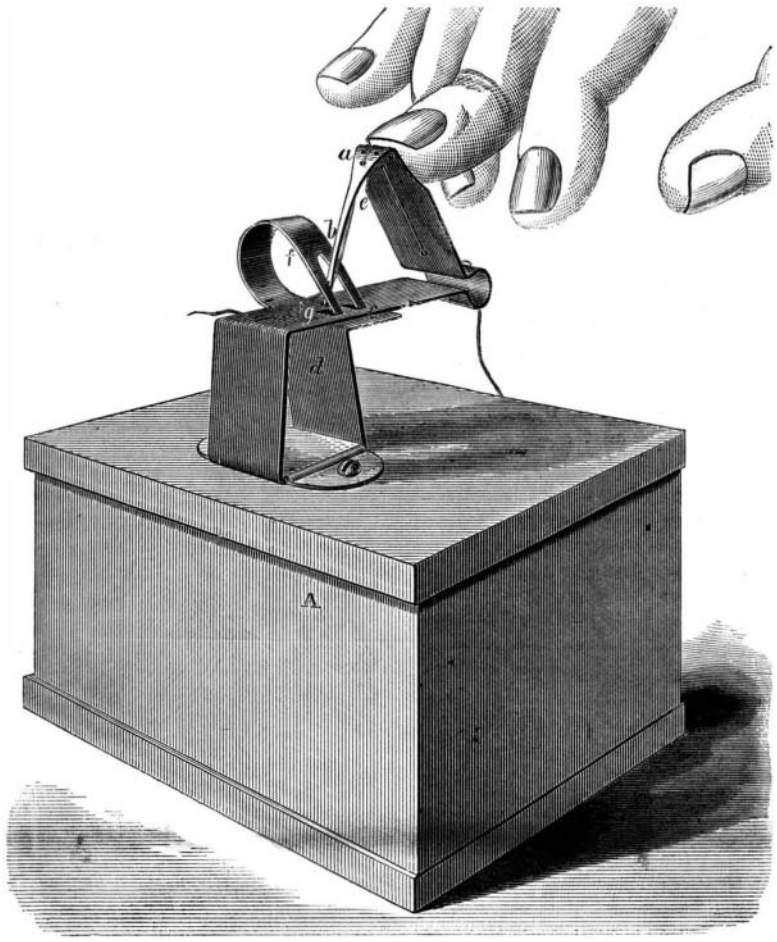
Improved Pocket Sewing Machine.

Many objections have been made to ordinary sewing machines on account of their expense and complexity. We fancy that the most unmechanical person could not find fault with the machine illustrated herewith in either of these respects, for there is not one of the mechanical powers involved in its construction. It is simply a steel spring ingeniously bent and arranged, and it is said to sew small articles very well. The spring is all in one piece and is held to the box, A, by a clamp. The whole affair can easily be carried in the coat pocket, and on this account will recommend itself to travelers, tourists, etc. The inventor thus describes the operations of his machine :—

"The thread being taken from a conveniently-placed spool (which may be laid in the box, A, if desired), is rove through a greater or less number of the tension holes, *a*, according to the tension required, and then passed through the eye of the needle, *b*. The cloth is inserted at *c*, the surplus, if any, lying over in the part, *d*. The machine is worked by being vibrated with the finger, in the same manner that a piano key is vibrated, and it may be done as rapidly; or, if desired, the machine may be taken in the hand and worked in the same manner as a pair of spring pincers. The needle-bar being depressed, the needle passes through the cloth, and when the inclined edge, *e*, comes in contact with the feed-spring, *f*, it forces said spring back from the slots, *g*, and when the needle rises clear of the cloth, the feed-spring moves forward by its elasticity and forces the cloth forward the distance of one stitch by its points acting through the slots. When the needle rises it leaves a loop protruding beneath the lower plate, and by the forward motion of the cloth this loop is flattened and prepared for the next descent of the needle, which passes through it, thus forming a chain stitch. The needle or feed-spring may be made separately if desired and attached to the other part in any suitable manner. This machine is adapted to sewing small articles, hemming handkerchiefs, etc., with patterns in the chain-stitch. It is not liable to derangement when well made."



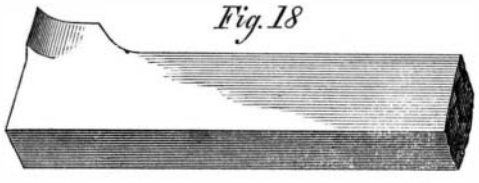
HEYER'S POCKET SEWING MACHINE.

This invention was patented, by W. D. Heyer, through the Scientific American Patent Agency on the 17th of November, 1863. State and county rights for sale. Address W. D. Heyer, Box 762, New Orleans, La.

BORING TOOLS.

NUMBER 4.

In the drills, and all other tools used by mechanics, there are innumerable cases where tools are made for special purposes, and it is principally for this reason



that the subject is inexhaustible. An elaborate treatise on tools would present little that is really new; and to the practical reader there is no benefit in discussing those which have been used for years unless some errors in their construction can be pointed out and removed, as in the case of the boring tool we illustrated in the first of these articles. For boring cylinders and hollow work in general, where a bar and boring head is used, a cutter like the one shown in Fig. 18 is very serviceable, but the kind of work varies so much that one tool cannot be used continually, and the good sense and ingenuity of the workman must be the judge of what is required. Much also depends upon the feed and speed of the cutter, or the work, and unless these are well regulated either the job is much longer in the lathe than it should be, or else it is not properly done. These details cannot be put down positively, for it very often happens that the intelligent workman does not know himself at what speed he will run until the the job is under way.

It seems hardly necessary to exclaim here against the habit of idling over work that some individuals practice. "Slow speed and fine feed"—say thesegentry—make the job last longer; they are correct undoubtedly, but they should also remember that the trick also makes their wages shorter. Men are paid for the work they do, and he that accomplishes the most and the best, will assuredly stand highest in the estimation of his employers. Let us all—as practical men—aim to drive the machines faster; have the cutters sharper, the feed as heavy as the job will bear. Let us make American engines and American machine work our pride and boast, and create a market for it all over the globe, and as a preliminary step to renown, criticize closely everything that promises to improve the character of the tools we work with.

Purifying Sorghum Sugar.

The following information just received from Mr. Riley Root, of Galesburg, Ill., patentee of a new process for clarifying Chinese and other cane-juices, may be of much benefit to those engaged in rising sorghum:— "I would add, in relation to sugar-making, that after the sirup has granulated the remaining (ungranplatable) portion of the sirup is drawn off. But with our cane at the North the mucilage is so adhesive and stiff that assistance by means of a press has been found beneficial. After the first pressing is performed the follower can be removed, and a little clear cold water may be stirred into the sugar, and press again. This process can be performed several times, and at each successive time the sugar becomes whiter, with some slight diminution of its amount; but each successive draining becomes a more perfect article of golden sirup, so that what is lost in one is gained in the other."

VERMONT is entirely independent of the foreign market in regard to sugar and molasses; not an ounce of imported sugar will be seen in many sections this year.

Caribe.

Don Ramon Paez, in his recent work, "Life in the Llanos, Venezuela, S. A.,' states that some of the Venezuelian rivers are infested with a peculiarly ferocious and blood-thirsty fish known as the caribe, which, though not larger than a perch, is one of the most formidable creatures that man or beast can have the misfortune to encounter. Their sharp, triangular teeth, arranged in the same manner as those of the shark, are so strong, that neither copper, steel, nor twine can withstand them, and hence the angler stands no chance of sport where the caribe is found. "The sight of any red substance, blood especially, seems to rouse their sanguinary appetite; and as they usually go in swarms, it is extremely dangerous for man or beast to enter the water with even a scratch upon their bodies. Horses wounded with the spur are particularly exposed to their attacks, and so rapid is the work of destruction, that unless immediate assistance is rendered, the fish soon penetrate the abdomen of the animal, and speedily reduce it to a skeleton." This cannibal fish is as beautiful in aspect as it is fierce in nature. Large spots of a brilliant orange hue cover a great portion of its body, especially the belly, fins, and tail. Toward the back, it is of a bluish-ash color, with a slight tint of olive-green, the intermediate spaces being of a pearly white, while the gill-covers are tinged with red. This fish, however, suffers from a special and constantly recurring visitation; being subject to a yearly mortality during the heat of summer when the water is deprived of a portion of the air it holds in solution. "Their carcasses," says Don Ramon, "may then be seen floating on the water by thousands, while the beach is strewn with their bones, especially their bristling jaws, which render walking barefoot on the borders of lagoons extremely dangerous."

A HANDY TOOL.

Holes in castings which are cored out very often require to be made true and smooth so that bolts will fit in them. Some machinists waste a great deal of time in plugging the holes up with wood and then drilling them out afterward; still others spoil rimmers and files in rimming or filing the sand out; it is needless to tell the intelligent workman that all these methods are costly and tedious. A better way to accomplish the object is to make a tool like the one shown in the accompanying engraving. It can be made in twenty minutes, and is a simple but indispensable tool. It is merely a steel pin ground square on the face and turned true in the lathe. It may be parallel for a short distance (so that it will go straight) and taper above so that it will clear; the length is made to suit the work to be done. This pin is to be driven right through the casting, half from one side and half from the other, or else the face of the casting will be injured. With such a tool as this ten times more work can be done than with a drill or any other method, while the quality of it is excellent. It is called a drift pin and may be made of any size.

THE latest novelty in London and Paris is the Photograph Letter Signature. Note and letter sheets are now gotten up with miniature oval photographs of the persons using them affixed to the right hand lower corner of the last page, after the words "Very truly yours," which are printed in the usual place. They are getting to be quite as fashionable as the *cartes de visite*.