiments, the professor merely suggests that the presence of ammonia in distilled waters must be the cause, or one of the causes, of their alteration on keeping; that it is always to be found in such waters, and they would keep better if this natural food of microorganisms could be left out.

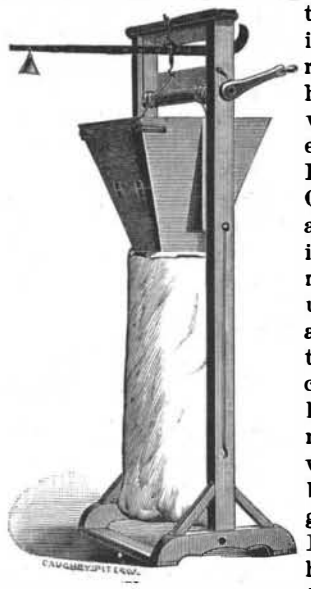
A COMBINED RAIN WATER CUT-OFF AND FILTER.

A simple, serviceable, and substantial device for filtering and straining rain water is illustrated herewith, of which Mr. N. W. Davis, of Port Jefferson, N.Y., is the patentee and manufacturer. Within outer pipe sections is an inner filtering chamber, at the bottom of which is a removable strainer, while near the top is a V shaped strainer, the water from the roof passing down the outer pipe section at the left, as shown by the arrows, up through the strainers and filtering chamber, and down again at the right, through the pipe connecting with the cistern, thus leaving all dirt and other matters in the bottom of the filter. A cut-off valve is arranged, however, near the bottom of the outer pipe section on the side in which the water from the roof enters, on opening which all the water from the roof, as well as all the sediment collected in the filter chamber, are turned down the waste pipe. This cut-off saves all unshipping of leader pipes, by the facility with which water can be turned in or out of the cistern, and the slide cover at the top and removable strainer at the bottom renders it easy to repair or clean any of the parts without taking the filter from its position.

DAVIS' FILTER.

AN IMPROVED BAG HOLDER.

A bag holding device affording simple and convenient means for connecting a sack with the hopper, so that it can be thus used in weighing grain, and readily detached from the hopper, is illustrated herewith, and has been patented by Messrs. Allison M. Roscoe and George E. Grier. The hopper is adapted to move vertically in ways, a windlass journaled between the ways uniting their upper ends and being connected with the hopper by chains or cords, one end of the windlass having a crank and ratchet wheel with pawl, whereby the device may be conveniently used with grain bags of different size. For weighing purposes, the hopper has a bail by which it may be suspended from a suitable weighing beam. In one side of the hopper is a hinged portion to facilitate the filling of sacks, and an aperture in the bottom is closed by a slide having a projecting plate with catches adapted to engage spring arms, whereby the edges of the bag are held in a groove or channel around the bottom of the hopper.



ROSCOE & GRIER'S BAG HOLDER.

For further particulars with reference to this invention address Messrs. Grier Brothers, Dubois, Pa.

Municipal Supervision of Electric Wires.

Almost by insensible degrees, New York, in common with all other large cities, has become covered with a network of electric wires, many of them carrying currents of high potential and great intensity. They have been erected by private corporations, whose only object was to effect their own purposes at the lowest possible expenditure of money and time. No rule as to quality of insulation or route to be followed has been adopted.

Recently, this state of things has been forcibly brought to notice by severe or fatal accidents. Within a few days, a boy, playing in the street, seized the end of a disused wire that hung from a pole, and began running about with it in his hand. This brought it in contact with an electric light wire. Owing to poor insulation, the crossing of the wires made a contact, and the boy was killed by the shock.

The iron wires erected for telegraphic purposes, when they fail, are not worth removal, and in many cases are abandoned. The fatal accident described above shows what serious consequences may ensue upon such abandonment. But had the electric light wire been properly insulated, the current would not have left it.

The remedy for the evil evidently existing is a simple one. Either the companies jointly, or the authorities, should appoint an inspector, and stipulate for methods to be followed in carrying out electric distributions as regards out-of-door work. The routes should be made as parallel as possible, to diminish the liability of crossing. A telephone wire coming in contact with an electric light wire may bring about the most serious consequences. The insulation of electric light wires should be of the most thorough description, and the abandonment of old wires should be stopped.

It is true that when the wires are to go underground, that such action would seem unnecessary. But at present it is impossible to say when the underground system will be in use. It seems far in the future. In the meanwhile, more deaths may occur, and the city remains covered by this network of absolute danger to life and property.