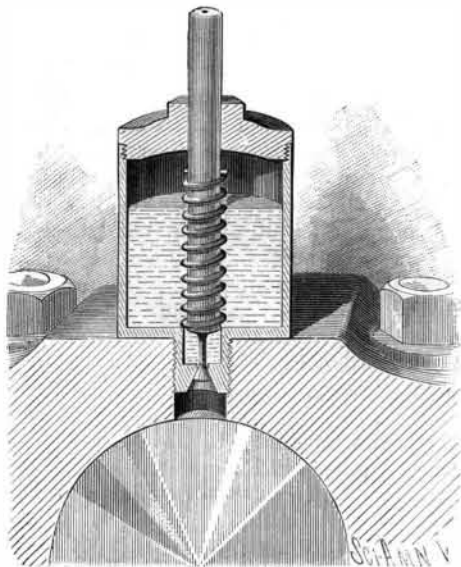


IMPROVED OIL CUP.

This simple and effective device is for supplying oil to the bearings and other moving parts of machinery. The cup is attached to the bearing by a screw neck. The top of the cup is closed by a screw cap, through the center of which passes a spindle having at its lower end a plug valve shaped as shown in the engraving. In the lower end of the neck is a recess, which provides a seat for the valve, and an aperture leads from the recess to an oil chamber formed in the neck immediately under the shoulder of the spindle. A spiral spring acts to lift the spindle and hold the



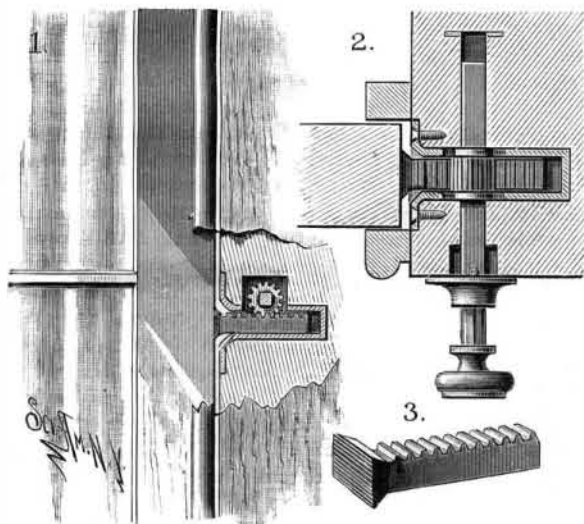
SLANKER'S IMPROVED OIL CUP.

valve to its seat, to prevent escape of oil from the cup. When the spindle is pressed downward, the valve will be lowered and the spindle shoulder will force all the oil from the oil chamber on to the shaft in the bearing. When released, the spindle will be raised by the spring, when the oil will refill the chamber. It will be seen that the size of the oil chamber governs the quantity of oil discharged at each downstroke of the spindle.

This invention has been patented by Mr. F. O. Slanker, of Pomona, Cal.

SASH FASTENER.

This device—the invention of Mr. Richard Gibbon, of Mobeetie, Texas—is for holding a sash at any desired elevation; it is simple in construction, and can be applied to any window. The casing is provided with an end plate and with two side plates; a squared spindle passes freely through lugs on the side plates, and projects from the front side of the window casing, as shown in the sectional plan view, Fig. 2. The spindle also passes through an escutcheon fastened on the casing and having a cogged opening into which a cogged part of the spindle at the knob can be passed. A pin prevents the spindle from being pulled out too far. A bolt, Fig. 3, formed with a rack on its upper edge and with a slightly serrated head on its outer end, is operated by a pinion revolved by the spindle. To hold the sash at any elevation, the spindle is pulled out until the cogged



GIBBON'S SASH FASTENER.

part is withdrawn from the escutcheon, and is then turned in such a direction as to press the bolt head firmly against the edge of the sash. The spindle is then pushed in, when the cogged parts interlock, and the bolt is held in place. The spindle is withdrawn to release the sash. If needed, a small socket can be placed in the sash to receive the bolt when the sash is closed.

OIL stains may be removed from paper by applying pipe clay powdered and mixed with water to the thickness of cream; leave on for four hours.

Plating without Electricity.

A curious phenomenon has been observed by M. Blondlot, and communicated to the French Academy of Sciences. A disk of platinum and a disk of copper, 0.03 meter in diameter, were fixed vertically in front of each other by help of two platinum stands. The disks were three or four millimeters apart, and both were placed inside a bell jar of porcelain, open below. The apparatus was then heated red hot for three hours by means of a gas furnace; and although there was no electric current, it was found that the face of the platinum disk was blackened with a deposit containing copper and platinum. In short, the copper had crossed from the copper plate to the platinum one. M. Blondlot, by repeating the experiment in different gas, found that the nitrogen of the air was the agent in this transport of matter. The nitrogen combines with the copper, and lodges on the platinum, either incorporating itself with the latter or decomposing in contact with it under the influence of its high temperature.

How to Design a Monogram.

Scarcely anything seems so easy as to design a monogram, yet we see very few successful ones, the most of them being a mass of mixed up letters and ornaments of which we can find neither the beginning nor the end. There is a law regulating the designing of everything, and it is this law which the true designer keeps in mind and applies to his work; the effects of obedience to this law, and its violation, are seen as clearly in the design for a monogram as in the design for a cathedral.

First, there should be harmony of composition, that is, the letters should so emphasize, subdue, or control each other that the composition should impress us as compact, appropriate, and, being so, beautiful.

Second, there should be no unnecessary ornamentation; there should be a quiet and peace about the design which will always please the truly artistic. Looking at some designs, we get the impression that ornament was so plentiful that the designers saw no other means of consumption than that of burying his designs in it, for we see that there is a mass of curves, angles, shades, and leaves, but nothing else.

Third, simplicity of lettering is an important requisite, as there should be no possibility of mistaking an E for a G or C, and the boundaries or outlines of the letters should be well defined.

Fourth, the order of sequence of the letters should be carefully attended to.

The common idea is that a certain number of letters are given with which to make a pleasing design, and so far, that impression is right; but there is something beyond this. There is the art of so placing the letters that one can distinguish at a glance the first, the central, and the last letter. Now, the rule to be observed to secure this result is as follows: The last letter of the monogram must be the principal feature, and must be the largest, the boldest, and the heaviest letter; then the first letter must be the next in size, but the lightest in outline and color; then the central letter must be the smallest, and of an intermediate tint. If the monogram is of four letters, the two intermediate must be of the same size, and the second letter lighter in outline and color than the third.—*Art Amateur.*

BASE FOR POSTS.

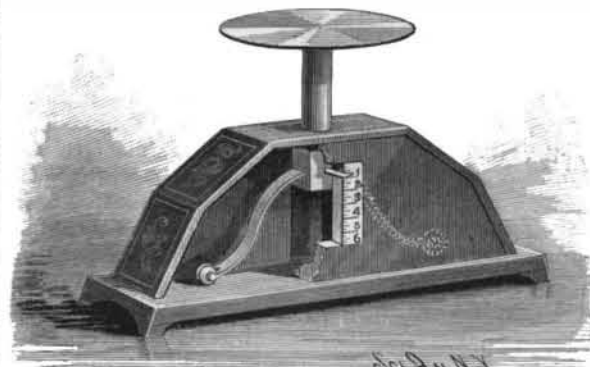
The base for posts shown in the accompanying engraving is simple, cheap, and practically indestructible. It consists of a section of hollow tile provided with a top and bottom cap held in place by one or two bolts. On the top cap, as shown in Figs. 2 and 3, is formed a cup to receive the stake, which is tapered at its lower end, and is allowed to enter until it wedges sufficiently tight in the cup. The cups are provided with side openings, to facilitate the removal of dirt and to allow rain or snow and ice water to run out. When two bolts are employed, as shown in the cuts, instead of a single central one, the bottom of the cup opens into the tile. With this style of a cup, any available stakes, waste lumber, etc., may be shaped to fit within the cups. When used as a base for a trellis, as shown in Fig. 5, in the fall of the year the posts can be lifted out of the cups and laid on the ground; in the spring they can be easily and quickly set up again.

The cup may be formed to receive the end of a piece of ordinary gas pipe, as shown in Figs. 1 and 4. A post constructed in this manner may be used to support barbed or other wire, forming a complete fence, at once indestructible, that will be especially adapted to use in places subject to fires, as in case of railroad fences. The base is easily and cheaply made of fire-clay tile, which is proof against frost and disintegration, and cast iron caps of desirable size and shape.

This invention has been patented by Mr. W. H. Kellogg. Further information may be obtained from Mr. W. A. Forbes, of Kalamazoo, Mich.

SPRING BALANCE.

The spring balance here shown weighs accurately and is very simple in construction. In the center of the case is a vertically sliding block provided with a pointer projecting through a vertical slot in the front of the casing. At the edge of the slot is a graduated scale. A rod projecting from the block through the top of the casing carries a plate on its upper end for receiving the article to be weighed. Secured to the block is a flat curved or bow spring, at the ends of which are rollers that run on the upper surface of the base. When an object is placed on the pan, it presses the rod downward, and thereby the spring is compressed more or less, its ends separating. The pointer shows the weight of the article. When the



WATT'S SPRING BALANCE.

article is removed, the spring contracts and moves the pan upward until the pointer is at the top of the slot.

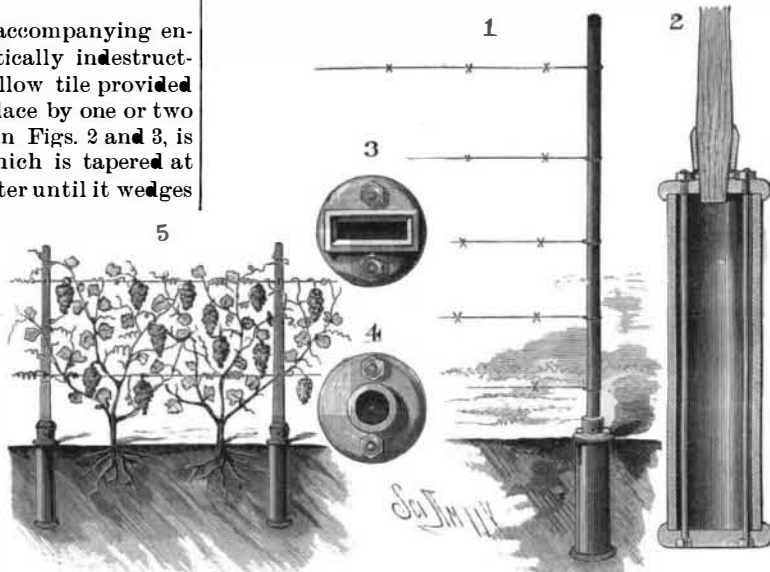
This invention has been patented by Mr. William R. Watt, of Somerville, Tenn.

A Curious Chemical Phenomenon.

A celebrated Parisian belle, says the *Popular Science News*, who had acquired the habit of whitewashing herself, so to speak, from the soles of her feet to the roots of her hair, with chemically prepared cosmetics, one day took a medicated bath, and, on emerging from it, she was horrified to find herself as black as an Ethiopian. The transformation was complete; not a vestige of the "supreme Caucasian race" was left. Her physician was sent for in alarm and haste. On his arrival he laughed immoderately and said: "Madame, you are not ill, you are a chemical product. You are no longer a woman, but a 'sulphide.' It is not now a question of medicinal treatment, but a simple chemical reaction. I shall subject you to a bath of sulphuric acid diluted with water. The acid will have the honor of combining with you; it will take up the sulphur, the metal will produce a 'sulphate,' and we shall find as a 'precipitate' a very pretty woman." The good natured physician went through with his reaction, and the belle was restored to her membership with the white race.

Education.

A bill now before Congress aims to set aside the net proceeds of sales of public lands for educational purposes. Besides the actual receipts, this will include all fees received at the General and District Land Offices



KELLOGG'S BASE FOR POSTS.

and three-fourths of the total moneys paid into the Treasury by railroad companies under the act of May 7, 1878. This money will be apportioned, upon the basis of population between the ages of five and twenty years, to the different States and Territories, and is to be set aside as an educational fund, the interest at 4 per cent to be paid as apportioned. For the first ten years the apportionment of the total sum and the interest on the fund is to be made according to the number of the population of the respective States and Territories of ten years old and upward who cannot read or write, as shown by the last census.