

ligatured the left lingual artery for a recurrent epithelioma of the tongue; the tumor sloughed away, and a fortnight before the patient's death from blood poisoning the tongue was quite healed. In just the same way ischæmia will impair the vitality and so lessen the growth of a tumor. The difficulty is rather in the practical application of this theory. The knowledge that we now possess of the mode of growth of cancers gives us at least one important indication. If we have to deal with a neoplasia that grows at the periphery by gradual infiltration of the surrounding tissues, it is plain that, for pressure to be useful, it must be applied around the tumor rather than over it, where, by compressing and obstructing the capillaries, it would cause overfullness of those at the circumference. It is the periphery of a cancer that is its active part, and we must, therefore, produce ischæmia around and not in the tumor. In the application of the treatment this must be obtained by the careful adjustment of elastic pads or cotton wool, and as the whole success of the plan depends upon the skill with which this is done, too much attention cannot be given to it. We cannot regard pressure as a substitute for removal of a cancer; but in the frequent cases where this is impracticable it appears to be the best substitute at present open to the surgeon. M. Bouchut's cuirasse would seem to be an improvement upon the spring pads and other appliances in use in this country. —*Lancet*.

#### NEW CUTTING AND BORING ATTACHMENT FOR LATHES.

Our engraving represents a useful little machine which is intended for attachment to lathes. Although it is exceedingly simple it is capable of performing a great variety of work.

The machine is used in two ways, either by attachment to a rigid support, as shown in Fig. 1, or by suspending it by a belt, so that it is capable of universal motion, as shown in Fig. 2.

The supporting frame, A, has three boxes for the spindle, B, and on the shaft at one side of the middle box there are planing knives, C, on the opposite side there is a balance wheel, and a pulley for receiving the driving belt. The spindle, B, extends beyond the ends of the frame, A, and has at each end a socket for receiving interchangeable cutting and boring tools. One end of the spindle is externally threaded to receive a face plate, to which may be attached a disk of wood for receiving sandpaper for smoothing and polishing wood or metal.

The frame, A, is held to its work by means of handles, A', and the spindle is driven by a round belt that passes over a suspended pulley, E, and also over the pulley on the lathe mandrel.

The entire attachment is balanced by a weight, F, attached to a cord that passes over a fixed pulley, F', to the pulley, E, to which it is secured by a swivel hook that permits of turning the belt in any direction. The belt is guided by small pulleys, H, so that the device may be turned without running the belt from the pulley on the spindle.

Guides, G, are attached to the frame, A, for guiding the material being operated upon by the planing knives. The frame, A, may be supported by attachment to an arm, I, at the lower end of the screw-acted follower, J, which slides in a rigid support, K. The arm, I, has a notched disk which is engaged by a spring detent which holds the frame at any desired inclination.

Among the kinds of work that may be done on this machine may be mentioned shaping and edging, fluting and beading table legs, balusters, etc.; dovetailing, boring, carving, paneling, shaping or friezing mouldings, scroll or fret work, inlaying and engraving, blind stile mortising and blind slat planing. By changing the inclination of the spindle different varieties of mouldings may be produced by the same cutter.

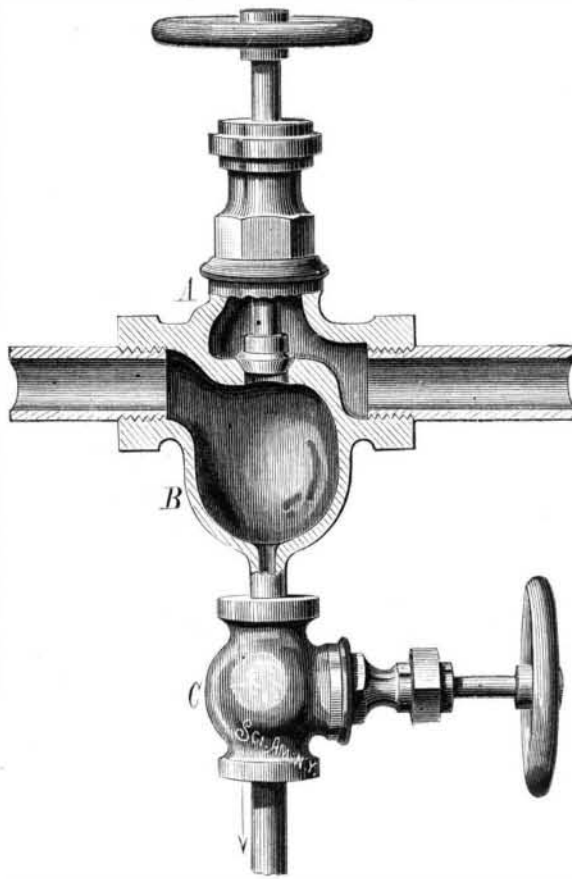
The machine may be used as an emery grinder, and it may also be used for drilling and shaping metals. For further information address Mathew Rice, Augusta, Ga.

#### Decrease of the New York Rainfall.

In his report for 1876, Director Draper, of the New York Meteorological Observatory in Central Park, showed that a careful examination of the records in his office proved that there had been, in late years, a change in the rainfall of New York and its vicinity, affecting seriously its water supply. The decrease had been steady since 1869, previous to which there had been an increase. In his report for 1877, Mr. Draper discusses the question whether the change continues, or is likely to continue, in the same direction, and comes to the conclusion that the rainfall of New York will, most probably, continue to decrease by fluctuations for several years to come; also, that the variations are very nearly the same in the two portions of the year, the division date being July 1.

#### NEW STEAM VALVE.

The improved valve shown partly in section in the engraving is designed for removing the water of condensation from steam pipes, so that dry steam may be furnished. In the engraving, the globe valve, A, is of the usual form,



SAUNDERS' STEAM VALVE.

except that the casing below the valve seat is enlarged, forming a pocket, B, which communicates through an aperture at the bottom with a small valve, C.

The steam, in passing through the valve, fills the pocket and there deposits any water that may have condensed from

This valve affords a ready means of supplying dry steam to sulphuric acid chambers. We are informed that by its use a chamber in ordinary working order will produce acid 3° to 5° Baumé stronger than can be obtained with ordinary globe valves. Thirty steam pipes, arranged at different points, are found to deliver into a chamber in the space of five minutes from 4 to 16 ounces of condense water (according to the circumstances of distance, temperature of the air, size of pipe, etc.). These valves, being placed close to the chamber separating all the condense water, deliver with certainty uniformly dry steam, without the inconvenience of ordinary steam traps or other expensive appliances.

This valve was patented through the Scientific American Patent Agency, May 21, 1878. For further particulars address Mr. Joseph Saunders, 975 Third avenue, Brooklyn, N. Y.

#### A Hint from the Mormons.

Ex-Governor Hendricks, in a recent industrial address, alluded to the highly prosperous condition of the Mormons as existing previous to the influx of the Gentiles into Utah, saying that "to the fact that they produced all they consumed I attribute their wonderful prosperity." This remark, associated with the prosperity of other communities in different parts of the country, would suggest the query of "Why the principle cannot be more largely applied to the whole nation?" Certainly the resources of the whole country would indicate a much greater diversity of production, and if there was the same regard for a uniform building up of our industrial system there would seem to be need of but little importation, certainly of goods which can be readily made, and which our people need the labor to produce.

#### New Agricultural Inventions.

Joseph George, of Springfield, Greene Co., Mo., has patented an improved form of Cultivator or Shovel Plow, designed to be convertible into either a single, double, or triple shovel plow as occasion may require. It consists in two detachable clamping plates, which hold the plow beams, and their arrangement with respect to the said beams and the handles of the plow, whereby a single bolt is made to secure the forward ends of the handles and clamp the plates to hold the plow beams in place.

Russel O. Bean, of Macedonia, Miss., is the inventor of an improved Seed Planter for planting cotton and other seeds, and for distributing fertilizers. The details of the construction of this planter cannot be explained without engravings.

Rutus Sarlls and Alexander Kelman, of Navasota, Texas, have invented an improved combined Planter, Cultivator, and Cotton Chopper, which may be readily adjusted for use in planting seed, cultivating plants, and chopping cotton to a stand, and is effective and reliable in operation in either capacity.

William H. Akens, of Penn Line, Pa., is the inventor of an improved Dropper, for attachment to the finger bar of a reaper, to receive the grain and deliver it in gavels at the side of the machine, so as to be out of the way when making the next round. It is so constructed that when attached to the finger bar of a mower it will convert it into a harvester.

James Goodheart, of Matawan, N. J., has devised an improved machine for Distributing Poison upon potato plants to destroy the potato bug. It may also be used for sowing seeds.

William V. McConnell and Charles M. Dickerson, of Crockett, Texas, have invented an improved Fruit Picker, having cup-shaped self-opening spring jaws attached to its handle, and operated by a cord to close upon and clamp the fruit. It also has a hollow extensible adjustable handle and a fruit receiver.

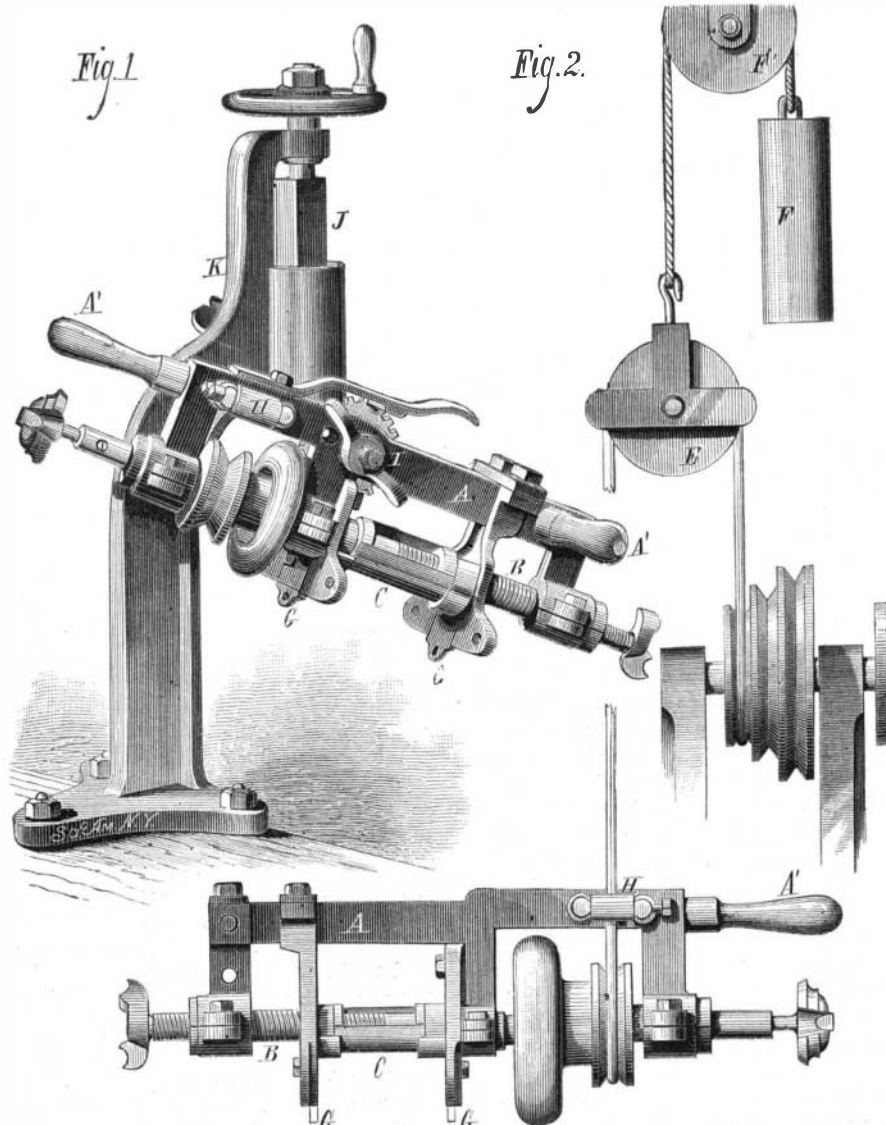
#### Quick Work.

Two years ago a farmer-miller and his wife, at Carrolton, Mo., furnished some invited guests with bread baked in eight and a quarter minutes from the time the wheat was standing in the field. This year it was determined to make still better time. Accordingly elaborate preparations were made to reap, thrash, grind, and bake the grain with the least possible loss of time.

In 1 minute 15 seconds the wheat, about a peck, was cut and thrashed, and put on the back of a swift horse to be carried to the mill, 16 rods away. In 2 minutes 17 seconds the flour was delivered to Mrs. Lawton, and in 3m. 55s. from the starting of the reaper the first griddle cake

was done. In 4 minutes 37 seconds from the starting of the reaper, a pan of biscuits was delivered to the assembled guests.

After that, according to the Carrolton *Democrat*, other pans of delicious "one minute" biscuits were baked more at leisure, and eagerly devoured, with the usual accompaniment of boiled ham and speech making.



CUTTING AND BORING ATTACHMENT FOR LATHES.

the steam in its passage through the steam pipe. The increased depth of the lower portion of the valve prevents siphoning, which takes place in valves of the ordinary form. The valve, C, is kept slightly open to discharge the water at the moment it collects in the pocket; the water is thus prevented from passing onward to the engine or other point of use.