

IMPROVEMENT IN KEY-HOLE GUARDS.

The object of this invention is to provide a convenient, simple, and inexpensive guard for a key-hole, and to make the same reversible so that it may be used on either side of the lock.

Our engraving gives a good idea of the improvement. In it, A represents the lock, B the key-hole, and C the sliding reversible guard. The lock is provided with a reversible sliding catch, D, which holds the key-hole guard in place whether it be placed over the key-hole or withdrawn.

Fig. 1

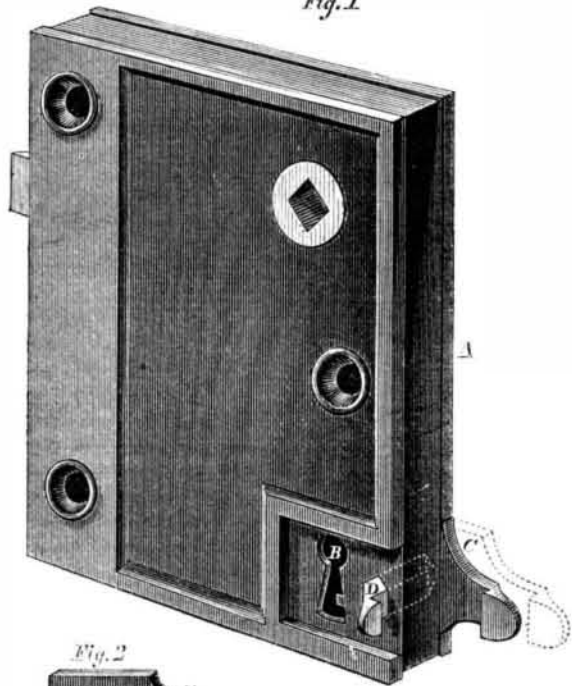


Fig. 2



On each side of the lock a recess is made which incloses the key-hole, and is sufficiently deep to receive the full thickness of the guard. The sliding reversible catch plays in a dovetailed recess or channel, made across the edge of the lock from one recess to the opposite one as shown. The point of the catch engages in one or other of the recesses, F, in the key-hole guard shown in detail in the engraving, Fig. 2. The recess nearest the thumb-piece is the one held by the catch when the guard covers the key-hole, the other is held when the guard is withdrawn.

By these means all tampering with the lock from the outside is effectually prevented.

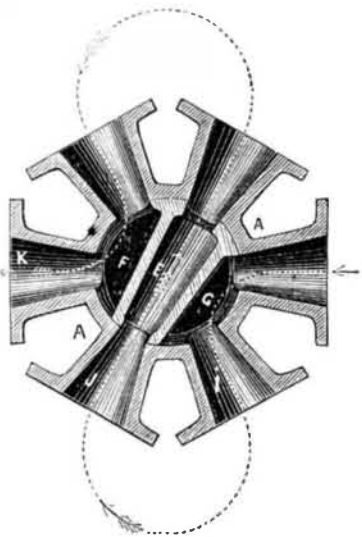
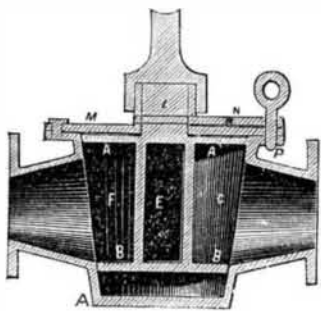
Patented through the Scientific American Patent Agency, January 18, 1870, by John L. Russell, of Prairie City, Iowa, who may be addressed for a portion or the entire right for the United States, or for the right to manufacture on royalty.

SIX-WAY TAP FOR GAS AND WATER.

Our engravings give a sectional and plan view of a new six-waycock for gas or water, representing it as applied to gas purifiers, for which it has special advantages. It is an English invention.

The barrel in which the plug is placed is formed of six branches, two of which form the inlet and the outlet passages, the other four being for guiding the gas, when used in gas works, into and out of the purifiers. The plug is composed of top and bottom disks, connected by thin division plates; one side of each of the plates has other plates at right angles thereto, which fill the spaces between any two of the openings at which they may be placed, and form bearing surfaces for the plug to work upon and to make the same gas-tight. It is intended to employ only one tap for every two purifiers, and any one, two, three, or all four purifiers of a set can be shut off for the purposes of cleaning or for repairs.

The plug is composed of top and bottom disks or plates, as before mentioned, which are connected by vertical division plates to form, as it were, three passages when the plug is in the barrel, one of the passages being between the plates so as to lead the gas direct through the

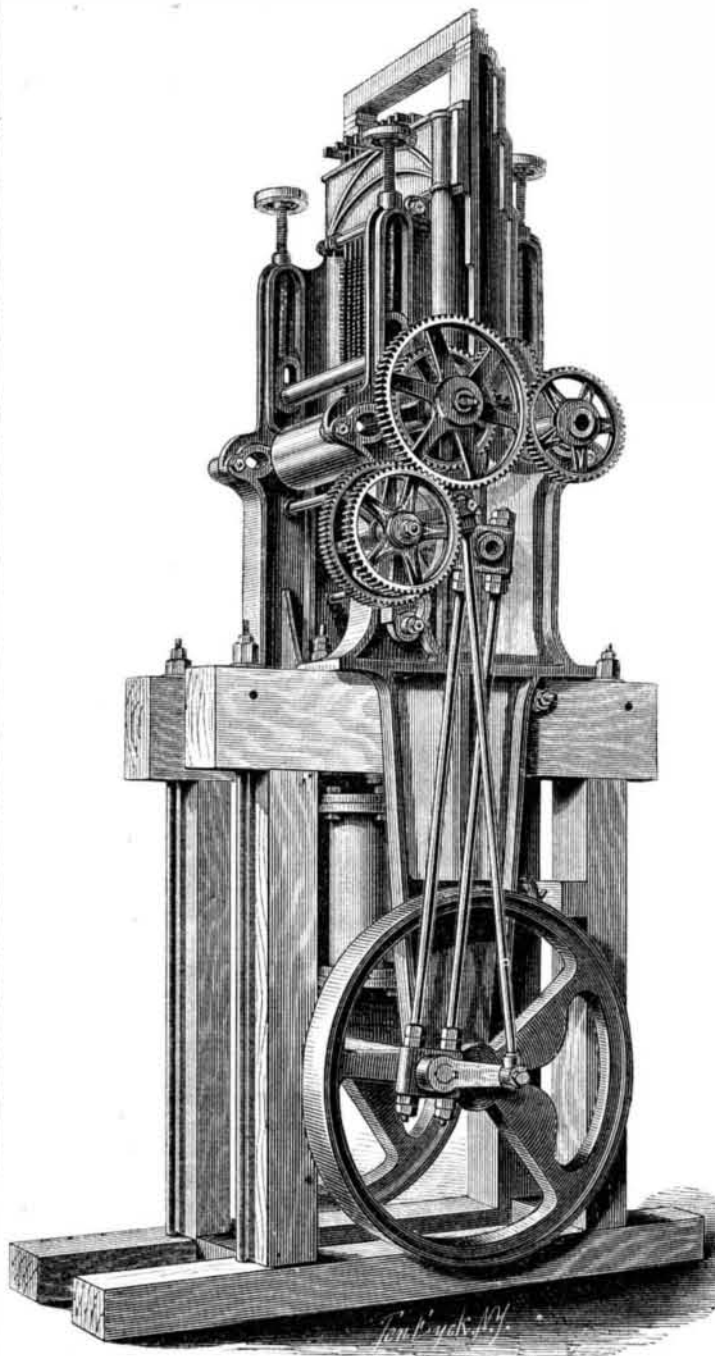


body, while the other passages are formed between the outside of the vertical plates and the inside wall of the barrel. The edges of one end of the vertical plates are of the same thickness as the body of the plates, or they may be a little thicker, to obtain a little more bearing surface, if desired, but the edges on the other ends have plates or pieces projecting from both faces as shown in Fig. 2. A guide pin serves as a stop to an arm connected with the plug; this pin being placed in one of six holes in the edge of the upper flange, enables the cock to be accurately turned the required distance.

This description with an inspection of the engravings will give a complete idea of the device.

PENNY'S IMPROVED GANG SAWMILL.

It is a generally admitted fact that our forests are being rapidly cut away, and as a matter of course the value of lumber is increasing in the same ratio as the supply diminishes. A saving of the stock wasted in sawing has therefore become a pressing necessity. While the old gang of reciprocating saws had all the essential requisites for producing the best article of lumber with the smallest amount of work, the elaborate mill houses and foundations, together with the great cost of the machinery have kept them from coming into more general use.



The accompanying engraving represents a portable gang sawmill, which has been condensed into a very limited space. Simplicity being of the utmost importance, each piece, where possible, has been made to perform a number of functions. The two upright frames carry the shaft, which gives motion to the slide valve of the steam cylinder and the arm that moves the feed rollers which carry the log, and they also sustain the steam cylinder that moves the saws; and upon these uprights are cast the brackets that support the entire machine. The stands that sustain the rollers for carrying the timber to be cut, are a part of the same brackets, while the upper portion acts as guides for the sash or sawgate, which also does the double duty of acting as a cross head for the piston rod. Upon the steam cylinder are cast large flanges which are planed up and securely bolted to the two uprights; also doing the double duty of supporting the cylinder which drives the saws, and rigidly bracing the whole framing. The feed is the old intermitting one of the pawl and ratchet; its amount being regulated by covering the teeth of the ratchet wheel which would be otherwise engaged by the pawl. To do this a narrow tongue of metal is placed in a grooved stand, and slid up or down by means of a lever, which is held fast by a set screw when the proper adjustment is made.

The operation consists of feeding the log or timber between

the top and bottom rollers, while the end is sustained either by a little car, or else by idle rollers, at option.

It is claimed that this machine is not only much cheaper than the stationary gang saw-mills, but that it excels them in the important particulars of simplicity, strength, and compactness. It may also be readily and easily put up or taken down. Only a comparatively small outlay is necessary for house and foundations.

The principal part of the weight being below the center serves to keep steady and balance the machine. It is composed of very few pieces, and therefore, in addition to the consequent reduction of cost at the outset, there is reduction in the wear and tear of the machine while in use.

In addition to these advantages, it possesses all the advantages of the reciprocating saw-mill over circular saws in economizing lumber.

This invention was patented Nov. 23d, 1869, through the Scientific American Patent Agency, by William Penny, of Milton, Fla., to whom, or to Wood and Mann, Utica, N. Y., orders for the machine or letters requesting additional information may be addressed.

Bichromatism.

This is an easy and cheap process, carried out as follows: Fasten a piece of stout, transparent, tracing paper by gumming the four corners to a piece of thick, flat, level glass on which the design on thin paper has been pasted. If you cannot draw or get a friend to draw for you, many good and effective subjects may be found among old prints and woodcuts, and by taking a careful tracing of the necessary parts, a very good design and skillful bit of "cribbage" obtained. When the design is satisfactorily pencilled out on the tracing paper it must be gone over with a quill pen and thick ticket-writers' ink; when dry, turn it, fasten down, and go over the other side. About one pennyworth of bichromate of potassa is to be coarsely pounded and put into about two ounces of hot water; strain this when cold, and then brush over one side of any pieces of paper or silk that it may be desired to print upon when they are dry. The printing is done by the usual photo paper printing frame, substituting the design on tracing paper for the glass negative. They print quick and deep if exposed to direct sunlight; one or more trials will easily give the right amount of time, and fixing is done by washing and soaking for a short time in clean water, next the drying and pressing with a warm flat iron. Pure white centers may be left in any kind of border by stopping out in the printing with a piece of thin card or blackened paper. Ornamental devices, or ornaments, can be printed on pieces of white silk or ribbon by marking out a pattern and laying on the bichromate solution with a camel hair brush inside the pattern; when dry, iron slightly, in order that the ribbon may lie flat to the tracing pattern. Some highly effective ornamentation may be produced in this way. White centers may be left on ribbon and paper, and mottoes, verses, etc., printed with type. Pleasing and artistic blendings of type-printing and ornament may be produced by such means with a very small outlay of time or money.

Wickersham's American Oil Feeders.

These feeders have been in use on the machinery used in the *Public Ledger* establishment for a period of two years, long enough to demonstrate their great usefulness and superiority. They are reliable, filter the oil before delivering it on the journals, detect, and make a greater saving of oil than any other method tried in this establishment. The economy in the saving of oil is very large. One of the greatest advantages of this oil feeder consists in the nicety with which it can be adjusted, so as to deliver the largest or smallest quantity of oil on the

journals in a given space of time, varying from an ounce of oil in one minute to an ounce in a year. It does its work evenly, certainly, effectively, and economically, and, as a real improvement in the lubrication of machinery, deserves this public notice.

Mr. J. B. Wickersham's (the inventor) address is 152 South Fourth street, Philadelphia.—*Philadelphia Public Ledger*, November 19, 1869.

OKRA PAPER.—We are in receipt of the *Tuscaloosa Observer*, which—as also the *Mobile Register*—is printed on Okra paper, a plant that grows abundantly throughout the South. The paper seems of good quality and though thin, possesses much more strength than ordinary paper of the same weight. It is now stated that through the patient perseverance of the inventor, Dr. Read, and the enterprise of the president and directors of the Chickasabogue Paper Company, the above manufacture may now be considered as fixed on a firm basis. The New York office of this company is at No. 48 Pine St., Room No. 7, where any additional information may be obtained.

THE trigonometrical survey of England and Wales, on the scale of one inch to the mile, was finished on the first week of the present year. It was commenced in the year 1791.