Antiquity of Trade Marks.

The question has been asked somebody, "How old are trade marks?" who answers it by saying that they seem to be nearly as old as the industry of the race.

Ancient Babylon had property symbols, and the Chinese claim to have had trade marks 1,000 years before Christ. Guttenberg, the very inventor of printing, had a lawsuit about a trade mark, and he won it. As early as 1300 the English Parliament authorized trade marks, and the laws of America have always protected them. The theory by which a suit is brought for infringement of a trade mark is that its use deprives the originator of his property, and deceives the public as to the article. Extraordinary means have been required at all times to guard against the fraudulent use of marks of manufacturers.

In ancient times the greatest importance was placed upon the marks of individual workmen, because, as in the case of the armorers, valuable lives often depended on the quality of the workmanship. One old author complains that certain good and true soldiers were killed simply because the workmanship of their swords and arms was not good, and failed them when in battle. Very early, therefore, it was found necessary to make stringent laws against counterfeiting trade marks, and against scamped workmanship. Without protection in this one particular, trade would almost come to a standstill, because there are very few things, comparatively, that can be purchased upon their merits, judged at the moment. In general, we know the quality of goods by experience, and it is only after they have been in use that a certain judgment can be pronounced upon their quality. Having, then, once found that a certain workman's productions are good, we seek them again in the market. If we have no means of identifying his trade mark the whole work of buying becomes a haphazard affair. The best goods at once lose their value. This was early discovered, and probably the successors of Tubal Cain were the first to use distinctive marks on their manufactures.—*The Carpet Trade Review.*

Curious Uses and Works of Ants.

At the recent Southboro session of the Massachusetts State Board of Agriculture, Prof. E. S. Morse gave the following curious particulars about ants:

The ant belongs to a family of insects such as wasps, bees, hornets, but is the superior of them all, as are the elephant, the horse, and the dog, in other lines of animal life. Ants are constructed with the "back" bone in front, and the heart and other internal organs on the opposite side are put together upside down, as we might think. Their mouth is for biting and swallowing food only, not for breathing. Their bite is so determined and lasting that they are used in some countries for confining the edges of wounds and cuts. Ants' heads are presented to the cut surface, which they grasp with their nippers, when their bodies are cut off leaving a whole row of them to hold the flesh. They are cheaper than sticking plaster in some countries.

As an illustration of their ingenuity and intelligence, it was stated that they sometimes excavate tunnels under rivers of considerable depth and width, and use the tunnels for transporting supplies. They dig wells twenty feet deep and a foot in diameter for drinking water. The harvesting ants plant seeds on farms, which they cultivate with great skill and neatness, keeping every weed down and harvesting the grain, curing and storing it safely in weather-proof cavities in the soil. They also organize into divisions with commanders, each individual doing a certain kind of work. Some ants are smart enough for engineers, while others only know enough to do as they are told. They can count and make correct estimates of the magnitude of an undertaking, as proved by observers.

Eight chrysalides (often called the eggs of ants) were placed in a path where ants travel. A single individual found them and undertook to remove them to their home. Several were carried by the single ant patiently enough, but when twenty chrysolides were placed in the heap, another ant was found engaged in the work. The pile was increased at intervals till eighty ants engaged in the undertaking, showing that workers were detailed according to the demands of the cases.

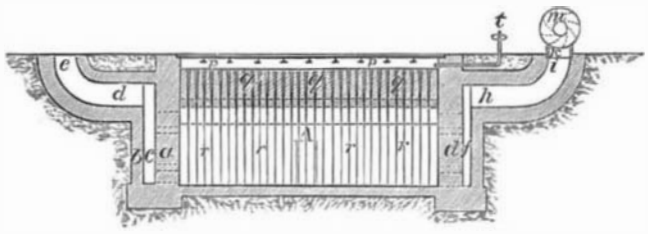
Ants' battles sometimes last many days, in one case seven weeks, the victors finally taking the stores and removing them to their own houses. Their wars are quite as justifiable as those of men, when the object—pillage—is the same. They have the power, too, of knowing members of their own communities even after six months' absence. Strangers are always driven off or killed. They are very helpful to each other, and show sympathy in case or sickness. Some families of ants build arched roads vered by an arch of clay or mortar for protection against enemies, and show great skill in the work, which is under the supervision of trained engineers, who order a rebuilding if the work is not perfect. Some kinds of ants keep cows, build cow-yards, and milk their cows regularly, and don't throw milking stools at them either to make them "give down," but pat and stroke their backs very tenderly. Of course these cows are the plant aphides so familiar to all farmers and gardeners.

A Locust-killing Beetle.

In the neighborhood of the site of ancient Troy, Sir John Lubbock finds a beetle which in both its mature and its larval condition preys upon locust eggs. The beetle is said to be very voracious. What it lives on when locust eggs are out of season does not appear. If it is not mischievous at such times, the beetle might play a good part in helping to exterminate the locusts of our Western Territories.

CELLAR FOR MANUFACTURING ICE.

From the water reservoir, *p*, which is fed by the pipe, *t*, water falls through the funnel-shaped openings, *q*, upon the threads, *r*, into the cellar, and is brought there to the freezing point soon after the exhaust fan, *m*, is set in motion. Ice can be made only when the temperature of the atmosphere is low. The air enters through the channel, *e, d, c*, and through the openings, *a*, into the cellar, A, and is drawn through similar openings, *a*, and the channel, *f, h, i*, by the exhaust fan, *m*.



CELLAR FOR MANUFACTURING ICE.

HUMAN FOOTPRINTS IN KENTUCKY SANDSTONE.

Through the courtesy of Mr. M. Robinson, of Shawneetown, Ill., we are able to lay before the readers of the SCIENTIFIC AMERICAN a picture of what is probably the earliest human "footprint in the sands of time," that has come to the light of day.

The track from which the photograph was taken is one of three occurring in a block of sandstone in Union County, Kentucky, about a mile and a quarter from the Ohio River. The stone is very hard, and the stratum containing the tracks (or, rather, which originally contained the tracks, for they have lately been cut out) is said to be from fifteen to twenty feet thick and to lie at an angle of 21°. The buried portion underlies shale. The exposed portion would seem to have formed at one time the bank of the river, and the tracks were within a few feet of the edge of the rock. The age of the rock is uncertain. Mr. Robinson says it "is thought by those best posted here to have been below the coal measures."

HUMAN FOOTPRINTS IN KENTUCKY SANDSTONE.

The track represented in the engraving is now in the possession of Mr. Robinson. It measures ten inches in length and five inches across the spread of the toes. The foot appears to have slipped forward in making the track, thus elongating the heel mark and spreading the toes. Of the other two tracks, Mr. Robinson says that one, eleven inches long, was sent to a museum in Danville, Kentucky. It was badly defaced, but enough was left "to tell nearly all about the foot." The third track was too much defaced to be of any value, but whether in the act of cutting out, or by being weather-worn, Mr. Robinson does not say.

The tracks have been known almost from the first settlement of the county, but the former owner of the land would not let them be touched. The present owner gave Mr. Robinson permission to remove them only recently.

The geological value of these fossil footprints it is obviously impossible to estimate at this distance. It is to be hoped that the matter will be carefully investigated by some geologist so well known as to give his report assured scientific value. The ines crossing the track are cracks in the rock, which have been filled, it is inferred, by infiltration.

MISCELLANEOUS INVENTIONS.

Mr. Carl Posen, of Offenbach-on-the-Main, Germany, has patented an improved fastening for pocketbooks and other articles, which is so constructed that they may be easily and conveniently fastened and unfastened, and it presents a neat and finished appearance.

An improvement in eyeglasses has been patented by Mr. Robert Kabus, of New York city. The object of this invention is to simplify and cheapen the construction of eyeglasses and to render them more convenient for use.

An improved drop gate has been patented by Mr. James Beezley, of Rocky Ford, Col. The object of this invention is to furnish drop gates so constructed that they may be conveniently opened and closed by persons riding in a carriage or on horseback.

An improved device for securing wheels to axles has been patented by Mr. Thomas H. Outerbridge, of Hamilton, Bermuda, the object of the invention being to dispense with the screws and nuts generally used for that purpose, and to furnish a lock that shall secure the hub safely to the spindle and can be readily manipulated.

The sheets of gaff-topsails on vessels are led through sheaves at the outer end of the mainsail gaffs, and it frequently occurs that the sheets part or unbend from the sail and unreeve from the gaff, so that a man must be sent out on the gaff to reeve the sheet or the gaff and mainsail lowered to the deck for the same purpose. To lower the gaff, especially if the wind is fresh, involves considerable wear and tear on the sails and rigging, besides loss of time and labor, while the work of passing out on the gaff to reeve the sheet is the most hazardous undertaking required on vessels, as there are no footropes, beckets, or other conveniences to insure safety, and loss of life by men being thrown from the gaff is of frequent occurrence. Mr. Frank B. Cort, of Holyoke, Mass., has patented means for reeving gaff-topsail sheets, rendering such work safe and rapid. The invention consists in the combination with the gaff of an endless rope fitted to run in the throat and end sheaves of the gaff, so that the top-sail sheet can be rove from the deck or from the throat of the gaff.

Mr. Green Smith, of Coal Valley, West Virginia, has patented improvements in that class of windows designed to secure the benefits of ventilation through the entire area of the window, to permit the window-panes to be washed on both sides without taking out the sash or going outside of the window, and to secure the balancing of the sashes, the independent movement of either sash, or the entire removal of the sashes, as may be desired.

Mr. Robert B. Herskell. of Wallingford, Conn., has patented an improved apparatus to facilitate the coating of spoons, forks, and similar articles with a plating or covering of metal, so that the thickness of the plating metal shall vary at different parts of the articles, as desired, the thickness being greatest upon the parts most exposed to wear.

An improved fan, patented by Mr. Max Rubin, of New York city, relates to that class of fans on which the wing or web folds between two handles and opens into circular form when in use, and has for its object to make the fans more convenient in use and less liable to get out of order than fans constructed in the usual manner.

An improvement in steel earth scrapers has been patented by Mr. William Haslup, of Sidney, O. It consists in the means for fastening the handles to the sides of the scraper, and in curved and flanged socket plates arranged on the inner walls of the scraper to receive the ends of the backboard.

Messrs. Sylvester J. Tucker and Robert F. Williams, of Richmond, Va., have patented a street car which is convertible at will, by a simple adjustment, either into a summer or winter car.

A machine for fitting and putting together the several parts of a wagon wheel has been patented by Mr. William Casady, of Milton, Iowa. The invention consists of felly-boring, spoke-tenoning, and spoke-gauging devices combined in one machine.

Mr. George E. Bales, of Walla Walla, Washington Ter., has patented an improved snap-hook and buckle for breast-straps, hitching, and other straps or lines on which snap-hooks are commonly used. This snap-hook is more easily unsnapped and less liable to become clogged with ice or mud than those now in use.

An improved bale tie has been patented by Mr. Thomas B. Taylor, of Mount Meigs, Ala. The object of this invention is to apply bale ties and bands in such manner that the bands will not turn upon the bales when being tightened, and will be securely held, retaining the compression by preventing the bale from swelling when the pressure is withdrawn.

A block of artificial stone formed of pitch, cement, sand, and embedded surface pebbles, the latter planed down, to exhibit their various colors, has been patented by Mr. George W. Mason, of Sharon, Pa.

An improvement in machines for folding the edges of collar and cuff blanks, preparatory to sewing, has been patented by Mr. Max Hermann, of Troy, N. Y. The machine folds the blanks ready for being placed together, and attached by a single line of stitching.

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