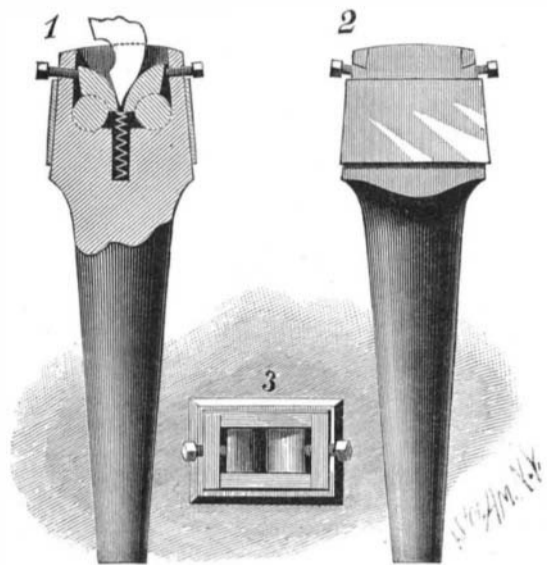


## AN IMPROVED SAW SWAGE.

The saw swage shown in the accompanying illustration consists in two eccentric swages pivoted in a socket, and capable of receiving between them the point of the saw tooth, the object being to spread the points of the teeth when the swage is driven forward,



YOUNG'S SAW SWAGE.

without diminishing their length. The adjoining faces of the eccentric swages are nearer the center of rotation than the outer portion, so that when the swages are caused to revolve by the insertion of the tooth between them, the faces of the swages will approach each other and operate laterally upon the opposite edges of the tooth. In our engraving, Fig. 1 shows a side elevation, partly in section, of the swages pivoted in their socket; Fig. 2 representing the exterior of the implement, and Fig. 3 an end or top elevation. In Fig. 1 can be seen the adjusting screws and spiral spring resting in a cavity in the shank, which hold the swages in position. The shank and the swages are made of steel, hardened and properly tempered, and with sufficient strength and rigidity to stand the lateral pressure created by driving the implement upon the tooth, whereby the tooth is elongated rather than upset, as in the usual manner of swaging.

This invention has been patented by L. B. Young, and further information can be had by addressing Messrs. Young & Lewis, of Villa Ridge, Ill.

## IMPROVED SCROLL SAW.

Amateur scroll sawing, for the making of a great variety of household ornaments and useful articles,



THE HOUSE SCROLL SAW.

has steadily grown in popularity for a few years past. One can so readily become proficient in the operation of the machines devised for this purpose that their use has come to be a favorite diversion among the young people in many families throughout the country. Among the latest improved devices of this kind is the House patent scroll saw, shown in the accompanying illustration. It has been a popular style of saw for years, being light enough for a lady to lift around, making but little noise while running, and being very durable, although sold at a low price; but it has lately been materially improved by the addition of three inches to the swing, making nearly sixteen inches in the clear, and a positive blower, which keeps the work entirely free from dust.

In our engraving, Fig. 1 shows the cam which springs the arm for tension; Fig. 2 is a rubber ball with tube attached, each downward stroke of the saw arm forcing air through the tube; Fig. 3 is the pitman rod, to which the lower end of the saw blade is clamped. The moving arm of the saw is made of malleable iron, and is attached at the center of the bow to an iron frame. The surface of the saw table, on which the wood rests, is on a level with the screw attaching the

movable arm at its center to the iron frame, so the overcut is so slight that it is overcome by the pressure of the wood against the saw blade. The saw blade has always the same strain at any position of the stroke, so that few saws are broken, and the treadle bar is hung on A-shaped bearings, like those of a letter scale, causing the machine to run very easily. The machine is light, and of great power, being made entirely of iron and steel except the pitmans and wood tables, the latter being of black walnut, filled and finished.

The House scroll saw is manufactured by Mr. A. H. Pomeroy, of 216 to 220 Asylum Street, Hartford, Conn.

## The Poiograph.

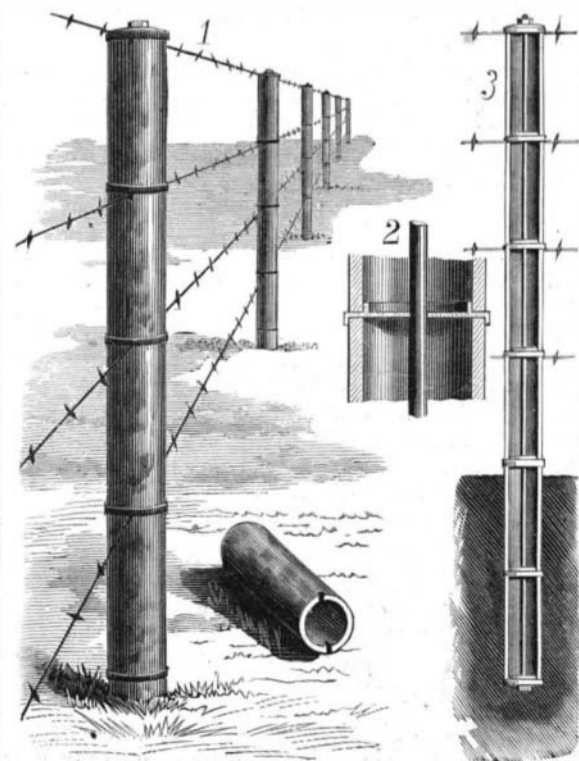
Mr. C. H. Hinton lately read a paper before the Physical Society on "The Poiograph." As the result of a process of metaphysical reasoning, Mr. Hinton has come to the conclusion that relations holding about number should be extended to space. Starting from the premises that the relation of a number to a number is a number, e. g., the relation of 6 to 2 is 3, the author proceeds to carry these principles into the considerations of space, and concludes that when properly understood the relation of a shape to a shape is a shape, and that of a space to a space is a space. The shape that shows the relation of a shape to a shape is called a poiograph. To form a poiograph, the content of each shape is neglected, and the shape is represented by a point, each point being by its co-ordinates representative of the properties of the shape considered. The resultant shape is a poiograph.

## A SECTIONAL TILE FENCE POST.

The post illustrated by the accompanying drawing is especially adapted for barbed wire fences. It is constructed of common drain tile, in sections varying in length according to the desired distance between the wires, each section having a notch or groove across the upper end to hold the wire. The ends of the posts are provided with bottom and cap pieces, and through the whole passes a light iron rod, having a head at the bottom of the post and a burr at the top. Between each section is placed a thin iron washer of the same diameter as the post, with a hole in the center fitting the rod that passes through it. The construction will be readily understood by reference to the illustration, Fig. 1 showing the post in position holding its wires, Fig. 2 the detail of joining the sections, and Fig. 3 the interior of Fig. 1. The post is set the same as the common wooden post, and tile of an outside diameter of four inches is sufficient. The fence wire is tightened and placed in the notches between the several sections, the burr is turned down on each post, holding the fence, wire, and posts all firmly in place.

Among the advantages claimed for this style of fence post are, first, great strength, the washers between sections conveying all lateral strain to the highly tensioned connecting rod, making the joints remarkably rigid; second, durability, as a fence constructed of wire and sectional posts of hard tile as above is fire-proof and practically indestructible by the weather; third, economy, as the posts can be so constructed and sold cheaply, and whenever a section is accidentally broken, the post is easily repaired by insertion of a new section. No new machinery is needed for the construction of these posts, all machinery required in their manufacture being already in daily use.

The patentee of this new fence post is Mr. E. R. Anable, of Paw Paw, Mich., and John Hodges, of the same place, as assignee of a one-half interest, to either of whom letters relating to the patent may be addressed.



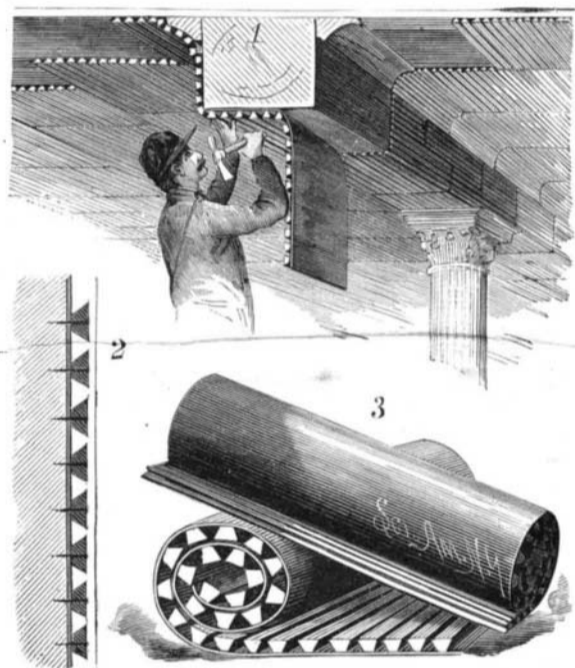
ANABLE'S TILE FENCE POST.

## The Steepest Railroad Grade.

There are several steep grades on railways in this country. The Atchison, Topeka & Santa Fe has one over the Raton Mountain, the steepest portion of which is 285 feet to the mile. The Denver & Rio Grande climbs at one place a grade of 220 feet per mile, but the J., M. & L. takes the lead, which is found on what is known as the Madison hill. Length of hill, 2 miles; average grade, 211.86 feet per mile; grade at steepest part (7,000 feet long), 307.30 feet per mile. On this hill are used two engines. The passenger engine, light, exclusive of the tender, weighs 89,600 pounds; eight drivers. Freight engine, light, exclusive of tender, weighs 112,300 pounds; ten drivers. All weight on drivers. This hill has been the source of much trouble to the company. Various experiments to overcome the grade have been tried, and abandoned. The third rail with cog face, in which worked a cog driver, was brought into requisition, which for a short time worked quite satisfactorily, but of necessity was abandoned, and followed by the present pattern of engine in use, low, heavy, all weight on drivers, with as many drivers as practicable.—*Indianapolis Journal*.

## IMPROVED LATH.

The illustration herewith represents an invention of an improved web of lath, Fig. 1 showing its application on a ceiling, Fig. 2 being a side view, and Fig. 3 showing the manner in which it is furnished ready for use. The novelty consists principally in attaching lath to a flexible backing, to facilitate the application of lath to the joists of a building, and to cause the plaster



MORRISON'S IMPROVED LATH.

to key closely to the lath. It is preferred that the lath sticks be attached to the backing by means of tar or other adhesive material; the backing also serves as a good "deafening" for the wall.

This invention has been patented by Mr. James Morrison, Jr., 122 West Seventeenth Street, New York City.

## Turtle Oil.

Turtle oil is suggested as a substitute for cod liver oil. The oil is of a yellowish color, and at the ordinary temperatures in this country forms a thick, finely granular fluid, in consistence something like olive oil partly congealed. A gentle heat renders this oil clear and transparent. It possesses little odor or taste, and does not quickly turn rancid. Taken in warm milk it is not so objectionable as cod liver oil. Mr. E. M. Holmes, in the *Pharmaceutical Journal*, says:

"Mr. J. H. Brooks informs me that the oil is obtained from the fat of the reptile by boiling, and not from the eggs. Concerning its use in medicine, Mr. Brooks adds, 'I have for some twenty years employed turtle oil with the most beneficial results in all cases where cod liver oil was indicated, in persons in whom the nutritive process was defective, in children of strumous disposition, in the sequelæ of scarlet fever, in measles, and other acute specific diseases. It has proved of the greatest service in scrofulous affections of the eyes, nose, and other parts; and has been most beneficial in chronic bronchitis, gout, rheumatism, and syphilitic affections; but I have found it more particularly useful in phthisis pulmonalis, in all its stages. Turtle oil is borne well by the stomach, causing neither nausea, eructations, dyspepsia, nor diarrhoea. It should be administered in the same doses as cod liver oil, commencing with a small dose three times a day, in any vehicle that the patient may fancy. It is also largely used in the Mauritius and Reunion, where pulmonary diseases prevail, and is much preferred to cod liver oil.'"

This animal oil, which keeps well, and is comparatively free from smell, should prove, with its color and non-drying properties, of great service in the manufacture of pomades, etc.