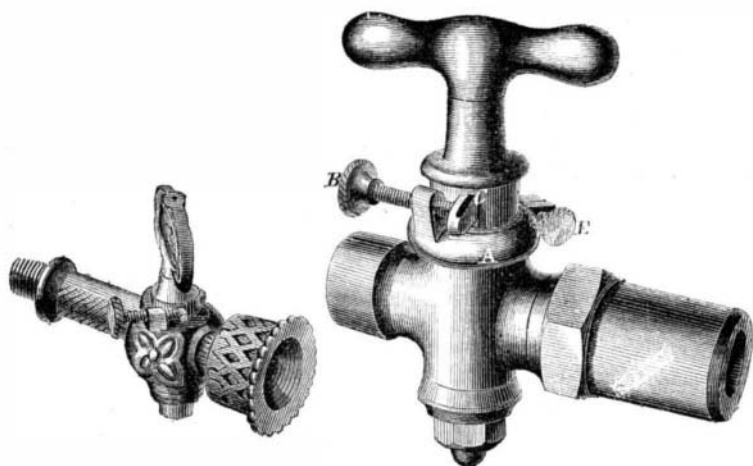


**Improved Self-regulating Faucet.**

This engraving represents an attachment to a faucet for regulating the flow of liquid through the same, so that the fluid can be drawn off, and the faucet closed properly to prevent leakage. This is useful where inflammable liquids have to be drawn, such as naphtha. No light can be carried near this liquid, as it explodes instantly if brought in proximity to a lamp. The attachment consists of a collar, A, provided with a screw, B, and a pin, C, let into the plug of the faucet. The collar is fast on the shell, being secured thereto by the bolt, E, and the screw, B, can be run in or out, so as to allow the opening to be varied at will, as shown in the engraving. For gas fixtures this arrangement is very desirable, as



**PERCIVAL'S SELF-REGULATING FAUCET**

the amount of light can be adjusted to a nicety thereby; a full head of gas can only be turned on by setting the screw at a certain point. As this is not likely to be tampered with, hotels or boarding-house keepers can secure themselves against extravagance in this respect. This arrangement is also applicable to gas stoves, where a fixed heat is desired.

It was patented through the Scientific American Patent Agency on July 25, 1865, by Dr. George G. Percival; for further information address him at Waterville, Maine.

**PRICE'S PEA SHELLER.**

This machine is intended to perform a tedious operation now done by hand—that is, to shell beans and peas. The details of this machine are simple enough, being merely a pair of rollers, A, covered with india-rubber, similar to those used in wringing machines, and mounted in a wooden frame, B, in the same general way. These rollers are connected by gearing with a shaft and crank, so that when the



same is turned the rollers will revolve also. In the bottom of the compartment, C, in which the rollers work, there are holes, D. These holes let the peas and beans fall into the drawer, E, below. By turning the rollers, the pods are drawn in, and the compression causes them to burst open and deliver the peas on the other side in good order. Where large quantities of the vegetables in question are to be shelled, the inventor provides an endless apron, not shown—one on each side—so that the peas are carried into the rollers regularly, and the pods thrown out on the other side

For hotels and boarding-houses the machine will effect a saving of labor. It was patented through the Scientific American Patent Agency Aug. 16, 1864, by G. B. Price; for further information address patentee at Watervliet, N. Y.

**SMITH'S RIVET.**

In riveting with the common solid-end rivet, it is a common experience, even with the greatest care, to have the rivet "cant" over and spring the whole job out of shape. It is also com-



mon for a mechanic or other person to strike from five to twenty-five blows before he can form a proper head, or clinch, on a rivet, even under the most favorable circumstances; and also when riveting on leather or other soft material, to have the rivet "dance round" so as to render it almost impossible to form a head at all. All these difficulties are entirely obviated by this improvement, which consists in countersinking the end of a rivet, as shown, so that when this rivet is struck with a stunt punch, or set or squeezed with an eyelet nipper or other suitable stool, the outer edge will easily turn over so as to form a handsome and substantial head, as compared with the bad jobs which frequently disfigure all kinds of articles on which rivets are used.

The improvement is applicable to all kinds and sizes of rivets; the countersink can be made of any required depth, and, in the opinion of experts, with very slight alteration in the common rivet machine, be made as cheaply and quick as common rivets are now made.

This invention was patented Feb. 21, 1865, by John W. Smith; for further information address him at No. 152 Washington street, Boston, Mass.

**Pothooks.**

In the last century, the original Crawshay, then a farmer's son, rode to London on his pony (his sole property) to seek his fortune. He began by sweeping out the warehouse of an ironmonger, who was of a discriminating mind, and saw that young Crawshay had good stuff in him. The ironmonger had been speculating successfully in sending out iron pots to America, and his astute apprentice observed that if the Americans used so many pots they must want hooks to hang them on. Whereupon his master not only took the hint, but kindly determined that Crawshay should send them out, and that he would lend him the money for the purpose. Upon this venture £100 was realized, and from that time the farmer's son moved rapidly upward, being first taken into partnership by his master, and ultimately becoming an iron king in South Wales.—*Once a Week.*

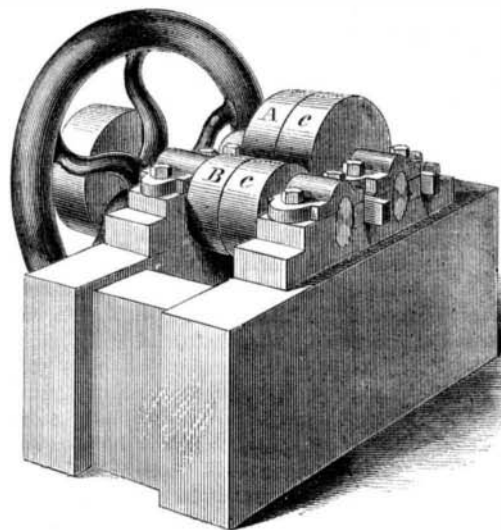
**HITCHCOCK'S ROLLER QUARTZ MILL.**

It is asserted by those familiar with the subject, that after many years of experiments and experience in grinding ores for procuring the precious metals, there has never been a machine produced that equals the Cornish rollers for speed and capacity of work. But there is an objection to them on account of their wearing out rapidly; that is, when two plain cylinders are used in reducing ores to the condition of coarse sand, the middle of the cylinders are worn concave on their surfaces, which prevents them from being set up to grind to the required fineness.

By a very simple device in the present machine this difficulty is entirely overcome, as may be seen by referring to the engraving. A and B are two rollers, divided transversely through the middle into two sections, as shown by the lines, C C. When the mid-

dle of the rollers become worn by use, as shown by the dotted lines, then one or both of the rollers are taken off of their respective shafts and reversed—the out end or largest diameter of each section is placed in the middle, while the smallest diameters are at the outer ends. Each cylinder now presents a convex surface, and they will first touch in the middle, where nearly all the grinding must be done. By this arrangement they may be reversed indefinitely, and made to last any length of time.

Other parts of the machine are too well known to need description, except in a few minor points, as making the roller, B, about one-half the diameter of A; and making the driving pulley twice the diameter of the roller, B, using a very heavy belt with fly-



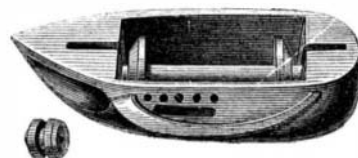
wheel and no gearing. But those machines with no gearing are not intended to be used as breakers except for desulphurized ores, or for hard quartz, after it has been passed through a breaker. To make this machine a breaker, would require gearing.

The patent having been allowed, further information may be had by addressing A. Hitchcock, Nos. 4 and 6 Pine street, New York.

**CUTTER'S SHUTTLE.**

The bobbins in sewing machines are liable to various contingencies, whereby their efficacy is impaired—such as getting out of the centers, wearing of the journals, baitering of the same, and displacement of one end of the bobbin, so that the head wears against the end of the recess in which it works. It has been customary to make shuttles with one bearing solid and the other to spring, also with both bearings solid; these methods are objectionable and give great trouble, it is asserted, to keep the bobbins in repair. It is claimed for this shuttle that by making both of the bearings to yield or spring, all the objections noted are obviated, and that some advantages are secured. As for instance, a longer bobbin can be inserted, because both bearings spring apart; the bobbin cannot fall out of the centers unless both bearings yield in opposite directions, which is not likely to occur; the tension is more uniform, and it is easier to put the bobbin in place or remove it. The small figure represents one of the bearings removed.

The inventor has also patented an improvement in the shuttle drivers of sewing machines, whereby they are made to yield slightly, so that if the sewing ma-



chine is run rapidly the percussion will not be so great on the shuttle or the driver, and the parts will consequently last much longer without repair.

These inventions were patented through the Scientific American Patent Agency, on Aug. 1, 1865, by Volney Cutter, of Cincinnati, Ohio; address him at No. 270 Central street, that city, for further information.