

made under Holmes' patent. The common levers are not used, the power required being obtained by a pair of cranks, one on each side of the capstan. These cranks are adjustable. When a quick speed is wanted the cranks can be quickly shortened for that purpose, or if great power is required, they may be lengthened. See SCIENTIFIC AMERICAN, Vol. 11, page 257, for engraving and a more full description.

Talcott, and Son, of this city, exhibit some improved lever capstans. The barrels are made large, to prevent breakage of line, and the pawls are placed within, out of the reach of water and ice.

#### Hatter's Lathes.

L. W. Boynton of this city, exhibits an improved Hatter's Lathe containing several novel features. One of them consists in the introduction of a suction fan, which carries off the dust arising from the sandpapering of the hat body. This dust is very offensive, and highly injurious to the health of the operator. There is a lever for stopping the lathe, at pleasure, while the fan continues to revolve. The hat block is made in two parts, so that it may be extended or reduced, according to the ruling fashion. The making of a new block for each change of style is thus avoided.

#### Horse Hitch.

Edward Boynton, East Hartford, Conn., exhibits a novel spring clamp, to be applied to posts, for hitching horses. The end of the halter needs only to be passed into the clamp, and no other fastening is required. Press a spring and the halter is released.

#### Steam Sawing Machine.

Fairbanks, Wilnot & Co., 343 Broadway, N. Y., exhibit one of Wilnot's patent portable Steam Saws, for cutting down and then cutting up trees. The handle of the saw is made hollow, and contains a piston, to the front end of which the saw is attached. Steam is introduced, through a flexible pipe, to the handle, and the piston with its saw is thus caused to move back and forth with great rapidity. The apparatus is shown in operation, and can cut through a log of 20 inches in diameter with great speed.

#### Hydraulic Rock Drill.

J. Echols, Columbus, Ga., exhibits his newly patented drill for boring rocks. The central part of the drill passes through a small box, from the upper and lower sides of which a stream of water is allowed, alternately, to spirt. The water strikes into cups that are attached to the drill, and the latter is thus caused to rise and fall with great rapidity. The water is introduced to the drill through a flexible pipe. For an engraving and full description see SCIENTIFIC AMERICAN, Vol. 11, page 244.

#### Window and Door Lock.

Alfred Speer, of Passaic, N. J., exhibits an improved patent weather-strip and door lock, which is really a valuable invention. By simply turning a knob or button a tongue or strip is made to project from the casing into a corresponding groove in the window or door. A tight joint is thus made, which excludes rain and dust. The device also serves as a firm lock, and thus gives security. It is neat, durable, and so simple that it cannot get out of order. Price \$2. See engraving and description in SCIENTIFIC AMERICAN, Vol. 11, page 96.

#### American Watches.

Dennison, Howard & Davis, of Waltham, Mass., exhibit several fine specimens of gold and silver watches made at their establishment. The finish and general appearance equal the best imported articles.

#### Cooking Without Fire.

E. D. Seeley, of this city, exhibits Albro's patent apparatus for cooking without fire: the required heat being generated by means of lime. The apparatus consists of a small tin boiler-looking contrivance, within which the meat, vegetables, bread, etc., are placed. A small quantity of lime is placed in the bottom, in an apartment by itself. Cold water is now conveyed by a tube to the lime, and a strong chemical action instantly ensues. The result is that a heat sufficient for all ordinary cooking purposes is produced, which continues from half an hour to an hour. For an engraving and description of this novel contrivance see SCIENTIFIC AMERICAN, Vol. 11, page 251.

#### Carpet Sweeping Machine.

L. W. Boynton, of this city, exhibits an ingenious little contrivance for sweeping carpets, which is the delight of all the ladies. It consists of a small box in which there is a revolving brush that sweeps the carpet. There is also a revolving fan, that sucks up all the dust and dirt, and carries it into a small compartment containing water. The woolen fibers and larger particles are deposited in a drawer. The sweeping is done by pushing the box along over the surface of the carpet by handles. The whole apparatus is light and simple, and will outlast a thousand brooms. No dust is created, and the sweeping is most thoroughly done.

#### Stone Sawing Machines.

Avery's patent Stone Dressing Machine is exhibited by Lucius Thompson, of New Haven, Conn. The cutters are arranged upon the surface of a rotating disk. The stone is placed upon a carriage and fed up to the disk. The latter revolves vertically, being attached to the end of a horizontal shaft.

Starbuck Brothers, of Troy, N. Y., exhibit a new machine for dressing stone, which operates with great success. In this machine the cutting is done by means of a series of chisels arranged side by side in a line. The chisels are pushed down and caused to cut the stone by means of a series of projections attached to an endless belt. As the projections come around they hit the shanks of the chisels and drive them down. The chisel shanks and projections are beveled so as to graduate the blows. Only two chisels are struck at once, but such is the rapidity of movement that they all seem to act together. The points or cutting edges of the chisels are made of thin blades of steel, which are moveable at pleasure from their shanks. The method of grinding the cutters and the adjustment of the parts is simple and convenient.

#### Smoothing Irons Heated by Gas.

L. W. Boynton, of this city, exhibits a new device for heating smoothing or sad irons. The common objection is, that in the combustion of gas, water is produced. Hydrogen from the gas unites with oxygen from the air and forms water. This collects on the bottom of the iron, and soon roughens its surface by corrosion. Mr. Boynton divides the bottom of the iron into two parts, which slip together. The lower part, or shell, is removed and heated by exposing its inside to the gas. The other part is now placed within the shell, and the iron is ready for use. In this manner the bottom is heated, but never exposed to the flame. The removal of the upper part always insures a cool handle. The iron presents the usual form and appearance.

#### Blowing Apparatus.

John Boynton, Jr., of this city, exhibits a newly invented blowing apparatus, which is alleged to present a gain of 75 per cent. in power over common fan blowers. In other words, only one-fourth as much power is needed to drive this improvement, as the common fans require; or, with the same power, four times as much air can be delivered. The improvement is applicable to steam boilers, furnaces, and all kinds of machinery where a blast is wanted. The apparatus consists of two shafts, each having two arms that mesh together like cog wheels. These arms are encased in a circular box. The air enters at the periphery of the case, on one side, and is discharged, in the same manner, on the other side. The air is partly compressed and forced along by the said arms. The invention may be applied to pumping purposes, or used as a rotary steam engine.

#### Machine for Boring Pumps and Tubes.

A. Wyckoff, of Elmira, N. Y., exhibits one of Wyckoff & Morrison's patent Tubular Boring Machines, for boring pumps and wooden tubes. It consists of a hollow tube or auger having cutters at its extreme end. Within the tube is a rod furnished with an auger-shaped screw. The cutters on the tube effect the boring, while the auger rod extracts the chips. The parts named move in different directions. The machine bores at the rate of ten feet per minute, and with an accuracy that is truly wonderful. We are preparing an engraving of the above machine, which will be published next week.

#### Planing Machines.

C. B. Morse, of Rhinebeck, N. Y., exhibits his patented planing machine provided, with a self-adjusting, unyielding knife bed which permits the planing of stuff of from three inches in thickness down to one-eighth of an inch. We are preparing an engraving of this invention, which will shortly appear.

Jones & Crowell, 208 Broadway, N. Y., exhibit a planing machine that operates with much success. It puts a good finish upon its work, planes thick or very thin stuff, is easily adjusted, etc. Price \$500.

N. Barlow, exhibits one of his small-sized planing machines, celebrated everywhere for their simplicity and practical excellence.—Price \$500. For a full description and engraving see SCIENTIFIC AMERICAN, Vol. 11, page 49.

Woodworth's Planing Machine, small size, is exhibited by the Fitchburg (Mass.) Foundry and Machine Co. It is a fine specimen of workmanship.

Denison's planing machine, an original invention, will be found illustrated on the front page of this number.

The above comprise all of the planing machines at the Palace. All of them use cutters attached to rotating horizontal shafts.

#### Ratchet Handle Borin: Instruments.

G. H. Talbot, of Boston, Mass., exhibits several varieties of his newly patented ratchet handles, for gimlets, screw-drivers, augers, bit-stocks, cork-screws, etc. The arrangement is such that the handle of the auger or other instrument, may be turned back for a new stroke, without removing or changing the grasp of the hand. As applied to bit-stocks it permits them to be used in corners or narrow places where the common stock cannot be employed. In appearance and size these handles are about the same as the common kind. One handle may be used for different sized tools.

#### Gas Regulators.

Henry G. Beasley, of this city, exhibits Hoard's Patent Gas Regulators, which are alleged to produce a saving in the amount of gas consumed of from 25 to 50 per cent. This economy is said to be effected by a self-acting valve arrangement which causes the gas to escape with a uniform velocity at all times, no matter how unsteady the street pressure may be. Price \$8 and upwards.

Kidder's Gas Regulator is exhibited by the New York Gas Regulator Company, No. 262 Broadway. The saving which this device is alleged to effect is surprising. One theatrical establishment in this city certified to a saving of \$2000 by its use in one year. That it saves from 25 to 50 per cent. of gas, has been too often proved to be doubted. For engraving and description see SCIENTIFIC AMERICAN, Vol. 11, page 100.

#### Weighing Machines.

Strong & Ross, of Vergennes, Vt., exhibit a variety of specimens of their newly patented platform scales. Among others is a platform scale having a capacity of six tons. A test burden of 2500 lbs., placed on a truck and rolled about from corner to corner, on the platform, scarcely indicated any variation in the beam, no matter in what position the weight rested. We were much pleased with the accuracy of the machine. These scales are constructed on scientific principles. No pit is required and small links, which always prevent accuracy, are also avoided. Price for scales of 6 tons capacity, \$150. For an engraving and description see SCIENTIFIC AMERICAN, Vol. 11, page 369.

The Vergennes Scale Co., E. A. Johnson, Agent, New York, exhibit several specimens of their scales, made under Sampson's patent. Among them is a railroad weighing machine, 40 feet in length. We witnessed a trial a few days since, during which a burden of about twenty tons, placed on a railroad truck, was rolled from one end to the other. But little variation in the scale beam was observed when the position of the burden was changed. For engraving and a full description see SCIENTIFIC AMERICAN, Vol. XI., page 169.

Fairbanks & Co., of this city, exhibit a large variety of weighing apparatus from post office scales up to large platform machines.

D. M. Smyth, Herford, Pa., exhibits his new self-acting cotton scales. The peculiar-

ity consists in connecting a weighted lever and an index, with the scale beam, in such a manner, that as soon as the bale is swung, a pointer indicates the exact weight, without assistance from the attendant.

The Parker Scales Co., of Meriden, Conn., exhibit some fine specimens of weighing apparatuses.

#### Sewing Machines.

Robinson & Roper exhibit their new improved sewing machines, which appear to operate with great success. Two needles are employed, the points of which are furnished with hooks that alternately catch the thread and form the stitch. The finest kind of cotton thread or silk can be used. The work appeared well done. Price \$100.

The above parties also exhibit an ingenious machine for sewing eyelets, which, it is said, will sew from 1600 to 2000 eyelets per day, putting from 20 to 30 stitches into each. The machine is particularly useful for gaiters, corsets, etc. J. S. McCurdy, agent, 411 Broadway, N. Y.

Nicholas Leavitt & Co., exhibit their improved machines for sewing leather. Waxed threads are used, or not, as desired. For boot and shoe making, harness and carriage makers, the invention appears well adapted.—Agency as above.

L. W. Langdon, of this city, exhibits his newly patented knot stitch machine. A shuttle is used in combination with a needle, and a peculiar stitch formed, so knotted, it is alleged, that all ripping is prevented. It is claimed that this machine produces stronger and better work than many others. Price \$75.

Wheeler & Wilson Manufacturing Co., of this city, exhibit a number of their machines, which appeared to be in great favor with spectators. They operate with great rapidity and do the very finest kinds of work with perfect success. Price \$100.

I. W. Singer & Co., of this city, exhibit several varieties of machines, among which are some for sewing leather. Many elegant samples of machine sewing were shown. Price of machines \$125 and upwards.

#### Gutta Percha Fabrics.

Gutta Percha is a peculiar gum resin, and has only been known in the arts for about ten years; it is only a few years since the method of preparing it, to render it capable of vulcanizing, was invented; this is also an American discovery—that of Rider and Murphy. The articles now manufactured of it are similar in appearance and nature to vulcanized india rubber. A variety of these are exhibited in the North-East Gallery. There are life-preservers, tents, coverlids, hats, coats, pants, drinking cups, valises, buckets, &c. They are all dark in color, and not so varied in their forms as vulcanized india rubber fabrics, but they will yet become more numerous.

#### Gold Separators and Crushers.

Edward N. Kent, of this city, exhibits his patent Gold Separator. The invention is in use, with much success at the U. S. Assay Establishment, Wall st., N. Y. For engraving and description see SCIENTIFIC AMERICAN, Vol. 11, page 81.

Bullock's Quartz Crusher Co., 208 Broadway, N. Y., exhibit in operation one of Bullock's patent Quartz Crushers. The invention is highly spoken of.

Thomas J. Chubb's patent Metal Separator, Williamsburgh, N. Y., is exhibited in operation. This is an ingenious machine. The separation is effected by specific gravity, the ore being first reduced to a dry powder or dust. A blast of air is made to pass through the dust, and causes a steady agitation. An endless chain of scrapers carries the dirt up an inclined plane, and out at one end of the machine, while the metallic particles, by their heavier gravity, gradually find their way down the incline into a receptacle.

#### Seed Planter.

Gould & Flanders, of Cambria, N. Y., exhibit a new seed planter, which is a very excellent and practical invention. The method of adjusting, of planting, in hills or drills, of regulating the depth at which the seeds are deposited, etc., is good. The frame is of iron, and the machine light but strong and substantial. Two or more rows can be planted at a time.