

DOSE-MEASURING BOTTLE.

The engraving shows a novel form of bottle for containing liquid medicines, such as are usually taken in prescribed quantities. It is designed to enable the user to measure and pour out only so much as may be desired, it being provided with a measuring receptacle, formed in the neck in such way that, by first tilting or turning the bottle so as to cause the liquid contents to flow into the measuring device, and then turning the bottle so as to leave a portion of the contents in the measuring receptacle, they may be poured out without discharging any portion of the liquid contained in the body of the bottle.

The neck is suddenly and considerably enlarged or bulged out at one side, immediately beyond the point of its junction with the body of the bottle, so as to form a hollow or receptacle designed to hold a given quantity of the liquid from the bottle. The neck of the bottle may be provided with indicating lines or a scale. This design may be considerably varied without affecting the efficiency of the device.

The engraving shows modifications of the bottle in which there is no bulging receptacle in the neck, which in one case is placed at one side.

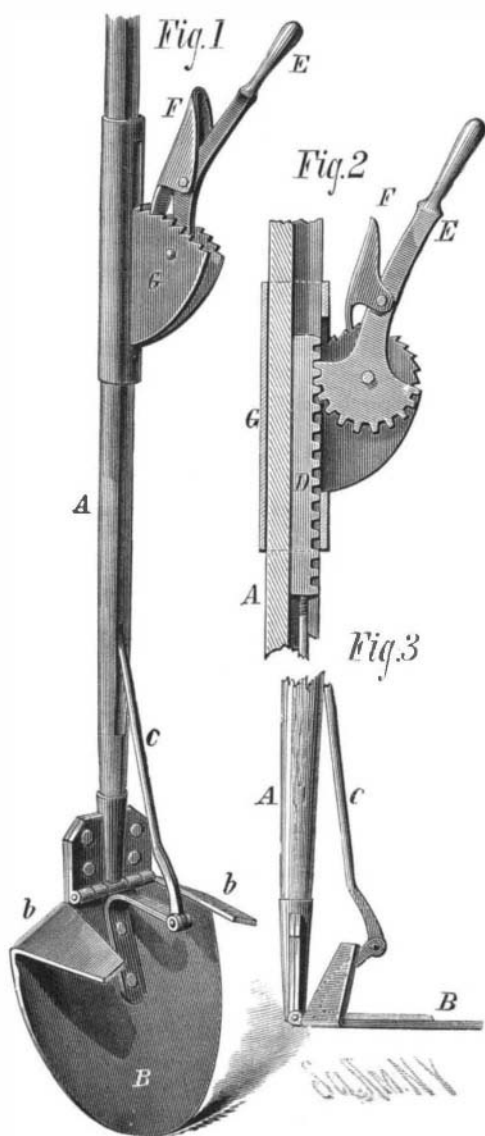
A perforated partition divides the body of the bottle into two compartments, and by holding it in a substantially horizontal position, with its shorter side down, and then turning it axially to bring the longer side or line of the body down, the chambers will stand full to the same level, but their contents will be separated by the partition.

Another modification is shown in the engraving, in which the bottle has its interior divided into two compartments by a solid partition, a tubular passage being provided between the compartments. In this form of bottle the measuring and separate discharge of the desired quantity of the liquid contents of the bottle may be accomplished in the manner above described.

This invention was lately patented by Mr. James M. Dodge, of Chicago, Ill.

IMPROVED POST HOLE DIGGER.

The engraving shows an improved implement for digging fence post holes, which can be inserted in the ground like an ordinary spade, and when inserted to the proper depth can be transformed into a lifter, by which the earth may be



POST HOLE DIGGER.

readily removed. The handle, A, carries a blade, B, at its lower end, which is hinged so that it can be made to assume any position with respect to the handle, varying from a straight line with it to a right angle. The shovel, at its shoulders, is provided with extensions, b, reaching forward at or about right angles to the blade, which form stops to limit the extent of its insertion into the ground to permit of shifting the position of the blade without hinderance. To the

blade of the shovel is secured a bent arm, to which is pivoted the end of a curved rod, C, extending backward to the handle, and provided with a sliding rack, D. To the handle is secured a sleeve, G, having a longitudinal slot and two parallel standards, between which is pivoted a lever, E, having a toothed segment, by means of which the rack may be moved back and forth to operate the shovel blade. The rear edges of the standards are provided with ratchet teeth,



DOSE-MEASURING BOTTLE.

and the lever with a pawl, F, adapted to engage the teeth so as to hold the lever and other parts in any desired position.

When the blade is in line with the handle it may be driven into the ground after the manner of an ordinary spade, and when inserted to the proper depth, by operating the lever it may be brought at right angles to the handle, so that the earth may be lifted vertically and removed.

This invention was lately patented by G. B. Van Vleet, of Lodi, N. Y.

Microscopic Tests for Poisons.

Professor Rossbach has just published, in the Vienna *Klinische Wochenschrift*, some remarkable delicate tests for the presence of poisons when they are in too minute quantities to answer any chemical tests.

As small animals, like frogs, mice, etc., are known to be very susceptible to the action of certain of the poisonous alkaloids, so this fact is taken advantage of and very weak solutions introduced into their circulation. Delicate and wonderful as the tests are as applied to frogs, etc., still Professor Rossbach gives far more delicate ones. A drop of water containing infusoria is placed on a glass slide and examined uncovered. The infusoria are examined carefully as to size, form, color, etc. Then a drop of the solution is placed just to the edge of the fluid containing the infusoria. If organic poisons be present the infusoria are instantaneously destroyed, becoming a formless sediment. He startles us with his figures. "If a drop of water containing infusoria and weighing 0.001 grain be used as a test the quantity of strychnine required to cause remarkable changes will be 0.00000006 of a grain. In this way one fifteen-millionth of a grain of atropine can be detected." Thus, he says, if the stomach of a person poisoned by strychnia contains a liter of fluid and only three-quarters of a grain of the alkaloid, a single drop of this fluid will contain forty times as much strychnine as necessary for the test.

The Bending of Glass Tubing.

When glass tubes are not too wide they may be easily bent over a common gas jet. A burner, made by attaching a lava tip (such as are now commonly used in illuminating burners) to the stand or base of the ordinary Bunsen burner, will be found convenient. The tube is held horizontally in the flame in such a manner as to be entirely surrounded by the flame, and so all possible draughts are avoided and the flame does not flicker. The tube is soon covered with carbon; then it becomes glowing, and bends, in consequence of the weight of its free end, in an even and uniform manner, without making any wrinkles inside the bend or angle. Wide tubes are first filled with sand, and then suspended over a broad flame burner. A broad tube with flattened end, which exactly fits the Bunsen burner, may easily be procured. Thin glass tubes may be bent in the flame of a simple spirit-lamp, but if they are at all thick a Bunsen lamp becomes requisite. In this case the tube must be held across the flame, for then it would become heated in two places and remain cold in the center (i. e., between). It is, therefore, best to hold it tangent to the flame. If it does not bend freely, it is well to assist the operation with the hand, by slightly pressing the free end in the desired direction. This operation requires a certain amount of skill and dexterity in order to prevent the formation of wrinkles on the interior surface of the bend. These wrinkles not only offend the eye, but so contract the tube that a free current of the gas is prevented, and, in case of distillation, etc., condensable products are caught in the cracks, and the experiment spoilt.—M. B., in *Journal of Education*.

British Scientists to be Invited.

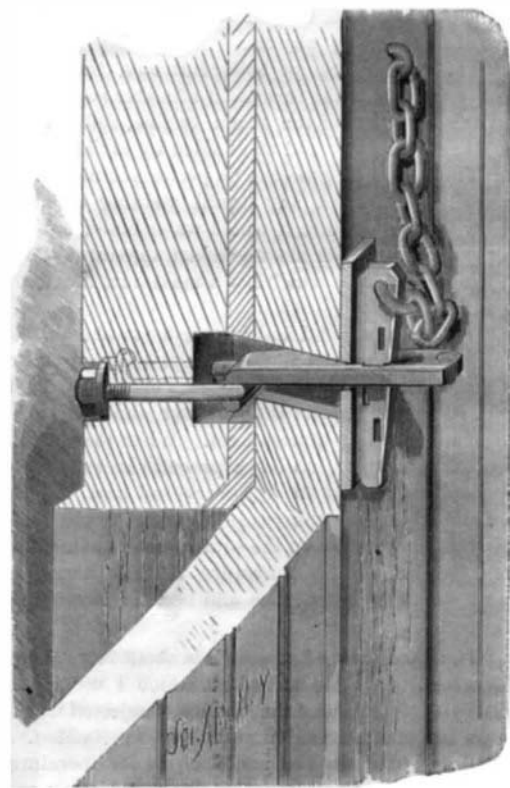
It is rumored that at the next meeting of the American Association for the Advancement of Science, to be held in Cincinnati in August of this year, a proposition will be brought forward to extend an invitation to the British Association to depart from their usual custom so far as to come over to this country in 1883, and hold their annual meeting for that year in conjunction with the American Association, at some place hereafter to be fixed upon. A number of the most prominent scientific men in the States and Dominion are known to be in favor of the plan, and doubtless the members of our association will be glad to send such an invitation as a mark of our cordial feelings toward the students of science in the mother country. It will give us great pleasure if it should prove practicable for the English body to accept. We hope that the proposition may be happily successful. The advantages of such a gathering of scientific men from two countries having a common language, are as evident as they are great. The meetings of the American Association have proved of inestimable value by bringing the investigators of the continent into personal contact with one another. Every scientific man has not only new facts to present, but also theories and hypotheses which may not be sufficiently complete, or justified by positive knowledge, to be put into print, yet it is precisely these vague ideas which are the most valuable stimulants of discovery, because they are the store from which new and sound ideas can be selected. By no other process can this selection be rendered so efficient as by personal discussion with others whose studies are in the same direction. If the suggested meeting be actually held, it will certainly prove as profitable as delightful.

There is no room to doubt that on our part we would be lavish of pains to make the meeting successful, and we think our reputation for hospitality is a guarantee that our guests will have a pleasant as well as a profitable visit.—*American Naturalist*.

IMPROVED DOOR FASTENER.

We give an engraving of a very simple and effective door fastener, patented by Mr. F. M. Alexander, of Marshall, Texas, and intended more particularly for application to car doors.

The staple is fastened in the side of the door frame with its outer end in a recess of the frame. The stile of the door is traversed by an oblique mortise covered on the outside by an iron plate having a slot, through which passes a short flat bar or hasp having a hook turned on its inner end and having in its outer end a rivet which prevents it from slipping inward through the plate attached to the door. The hasp has a mortise for receiving a key or pin attached to the car door by means of a chain. This key is mortised transversely for receiving a lock or seal. The staple is flush with the front of the door frame, and the locking of the door is effected by hooking the hasp over the staple and inserting the key as shown in the engraving. It will be



ALEXANDER'S DOOR FASTENER.

seen that by means of this device the car door may be drawn tightly against the door frame, and the car will be securely locked.

When the hasp is disconnected from the staple it hangs down upon the car door, its hooded end engaging the plate on the face of the door.

This fastener is very strong and effective, and at the same time inexpensive. The inventor informs us that railroad men who have seen it fully endorse it.