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Geological Discoveries.

At a meeting of the London Geological Society, held in the 7th of last month, Prof. Owen, the eminent Zoologist, read a paper on the remains of a new species of mammal obtained from the Eocene tertiaries of the Isle of Wight.

The Professor founded his description of the animal chiefly on the jaw and teeth, which presented characters intermediate between those of the hog and the sheep. The Professor remarked on the immense void which existed between the pachydermata of Cuvier, and the ruminantia of the same author. Amongst animals of nearly the same size, the pig may be taken as a type of the pachydermata, thick skinned animals, and the sheep of the ruminantia, or ruminant quadrupeds. Although both these orders are hoofed, yet there are many striking distinctions between them, and judging only from the living creation, nature seems to have jumped at once from the sheep with its four stomachs, and harmless grass-eating teeth, to the pig with its omnicarnivorous habits and truly canine teeth. Many fossil forms which have been brought to light by Cuvier and others, from tertiary formations have supplied links which are wanting between these two classes of animals.

Professor Owen described this intermediate form under the name of *Dochodon arspidatus*. Several jaws of this quadruped had been found, one jaw being in the collection purchased from the Marchioness of Hastings, for the British Museum, and another having recently been discovered by Dr. Wright, of Cheltenham. The earlier specimens had caused the animal to be classed with the hog tribe, but the immature jaw discovered by Dr. Wright completed our knowledge of the dentition, and showed the animal to be intermediate between the pig and the sheep.

Hitherto no traces of a ruminant animal had been discovered in older strata than the Miocene, and Cuvier, in the Paris Basin, had brought to light no ruminant of a date so old as the Eocene or lower tertiary. Hence the interest of the present discovery, which affords ground for believing that animals closely allied to the ruminants were in existence in the lower tertiary period.

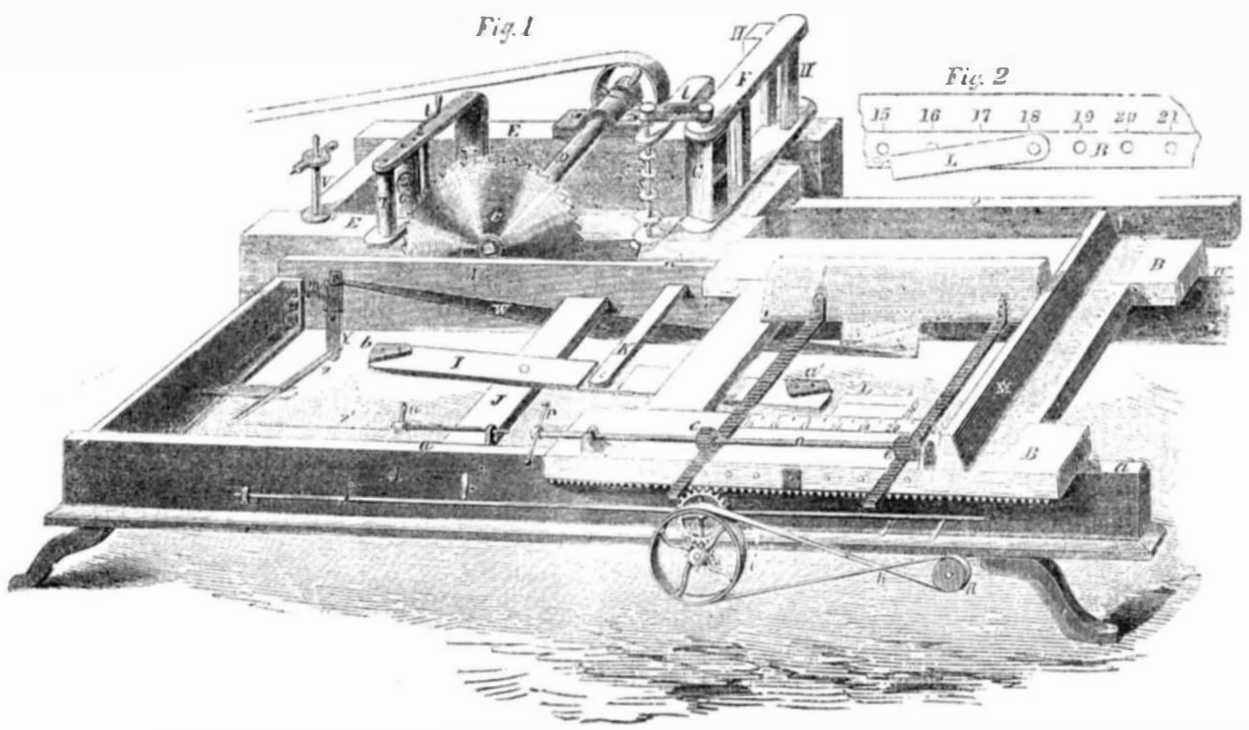
Steel from Oxyd of Iron.

At a recent meeting of the Cleveland, (O.) Academy of Natural Sciences, Colonel Whittlesy presented specimens of steel manufactured directly from pure iron oxyd, at the Sharon Iron Works, Mercer county, Penn.—This steel presented a finer fracture than that of blister steel. Col. W. stated that this article could be made at an equally low price with common wrought-iron, or nearly so.

Cultivation of Chicory.

Great quantities of chicory root, ground and prepared for use, are now imported from Europe. All the Germans in our cities use it in their coffee, and, it is said, to improve its flavor, while it is, at least, as healthy, and is much cheaper. It can be cultivated in almost every State, and no doubt would be a profitable crop.

MANUFACTURING AND MARKING HOOPS.



In the accompanying illustration, figure 1 is a perspective view of a machine for manufacturing sawed hoops from bolts of wood; and figure 2 is a section of part of the machine, representing the shipper arm, L, and a part of the carriage.

The hoops made in this machine are forme with a *chamfer* at each end. All kinds of hoops—broad, narrow, short, and long—can also be made by it, and they can be formed with characters, names, brands, and numbers printed on one side.

The machine consists of the following parts, indicated by letters of reference. A A is the carriage frame, which may be made of iron or wood. B B is the bolt carriage, and *a a* are ways on which the carriage B is placed, and moves freely back and forth. C is a circular saw on an arbor D, which runs in bearings on the saw frame, E E. F is a sliding frame on the saw frame, E; it slides back and forth thereon, and is kept in its place by brackets or studs, H H. G is an upright rotary planer, in frame F. I is a lever placed under the carriage, B, and pivoted near its center on the cross-piece J. K is an arm attached at one end to the lever, I, and passing through the frame, A, and is made fast to sliding frame F. On each end of the lever, I, a beveled or oblique projection is placed, seen at *a' b*. L (figure 2) is an arm attached to the inner side of carriage B. M is a cross-piece or head-block of wood, made fast to and across the carriage. N is a bar of wood placed on and lengthwise of the carriage, to which two transverse racks are attached at one side. O is a shaft, on which two pinions, *e e*, are keyed, and which gear into these racks. P is a lever or a hand wheel on the end of shaft O. Q is a rest placed in front and parallel with carriage B. This rest is hinged at the bottom, to admit of its being turned down out of the way, to facilitate the placing of the bolt on the carriage. R, *h*, *g*, *i*, and *f*, are pulleys, and gear wheels, with belts, for feeding up and running back the carriage, B. *j* is a rod on the side of frame A, with a handle, *j'*, by which a driving belt, under the machine, is shifted, to give a forward or reverse motion to pulley R, to feed or run back the carriage, B. S is a small upright arbor between the planer, G, and saw, C. On this arbor several small saws are placed, about three inches in diameter, and adjusted at any distance apart that may be desired. This arbor is supported in brackets, *l*, which are bolted to frame E. T is a small upright roller, placed in rear of the saw, C. Close to this is placed a larger roller or cylinder, U, having in its surface a recess, wherein are placed the dies or types of the characters desired. In rear of the cylinder, U, are placed three small rollers, for inking the dies or types, in the cylinder. On the top of these rollers is a small crank, *t*, to enable the operator occasionally to revolve the same and spread the ink; or a motion for this purpose may be given to them by a small band. V is a small upright rod, passing down through frame, E, to the upper end of which a socket, holding a pencil, is made fast. W is a small lever, placed snugly against the inside of frame A, and pivoted at or near its center. One end of this lever is bent at right angles, and passes through a slot in the frame A at *m*. On this end, so projecting, the pencil-rod, V, rests. X is an inclined plane, on lever W, and X' is a similar one on the under side of the carriage B. Y is a catch pivoted to frame, A, and pressed up by a spiral spring, *m*. *z* and *z'* indicate a small lever and rod attached to catch, Y. On the rod, *z'*, is a dog, *n*, adjusted by a set screw.

The operation is as follows:—The bolt from which the hoops are to be cut, is got out the proper thickness, and placed on the carriage, B—its rear end against the head-block, M, and in front of and against the bar, N. The rest, Q, being now turned upright, the operator moves the hand wheel, P, and by the action of the pinions, *e e*, on the racks, the bolt is moved snugly against rest Q. Feed motion being now given to the carriage, the bolt is moved towards planer G, and as the carriage is thus moved, the planer consequently makes a deep cut at its commencement; the arm, L, then immediately strikes against the projection, *a'*, and moves the lever, I, and—through the arm, K—the sliding frame, F, and the planer, G, are gradually thrown back a certain distance. This movement of the planer causes the inner end of the bolt to be cut of a taper form. The saw, C, now enters the bolt, and cuts a strip the necessary thickness therefrom; the planer, G, has now no lateral movement, but it rotates and planes the side or face of the bolt, which is, of course, the outer side of the strip when sawed off from the bolt. As the rear end of the bolt approaches the planer (and at the proper time) a pendant, on the front end piece of carriage B, strikes the projection, *b*, on the other end of the lever, I, and the planer is moved gradually inward, so as to cut the rear end of the bolt in taper form. As the cut strip passes the saw, C, it enters between the roller, T, and the type cylinder, U. This cylinder, by the forward movement of the carriage, and at the proper time, is caused to turn, bringing the dies against the face of the hoop, and thus impressing thereon the characters desired. When the hoop has advanced the proper distance, the arm, L, according to the point at which it is set (fig. 2,) strikes the dog, *n*, on the rod, *z'*, and throws back the catch, Y, when the end of lever W, with the pencil-rod, V, drops, whereby the pencil mark (which is requisite in bending the hoop to the size desired.) is made with the utmost exactness. The saw, C, finishes its cut, the hoop is removed, and the carriage, with the bolt, returns to its former position. As the carriage runs back, the type cylinder, U, is turned to its first position, bringing the dies against the inking rollers. At the same time the pencil-rod is raised by the action of the carriage on the incline, on lever W, and held up by catch Y. When narrow hoops are wanted, such as barrel hoops, &c., the arbor, S, is used, and as the bolt passes the planer, G, these saws cut a trifle into the side or face of the bolt, and when the saw, C, completes its cut, as many hoops as the width of the bolt will allow, are finished at once. When wide hoops for cheese boxes, bushel and other measures, sugar boxes, &c., are wanted, the arbor, S, with its slitting saws, is removed. A scale of the different sizes of hoops made is placed on the carriage, as a guide in adjusting the arm, L; and thus the tapering and marking is insured at the proper time to form a hoop of the size corresponding with the number on the scale at which the arm is set. The saw, C, is driven by the belt, A', and the planer, G, by a belt applied at the bottom or top, as may be most convenient. The little arbor, S, may be driven from the planer, G, as shown.

The machine is simple, and not liable to get out of order, and does its work in the most accurate and expeditious manner, and will work timber that cannot be used by the ordinary method. As these hoops are of equal thickness throughout, they are consequently of an uniform strength.

A patent was issued for this machine to C. H. Brown, of Forest Port, N. Y., on the 16th of December last, from whom more information may be obtained by addressing him by letter.