The Devil's Darning Needle.

To the Editor of the Scientific American:

"Though I regret being compelled to even appear to take issue with the eminent entomologist of Washington, I must beg to assert that my statement in your issue of August 16, in regard to the finding of a thick-thighed walking-stick in early spring, and in a pool of water, is not "founded on mistaken identity." I have been perfectly familiar not only with these insects, but also with the water-boatmen referred to by Professor Riley, for several years, and certainly would not confound them even at a casual glance; and I noticed one or two characters of the walking-stick quite particularly. I observed that the alternate brown and greenish transverse bands marking the femora were unusually distinct, probably on account of being wetted; and as it occurred to me at the moment that the females might occasionally survive and deposit ova in spring, I examined it to ascertain the sex, and found the curved clasping organs of the male insect at the extremity of the abdomen.

It should not be inferred from my statement of the size of very young individuals that the adults are so diminutive, nor from the finding of this specimen in the water that the species is properly aquatic. The specimen was perhaps three inches long, exclusive of the antennæ, and is the only one I have ever seen in, or even near, water. I simply placed the matter on record in the columns of your paper as being wholly anomalous, and, to me, utterly inexplicable.

Yours truly, W. J. McGEE.

Farley, Iowa, Sept. 4, 1879.

The Catskill Mountains.

Professor Guyot has published a new map of the Catskill Mountains, the result of several summers' work in the Catskill region with his barometer and surveying instruments. He has measured the height of over two hundred places, determined by triangulation the positions of all the many summits, and discovered mountains that were not known to exist. A large part of the region, especially the southwestern, is an untracked wilderness of forests; and in several cases the only chance for making his triangulation was by climbing to the tops of the highest trees. He has found higher points than were before recorded, and many of them. His table of altitudes contains three peaks over 4,000 feet, thirteen over 3,800 feet, and thirty-six over 3,500 feet. The highest point is one of the previously unknown, Slide Mountain, in the Southern Catskills; its height is 4,205 feet above tide.

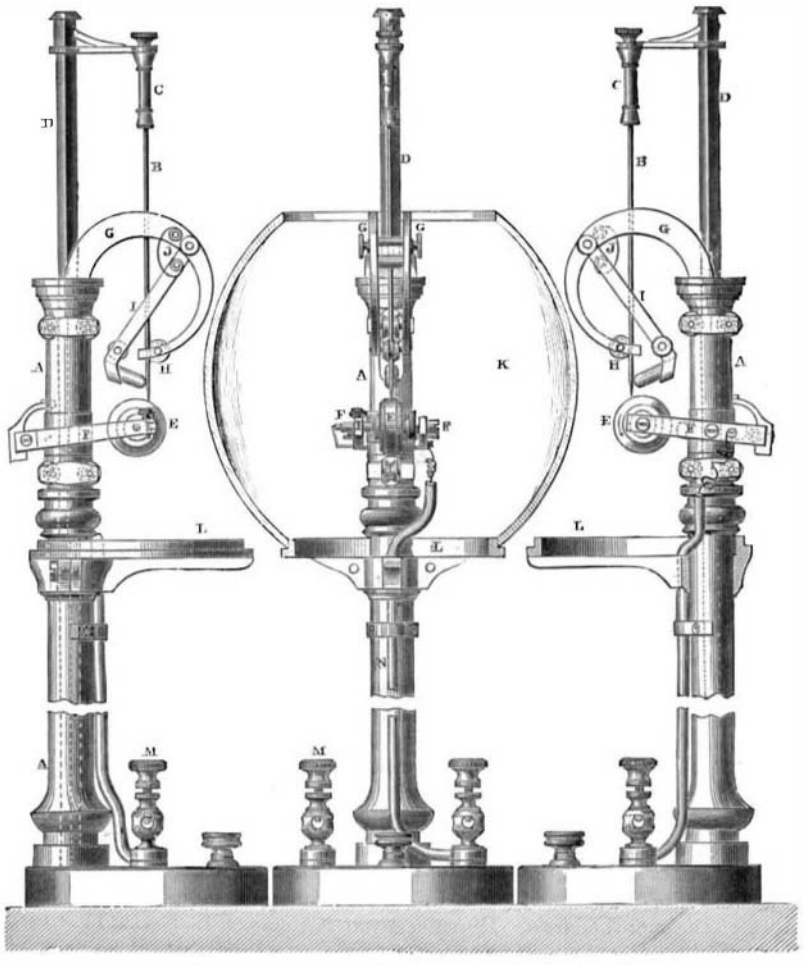
NEW FORM OF REYNIER'S ELECTRIC LAMP.

In 1878 Mr. E. Reynier observed the advantages presented by the effects of incandescence for the simple production and division of the electric light, and conceived the idea of uniting these effects with those of the voltaic arc. He therefore arranged the carbons, according to the Lodyguine system, so that it would burn at the point and furnish a small center of combustion at the point of contact. A small voltaic arc was thus produced.

In this lamp a slender rod of carbon is placed above a fixed and massive contact, either of carbon or metal, and is held in a vertical position by a heavy carbon holder. The carbon holder, by means of its weight, gradually pushes the carbon rod downward to replace the parts burned away. Cinders will collect at the point of contact if the ordinary carbons are used, but these cinders are thrown off by the rotation of the carbon disk. With this apparatus Mr. Reynier illuminated five lamps with a current from thirty Bunsen elements, and maintained the light in one of the lamps for more than a quarter of an hour with a secondary battery of three Planté elements.

Fig. 1 is a side view of the lamp without globe. Fig. 2 is a front elevation with section of globe and support. Fig. 3 is an elevation of the other side. A is the hollow supporting column with base; B is a slender carbon rod fitted to the socket, C, and retained by a screw. The vertical rod, D, supports the carbon rod, B, and slides in the column, A, on friction rollers. The carbon disk or cylinder, E, upon which the end of the carbon, B, rests, is supported in a forked arm, F. The carbon slides between the two cheeks of the curved guide, G. There is a small wheel, H, at the end of the guide, G, against which the carbon rod, B, rests, and an inclined lever, I, is pressed by the spring, J, against the carbon rod, and acts as a brake. A glass globe, K, covers the whole.

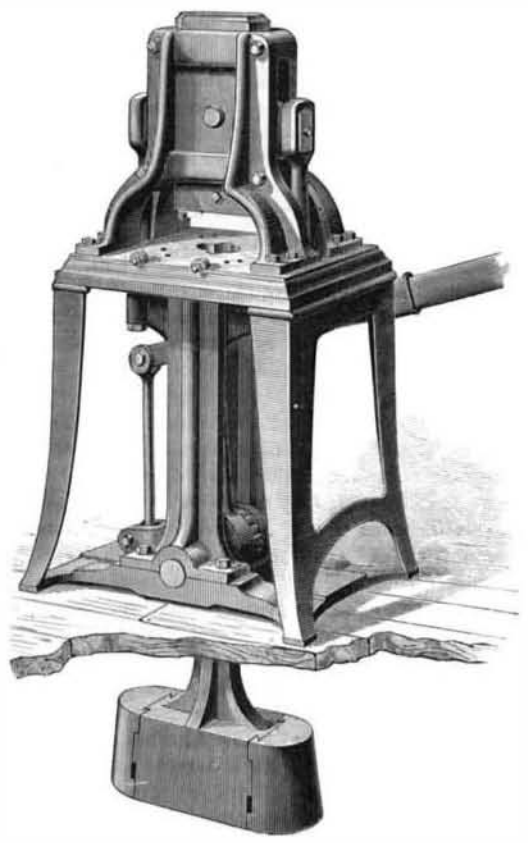
Mr. Reynier has made several models of his lamps. The last has a Carré carbon about 0·08 of an inch in diameter, held by a heavy carbon holder, which slides in a hollow column, and is provided with four friction rollers. The carbon rod rests on a carbon cylinder pivoted to a vertical arm of the column. A guide piece, provided with a brake, holds the carbon rod, and through this guide the current passes into the carbon rod, and from thence to the carbon cylinder, and returns to the battery. The point of contact is not directly over the center of the cylinder, but a little to one side, so that the cinders cannot accumulate.



REYNIER'S ELECTRIC LAMP.

A NEW COMBINED PUNCH AND SHEAR.

In our last two issues we gave brief descriptions of the new patent "Peerless" punching and shearing pendulum presses, Nos. 1 and 2, designed for comparatively light work. The one shown in the accompanying engraving is adapted to heavy work, and differs from the others in construction but not in principle. In the two presses previously described, the pendulum swings above the floor, and is actuated by treadle or hand lever. In this press the hand lever alone is used. It is designed for work as heavy as is usually done by large



"PEERLESS" COMBINED PUNCH AND SHEAR No. 6.

power presses, and is intended for railing makers, machinists, bridge builders, ship joiners, railroad contractors, and heavy iron working generally.

The work accomplished by it is astonishing, and we do not know of a hand press in the market performing as heavy work as this with but one man at the lever.

The pendulum swings below the floor, and is longer and heavier than in the presses before described. With one man at the handle, it punches easily an inch hole in three eighths bar iron, and ⅝×½, any distance from the edge; and shears ¾ bar, 2½ inches at a cut. It has an open back, and will admit a plate 14 inches wide, and of course any length. The opening in the bed is 7x9 inches; stroke of slide 1½ inch; adjustment of slide 1½ inch. It weighs about 1,200 lbs., and occupies but one foot seven inches by two feet four inches of floor space.

The cross heads and connecting rods are made of steel, and the press is apparently very strong and substantially finished. We are informed that the manufacturers intend to exhibit the machines we have illustrated, in operation, every evening at the approaching exhibition of the American Institute in this city. The novelty of these presses will, doubtless, excite the curiosity of all practical machinists.

For further information, address the Peerless Punch and Shear Company, 52 Dey street, New York city.

A Strange Collision at Sea.

The Rotterdam steamship P. Caland, which arrived at this port September 9, brought the captain and crew of a Norwegian bark which had been sunk by collision with some sea monster in mid ocean. The bark Columbia left London for Quebec, in ballast, August 8, and met with variable weather until the morning of the 4th inst., when she was sailing at the rate of from six to seven miles an hour before a fair wind. The sea was not very rough, and the bark was carrying all sail and heading westward. The captain was on deck at five bells in the morning watch, when a tremendous shock, which shook the bark from stem to stern, was suddenly felt. The men who were asleep in their bunks were awakened, and thinking that the foremast had been carried away, sprang on deck. Capt. Larsen and three of his men ran to the port side and saw the water discolored with blood, while the tail and fins of a huge monster were seen splashing about in the sea, which had become violently agitated on that side of the vessel. At this moment one of the crew cried out that a leak had been sprung, and Capt. Larsen and the carpenter hurried down into the hold to see if the bark had suffered any injuries. In the port bow, about three feet below water mark, they found that four planks had been crushed in for a space about four feet long. A large hole had been made, through which the daylight above the water could be plainly seen. The water was pouring into the vessel through this hole. Several attempts were made to stop it up, but failing, the bark was abandoned and sank soon after. The captain and his crew of twelve men were fortunately picked up by the P. Caland the same day in the afternoon. No precise description of the colliding monster could be given The Columbia was an old ship, but about two years ago was put on the stocks and thoroughly replanked. Her bow was made of solid 4½-inch oak planking.

MECHANICAL INVENTIONS.

Mr. John J. Kendall, of Greensborough, N. C., has patented a shingle machine, which is an improvement upon the shingle machine for which letters patent of the United States No. 166,784 were granted to the same inventor, August 17, 1875. The improvement cannot be clearly described without an engraving.

Mr. John F. Rakes, of Greenup County, Ky., has patented improvements in automatic car couplings, the object of which is to furnish means for holding the link and pin in position to immediately and surely engage each other when the cars are moved up in position to be coupled.

An improved car coupling has been patented by Mr. Colin Chisholm, of Los Angeles, Cal. This is an improvement in the class of car couplings in which the pin is so pivoted as to form a gravitating latch, which is thrust back by the disk when it enters the draw head, but immediately falls into the slot of the link, and thus completes the coupling. For uncoupling, the latch is raised by a chain and lever.

An improved device for locking the adjacent ends of railroad rails securely in place, so that they cannot rise out of line with each other under the pressure of passing trains, has been patented by Mr. Elijah F. Locke, of Apponang, R. I.

An improved ice boom has been patented by Mr. John B. Hansler, of Jersey City, N. J. It is designed for keeping cut or broken drift ice from floating farther up and down stream than is desired, and also to prevent ice from descending the rivers and entering the harbors. It consists of an arrangement of net work of iron rods and cables connected to floats, and joined to the shores, piers, or docks on either side, and arranged to swing open for the passage of vessels, and possessing sufficient elasticity to yield to the force of the current and tides, and to the impact of the floating ice, without breaking.

An improvement in wagon jacks for raising the axles to take off the wheels for greasing the spindles, has been patented by Mr. Andrew McClure Jones, of Birmingham, Ala. It consists of two bars, one serving as a standard and the other as a movable extension, to the upper end of which the lifting lever is fulcrumed. The adjoining faces of the bars are ratcheted, so as to engage each other, and connected together by bolts projecting from one bar through a vertical slot in the other, and furnished with thumb nuts, by which the upper bar can be secured at any desired height.