year ago, and since then he has examined the blood in 192 patients affected with various symptoms of malarial poisoning, intermittent and continued fever, and palustral cachexia, and found the organisms in 180. The disease had been contracted for the most part in different regions of Algeria and Tunis. He convinced himself, by numerous and repeated observations, that these organisms are not to be found in the blood of persons suffering from diseases that are not of malarial origin. In most of the cases of malaria in which the examination yielded a negative result the patient had undergone a course of treatment with quinine, and to this fact the absence of the organisms from the blood was probably due. The addition of a minute quantity of a dilute solution of sulphate of quinine to a drop of blood was found at once to destroy the organisms. In all the examinations great care was taken to preclude the entrance of any extraneous objects into the drop of blood examined. In general the parasitic bodies were found in the blood only at certain times: a little before, and at the moment of, the accession of the fever. In some very obstinate cases the organisms were always present in the blood. They rapidly disappeared under the influence of a quinine treatment. It is conjectured that in the apyrexial intervals the organisms probably sojourn in internal organs, especially the spleen and the liver. After death from malarial disease pigment granules are found in great numbers in the blood, and especially in the small vessels of the spleen and liver; and they may be, in the most severe cases, so abundant that not only the spleen and liver, but the marrow of bone, and even the gray substance of the brain, are darkened by their presence. These pigment granules, which may obstruct the capillary vessels, appear to be derived from the parasitic elements, which perish after death, and become then unrecognizable. —*Lancet.*

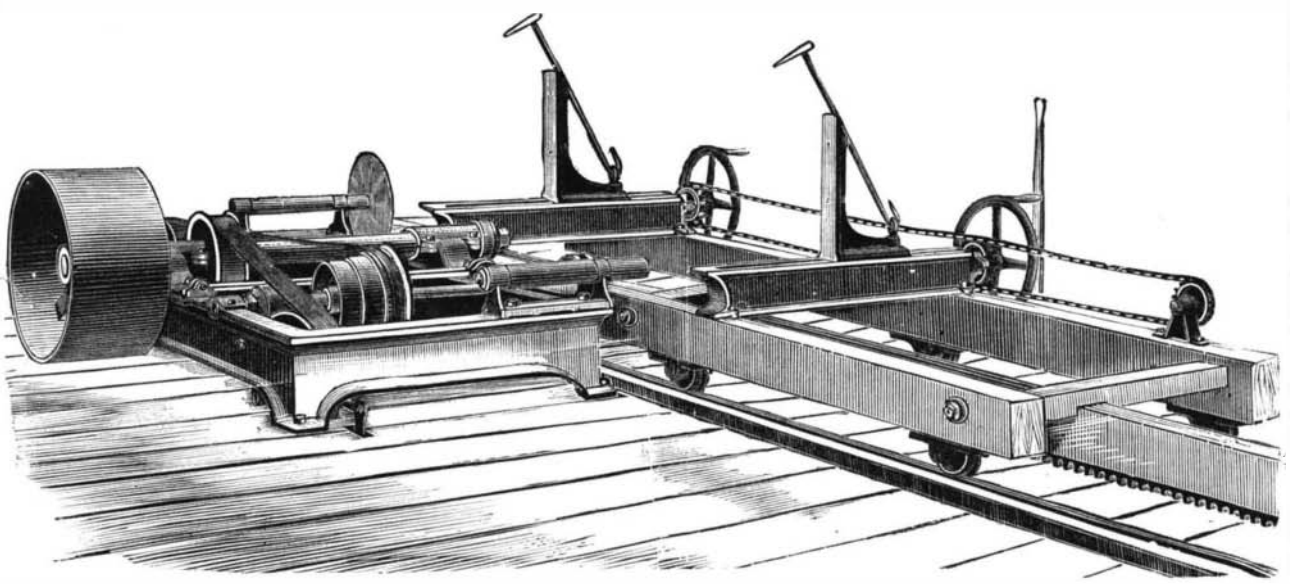
IMPROVED CIRCULAR SAWMILL.

The circular sawmill shown in the annexed engraving is made at the works of Alexander, Bradley & Dunning, Syracuse, N. Y. The frame is iron, and cast in one piece. The saw mandrel is made of steel, and runs in self-oiling boxes, which are cast in a solid yoke extending across the frame, and is adjusted by means of set screws to line the saw. The main pulley is placed outside of the frame, in order to relieve the bearing next to the saw from the strain of the main belt, and give more room between the saw and belt, greatly increasing convenience and safety in handling the lumber. This mill has an improved friction feed, which may be varied at any point to feed slowly while passing through a knot by pressing with less force upon the feed lever, or the carriage may be instantly stopped by throwing the feed lever over. The sawyer sets the log and operates the carriage, thus saving one man over the old style of mill. These machines are furnished with Carley's improved head blocks with screw or lever set as preferred. The screw set has a patent chain connection and taper attachment, as shown in the engraving, by means of which the screws are operated independently or simultaneously, with perfect exactness, enabling the sawyer to set to any required thickness, with great accuracy, and to advance one or both ends of the log at pleasure, without removing from his place.

When only two head blocks are employed an idle chain wheel and stand is attached to the tail end of the carriage, as shown in the engraving. This enables the sawyer to adjust the second block for long or short logs without detaching the chain; when three blocks are used the third block takes the place of the idle wheel.

An improved simultaneous ratchet set head blocks, with rod connection, can be supplied if desired. They are very simple in construction, and much approved by those who prefer the lever set. The connecting rod is made large to avoid torsion, and is 12 feet long for 18 feet of carriage; 16 feet long for 24 feet of carriage, and 20 feet long for 30 feet of carriage.

Three sizes of this mill are made, namely, Nos. 1 2, and 3. The No. 1 mill is strong and well made, and runs very light. It is designed for use principally as a portable, in connection with the farm engine for neighborhood use. It is also used in connection with water wheels in localities where water power is limited, and where there is not enough sawing to do to justify the use of a large and more expensive mill. No. 2 is a strong, durable mill, designed to meet the wants of a large class for a good, cheap mill, of larger capacity than No. 1, and is used as a portable or stationary mill. No 3 (shown in the engraving) is used principally as a stationary mill. It has extra heavy iron frame, 3 inch steel saw mandrel with standard collar, and carries a 60 inch or smaller saw. The main pulley is 26 inches in diameter and 14 inch face, and the head blocks open 36 inches; capacity from 10,000 to 15,000 feet per day.



CARLEY'S IMPROVED CIRCULAR SAWMILL.

NEW AUTOMATIC PENCIL.

The engraving represents a pencil of entirely new construction and of convenient size for the vest pocket. It is handsome in design, well made, strong, and durable. It carries a lead three and three-quarter inches long and three thirty-seconds of an inch in diameter. Leads of this size, black, indelible, or copying, are sold by all stationers, so that the pencil may be readily fitted with leads. The exterior of the instrument is of finely nickel-plated metal and hard rubber, plain or ornamented in various artistic designs. No spiral or other variable spring is used. Unlike other automatic pencils, it has a firm and immovable grasp on the lead that does not cut or mar the lead in the least, and maintains the gripe as long as desired.

LIVERMORE'S NEW AUTOMATIC PENCIL.

When needed for use the lead is advanced by the pressure of the forefinger on the top section; and, when no longer needed, is retired, for protection, by a perpendicular pressure of the pencil on the paper or desk, or by a back-pull of the top section.

When the lead, from wear, requires resetting for a longer point, a quarter turn to the left of the top section releases the gripe, the movable parts are drawn back by the top section, the pencil is then placed, point downward, on the finger or desk, and, while the movable parts are held back, the top section is turned to the right till the gripe is renewed. This automatic operation, requiring but an instant, sets the lead the proper length for use without the aid of the eye.

This instrument is manufactured by the Stylographic Pen Company, and was patented September 13, 1881. It is also covered by Letters Patent in foreign countries, and may be purchased for fifty cents at any of the following offices of the company: 173 Broadway, New York; 290 Washington street, Boston; 38 Madison street, Chicago.

The Marlboro Sea Serpent.

There was lately discovered in a marl pit in Monmouth County, New Jersey, a notable addition to the known fauna of the ancient sea which overlay that region in cretaceous times. According to Professor Lockwood, the monster was between seventy and eighty feet in length, about one-third of his longitude being a broad, flattish tail constructed of chevron-shaped bones so as to make it a valuable engine of propulsion when used as a scull. The data furnished by the relics would imply that between the tip of his muzzle and the back of his head was a distance of four or five feet. It is possible that the specimen belongs to some undescribed species, but perhaps the remains are too imperfect to decide this. It is certain, however, that it belongs to the genus clidastes, many species of which have been determined, and which have been abundantly found in the West. Clidastes was an own cousin to the mosasaurus, or the great lizard of the River Meuse, described by Cuvier. The European reptile, however, was of a more chunky build, with shorter head and neck and stronger jaws. Both belonged to the order of pythonomorphs or snake-like saurians, which were the genuine sea serpents of the period.

MECHANICAL INVENTIONS.

Mr. Jacob Burkhart, of Lock Haven, Pa., has patented an improved saw set. This is an improved implement by which the teeth of fine as well as coarse saws may be accurately set, and one which is adapted also to hold and set the teeth of narrow scroll saws. The invention consists principally of an adjustable and slotted rest or support for the saw, of a horizontally adjustable stop or guide in combination with a spring-supported hammer.

Ordinarily pitman bars or rods are connected with the shaft by means of a crank at the end of the shaft, or to cranks formed by bending the shaft. By this arrangement the whole body of the pitman bar is carried with the crank, causing a considerable loss of power and an undesirable jarring or shaking effect, due to the centrifugal force of the pitman bar, and when running at high rates of speed, the centrifugal force of the pitman becomes injurious, causing the whole shaft to vibrate. Mr. George P. Conant, of Geneva Lake, Wis., has patented a pitman bar intended to overcome this difficulty, and also to provide a pitman connection which may be attached to a straight shaft at any point in its length. The invention consists of a pitman head formed with cross slots, in combination with a crank adapted to be secured upon the shaft, the crank pin of which is adapted to move in one of the slots of the pitman head, the other slot thereof being to accommodate the backward-and-forward movement of the pitman and pitman head in a right line upon the shaft, the crank pin being provided with a sliding block, so that the pin will pass the slot for the shaft.

An improved boot-brushing machine has been patented by Mr. Alfred S. Clark, of Chatawa, Miss. The invention consists of a series of brushes attached horizontally and vertically to a frame loosely mounted on a vertical rod and combined with suitable devices for revolving it. The vertical rod is fastened in a base provided with foot-rests, upon which the feet may be placed if the boots or shoes are to be brushed.

An improvement in knitting machines has been patented by Mr. Freeman A. Calley, of New York city. The object of this invention is to facilitate the adjustment of the length of the stitch; to facilitate running a series of needles out of operation, and, finally, to prevent breaking the vertical ribs of the stationary needle-carrying cylinder. These ends are attained by an ingenious combination of mechanism which cannot be clearly described without engravings.

Mr. Henry G. Dennis, of New Bedford, Mass., has patented an improved bell joint for coupling pipes which consists in a beveled or bell-shaped collar provided in the inner surface with a groove or rabbet a short distance from each mouth of the collar. The latter is mounted on the enlarged or swaged end of a pipe, which receives the contracted end of another pipe. The rabbets of the collar are then filled with molten lead or other suitable filling and thoroughly driven.

An improved spring, particularly adapted for side bar buggies, has been patented by Mr. James H. Howe, of Conneaut, O. These springs are long, yet they occupy small compass in the buggy, thus making the buggy very easy riding, and a buggy provided with these springs will carry one or more persons with equal ease and comfort.

Mr. Parsons Shaw, of Manchester, County of Lancaster, England, has patented an improvement in dental engines. The main object of the invention is to improve the universal joint employed in dental engines by a hinge movement which will allow the swinging arm to play freely in any direction without straining the spiral transmitter or causing it to bind or buckle. This is accomplished by using bifurcations on the bearings and bending their ends at right angles to the bearings, then connecting these ends by pivots.

In the manufacture of cotton goods the marks called "cut marks," which indicate "pieces" or "cuts" of forty, fifty, sixty, or more yards, are put upon the warp in the process of dressing or sizing the same, usually by means of a roller (which has interchangeable large and small gear wheels) placed in the slasher near the measuring wheel, which roller carries a block from a trough or box containing coloring material slowly upward to a point where, at the proper time, it rolls against the warp, leaving the cut-mark, and from thence falls back into the color box. Mr. Orrin M. Rolfe, of Lowell, Mass., has patented a cut-marker for slashers which will deliver the mark suddenly, as by a blow, and then cause the brush to move down into the color box with