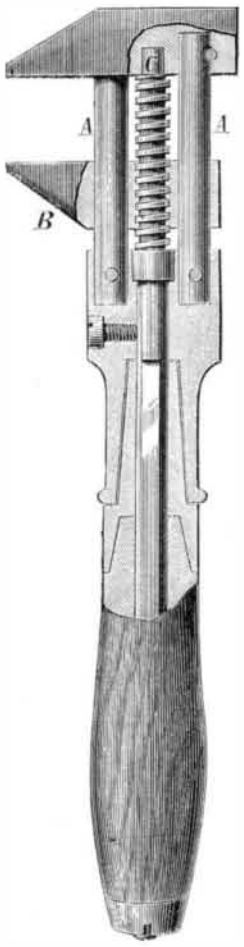
PORT'S IMPROVED WRENCH.

We illustrate herewith a new and simple form of wrench, easily and swiftly adjustable, and so constructed as to insure strength and at the same time lightness. It is made of steel; but it is claimed that, owing to its construction and the small amount of metal therein employed, it is no more costly than an iron wrench of common form. It can be produced, we are informed, by special machinery, so that the corresponding parts of any number of wrenches of the same size may be interchangeable.



The standing jaw is secured upon two cylindrical columns, A, which are rigidly held, and which also serve as guide bars for the moving jaw, B. The latter is caused to traverse by the screw, C; said screw passes through a female thread in the jaw, and is rotated by turning the handle in which its straight shank is embedded, and fastened by the nut shown at the lower extremity. The arrangement of the two columns or guide bars is one well calculated to give the tool strength and stiffness, since, when strain is applied, neither bar can bend without the other also bending; and this is a condition which the construction renders practically impossible. The screw acts as an additional bar, re-inforcing the others.

The device as a whole, as the engraving plainly shows, is ingeniously simple, and it appears to be abundantly able to withstand severe strain.

Patented November 30, 1875, by Mr. Henry Port, of Staten Island, N. Y. For further information relative to sale of rights or of wrenches, address Mr. John A. Amrein, Sinking Spring, Pa.

IMPROVED LATHING MACHINE.

Mr. Charles B. Trimble, of New York city, has recently patented the apparatus illustrated herewith, the object of which is to facilitate the operation of lathing buildings for plastering. It consists of a case for holding the lath in position, and of a machine for clamping and taking up the lath and placing them on the wall or ceiling.

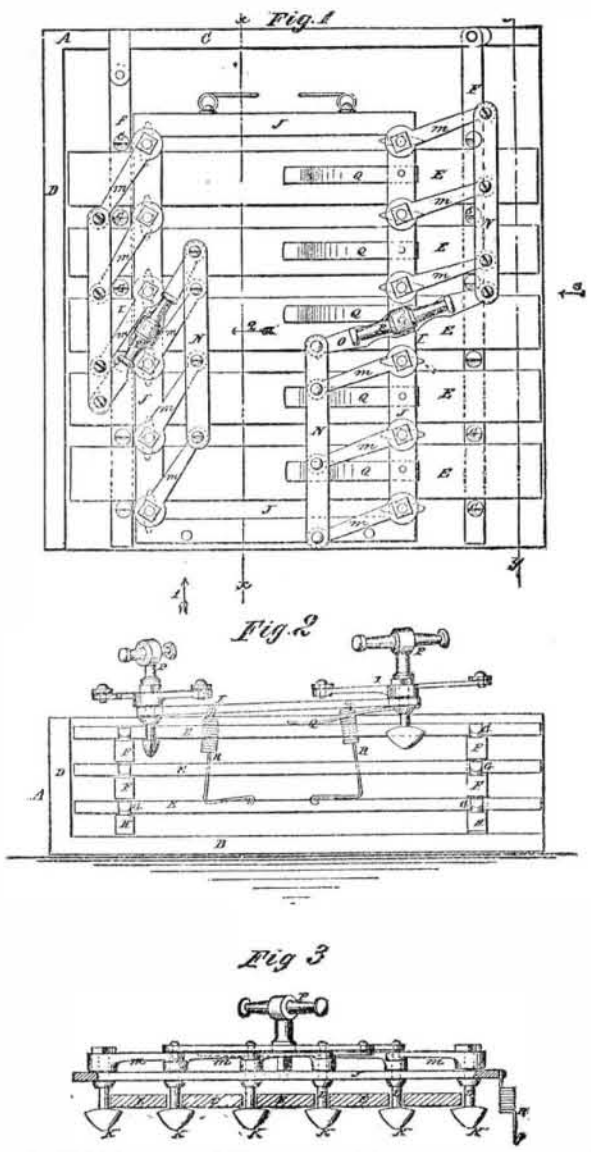


Fig. 1 is a top view of the clamp laid upon the first tier of lath in the case, the left hand clamp being turned to clamp one end of the lath, the other clamp being ready to be turned. Fig. 2 is an edge view of the case and clamp, looking in the direction indicated by arrow 1. Fig. 3 is a vertical section of Fig. 1, looking as indicated by arrow 2, from the line, *x x*. A is the case, composed of bottom, B, and two sides, C D, of square or rectangular form, and of sufficient hight to contain one or more tiers of lath, arranged as shown in the engraving. E is the lath, which is about 4 feet in length, about 1½ inches wide, and ⅝ inch in thickness. These pieces are arranged in the case in the position they are to occupy when nailed on the wall or ceiling. The tiers of lath rest on hinged bars, F, and are separated by the wedge shaped pins, G. On the bottom of the case are two stationary bars, H H, over which the other bars rest, as seen in Fig. 2. The lath, being thus placed in the case, are taken up by the clamps, and laid upon the joist or studs, in the same position they occupied when in the case. There are two sets of gripes, I I, which are arranged to support each of the ends of the lath. These clamps are attached to an oblong frame, J, and consist of a series of buttons, K, Fig. 3, having shanks, L, which pass up through the frame, and receive each an arm, *m*. These arms are connected together by means of the flat bars, N. The bars are attached to the central bars, O, to the middle of which are attached the handles, P, by means of which the central bars, O, and the arms are turned. These bars, O, and the handles, P, are placed in the middle of the opposite sides of the frame, J, so that the frame, J (with clamps), will balance when lifted. One half of the arms, *m*, of each clamp extends outside and half inside of the frame, J, so that when the handles are turned the arms are thrown in opposite directions, but so as to turn all the buttons, *k*, in one direction, to either take up or release the laths. As seen in Fig. 3, a tier of lath is supported by the buttons. When the buttons are turned so that their sides are parallel with the lath, the latter are released. Q are springs attached to one or both sides of the frame, J, the ends of which bear upon the separate pieces of lath to hold them in place. R R are spring hooks to be used in lathing overhead, which engage with the firrings on the ceiling for supporting the frame, while the other end is held up by the bottom engaging with the lath already on. "By means of this apparatus," says the inventor, "labor and time are saved, as the lath can be laid very expeditiously, and the spaces between them are made of uniform width."

IMPROVED SUBMERGED CURRENT WHEEL.

The water motor illustrated in the annexed engraving is intended to be entirely submerged, to be operated by the action of the current or tide.

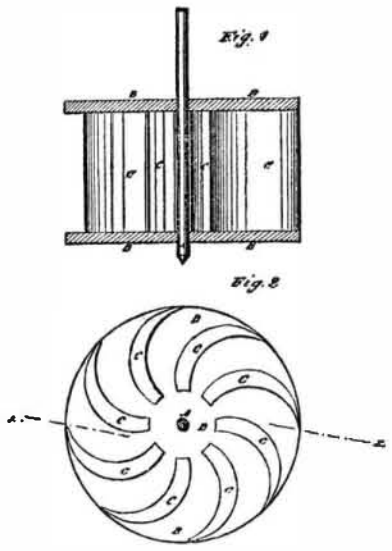


Fig. 1 shows a cross section of the wheel, taken through the line, *x x*, in Fig. 2. Fig. 2 is a top view, with the cover removed. A represents the shaft to which the wheel is attached, the lower end of which is designed to revolve in a step in a simple frame secured in the bed of the stream. The upper end of the shaft is designed to extend above high water mark, and with it is connected the gearing to give motion to the machinery to be driven. To the shaft, A, at suitable distance apart, are secured two disks, B, between which the buckets, C, are placed, and to which the upper and lower edges of said buckets are attached. The buckets are vertical, are thicker at their inner ends, taper to an edge at their outer ends, and are curved, as shown in Fig. 2. The inner ends of the buckets, C, do not extend quite to the center of the shaft, so as to leave a clear space around the shaft, A. With this construction, the water will enter at one side of the wheel, and escape at the other side, giving it an impulse both times, and will rotate the said wheel in the same direction, in whatever direction it may be flowing.

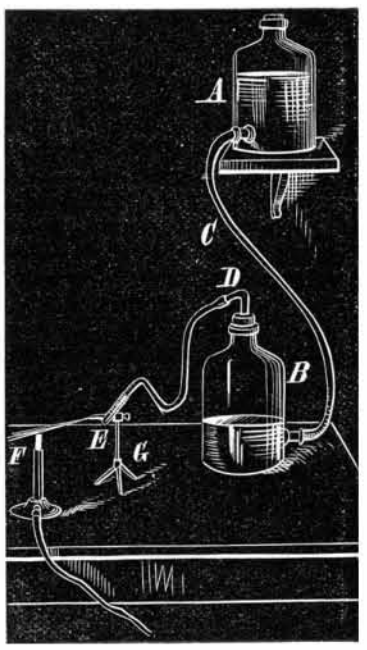
Patented November 23, 1875. For further particulars, as to sale of patent, etc., address Mr. John J. Hill, Hayden's Ferry, Arizona Territory.

The Scientific American in the Pulpit.

An esteemed correspondent, writing from St. Louis, Mo., states that, in one of the Catholic churches there, during an interesting discourse upon the best methods of avoiding evil influences and promoting practical goodness, the speaker took occasion to caution his hearers against the reading of trashy papers. "If," said the preacher, "you want a first class paper, get the SCIENTIFIC AMERICAN. The proprietors of such journals are public benefactors." To which, we have no doubt, a quarter of a million of our readers will heartily say: Amen.

A SIMPLE FORM OF BLOWPIPE.

The simple method of obtaining a continuous self-acting blast for blowpipe work, shown in our illustration, was devised by J. Landauer, of Braunschweig, Germany, and described in a late number of the *Berichte der Deutschen Gesellschaft zu Berlin*. It consists of two spacious bottles, A and B, connected by an india rubber tube, C. One, A, is filled with water and placed on a shelf above the working table; the other, B, is closed by a perforated rubber stopper, from which a tube, D, leads to the blowpipe, E, supported on a standard, G. As the water flows from A to B, the air in B is compressed, and a jet of air is driven across the flame of a Bunsen burner, F.



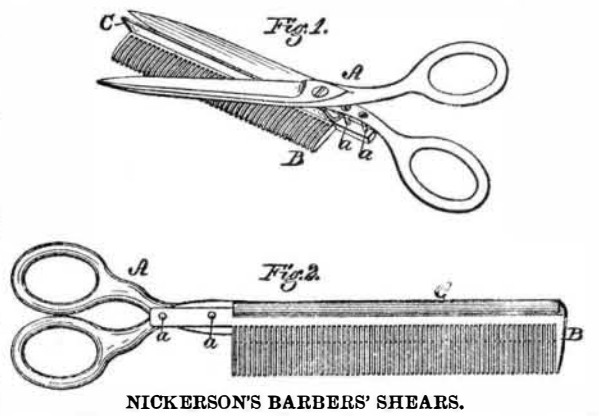
With bottles that hold 7½ pints each, a constant current of air of 0·016 inch diameter is produced, which lasts for 10 minutes. At the end of this time it is only necessary to reverse the bottles in order to put the blast again in operation. With a convenient fall of 35 inches, a reducing flame may be obtained 3·15 to 3·50 inches long, and an oxidizing flame 2·7 to 3 15 inches long.

If bottles with holes at the bottom are not at hand, ordinary bottles can be employed, connected by tubes running to the bottom, like siphons. In this case the air must be sucked out of the tube, C, before beginning to work. The flow of water, as well as the current of air, may be regulated by pinch cocks with screws, or even by a common spring clothes pin. The advantage of this blast is that all the materials are at hand in every laboratory.

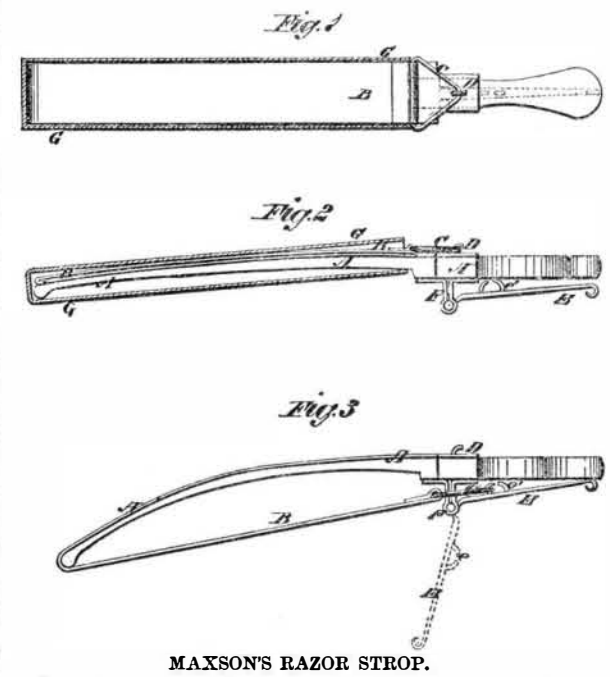
IMPROVED BARBERS' APPARATUS.

We illustrate herewith two recently patented inventions for facilitating barbers' work, the first of which is an improved combination of shears and comb. The device is the invention of Mr. Samuel Nickerson, of Gallatin, Tenn., and consists of a comb secured to the side of one of the blades; and a guard or shield is placed between the blade and comb, serving to govern the length at which the hair is cut, and to present the same properly to the blades.

Fig. 1 represents a perspective view of the shears, and Fig. 2 a side view of the same. A is an ordinary pair of shears, and B is a straight hair comb, arranged outside of and parallel with one of the shear blades, and secured thereto at the inner end by two screw studs, *a*; and C is a guard plate, extending from the back of the comb, over which it is clasped, inward to the edge of the shear blade, as represented in Fig. 2. The parts are arranged to hold the comb and the blade parallel with each other, while the screw studs are so arranged that by turning them, the distance between the



NICKERSON'S BARBERS' SHEARS.



MAXSON'S RAZOR STROP.