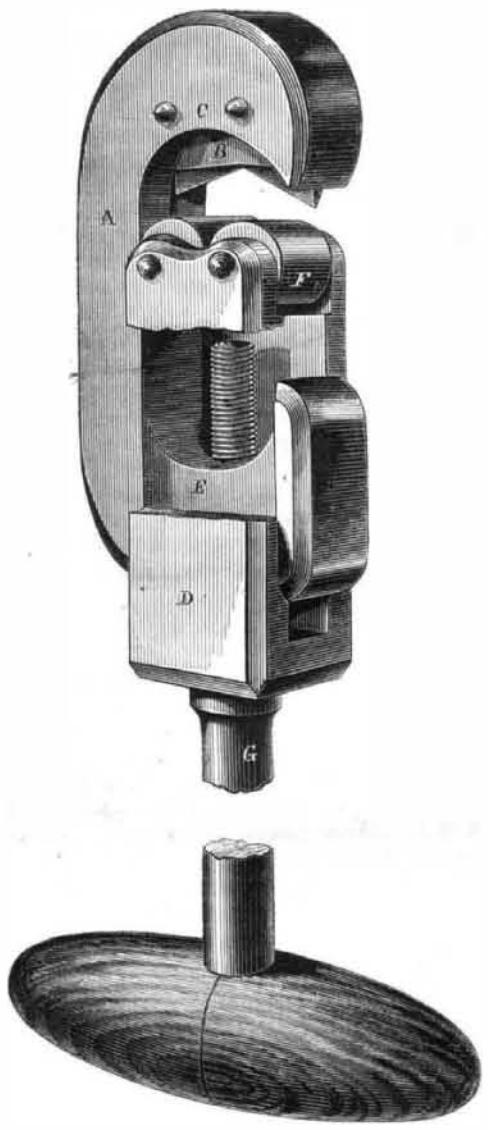
GETTY'S PATENT PIPE CUTTER.

Hand pipe cutters have not been always successful ventures. Most of them have some radical defect, in some the cutter frequently breaking, while in others the head block forms a bearing for the pipe, creating great friction, making the labor of cutting excessive, and wearing the head block rapidly away. Others have no proper method of securing the carrier or slide, which sometimes gets lost, and the tool is useless. In those which depend on some kind of scraper to take off the burr edge left by the action of the knife, the friction and labor are also great. The inventor of the cutter shown in the engraving believes these objections are removed in this implement.

The head block, A, is forged of wrought iron, and is slotted for the reception of the knife, B, which is V-shaped, and thus makes a drawing cut, no matter how it is turned, and while making a splendid cutting tool, it also serves the double purpose of a rest for the pipe while being cut and a protection to



the head block. The pins, C, which are tapering, pass through the head block and knife, and thus, though holding the latter perfectly firm, allow it to be easily removed. The slide, D, is of malleable iron, and travels in a broad groove, E, formed on the sides of the head block. It carries the two steel anti-friction and pressing rollers, F, which allow the cutter to work smoothly and easily, and also rolls down the burr edge thrown up by action of the knife, and presses the pipe to be cut up against the knife. The handle, G, has a boss formed on it for the purpose of pushing the slide, which carries the anti-friction rollers, forward. One end of it is screwed, and works in a thread formed in the head block. The other end has a wooden handle for the purpose of working the implement.

The advantages of this cutter are as follows: The knives are simple, durable, easily replaced, and they are interchangeable; the rollers roll down the burr edge, and make the cutter work easily; the slide is always held perfectly steady, no matter how small the pipe being cut, by means of the grooves in the head block, and also by the handle rod; the head block and slide cannot wear out, as the former is protected by the knife and the latter by the rollers. There are two sizes; one cuts from one inch down, the other from two inches to three quarters of an inch.

Patented through the Scientific American Patent Agency, Aug. 6, 1867, by Henry Getty, of Brooklyn, N. Y., and they are manufactured by McNab & Harlan, 86 John street, New York city.

Curiosities of Sound.

Among the things not generally known, Dr. Tyndall informs us that sound resembles light, in being susceptible of refraction. The refraction of a luminous beam by a lens is a consequence of the retardation suffered by the light in passing through the glass. Sound may be similarly refracted by causing it to pass through a lens which retards its motion. Such a lens is formed when we fill a thin balloon with some gas heavier than air. As an example, the professor takes a collodion balloon filled with carbonic acid gas, the envelope being so thin as to yield readily to the pulses which strike against it, transmitting them to the gas inside. He then hangs up his watch close to the lens, and then, at a distance, of four or five feet on the other side of the lens, he listens, assisting his ear with a glass funnel, which acts as an ear trumpet. By moving his head about he soon discovers a position in which the ticking of the watch is particularly loud. This, in fact, is the focus of the lens. If he moves his ear away from this focus, the intensity of the sound decreases. If, when his ear is at the focus, the balloon be removed, the ticks are enfeebled; on replacing the balloon their force is restored. The lens enables him to hear the ticks distinctly when they are perfectly inaudible to the unaided ear. The sound lens magnifies small sounds, as the glass lens magnifies minute objects. Thin india-rubber ballons form excellent sound lens.

The moderate speed of sound in air is the cause of a number of curious facts which ignorant people might take for contradictions. For instance, if a row of soldiers form a circle and discharge their pieces all at the same time, the sound will be heard as a single discharge by a person occupying the center of the circle. But if the men form a straight row, and if the observer stand at one end of the row, the simultaneous discharge of the men's pieces will be prolonged to a kind of roar. A company of soldiers marching to music along a road, cannot march to time together, for the notes do not reach those in front and those behind simultaneously.

The velocity of sound in water is more than four times its velocity in air. The velocity of sound in iron is seventeen times its velocity in air. The difference of velocity in iron and in air may be illustrated by the following instructive experiment: Choose a long bar of iron, and let an assistant strike the bar at one end, while the ear of the observer is held close to the bar at a considerable distance. Two sounds will reach the ear in succession; the first being transmitted through the iron, and the second through the air. This effect was observed by M. Biot, in his experiments on the iron water pipes of Paris.

IMPROVED OILER FOR SHAFT JOURNALS, CRANK PINS, ETC.

The action of this oiler depends entirely on the motion of the journal to which it is attached, it giving out no oil when the shaft is still, but adapting the amount delivered to the velocity of the surface of the journal. It is made in different forms for adaptation to different positions. The oil receptacle, A, is of glass, either incased in an ornamental frame of brass, or supported by a brass cap and stem. The caps, B, are for filling the oil cups, and when screwed in, or on, are air tight. The stem, C, may be plain or threaded, as desired, for securing the cup to the cap of the box, or the strap of a connection, crank, etc. The stem or pipe, D, receives on its exterior a wooden cone, E, for the same purpose of attaching it to the box. Through the hollow stems, C and D, passes a wire, F, which may be called a feeder, the lower end of the wire resting on the journal of the shaft and receiving a trembling or jarring motion from the rotation of the shaft. This motion allows a sufficient quantity of atmospheric air to pass up through the annular space between the pin or wire, F, and the interior of the stem, C or D, to assist in the downward movement of the oil, while the motion itself aids to the same result. Patented through the Scientific American Patent Agency, May 2, 1867, by I. R. Dreyfus, whom address, at 35 John st., New York, or P. O. box 5476.

Artificial Ivory.

I make use of the following ingredients, in about the proportions named, by weight: Shellac 8 parts, asbestos 7 parts, kaolin 2½ parts, camphor ⅓ part. To these I add the desired coloring matter. For light colors, sufficient white lead or similar pigment (about two ounces), to make the compound a white ivory color, and this may be tinted almost any desired hue, but for dark colors a less proportion of white may be employed, or it may be omitted.

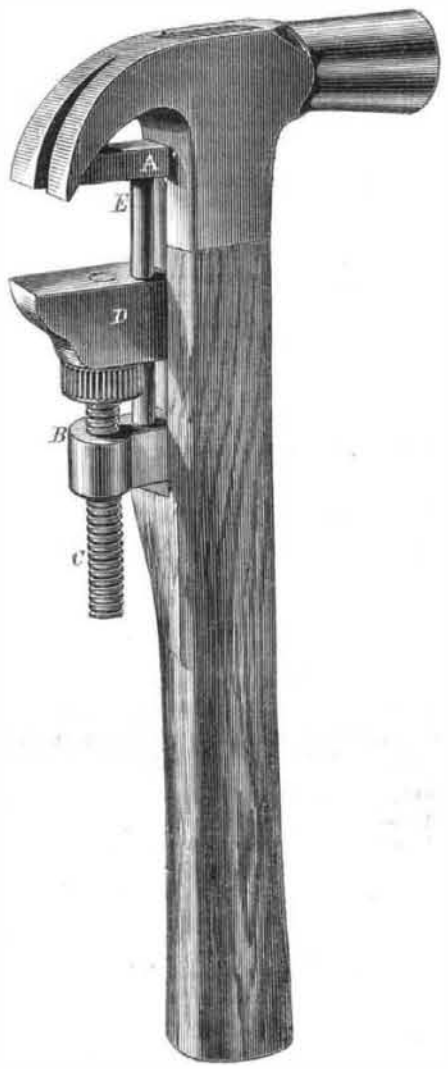
My compound is designed to imitate ivory, and is adapted to the manufacture of any article that can be formed by pressure while in a heated, plastic state; for instance, billiard balls, numbers, counters, checks, paper cutters, ornamental fancy articles, and, in dentistry, may be used for the filling of teeth, for artificial-gum work, and for plates, as the said composition may be colored of almost any hue.

The composition I employ is to be heated and mixed in the most thorough manner. For this purpose I mix my ingredients after they have been finely ground or pulverized, and I prefer to employ a pan heated by steam at a temperature of about 240° to 280° Fah., and then thoroughly mix or grind the substances together between heated rollers.

Recently patented by Alfred Starr, of New York city. We think it will be some time before dentists make use of this compound for filling teeth. It bears about as close a resemblance to ivory as chalk does to cheese.

MEEKER'S COMBINED CLAW HAMMER AND SCREW WRENCH.

The engraving is a view of a combined tool, which is intended mainly for the use of farmers, teamsters, and others, who have not ready access to shops or a chest of tools, and is



adapted to the facilitation of repairs in exigencies. It is a simple and handy tool, notwithstanding its double office. It is really a common claw hammer, one of the claws of which has a connection reaching from the point of the claw to the shank of the hammer, and forming, as at A, the stationary jaw of the wrench. A plate is inserted into the handle, having at the handle end a projection, B, which is a nut for the screw, C, that moves the jaw, D, by means of a knurled knob as in ordinary screw wrenches, a rod, E, being the guide for the movable jaw. It will thus be seen that the screw wrench is complete in itself, and yet is an efficient claw hammer. If, however, the hammer alone should be needed, a screw, the head of which is on the side opposite the jaws, may be loosened, and the wrench plate with its appurtenances removed, leaving simply an ordinary hammer. For farmers, wagoners, and others, it will prove a valuable tool.

Patented through the Scientific American Patent Agency, Feb. 18, 1868, by Ellis R. Meeker, who manufactures largely at Elizabeth, N. J. This combination tool can be sold at a price very little in advance of the ordinary claw hammer. For further particulars address the patentee and manufacturer, as above.

An Invention Wanted.

A correspondent calls our attention to the importance of the peanut crop, which, he says, in Eastern Virginia and North Carolina, is being very much extended; the greatest difficulty attending the preparation of the crop for market is the picking from the vines, which is done by hand, a tedious and expensive operation. No machine having been yet introduced for that purpose, will you please call the attention of inventors, through the medium of your widely circulating journal, to the great need of such a machine.

While force of some kind must be employed to create or construct a reservoir of power, and that force is greater, reckoning friction, than the power ultimately yielded; yet if it can be exerted with a comparatively brief expenditure of time, it may be an economical means of creating power to be used gradually or at intervals.