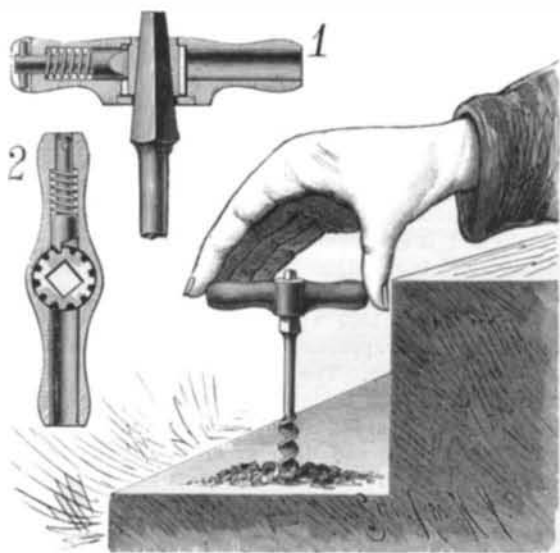


RATCHET TOOL HANDLE.

Fig. 1 is a sectional side elevation, and Fig. 2 a sectional plan view of a ratchet tool handle recently patented by Mr. Christian Hermann, of Bristol, R. I. The handle is a straight bar of suitable length formed with a recess in which is seated a ratchet sleeve having an angular aperture for passing upon the tool shank. The handle is bored lengthwise through both ends, and in one hole is a sliding pawl that engages the ratchet sleeve. A spiral spring acts to move the pawl, the movement being limited by a cross pin through the outer end of the dog, that enters a groove in the handle to prevent the pawl from turning accidentally. The ratchet is held in the recess by a ring plate fitted to the under side of the handle in a manner to allow removal. The hole in



HERMANN'S RATCHET TOOL HANDLE.

the opposite end of the handle permits the insertion of the dog, and can be used to receive a bar and to give greater leverage.

This handle can be readily applied to bits, screw drivers, and other tools, and by drawing back the pawl and giving it a half turn the ratchet mechanism is changed from right to left, so that the handle can be used to withdraw a boring tool or back out a screw.

Brier Root Pipes.

In a report on the trade and commerce of Leghorn, the following note on the so-called brier root pipes, which have become so large an industry of late years, will be read with interest: "An interesting industry has been started here within the last three years by a Frenchman from Carcassonne, for the export of material for the manufacture of wooden pipes. Similar works are also to be found at Sienna and Grosseto. Selected roots of the heath (*Erica arborea*)—preference being given to the male variety—are collected on the hills of the Maremma, where the plant grows luxuriantly and attains a great size. When brought to the factory the roots are cleared of earth, and any decayed parts are cut away. They are then shaped into blocks of various dimensions with a circular saw set in motion by a small steam engine. Great dexterity is necessary at this stage in cutting the wood to the best advantage, and it is only after a long apprenticeship that a workman is thoroughly efficient. The blocks are then placed in a vat, and subjected to a gentle simmering for a space of twelve hours. During this process they acquire the rich yellowish-brown hue for which the best pipes are noted, and are then in a condition to receive the final turning and boring, but this is not done here. The rough blocks are packed in sacks containing 40 to 100 dozen each, and sent abroad, principally to France (St. Cloud), where they are finished into the famous G. B. D., or 'Pipes de Bruyere,' known to smokers in England under the name of 'brier wood pipes.' The production of this article is considerable, four hands turning out about 60 sacks per month. Consignments are also made to England and Germany, but at present the demand is said to be rather slack."—*The Gardeners' Chronicle*.

Ingenious Idea.

It is told of a man in Connecticut who wanted to put a water pipe through a drain several feet below the surface of the ground, without digging up the drain. To accomplish it he tied a string to a cat's leg, thrust her into one end of the drain, and giving a terrific "scat," the feline quickly appeared at the other end; the pipe was drawn through the drain by means of the line, thus saving considerable expense.

New Italian War Ship.

The latest addition to the Italian ironclad navy, the Ruggiero di Lauria, was launched at Castellamare on the 9th ult. This vessel forms one of the Andrea Doria class, and is a modified type of the Italia. She is constructed entirely of steel, and her principal dimensions are: Length between perpendiculars, 328 ft. 1 in.; extreme breadth of beam, 65 ft. 7 in.; mean draught of water, 25 ft. 6 in.; displacement, 10,080 tons. Her twin screw engines, of 1000 indicated horse-power, have been supplied by Messrs. John Elder and Co., of Glasgow, and are estimated to propel her at a speed of sixteen knots per hour. The chief armament of the Ruggiero di Lauria will consist of four 17 in. Armstrong breech-loading guns of the latest design, mounted *en barbette*, and she will likewise be provided with the most modern type of torpedo apparatus and machine guns. The most vulnerable parts of the hull will be protected by 17 3/4 in. armor, the system of which, viz., steel or compound, does not appear to have been decided upon as yet. The only explanation which can be found for this is that various conflicting interests are at work at the naval headquarters for the purpose of mere political opposition, and we therefore find Italy expending enormous sums on competitive armor-plate trials, reoccurring with every change of ministry, while the question of the comparative value of the different systems of armor has long been settled by every other naval power.

The Breaking up of Monitors.

According to one of our contemporaries, the breaking up of an old wooden hull is not an easy matter, but it is nothing compared with the task of dismantling a disused ironclad, as some contractors at Philadelphia, who have been trying to break up an old monitor, have found to their cost. A fire has been burning briskly for several weeks on board the old United States monitor Dictator, at Tasker Street wharf, Philadelphia, the contractors having been endeavoring, with but little success, to get rid of the woodwork which lies firmly embedded between the armor and the hull. Nine months have been spent in the work of tearing the old hulk apart, with prospect of many more passing before the vessel will be reduced to old iron and ready for the furnace. Several thousand tons of material have been taken out of the Dictator, and yet there are many more concealed in her massive frame. As soon as the remaining portion is cut down to the water's edge, the hull will be towed to a shoal spot on the Jersey side of the Delaware River and—blown up!

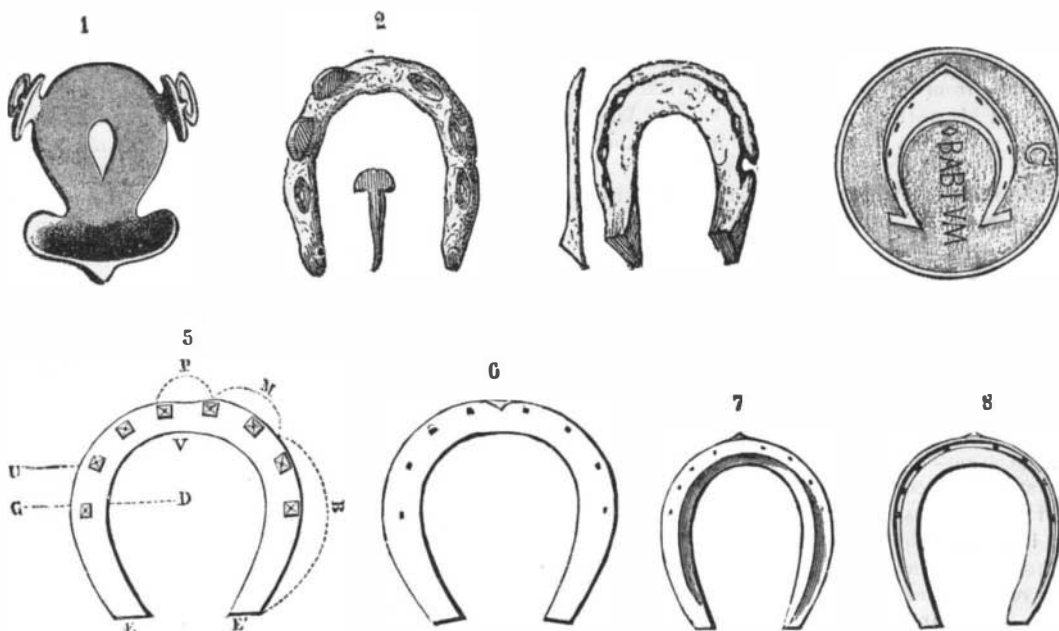
HORSESHOES.

We illustrate in the accompanying engraving some curious specimens of horseshoes that were recently shown at the Exhibition of Hippic Material in Paris.

Fig. 1 is the *solea*, an oval plate, entire or perforated in the center, and provided with a heel piece and lateral ears. This is found in France, England, Germany, and all places where the Romans once established their power.

No. 2 is the Celtic shoe with nails in the form of violin keys. This was found in the environs of Alise.

The horseshoes of the seventh century (Fig. 3) are distinguished by the thickened extremity of their branches. Those of the middle ages (Fig. 4) were proportioned to the large stature of the war horse and the weight of the knight's



HORSESHOES OF DIFFERENT NATIONS.

armor. They sometimes weighed over two pounds, and were wide, pointed at the toe, and provided at the heel with a long projection.

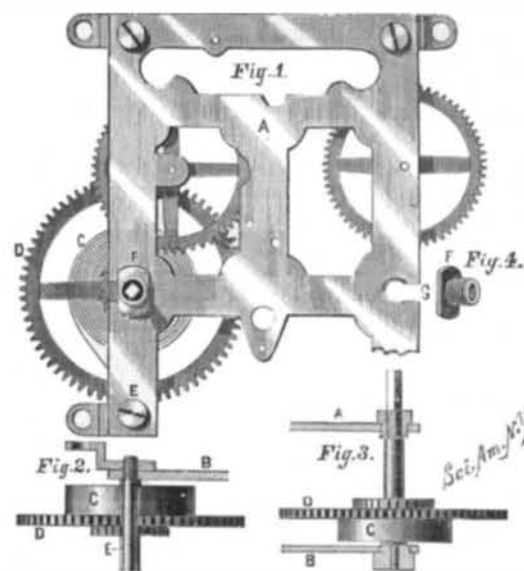
In the French shoe (Figs. 5 and 6) we distinguish the toe, P, the *mammelles*, M, the branches, B, and heel, E.

The English shoe (Figs. 7 and 8) differs from the French as regards the arrangement of the iron and the method of applying it to the hoof.—*Science et Nature*.

ACCORDING to the *Journal d'Hygiene*, citric acid is a most powerful disinfectant, preserving meat from putrefaction, and proving rapidly fatal to septic microbia. The soluble citrates have no similar action.

AN IMPROVED CLOCK FRAME.

The invention herewith illustrated provides for the ready removal of the main spring or springs and main wheels of a clock without disturbing the rest of the movement, or taking it apart in case of breakage or for necessary repair, and so they may be quickly and easily replaced. The front plate of the frame, A, Fig. 1, is made with a peculiar slotted construction for a screw boss or front bearing for the arbor of the main wheel, as shown at G, the form of these detachable screw bosses being as represented by F, Fig. 4. One main spring, C, and wheel, D, are shown opposite, fixed in place in a similar bearing. E represents the pillar or bolt of the main frame, to which the main spring is attached, and



WYKHUISEN'S IMPROVED CLOCK FRAME.

this pillar has at its rear end a screw thread adapted to screw into the back plate of the movement, B, as shown in Fig. 2, although the rear bosses may be permanent attachments, as in Fig. 3.

This invention has been patented by Mr. Hendrik Wykhuisen, of Holland, Mich., to whom communications should be addressed.

A Whale Caught by a Telegraph Cable.

Mr. Robinson Kendal, chairman of the West Coast of America Telegraph Company, has communicated the following extracts from letters received from that company's officials on the west coast of South America, to the papers. The captain of the company's repairing steamer writes: "Having picked up 21 knots of cable, and while continuing picking up, an immense whale came up to the bows entangled in the cable. It seemed to be about 70 feet in length. In its struggles to get free the cable cut right into its side, the whole of its entrails coming out, and great streams of blood. In its last dying struggle it parted the cable on the bow sheaves, and floated to windward of the steamer.

"The cable was twisted up in the form of a wire rope for about two fathoms, and in six different parts it had the appearance of having been bitten through sufficiently to stop all communication. There is no doubt the whale has been the cause of the interruption." Their manager also writes: "The cause of the breakage of the cable, as has been pointed out to you in Captain Morton's report, was a huge whale, which became entangled in the turns of the cable, and was held prisoner for seven days; the interruption was unfortunate, but it is, at least, satisfactory to know that the cable did not give way naturally, and that where picked up, the sheathing yarn and core were found to be in an almost perfect state of preservation, in fact, looked as good as on the day the cable was first laid."

Great Fire in Cleveland.

On the 7th of September the city of Cleveland, Ohio, was the scene of a gigantic fire, which swept away for the time being many of her manufacturing industries, caused the loss of life, and also destroyed property to the value of two millions of dollars. The burned area covers more than fifty acres, extending from Scranton Ave. and the Bee-line track on the east and west, and from the river to Gerard St. on the north and south.

Included in the property destroyed were several lumber yards, thirty-five million feet of lumber, coal yards, many railway cars. The fire was spread from point to point by the burning boards, which were floated into the air by the strong upward current. The heat was terrible. Several fire engines were consumed, owing to the rapidity with which the fire spread.